Oregon Gambling Addiction Treatment Foundation

The Oregon Affiliate of the National Council on Problem Gambling

THE ETIOLOGY OF PATHOLOGICAL GAMBLING

A study to enhance understanding of causal pathways as a step towards improving prevention and treatment.

December 28, 2002

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Principal Investigator

Enhancing the Value of the Public Investment in Oregon's Gambling Treatment

IN MEMORY

MICHAEL H. MCCRACKEN

1943 – 2001

IF NOT FOR HIS VISION AND
DEDICATION TO HELPING OTHERS
WE WOULD NOT HAVE THE OPPORTUNITY
TO SERVE THE PATHOLOGICAL GAMBLERS
AND THEIR FAMILIES

ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

This study is the fifth in a series commissioned by the Oregon Gambling Addiction Treatment Foundation since 1997. The purpose of the first four studies was to measure the prevalence of gambling and disordered gambling among adolescent, adult, and older adults in Oregon. The purpose of this study was to increase understanding of the potential causal pathways leading to pathological gambling as well as to test research methods that might be fruitfully employed in a large scale randomized population study. This project was designed as an exploratory case study incorporating the collection of both qualitative and quantitative data from a variety of sources, including an opportunity sample of 75 pathological gamblers from across Oregon.

This study confirmed what was found in the literature, that gambling is not an activity that afflicts the unwitting individual without warning. To the contrary, while 87% of the adult population in Oregon gambles, as reported in 2001, fewer than 1% were reported as pathological gamblers. The findings from this study suggest there is likely no one universal pathway leading to pathological gambling. Nonetheless, more than 81% of the pathological gamblers participating in this study reported mental illnesses, including substance abuse, prior to the onset of pathological gambling, and more than 73% reported trauma stemming from abuse or neglect prior to the onset of pathological gambling.

Of those participants reporting trauma stemming from abuse or neglect, nearly 93% report the existence of mental illness, substance abuse, or pathological gambling in their biological family that included parents, siblings, grandparents, aunts and uncles. Nearly half (47.3%) identified a pathological gambler in their biological family. Of those reporting preoccurring mental illness or substance abuse, nearly 69% reported a family history of mental illness, substance abuse, or pathological gambling.

Clearly, the existence of an intertwined relationship between family histories of mental illness, trauma from abuse and neglect, preoccurring mental illness including substance abuse and pathological gambling is evident to even the untrained eye. The adhesive that seems to bind pathological gambling within this milieu of mental illness and addiction is the gamblers' ability to achieve a state of being while gambling that alleviates the unpleasantness of both present and historical stress. This quest for disassociation, carried to an extreme, then becomes both the solution and the problem as more and more time and money are spent gambling in an attempt to distance oneself from the ever-expanding sphere of problems.

This study combined published literature with the experiences of the participants in an attempt to provide a framework for the explanation of the etiology of pathological gambling. Unquestionably, the answer is as complex as human behavior. Nonetheless, the study found that the course to pathological gambling is contingent upon the interaction of biological, psychological, and social determinants and in documenting these findings discusses a wide range of theories that can be applied to understanding the etiology as well as possibly yielding a better understanding of effective treatment.

Based on the findings of this study, it is hypothesized that as many as 75% of pathological gamblers will have had traumatic experiences prior to the onset and, as a result of a developmental process, will have come to rely on various forms of dissociation as coping mechanisms throughout their lives.

It is further hypothesized that a second pathway to pathological gambling exists for an estimated 20% of pathological gamblers who came from families that have histories of mental illnesses including substance abuse and pathological gambling. These individuals may not experience preoccurring mental health problems nor trauma, yet will find themselves gambling pathologically. For this group, the primary casual factors will be a combination of genetic, environmental, and psychological factors.

Finally, it is hypothesized that the least common pathway to pathological gambling is one where there was no family history of mental illness and no preoccurring experience of mental illness or substance abuse. These individuals are hypothesized to gamble because they enjoy it and, lacking insight or judgment, gamble to the point of experiencing serious problems. It is hypothesized that many of these individuals, once realizing the extent of their problems associated with gambling, simply stop or regulate their activity to a point that does not create problems. This phenomenon has been referred to in the literature as "natural recovery." This group may account for less than 5% of the pathological gamblers.

The study made the following recommendations:

1. Clients entering gambling treatment programs should receive a thorough mental health assessment by a qualified mental health professional. Pathological gambling should continue to be treated as a primary illness and underlying issues, such as those commonly associated with post-traumatic stress disorder for example, should be identified and incorporated into the plan of treatment.

2. Controlled studies be should be undertaken to determine efficacious treatment strategies for blending known best practices for cooccurring mental illness and addictions with the emerging knowledge base for the treatment of pathological gambling.

3. Gambling counselor training and certification programs should be reviewed to ensure the inclusion of a protocol for the effective identification of post-trauma related disorders, the long-term effects of trauma, promising treatment interventions, and the efficient integration of these interventions into the plan of treatment.

4. Awareness, education, and prevention efforts should take into consideration the role that trauma from abuse and neglect plays in the etiology of pathological gambling. These efforts must recognize the association with pre- and co-occurring mental disorders and family history, yet stress the uniqueness of pathological gambling in order to foster compassionate understanding that the disorder is similar to other mental disorders and is treatable.

5. Finally, randomized, population based research should be conducted on a large heterogeneous sample following a design similar to this effort testing the extent to which these findings can be generalized.

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1. INTRODUCTION

Concern for problems commonly associated with gambling have been present throughout the recorded history of mankind (National Research Council, 1999, p. 9). Over the centuries, beliefs regarding the causes of pathological gambling have paralleled those of other health issues and have progressed through spiritual, moral, and physical theories of causality. With advancements in science, technology, and understanding of the complex interrelationships among genetics and environment, the causes of many diseases are now well understood and in many cases preventable and, or, treatable.

Nonetheless, there have been no etiological studies published regarding pathological gambling. Most of what is believed regarding the etiology of pathological gambling has come from cross-sectional studies that have attempted to correlate suspected causal factors with pathological gambling behavior or case studies with small and homogeneous samples selected from treatment or self-help participants. These studies have provided a wealth of knowledge regarding cooccurring and potentially comorbid illnesses seen in pathological gamblers but have only surmised its etiology. A few efforts to look retrospectively at longitudinal data collected by other health studies conducted over the years have been helpful but have been hindered by weaknesses in question design. Additionally, within the past five years, there have been several biologically based studies that have, using highly advanced technology, provided glimpses into brain functioning of the pathological gambler. All these studies combined have given tantalizing hints at causality but, due to design limitations, their findings thus far have been inconclusive.

PURPOSE OF THE STUDY

The purpose of this study was to contribute to the knowledge base regarding the etiology of pathological gambling by systematically investigating and documenting several factors. These included mental health issues that were experienced prior to the onset of pathological gambling that may have played a role in the onset of the disorder; mental health issues that were experienced at the same time as the pathological gambling that may be linked with pathological gambling; family history; and environmental factors that may have contributed to the behaviors associated with pathological gambling. The results of this study were envisioned to serve as a foundation for increasing the understanding of the causes of and conditions relating to pathological gambling and to provide a foundation upon which prevention and treatment efforts could be improved.

The limited sample size cannot be expected to fully answer all the questions. Instead, the findings from this study and the methodological experience gained, were intended to become a foundation upon which future investigations can be undertaken to determine effective methodologies with which to both prevent and treat pathological gambling.

STUDY DESIGN

This study was designed as an exploratory case study and undertaken as a precursor to a large-scale investigation as discussed in the recommendations section. The function of an exploratory case study is to develop the evaluation questions, measures, designs, and analytic strategy for a larger, more rigorous study (U.S. General Accounting Office, 1990, pp. 34-37). This approach was considered necessary for several reasons. First, a thorough search of the

published literature supported the notion that no previous study of this kind had been undertaken for pathological gambling. Second, although not dissimilar from other mental illnesses, no clear, fully supported theory specific to the causality of pathological gambling existed, although attempts had been made to fit pathological gambling into existing causal models. Finally, due to the competing and complementary theories proposed in the literature, it was determined that a cogent discussion of these theories would be of value for both understanding and future research.

In addition to the theoretical nature of this study, the design called for an investigation within the pathological gambler community to determine if other theories, not reflected in the literature, might be helpful in understanding the causal factors. With the inclusion of this element of the study, the design more accurately can be defined as an embedded multiple-case study design (Yin, 1994, p. 42) incorporating the collection of both qualitative and quantitative data from a variety of sources. The purpose of this element was to combine multiple individual case studies to formulate findings based on a synthesis of the data collected from all individuals and then compare these findings with the existing literature. Methods for this element of the study are discussed below.

ORGANIZATION OF THE REPORT

Following an embedded case study format, this report is comprised of five primary sections. The first section includes the purpose, design, organization of the report, and background for the study. The second section is comprised of a discussion of the theoretical premises that were found in the literature. The third section is a presentation of the instrumentation and methods used for the participant interviews. The fourth section is the

findings from these interviews with pathological gamblers, and the final section is a general discussion of the findings, conclusions reached, and recommendations.

BACKGROUND

THE FOUNDATION

This study was commissioned by the Oregon Gambling Addiction Treatment Foundation (OGATF) in its continuing efforts to advance the understanding of disordered gambling for the purposes of identifying sound public policy towards gambling, increasing awareness of problem and pathological gambling, and preventing and treating pathological gambling. The Foundation was incorporated in January 1997 as a non-profit public benefit corporation. Founders included three representatives from separate state-funded gambling treatment agencies, a senior representative from county government in Oregon, a representative for the Ecumenical Ministries of Oregon, and senior personnel from the Oregon Lottery, Spirit Mountain Casino, and the New Portland Meadows.

In 1997, the Foundation commissioned the first adult gambling prevalence study in Oregon. This study was followed in 1998 with a prevalence study of adolescent gambling in Oregon and, in 2001, another study was commissioned to explore older adult gambling in Oregon. Also in 2001, the Foundation sponsored a replication prevalence study of adult gambling. The findings of these studies are discussed below.

Finally, in 1999 the Foundation, supported by the Spirit Mountain Community Fund, commissioned a one-year pilot program to develop and test prevention strategies in public primary school settings in Polk County, Oregon. This effort developed expertise and

produced materials that continue to be utilized in conjunction with alcohol and drug abuse prevention efforts. (Moore, 1999)

In 2001, the Foundation petitioned and was accepted by the National Council on Problem Gambling as the Oregon State Affiliate.

The findings from these research efforts enabled the Foundation to not only take a leadership role in helping legislators and state administrators define state-wide policy regarding the prevention and treatment of disordered gambling, but also contribute to the existing knowledge base regarding disordered gambling.

GAMBLING IN OREGON

Because the participants selected for the this study were recruited in Oregon, it is important to document the history of gambling availability as a benchmark to identify potential cohort effects if information from this study is utilized for comparison purposes with other studies in the future.[1]

Oregon, like most states, has dealt with illegal and gray gambling[2] since statehood was achieved. In 1933 the state passed legislation that allowed for pari-mutuel wagering on horses and dogs. From the mid-1950s through 1991, various modifications and new rules were adopted covering pari-mutuel wagering, and in 1987 off-track betting was legalized. Since legalization, pari-mutuel wagering has been governed by the Oregon Racing Commission.

Social gaming was legalized by the Oregon Legislative Assembly in 1973. This statute allowed for counties and cities to, by ordinance, authorize social gaming in private businesses, private clubs, and places of public accommodation. Social gaming requires there

[1] The information for this section was summarized from historical material provided by the Oregon Lottery.
[2] Illegal gambling that is unofficially allowed to continue, such as slot machines at private clubs.

to be no house player, house bank, or house odds and there is no house income for the operation of the social game, usually poker and blackjack. At the time of this report, ten of the 36 Oregon counties and 34 cities had adopted such ordinances.

In 1976, by Constitutional Amendment, charitable gaming was legalized allowing for charitable, fraternal, and religious organizations to conduct bingo, lotto, and raffle games as means of raising funds for charitable causes.

In 1984, the Oregon State Lottery was created by a vote of the people through the initiative process and passed by a margin of two to one. The lottery is governed by a five-member, governor-appointed commission that is approved by the State Senate. The lottery's statutory mandate is to "produce the maximum amount of net revenues to benefit the public purpose …commensurate with the public good."[3] A minimum of 84% of the lottery's annual net revenue must be returned to the public in the form of prizes and benefits to the public good.[4] The lottery offers instant tickets (scratch-offs), first available in 1985, Megabucks (1985), multi-state lotteries – (Lotto America from 1989 to 1992 and Powerball from 1992), Sports Action (1989) that is the first and only state lottery game that is based on the outcome of professional sporting events, Keno (1991), video poker (1992), Pick 4 (2000), and Win for Life (2001).

In 1991 the State Legislative Assembly asked the Oregon Lottery to operate video lottery games that became available in 1992. The statutory changes implemented by the

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[3] Oregon Constitution, Article XV, Section 4. and the Oregon Revised Statutes (ORS) 461.
[4] To date, over $4 billion has been awarded in prizes and nearly $2 billion returned as profit to the state. The lottery currently returns approximately 96% of its net revenue to prizes and the state.

Legislative Assembly included the requirement that 3% of the video lottery net proceeds be used to establish and fund treatment programs for disorder gamblers in the state.[5]

There were approximately 1400 traditional game retailers in the state; 800 video game retailers; and 1100 retailers selling both traditional games and video poker at the time of this study.

Finally, the first Indian gaming center (IGC) in the state was established in 1993 under the auspices of the Federal Indian Gaming Regulatory Act of 1988 which allowed tribes to offer any and all forms of gaming that are otherwise legal in the state. With the combination of charitable, social, and lottery games regulated in Oregon, the eight[6] IGCs were able to offer all gaming customarily associated with Las Vegas-style casinos.

DISORDERED GAMBLING PREVALENCE IN OREGON

The first adult gambling prevalence study in Oregon, conducted in 1997, found that an estimated 1.9% of the adult (18 years and older) population were problem gamblers and an estimated 1.4% were probable pathological gamblers[7] (Volberg, 1997). The 1998 study of adolescent (13 year olds through 17 year olds) gambling in Oregon, as expected, found much higher rates among this age group with an estimated 11.2% problem gamblers and 4.1% probable pathological gamblers (Carlson and Moore, 1998). The older adult (62 years and older) prevalence study, published in 2001, found an estimated 0.9% problem gamblers and 0.3% probable pathological gamblers (Moore, 2001b).

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[5] Expansion to video poker was narrowly passed by the legislature and subsequent court challenges, though unsuccessful, inadvertently led to the finding that funding of treatment was not legal as an administrative cost. This crisis caused many treatment programs to temporarily suspend services until the legislature could enact legislation that would allow for funding of treatment from the general fund. Recent legislation has again linked treatment funding to 1% of the net lottery proceeds.

[6] A ninth IGC was in the planning stages at the time this report was written.

The adult replication study estimated the rate of problem gambling at 1.4%, and 0.9% for probable pathological gambling (Volberg, 2001; Moore, 2001c). This study suggested that the frequency of past year gambling and the rate of disordered gambling had significantly decreased from the findings of the 1997 study (Volberg, 2001). A review of similar findings in other states conducted by Volberg suggested the reduction in gambling and the prevalence of disordered gambling were most likely due to aggressive "play responsibly" campaigns, public awareness of treatment availability, and effective treatment programs.[8]

Prevalence of Mental Health and Substance Abuse/Dependence

Although there is no specific mental health prevalence data for Oregon, it has been estimated that about "one in five Americans … [will have their adulthood] interrupted by mental illnesses." (U.S. Department of Health and Human Services, 1999b, p. 103).[9]

In 1999, Feyerherm found that the combined estimated prevalence of substance abuse and dependence among Oregon adults was 15.2%. For alcohol alone the prevalence was estimated at 7.8% and for illicit drug abuse and dependency his estimate was 10.6%. Using national studies of lifetime prevalence rates, it is estimated that the rate for alcohol dependence is approximately 30% for individuals that began drinking at approximate the same age as the participants in this study. However, the life-time prevalence overall is approximately 10% to 12% (U.S. Department of Health and Human Services, 1999c).[10]

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[7] The terms problem, probable, and pathological gambling are discussed more thoroughly in the section "Defining Pathological Gambling."

[8] All these studies are available for download from the Foundation's web site: www.gamblingaddiction.org

[9] The State of Oregon has not conducted recent prevalence studies of mental illnesses.

[10] This is based on 1999 NHSDA survey data that was provided in table format from SAMSHA and is based on comparing the sample's average age of first use with the prevalence data provided. It is interesting to note that for individuals who first used alcohol at 21 years old the lifetime prevalence was approximately 12%. However, for individuals who began drinking at 13 years of age the prevalence estimates jump to approximately 43%.

DISORDERED GAMBLING TREATMENT AND PREVENTION IN OREGON

As discussed above, part of the legislative action that introduced video lottery terminals into the lottery's mix of games was the requirement that treatment programs be made available to all Oregonians. Several pilot treatment programs were initiated throughout the state from 1992 through the spring and early summer of 1995. On July 1, 1995, the statewide treatment effort was consolidated through a management contract with the Association of Community Mental Health Programs (AOCMHP) and the state. In 2001, management of the state-wide treatment and prevention efforts was taken in-house by the State Office of Mental Health and Addiction Services (OMHAS) under the direction of the gambling services manager. There were 26 outpatient programs open and within the past year the state had funded two short-term residential, or respite, programs for pathological gamblers[11] as well as field testing a home-based program with limited telephone access to qualified gambling counselors.

The Oregon Lottery is tasked with implementing a play responsibly campaign that includes extensive advertising (print and broadcast) regarding both the availability and effectiveness of treatment in the state[12] and accounts for the largest number of referrals to treatment (Moore, 2001a). In the summer of 2001, several special project contracts were initiated with provider organizations throughout the state by OMHAS to enhance local outreach and prevention. Prior to this, there were only two definitive county-based ongoing prevention and education efforts, one for the general population and one for adolescents identified as having substance abuse problems.

[11] A third respite program was slated for opening in the fall of 2002.
[12] There are no costs to gamblers or their family members for accessing and participating in state-funded treatment.

DEFINITIONS

The following terms are defined in relation to their use in this study in an effort to alleviate possible confusion. Each term is more fully discussed in the report.

Comorbid: a mental or physical condition that occurred at the same time as another condition and there is a clear causal relationship between the two.

Cooccurring: a mental or physical condition that occurred at the same time as another condition but there is no causal relationship between the two.

Pathological Gambler: an individual who has been clinically assessed by a competent mental health professional as meeting at least five of the ten diagnostic criteria as set forth by the American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders.

Probable Pathological Gambler: a term commonly used in prevalence studies were an individual has been screened by use of a brief self-report instrument that includes the criteria found in a clinical assessment for pathological gambling; has endorsed a minimum number of items to meet the criteria for pathological gambler, but there is no diagnosis of pathological gambling provided by a competent mental health professional.

Problem Gambler: an individual that experiences problems associated with the gambling but does not endorse the minimum number of items necessary for a diagnosis of pathological gambler.

Premorbid: a mental or physical condition that occurred prior to the onset of an illness and there is a clear causal relationship between the two.

Preoccurring: a mental or physical condition, or event, that occurred prior to the onset of an illness and is not necessarily causally linked to the illness.

2. THEORETICAL PREMISES

As an exploratory case study, the intent of this effort was to identify existing theories and then through pattern-matching in the lives of pathological gamblers, reveal which theory or theories, if any, might hold the best promise for future research. One of the drawbacks of using this design is the possibility of venturing too far afield to attempt to discuss all the

theoretical propositions as well as following their evidentiary threads to potential underlying causal pathways.

Nonetheless, it is important to attempt to set the theoretical stage in an orderly manner before attempting to understand the information collected from the pathological gamblers. To that end, this section of the report briefly addresses etiological studies in general, what comprises pathological gambling from a definitional perspective, and the general theoretical frameworks that attempt to address the etiology.

ETIOLOGICAL STUDIES

Etiology is defined in general terms by Merriam-Webster as "all the causes of a disease or abnormal condition" (1994, p. 399). In order to undertake an efficient investigation of the potential causal pathways of pathological gambling, it was necessary to determine a specific framework with which to organize the available literature as well as to establish the methodology and develop the instrumentation for the study.

All behavioral disorders, as well as disorders associated with the manner in which the human mind processes information, have been elusive to complete understanding through rigid, highly controlled, scientific investigation. What is known of mental and behavioral disorders, in general, constitutes a highly complex interrelationship between biology, psychology, and social interactions.

DEFINING PATHOLOGICAL GAMBLING

The lack of precision in the definition of pathological gambling, combined with attempts to determine pathways through correlational cross-sectional research is the crux of the problem facing the field. Research to date:

... has provided little understanding of the associations and causal relationships among the risk factors, the uniqueness of the risk factors, and age and cohort effects ... the diagnostic classification of pathological gambling has lagged behind, and it has been identified as an area in serious need of etiological research" (National Research Council, 1999, p. 108.).

Table 1. Diagnostic Criteria for Pathological Gambling

1. Preoccupation with gambling.

2. Need to gamble with increasing amounts of money to achieve the desired level of excitement.

3. Repeated unsuccessful efforts to control, cut back, or stop.

4. Restless or irritable when attempting to cut down or stop.

5. Gambles as a way of escaping from problems or of relieving a dysphoric mood.

6. Returns after losing money get even.

7. Lies to others to conceal gambling.

8. Committed illegal acts to finance gambling.

9. Jeopardized or lost significant relationship, job, or opportunity because of gambling.

10. Relies on others to provide money to relieve a desperate financial situation caused by gambling.

The critical underlying question for this study depends heavily on how pathological gambling is defined. It is common practice for pathological gambling to be viewed alternately as an addiction, an impulse control disorder (as it is now officially classified by the American Psychiatric Association [APA] Diagnostic and Statistic Manual, Revision IV – Text Revision [TR] [DSM-IV-TR] [APA, 2000]), or a subtype of myriad other disorders.

Following the lead of the World Health Organization in 1979, the American Psychiatric Association (APA) first included pathological gambling in the Diagnostic and Statistical Manual, Third Edition (DSM-III), in 1980 and subsequently revised the clinical criteria two more times (APA, 1980, 1987, 1994). The current DSM-IV-TR (APA, 2000) classifies pathological gambling as "persistent and recurrent maladaptive gambling behavior

that disrupts personal, family, or vocational pursuits" (APA, 2000).[13] This classification requires that individuals exhibit a minimum of five of the ten criteria. The essential features for a clinical diagnosis of pathological gambling include: "a continuous or periodic loss of control over gambling; a progression in gambling frequency and amounts wagered; a preoccupation with gambling and in obtaining monies with which to gamble; and a continuation of gambling involvement despite adverse consequences" (APA, 2000). (Table 1.)[14]

Lessening precision in the classification of pathological gambling is the fact that the APA classification criteria has not been, and is not currently, the only standard utilized in the field, although there is movement in that direction. The South Oaks Gambling Scale (SOGS), developed in 1987 (Lesieur & Blume) has seen extensive use in both clinical and epidemiological settings. Further recent prevalence studies have incorporated an extensively revised version of the DSM criteria (National Opinion Research Center DSM-IV Screen for Gambling Problems [NODS]) first employed in the National Gambling Impact and Behavior Study in 1999[15] (National Gambling Impact Study Commission, 1999)

Although these screening instruments were designed for different purposes (e.g., DSM-IV for clinical diagnosis and the NODS for epidemiological estimations) and intended to be used in different situations (clinical interview as opposed to written survey), they employ scoring procedures that appear similar on the surface and yield classifications that

[13] The APA criteria require exclusion of the diagnosis if the behavior can be better accounted for by a manic episode although, as discussed below, there is no empirical evidence that this exclusion is necessary or appropriate.

[14] This table is an abbreviated description of the criteria (APA, 2000, p. 674) adapted for presentation in the text.

also appear similar in terminology. Nevertheless, many of the individual scoring items are different. Consequently, an individual may "score" quite differently on each of the various instruments or the clinical interview. As Shaffer and colleagues aptly note, none of the instruments developed primarily for epidemiological surveys represent the "gold standard" and possibly the best, although not perfect, classification tool is the clinical interview.[16, 17] (Shaffer, Hall, & Vander Bilt, 1997)

In addition to the lack of precise instrumentation in either the clinical or epidemiological setting, there has been a trend for clinicians and researchers to adapt the available instruments to account for individuals with scores below the cut-off points on the respective instruments and label them as "problem gamblers." Lesieur and Rosenthal (1991) discussed the use of the term problem gambler to denote individuals who, in addition to falling short of the diagnostic criteria for pathological gambling, were assumed to be in the preliminary stage of a progressive disorder.[18] Recent studies support the notion that problem gamblers are certainly at risk of progressing to pathological gambling. Nonetheless, a significant number appear to not do so[19] (National Research Council, 1999). Perhaps a more meaningful classification of individuals who do score below the cutoff for pathological

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[15] Several other instruments have attempted to replicate the SOGS and DSM screening criteria but were never widely validated and in some cases not validated at all. It is outside the scope of this report to attempt to discuss these instruments.

[16] The SOGS, NODS, and DSM survey may be useful as epidemiological surveys but should not be used in place of a clinical interview for the diagnoses of pathological gambling.

[17] The reader is invited to read Shaffer, et al. 1997, pp. 67-70 for a complete discussion of the state of the instrumentation available for epidemiological studies.

[18] This definition presumes that disordered gambling, if left untreated, would eventually escalate to the point of pathological gambling. Many professionals, favoring the addiction model, have embraced this theory. Nonetheless, the National Research Council, in one of the most definitive studies to date regarding disordered gambling, found this unsubstantiated in research. "Although this increasing relationship is often asserted or implied in the literature, neither an increasing association nor a progressive gambling behavior continuum is supported by available research" (National Research Council, 1999. p. 19).

[19] This is especially true for adolescent gamblers.

gambling would be in-transition gamblers whom Shaffer and colleagues have noted as either transitioning towards or away from more severe problems (Shaffer, Hall, & Vander Bilt, 1997; Shaffer & Hall, 1996). This is most commonly seen in the adolescent population where a large distribution of the sample are "scored" as problem gamblers. None of the studies in the adult population suggest that this large distribution progresses to becoming adult pathological gamblers.

Further confusing the use of precise terminology has been the advent of several terms by epidemiologists attempting to measure the prevalence of gambling in the general population. Terms that have found their way into the gambling literature included "at-risk gambling," "problem gambling," "probable pathological gambling," "compulsive gambling," and "disordered gambling" (National Research Council, 1999).

As the investigation into the etiology of pathological gambling progresses, the evidence seems to indicate that the DSM and SOGS may actually miss essential features of the malady, such as a propensity towards dissociation, seeking out destructive activities as a means of reinforcing a negative self-image, a developmental history that includes exposure to trauma, or underlying brain dysfunction.

Nonetheless, in order for the findings of this study to be of maximum comparative value for future research, the classification of a pathological gambler was based on a thorough clinical interview by a competent professional who found the individual to exhibit a minimum of five of the 10 criteria of the DSM-IV as discussed above.

GAMBLING AS AN ADDICTION

Before moving further into the discussion, the issue of gambling as a addiction should be addressed. Historically, the term gambling "addiction" found its way into widespread use

in the contemporary literature regarding gambling. Freud was one of the most widely referenced early 20th century authors[20] to associate the term addiction with gambling, believing that it was closely related to substance dependence (Freud, 1979/1921; 1964/1940) which he also labeled as an addiction. Today, there remains a variety of opinions among treatment and research professionals regarding the classification of pathological gambling.

One of the most salient reasons for classifying pathological gambling as an addiction is the evidence emanating from the biological sciences where similarities in brain functioning and brain images have been reported between pathological gamblers and drug addicts. A major shortcoming of these findings is the nagging question of which came first, the brain abnormalities that "caused" the pathological gambling, or the brain responding to repetitious activities that eventually caused physical changes in the brain. One of the difficulties is that animal studies are often cited as evidence for the addiction process and subsequent change in brain functioning. Animal models are useful since any mammal can be involuntarily "addicted" to drugs or alcohol. With the onset of biological addiction, changes in brain functioning and as well as changes in brain images can be documented. As yet, science has not developed a methodology with which to replicate pathological gambling in animals as gambling appears to be solely a human activity.

Potentially adding to the confusion is the fact that the APA's classification of pathological gambling contains three criteria that are also found in the classification for alcohol and drug dependence. These common criteria include: preoccupation with the behavior, tolerance (requiring more to achieve the same results), and withdrawal (becoming

[20] But certainly not the first.

restless or irritable when attempting to stop or control the behavior). Even though the APA does not use the terminology "addiction" for any of the mental disorder classifications, including substance dependence, the alcohol and drug treatment field has been awash with the term.

This view of the etiology of illnesses is colloquially referred to as an "addictions model" and is characterized as a progressive disorder. Those who view pathological gambling as an addiction view problem gambling in the same frame as substance dependence introducing yet another non-clinically defined classification into the lexicon of pathological gambling.

GENERAL THEORY OF CAUSALITY

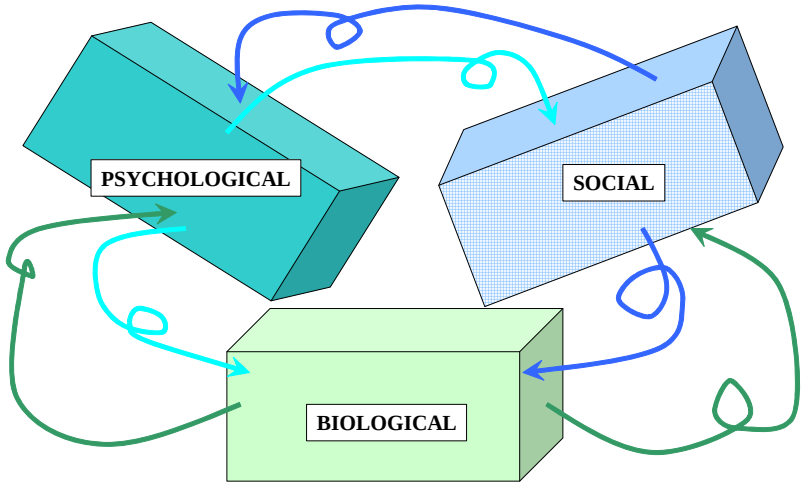
Perhaps the most common, and easily understood, model used as a framework for understanding the cause and spread of illness is the disease or medical model. This model contains three essential elements including the host (the individual), agent (a virus for example), and the environment or circumstances under which the agent is introduced into the host. This model is effective in describing illnesses where there is a clear agent, such as an infection. Nevertheless, when an agent is not present and replacement of that element is attempted by inserting a behavior, as with gambling, the model loses clarity as a basis for explanation. A more promising model is one that does not necessarily require the presence of a specific agent as a primary causal factor.

In 1980, Engel introduced the mental health treatment community to the biopsychosocial model in an attempt to integrate biological, psychological, and social factors into an explanation of human behavior without blurring them into one element. This model

coalesced modern thinking regarding both the cause and treatment of mental and behavioral disorders into an ecological approach, reinforcing the need to recognize and understand the varied aspects of these illnesses. A closer look at what Engel proposed can help to conceptualize the need for a multi-modal understanding of the causal pathways.

The biological level of Engel's model views human beings as dynamic organisms includes the basic anatomic structure acquired from their genetic heritage, the internal biochemical and physiological processes, and their interaction with the physical environment. The social level of the model recognizes that no individual exists without interaction with other human beings, small social groups, and society in general, and that those interactions have an effect on the continuing development of the individual. The psychological level is comprised of individual subjective conscious experiences of the environment, their social interactions, and the internal cognitive and affective results of these interactions (e.g.,

Figure 1: ECOLOGICAL ELEMENTS OF ETIOLOGY



thoughts and feelings). The core philosophical premise of Engel's system model is that no element can be considered independently when attempting to understand or treat a mental disorder, that is, nothing happens in isolation within the human condition.

Figure 1 is an attempt to visually represent the elements of Engel's model and their interrelationships. The serendipitous lines depicting relationships between each of the elements of the model have been included to reinforce the sometimes unpredictable influence of one element, or changes in that element, upon the other elements. The complexity of these relationships has led some to conclude (perhaps tongue-in-cheek) that understanding the etiology of mental and behavioral disorders might be explained by chaos theory or quantum physics and the uncertainty principle (Beahrs, 1986) due to the virtually limitless number of potential combinations. Or, as Shaffer and colleagues have aptly noted: "Conceptual and methodological chaos is common among emerging scientific fields…[Fortunately] [T]his discord encourages dialogue and debate among workers in the field" (Shaffer, et al, 1997, p. 8).

Recently, Blaszczynski (2000), proposed a three-element model, including what he labeled as ecological determinants, classical and operant conditioning, and biological determinants, as a mechanism in helping to define the potential causal pathways. He further postulates that there are actually three sub-classifications of pathological gamblers. First of the subgroups is the "normal" pathological gambler. He theorizes that through a combination of the availability of gambling opportunities (which he labels ecology) and reinforcements to continue gambling (conditioning), the gambler becomes habituated to gambling. The resulting disorders (e.g., anxiety, depression, substance abuse and dependence) that occur at

the same time are then the consequences of the problems created by the habituated (learned) gambling behavior.

The second of Blaszczynski's subgroups includes individuals who begin gambling with a predisposing psychological vulnerability manifesting as a "desire to modulate affective states ... or meet specific psychological needs." He postulates that this subgroup is characterized by premorbid psychopathologies such as anxiety, depression, substance dependence, and deficits in their ability to cope (Blaszczynski, 2000, p. 5).

The third subgroup of pathological gamblers is characterized by the presence of neurological or neurochemical dysfunctions that are primarily genetically based but could be associated with damage to the brain caused by injury, illness, or substance abuse.

On the initial review of Blaszczynski's model, it appears to fit smoothly within the framework proposed by Engel and does help to address how the causal factors might be described,[21] but it does not address the potential root causes of the disorder nor the relationship with other disorders.

BIOLOGICAL DETERMINANTS

Research from the physical sciences is providing preliminary insights into the potential biological factors associated with pathological gambling. This research has encompassed twin (Eisen, et al., 1998; Eisen, Beer, Pato, Venditto, and Rasmussen, 1997; Walters, 2001), biological, and neurobiological (genetic) studies (Breiter, Aharon, Kahr, Dale, and Schizgal, 2001; Comings, 1998; Comings, et al., 1999; Ibanez, de Castro, Fernandez-

[21] Nonetheless, there are some subtle, yet important factors that it does not fully address, especially the influence of the interaction of the three elements within the individual and the reliance on an underlying behavioral orientation towards learning theory.

Piqueras, Blanco, Saiz-Ruiz, 2000; Koepp, Gunn, Lawrence, Cunningham, Dagher, Jones, Brooks, Bench, and Grasby, 1998; Perez de Castro, Ibanez, Torres, Saiz-Ruiz, and Fernandez-Piqueras, 1997). (See also Eber & Shaffer, 2000.) Pharmacologically based treatment effectiveness studies have also provided some indication of a biologically based factor (Hollander, Decaria, Finkell, Betgaz, Wong, Cartwright, 2000; Hollander, Begaz, DeCaria, 1998). These, and other studies, have found evidence for biological associations with pathological gambling. Etiological factors that have been related to pathological gambling include "... abnormalities in the serotonergic, dopaminergic, and noradrenergic systems; cognitive distortions and a reinforcement of the gambling activity by either episodic gains or the excitement that accompanies gambling ... and the presence of comorbid psychiatric disorder[s]..." (Blanco, Ibanez, Saiz-Ruiz, Blanco-Jerez, Nunes, 2000). Although promising and contributory to the knowledge base, these studies have been unable to clearly distinguish pathological gambling from substance abuse and dependence, sensation seeking, risk-taking, or other potential underlying behaviors.

At the time of this study, several other interesting studies were currently underway such as the investigation of a molecular genetic analysis of personality traits associated with pathological gambling by Miller in Missouri; reward deficiencies possibly caused by event-related brain potential abnormalities in pathological gamblers by Warren in Illinois; functional MRI of prefrontal cortex function in pathological gamblers by Clark in Connecticut; a family-genetic study of pathological gambling by Black in Iowa; and a study of the affective, cognitive, and perceptual processes in gambling by Jones in Illinois to mention a few.

> Although many complex factors may be involved in excessive behaviors such as compulsive drug abuse, overeating, and gambling, they are all similar in that

> the brain is changed, reward circuits are disrupted, and the behavior eventually becomes involuntary. Find0ing low D2 receptors across various drugs of abuse … suggests a common brain mechanism that could contribute to such disorders. (Frascella, as quoted in NIDA, 2002, p. 10).
>
> It is through activation of these circuits that we are motivated to do the things we perceive as pleasurable. If you have a decrease in dopamine receptors that transmit pleasurable feelings, you become less responsive to the stimuli…When these activities don't reward you enough, your brain signals you to do something that will stimulate the circuits sufficiently to create a sense of well being. Thus, an individual who has low sensitivity to normal stimuli learns behaviors such as [gambling and drug abuse] that will stimulate them. (Volkow, as quoted in NIDA, 2002, p. 13.)

These biological studies then, although critical to our evolving understanding of how to identify and define the condition of pathological gambling, beg the question of what came first as "it remains unclear whether low D2 brain receptor levels are a cause or a consequence of addictive behaviors – or both." (Hatem, 2002, p.13)[22] Nonetheless, it has been demonstrated that the brain can change in response to experience and develop new capabilities throughout the lifespan (Johnson, 1997; Black, Isaacs, & Greenough, 1991), suggesting myriad possibilities of how the brain is effected by gambling and how responsive it might be to functional regeneration following effective treatment and abstinence.

[22] See also Wang, G., Volkow, N., et al. (2001). Brain dopamine and obesity. Lancet. 357(9253): 354-357.

It should be noted that two small studies reported by Secdat and colleagues (2000) and Molina and colleagues (2000) document the onset of pathological gambling in patients diagnosed with Parkinson's disease following pharmacological therapy which increased their gambling behaviors. These studies, and those discussed above reinforce the existence of a biological component of pathological gambling but do not provide sufficient evidence of a purely biological cause.

One of the more promising aspects of understanding the etiology of mental illnesses was a study undertaken by Blackshaw and colleagues in 1999 in Oregon addressing the role of trauma in the development of mental illnesses (Blackshaw, Levy, Perciano, 1999). The result of this effort was the promulgation of a statewide policy encouraging mental health and human service agencies to incorporate this growing knowledge base into policies and procedures for the treatment and prevention of mental illnesses and criminality.

SOCIAL DETERMINANTS

Trauma

Jacobs, in efforts to refine his general theory of addiction has taken an etiological approach leaning towards early childhood experiences as a major causal factor (Jacobs, 1993; 1989; 1986; 1982). He sets forth five elements as the framework for his theory of addiction. Within the first element, he postulates that the individual has an abnormal resting arousal state and that the individual has suffered traumatic experiences during early childhood. Acting together, he postulates, these two factors create a chronic and pervasive dysphoric mood (Jacobs, 2001).[23] Jacobs further defines addiction as a self-induced dependent state (1982).

[23] This discussion of Jacobs' general theory is based on an interview conducted with Dr. Jacobs by Don Feeney and published in Lottery Insights, February and March issues 2001.

Traumatic experiences include neglect and abuse and are defined by Jacobs[24] in his Jacobs Neglect and Abuse Protocol (J-NAP) (Jacobs, 1999) as follows:

> Serious Neglect: Parents or adults responsible for your care failed to provide you what you consider minimally sufficient food, clothing, shelter from rain, cold or heat, necessary medical attention, or protection from harm. (Jacobs, 1999, p. 1.)
>
> Physical Abuse: … were you ever hit, bitten, burned, beaten with a belt or other object, kicked or thrown, so that you bled a lot, or suffered pain, broken bones, or long-lasting bruises or welts. (Jacobs, 1999, p. 4.)
>
> Emotional Abuse: …you repeatedly were made to feel unwanted, worthless, unloved, inferior, and/or you were repeatedly told that you were no good, or could do nothing right, and you were made to feel guilty or ashamed. (Jacobs, 1999, p. 7.)
>
> Sexual Abuse: … you were fondled, seduced or forcibly raped by an adult, or you were otherwise led by a person in a position of power or control to participate in, or observe, sexual activities involving genital, oral, or masturbatory contacts. (Jacobs, 1999, p. 10.)
>
> Loss or abandonment: …you experienced loss or abandonment by, one or both of your parents because of death, divorce, separation, flight, hospitalization, or incarceration. (Jacobs, 2002, p. 1.)

[24] These definitions were incorporated into the instrumentation discussed below. Following completion of the field work for this study, Dr. Jacobs released a revised version of the screening instrument he was testing that included an additional section on abandonment. This new instrument is the Jacobs Neglect, Abandonment, Abuse Protocol (J-NAAP) © 2002. (For copies of this instrument or for permission to use, contact Dr. Jacobs at djacobs@uia.net)

Consistent with Jacobs' theory, exposure to trauma as a causal factor to a variety of disorders, including gambling, has been reported in several studies over the past several years (Briere, 1992; Brockman, 2002; Brown & Finkelhor, 1986; Jadlos, 2001; Taber, McCormick, & Ramirez, 1987; Polusny & Follette, 1995; Turner & Lloyd, 1995; Van der Kolk, 1987), although in some studies exposure to trauma was not necessarily confined to childhood (defined as less than 18 years old for this study).

In the U.S., the most recent estimates indicate that child abuse and neglect are on the rise. Comparing data from a 1993 study with that reported for a similar study conducted in 1986, it was reported that the total number of abused and neglected children in the U.S. doubled. Girls were three times more likely to be sexually abused than boys, while boys had a greater risk of emotional neglect and of serious injury than girls. The 1993 estimate was that more than 1.5 million children were abused or neglected each year (Sedlak & Broadhurst, 1996). Another study, published in 1999, reported that approximately 1.8 million child maltreatment cases were investigated and reported to the National Child Abuse and Neglect Data System. This equates to an estimated prevalence rate of 11.8 children per 1000 (U.S. Department of Health and Human Services, 1999a). Other studies have provided much higher estimates, for example, Polusny and Follette (1995) found that from 15% to 33% of females and 13% to 16% of males had been sexually abused. A recent study by MacMillan and colleagues of adults reported rates of 12.8% for females and 4.3% for males. Among adult survivors of sexual abuse, from 33% to 96% were diagnosed with post-traumatic stress disorder (Polusny & Follette, 1995). Clearly, child abuse, neglect, and abandonment

(childhood trauma) is a serious problem in the U.S. and appears to provide support for this theory.

> How childhood trauma can lead to later dysfunction is well described by Bloom: The basic internal protective mechanism is called "the fight-or-flight" response (Cannon, 1939). This is not a planned, deliberately thought-out reaction, but a rapid-fire, automatic, total body response that we share with other animals. Whenever we perceive that we are in danger our bodies make a heroic and rapid response. Numerous neurotransmitters and hormones produce massive changes in every organ system (Van der Kolk, 1994)…Under conditions of chronic stress, something goes wrong as the body attempts to cope with this massive overload of responses. The effectiveness of the response diminishes, and the body becomes desensitized to some of the effects of the neurohormones. The entire system can become dysregulated in many different ways. This results in a set of highly dysfunctional and maladaptive brain activities (Perry & Pate, 1993). The person experiences this as a state of chronic hyperarousal… People who have been severely or repeatedly traumatized may lose [the] capacity to modulate their level of arousal. (Bloom, 1997, pp. 18-19.)

The second element of the Jacobs' theory is that addictive behaviors represent an attempt by the addict to reduce both the historical stressors caused by the childhood predisposing conditions as well as to reduce additional stress in the current life situation. Third, all addictive behaviors, whether utilizing a substance (e.g., alcohol, food, or drugs) or a

behavior (e.g., gambling, exercise), represent the addict's[25] vehicle for escaping aversive stressors (both internal [biological and psychological] or external [social and environmental]) for which the addict has no available means with which to cope.

The fourth element postulates that the chosen substance or behavior not only allows the addict to escape the stressors (historical and current) but, through a series of dissociative reactions, also permit the addict to enter an altered state of consciousness. The critical factor is the accompanying dissociative state appears to be pervasive. For addicts, this altered state may be a chosen, positive state of identity, or it may be devoid of thoughts.

The final element in Jacobs' theory is that relapse is a sign that the addict has not yet learned sufficient coping skills to combat the need for escape stemming from the combination of his or her historical and real-life stressors.

Jacobs goes much further than most researchers or clinicians and believes that "addiction is a self-induced state," continues to be a state of choice, and that substances or activities such as gambling do not reach out and surreptitiously grab the unsuspecting individual and cause them to become an addict (Jacobs, 2001, p. 17).

Jacobs' theory fits Engel's ecological model and provides significant insight into an emerging set of factors that may be present in a large portion of those dependent on substances or who engage in destructive behaviors.[26] The root of Jacobs' theory is the occurrence of traumatic abuse, neglect, or abandonment in childhood and the manner in which the experience is cognitively, neurologically, and affectively processed in the short term and then continues to affect the individual's life as a form of post-traumatic stress. A partial

[25] Jacobs utilizes the term "addict" in his work and it is utilized in this section of the discussion for consistency with his writings.

explanation of this sequence has been referred to in the literature as a diathesis/stress model of psychopathology and in simple terms is a result of the interaction over time of a predisposition or vulnerability to psychological disorder and the experience of stressful events (Sigleman, 1999, p. 485).

There is a good deal of evidence that most humans, when faced with a situation that overwhelms an individual's mental (coping) and physical (fight or flight) abilities, resort to an immediate, innate response as previously discussed (see Bloom, 1994). This response includes a dissociative experience – a separation of mind and body – where the individual might experience an event, or combination of events, such as dissociative amnesia, that is, not being able to recall the event at all. Children, who have not yet developed mental reasoning abilities or the ability to exert some semblance of physical control over their environment, seem more vulnerable, especially when the experience is perpetrated by someone who is their caretaker (i.e., parent, older sibling, etc.) and grossly violates the social construct of family in that trust is lost and nurturing is not present – the two conditions absolutely necessary for the "normal" development of the child (Sigelman, 1999).

Erickson (1963) believed that the child's caretaker's general responsiveness was critical to the child's later development in that the child would either first learn to trust or mistrust the world around it. In his seminal work regarding the eight stages of human development, he theorized that in order to develop into a productive adult over the lifespan, the individual must experience, and successfully navigate through, each critical crisis or

[26] Jacobs' theory is based on more than 40 years of clinical contact with and study of adolescent and adult addicts – personal conversations of the author with Dr. Jacobs winter and spring 2002.

conflict. Failure to successfully resolve any of these developmental stages would result in later life difficulties as can be seen with pathological gamblers.

More pervasive in this trauma theory is a belief that "the deepest trauma is not the bad things that did happen [to the child], but the good things that did not happen. It is the errors of omission by the parents, not the errors of commission, that hurt most deeply" (Ross, 2002, p. 18). Ross, similarly to Jacobs, sees the coping mechanism as a matter of choice and an improper shift in locus of control where the child may develop the belief that he or she is responsible for the abuse, essentially "a bad person," and continues in life looking for opportunities and activities to support that belief and remain "in control" (Ross, 2000) . Although this latter presupposition is different from Jacobs, the outcome is the same in that the action shields, or buffers, the individual from the brunt of the stressors by creating the illusion of control.

The idea that it may not necessarily be the major traumatic events which are the pathways to pathological gambling possesses merit. Stress, as defined by Lazarus (1993), is a state that occurs when we perceive events as straining our coping capacities and threatening our well-being. What determines if an event, or a series of events, is stressful is the individual's appraisal of the event in relation to his or her coping skills (Lazarus, 1993), or as Lieberman has expressed it, "it's not always the floods that do an individual in, but more the drips over a period of time" (Lieberman, 1983).

These theories are compatible with the subsequent findings of others (Blaszczynski & McConaghy, 1988; Blaszczynski & McConaghy, 1989; Blaszczynski, McConaghy & Frankova, 1990) who have argued that pathological gambling can be conceptualized as a maladaptive coping strategy used to deal with emotional disturbance. Nonetheless, the

pathway from early childhood trauma to pathological gambling or addiction[27] has been clearly delineated in the theoretical literature, where the initial innate response of dissociating when under inescapable stress becomes a conditioned response to stressors and progresses, in some individuals, to become an instrumental (or goal directed) response of choice (see Skinner, 1953) to stress. In each of these models, the dysfunctional behavior is movement towards a "pleasurable" experience and subsequently a relief from the stressors.

Although the discussion has focused on early childhood development, each element is relevant when looking at individuals at any point throughout their lifespans.

Learning Theory

Both Jacobs and Ross appear to support the supposition that the pathologies they label as addiction are based in the field of developmental psychopathology. Developmental psychopathology seeks to understand pathological behaviors as products of a process that evolves over the course of time rather than arising from an acute episode. (Sroufe, 1997; Rutter, 1996; Stoffer, Rutter, 1984). This perspective lends itself to traditional learning theory first espoused by Watson (1925) and later refined by Skinner (1953) under the mechanisms of operant conditioning.

There are two types of operant (or instrumental) conditioning that could theoretically support the transition from social to pathological gambling. The first, a more conventional expression of operant conditioning, would follow the reasoning that a potential doorway to pathological gambling can be found in simple human motivation. Most people choose to

[27] The authors believe that dependence on a substance is different from dependence on a behavior and shy away from the use of the term addiction, although there may be many similarities between the two maladies. The principle rationale is both philosophical and practical.

gamble as a form of entertainment because it can create excitement. "Risk-taking underlies many human traits that have high significance for evolutionary survival…" (National Research Council, 1999, p. 17.) Operant conditioning, without trauma, could in theory occur as the individual experiments with gambling as a form of stimulating recreation and is periodically rewarded with winnings at unpredictable times (partial reinforcement is much more effective in reinforcing behaviors than continuous reinforcement [Sigelman, 1999, p.208]) as is evident in all forms of gambling. Proponents of this pathway have often cited the "big win" early in the individual's gambling as well as "near misses" during current gambling experiences as powerful forces in the continuation of gambling behavior across a variety of gambling venues (Griffiths, 1995; Kassinove & Schare, 2001). The excitement of the gambling experience and the associated uproar of the resultant lifestyle of the pathological gambler may, in fact, be important factors for the continuation of gambling among some individuals.

As Taber succinctly put it, "The problem in recovery from addiction seems to be that having been steeped in action, having lived on the edge for so long, a quiet and normal life appears to the gambler to be dull by comparison" (Taber, 2001, p. 55). This could be described as a "going towards" the excitement. On the other hand, the idea that the innate dissociative experience, associated with emotional or physical insult in the case of abuse or neglect, might be described as "going away from" the experience. In either case, specific behaviors become more or less probable based on the consequences of the behavior (operant conditioning), and in both cases the behavior appears to support Jacobs' theory regarding an abnormal baseline arousal state in the individual and a desire to modulate that state.

On the face of learning theory, it would seem illogical that the individual would continue gambling in light of the extremely negative consequences, such as loss of family, home, job, social network, and freedom if jailed for crimes committed to get money with which to gamble. Upon closer analysis, the idea is not so contradictory. Utilizing either Jacobs' or Ross' theories of early childhood trauma, it is relatively easy to theorize that the traumatized child, out of the inherent necessity for survival, finds that dissociating from the immediate experience of neglect or abuse is effective. Although young children do not have the intellectual capacity to reason (Piaget, 1952) and intellectually choose to dissociate, they are subject to influence by the principles of operant conditioning, although in the earliest years of childhood the ability to dissociate appears to be innate. The question arises, following this line of reasoning, of why, once individuals develop the intellectual capacity to reason, would the they continue to gamble. Proponents of this rationale often simply dismiss the question with the over-simplified answer that the pathological gambler continues to obtain more rewards from the gambling than he or she would from abstaining, even when those rewards would be considered negative experiences by most individuals.

Learned Decision-Making Strategies

Another aspect of learning theory is the fact that as individuals mature they develop a reasonably predictable pattern of responding to cues in their environment. This social information processing model (Dodge, 1993) suggests a six-step problem-solving model consisting of encoding (taking in information), making sense of the information (interpretation), deciding on what the individual wants to achieve in the situation (goals), identifying potential responses to the situation (response search), weighing the pros and cons

of alternative actions (response evaluation), and then taking action (behavioral enactment).[28] In cases of continued inappropriate responses, research has demonstrated that individuals exhibit deficient or biased information processing at every step (Dodge, 1992). This would suggest that the pathological gambler as viewed within the developmental model has, in reality, no other choice than to continue gambling in the face of life stressors because he or she sees no other alternative due to a learned, faulty decision-making process. This model could be theoretically extended to support the idea that when gambling creates problems, the only available choice is to continue gambling in an attempt to achieve relief from the problems created by gambling. Following this line of reasoning, gambling then becomes the individual's solution to the problems.

PSYCHOLOGICAL DETERMINANTS

Self-Concept

If the sense of self harbored by the pathological gambler is negative, then continuance of the behavior plays an important role in reinforcing that negative self-concept. Marcia (1966) suggests that the individual foreclosed on a negative self-identity[29] and would be expected to act in a manner that would reinforce that identity.

The majority of participants in Jadlos' 2001 study of older adult gamblers indicated experiencing one or more forms of abuse or trauma during their lives and either implied or made direct reference to harboring feelings of inferiority, low self-worth and feeling unwanted, unneeded, or rejected by parents or significant others. These same individuals

[28] These steps do not have to be taken in order nor are they always present.

reported that gambling seemed to be the only activity that ameliorated these negative feelings of "never quite measuring up," with relief for some reaching dissociative proportions. Gambling appeared to provide these individuals with a means of achieving social status and feelings of competency that they were otherwise incapable of achieving. Future gambling ventures were an attempt to recreate these self-soothing feelings. Taber and colleagues (1987) found that, "gambling also provided immediate gratification and temporary respite in the insatiable quest for self-affirmation," commensurate with Jacobs' belief (1986) regarding dissociation as a continuum ranging from children's pretend play and adult daydreaming through dissociative identity disorder (DID).[30] It is possible to include activities along the continuum of dissociation that allow the gambler to assume the altered identity of someone who is successful and confident when, in their real day-to-day lives they are not.[31]

Dissociation

This report has implied that dissociation is an abnormality as described in the DSM-IV-TR. The DSM-IV-TR includes four specific and one general dissociative disorders including: dissociative amnesia, defined as an inability to recall important personal information that is usually associated with a traumatic or stressful event; dissociative fugue, described as sudden, unexpected travel away from one's home and the inability to recall one's past or the assumption of a new identity; dissociative identity disorder (previously labeled as multiple-personality disorder) that is characterized by two or more personality states that

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[29] Although Marcia's work was focused primarily on determining identity statuses of adolescents, it is not a theoretical stretch to extend the theory through the entire lifespan of development.
[30] DID was previously called multiple-personality disorder.
[31] This study found that some of the participants reported feeling better about themselves when the casinos provided food and lodging "comps" and referred to them by their name.

recurrently take control of the individual's behavior and is accompanied by an inability to recall one's identity; depersonalization disorder characterized by a persistent or recurring feeling of being detached from one's mental processes or body that is accompanied by intact reality testing; and dissociative disorder not otherwise specified. It should be noted that dissociative features can occur in other disorders such as acute stress disorder, post-traumatic stress disorder, and somatization disorder (APA, 2000, p. 519), reinforcing the earlier concept of blurred boundaries among many mental disorders.

For the majority of individuals, dissociation is a normal and useful part of the human experience. It has been described as a highly evolved mechanism that allows individuals to efficiently accomplish two tasks such as driving a car while contemplating the solution to other problems (Bloom, 1997). For example, it is not uncommon for many automobile drivers to report experiences where they were not consciously aware of (could not remember) driving the car because they were focused deep in thought, or absorbed in conversation on a cell phone, or listening to the radio. Some suggest that the ability to essentially be two places at once within the realm of experience is associated with two separate areas of the brain that communicate under normal circumstances but assimilate information in different manners (Joseph, 1992).

Dissociative states are a common and accepted expression of cultural activities or religious experience in many societies. Most forms of meditation, whether they are based in Eastern or Western religious practices or simply undertaken as a method to reduce stress through controlled breathing or structured movement, are considered acceptable forms of dissociating from one's day-to-day stresses and in fact have been proven to have beneficial physiological benefits (Girdano, Everly, 1979). Children's play, especially pretend play, can

also be viewed as a type of dissociation. Pretend play is universal in healthy children and, in actuality, is beneficial in the development of mental and physical skills when done alone. When pretend play involves others, it is important in the development of vocabulary and social skills (Fisher, 1992).

In situations of high stress, dissociation can be useful in protecting the individual from severe cognitive disorganization and the physiological response that can accompany such distress (Bloom, 1997) which has been reported, in some cases, to result in death (Selye, 1982). Herman (1997) addresses the phenomenon that early dissociative experiences caused by childhood abuse result in major adaptive tasks being left unsolved (see Erickson, 1963). Although the individual may have successfully eliminated the memory of the abuse, the dysfunctional interactions with the surroundings continue.

Clearly, dissociation is an integral component of human development and play, where mild forms such as pretend play and daydreaming help to maintain equilibrium throughout the lifespan.

If these hypotheses are true, then it is reasonable ask why all individuals who experience trauma do not develop pathologies. The explanation for this is simple:

> Repeatedly we have seen that human beings of all ages are characterized by considerable plasticity—by a remarkable capacity to change in response to experience and to get off one developmental pathway and onto another…early experiences rarely make or break us. Instead, there are opportunities throughout the life span … to undo the damage done by early traumas, to teach new skills, and to redirect lives along more fruitful paths. If adverse early experiences are followed by adverse later experiences, we can expect poor

> outcomes. But, if potentially damaging early experiences are offset by favorable later experiences, we can expect developing humans to display considerable plasticity and resilience. (Sigelman, 1999, p. 531.)

Individual Choice

One of the persistent and confounding issues that has emerged from this study are the diffuse boundaries of mental illnesses which, although discrete, are not absolute (Beahrs, 1986) and which further blur the complicated milieu of intermingling forces and counter forces we might call etiology. One of these forces, yet to be more fully explored in future research, is the impact of the individual's ability to choose destructive behaviors as proposed by Beahrs (1986), Jacobs (2001), and Ross (2000).[32]

> The most important contributing factor to free choice is motivation. Motivation provides the energetics for higher human activity…These intangibles include human value priorities, cherished irrational and personal styles, idiosyncratic personality quirks, pride, and the many ways a person tries to save face. (Beahrs, 1986, p. 38)

The role of motivation in understanding both why individuals continue to gamble in the face of certain adversity and why they might choose to take steps to stop gambling is certain to hold value in future research on the efficacy of treatment.

[32] Although literature regarding self-harm was reviewed as part of this study, there was little, other than anecdotal information, linking self-harm (other than suicide) to pathological gambling. This area should be studied further to begin documenting the potential association, which is seen in regards to other mental illnesses. (See Blackshaw and colleagues 1999)

NATURAL RECOVERY

Several recent studies have presented findings that over time many individuals who have experienced problems with gambling that were serious enough to be classified as pathological, either stop gambling or reduce their gambling to a non-problem level. This finding suggests that at least for some, pathological gambling is not necessarily a malady characterized by a predictable progression to continuingly more serious problems (Abbott, Volberg, 1999; Abbott, Williams, Volberg, 1999; Marotta, 2001; Volberg, 1997). Although the phenomenon has been identified, the underlying factors that lead a pathological gambler to make and follow a decision to reduce or abstain from gambling for significant periods of time are not understood nor is it known if the non-problematic behavior will continue over long periods of time. Abbott and colleagues found such changes remained after eight years for some, while others appeared to move in and out of pathological gambling.

To date, there is a dearth of controlled studies relating to the efficacy of psychodynamic treatment for pathological gambling. There is even less known regarding the incorporation of pharmacological interventions for this population, although drug therapies have demonstrated to be effective for other mental illnesses. One of the concerns regarding treatment is the apparent high drop-out rate of clients from treatment and the poor post-treatment success rates (see Wildman, 1998, pp 225-259). In Oregon, approximately 70% of the individuals prematurely drop their prescribed treatment programs, although some report short-term success (Moore, 2001a).

COOCCURRING AND COMORBID DISORDERS

The cooccurrence of other disorders with pathological gambling "may be one of the most important and influential indicators of the pathways into and out of pathological

gambling. This is because common factors found for different disorders may signal shared familial, environmental, or biological vulnerabilities." (National Research Council, 1999. p. 128)

The majority of epidemiological studies have attempted to correlate the relationship of pathological gambling with the presence of other disorders such as: substance abuse and dependence; depression; obsessive-compulsive; impulse control; psychosis; attention deficit and hyperactivity; antisocial personality; post-traumatic stress, and narcissistic personality disorders. Increased suicides, suicide attempts, and suicidal ideation have also been associated with pathological gambling, but there is conflicting research on whether this is higher than in the normal population (Cunningham-Williams, et al., 1998; Benston, 2002; National Research Council, 1999).

A landmark study (Epidemiologic Catchment Area [ECA] sponsored by the National Institute of Mental Health) found that problem gamblers[33] were at least three times as likely to be classified for depression, schizophrenia, anti-social personality disorder, and alcoholism as nongamblers. (Cunningham-Williams, Cottler, Compton, and Spitznagel [as cited in National Research Council, 1999]).[34] This same study also found that depression preceded gambling unlike findings from other clinical studies.

Two studies conducted by Moore found that as many as 40% of the clients entering gambling treatment in Oregon, if they had presented at a psychiatric hospital without identifying the gambling behaviors, could have been admitted for other mental health

[33] It must be noted that this study did not utilize a recognized screen such as either the SOGS or DSM and consequently did not attempt to distinguish between problem and pathological gambling – a major weakness in the design.
[34] This study had 5 sites and only one of the sites conducted a gambling screen.

diagnoses based on a comparison of their symptomology scores with those of inpatient psychiatric patients. This further confirms high rates of cooccurrence with symptoms common to other mental illnesses. (Moore, 1995a, 1995b.)

SUMMARY OF CAUSALITY THEORY

The literature and anecdotal experience of the authors, in conjunction with the findings from this study, most certainly support the notion that the etiology of pathological gambling is not linear. Likewise, it is also certain that pathological gambling is not a spontaneous or universally occurring condition that develops when normal individuals come in contact with gambling.

3. SURVEY METHODS

The study was constructed as an embedded multiple-case study design (Yin, 1994, p. 42) incorporating the collection of both qualitative and quantitative data from participants. The purpose of this design is to combine multiple individual case studies to formulate findings based on a synthesis of the data collected from each individual. The technique utilized was a multiple-session, semi-structured interview incorporating a follow-back calendar technique that has proven to be effective in anchoring historic life events in a cogent sequence.

The intent of the study was not to diagnose mental or physical disorders, nor to develop a hard and fast time-line of events, but to determine a general order of significant life events. The major concerns of doing lifespan follow-back based interviewing are two-fold. First, the omission of important life events can lead to inaccurate conclusions. Most individuals, if asked to develop a chronology of significant life events from childhood to their

mid-forties, for example, will usually omit, or confuse, essential experiences if attempting to complete the assignment unaided and in one sitting. However, when given the opportunity to identify major events on paper and then go back, after a lapse of several days, and tell their life story, much of the previously missing information and approximate time relations (before or after significant events) can be lucidly organized. And second, even with verification of events, their relative order in the lifespan sequence can become clouded. As John Nash, the Nobel Lauriat, in his autobiography suggested: "…one suspects…that the earliest memories have become memories of memories and are comparable to traditional folk tales passed on by tellers and listeners from generation to generation." (Nash, 1994)

INSTRUMENTATION

In order to facilitate collection of lifespan key events, the data collection process attempted to focus on recognition memory as opposed to recall memory. This is based on research that strongly suggests that as humans age their information processing abilities, both physiologically and preferentially, favor having cues provided that greatly improve retrieval of information. (Sigelman, 1999, pp. 206 -231) A potential shortcoming of this approach is the possibility that providing cues can, if not accomplished in a controlled manner, lead the participant to provide anticipated information rather than actual information. A primary goal was to develop a format that would be casual and place participants at ease, yet permit the interviewer to quickly begin gathering highly personal information.

A number of instruments were reviewed for possible use in conjunction with this project including the Structured Clinical Interview for DSM-IV Research Version: SCID-I/NP, Non-patient Edition (First, Spitzer, Gibbon, & Williams, 2001), Symptom Checklist-90-

Revised (SCL-90-R), (Derogatis, 1983), Brief Symptom Inventory (BSI) (Derogatis, 1992), CATI telephone interview as used in the Older Adult Gambling in Oregon Study (Moore, 2001), Dissociative Experiences Scale (Putnam & Bernstein, 1993), Trauma Symptom Inventory (Briere, 1995), and Jacobs' Abuse and Neglect Protocol (Jacobs, 1999) discussed above.

The SCID-I/NP uses a semi-structured interview format and was designed to assist clinicians in making DSM-IV Axis I diagnoses. It was not used in this study since the initial screening of participants consisted of the DSM-IV-TR criteria set for pathological gambling and consequently it was not felt that the information gained would justify the additional time required to complete the protocol.

The SCL-90-R and BSI are self-report inventories designed to screen for a broad range of symptoms of psychopathology all use severity scales that allows respondents to identify their level of distress. The Dissociative Experiences Scale is a 28-item self-report assessment instrument designed to assess the degree and types of dissociate experiences reported by a respondent. Correspondingly, the Trauma Symptom Inventory is a 100-item test designed to evaluate post-traumatic stress and other psychological sequelae of traumatic events, including rape, spousal abuse, physical assault, and childhood abuse. Although none of these instruments were utilized specifically, they provided ideas on how to develop content, structure, and sequence.

The result of the review of these instruments was the decision not to attempt to retrospectively diagnose premorbid conditions. This decision was based on two factors. First, arriving at a reliable diagnosis of mental health conditions retrospectively is difficult at best in general, and impossible to do with much confidence without collaboration by a reliable

source such as a family member, especially when looking back over a potential span of 30, 40, or more years. The second factor in support of this decision was the length of time that would have been necessary to administer standardized instrumentation, which would have diverted focus from the developmental aspects and identification of the potential gateways to pathological gambling.

The resulting semi-structured interview schedule was folded into segmented interviews designed to be implemented over a two to three-week period to facilitate recollection. This oral history method (Chiang, 1997) of collecting information, similar to a life review (Kathard, 2001; Wolf, 1984) or life history (Hartwell, 1998), is predicated upon the reconstruction of a life events calendar for the individual and has been found to be effective in anchoring events in one's life into a sequential history (Hoppin, Tolbert, Flagg, Blair, Zahm, 1998). Each participant then becomes a separate case study (Berg, 1998) as his or her history is reconstructed, and then, as the individual histories are analyzed to determine similarities and dissimilarities with all the other participant histories, the research becomes a multiple-case study design, as discussed above.

PARTICIPANT RECRUITMENT

The study design proposal called for a minimum of 60 participants, equally distributed between males and females, to be recruited as an opportunity sample from within Oregon. Consideration was given to attempting to recruit participants from the extensive gambling treatment network within the state but, concern for potential bias as a result of choosing individuals who had already self-selected treatment argued for more general recruitment. Because of the relatively small size of the study and the available budget, a decision was

made to primarily utilize newspaper ads in various regional papers throughout the state as opposed to attempting to employ radio or television advertising. A $50 stipend was also offered to those who completed the interviews.

The advertisement for the study was planned as a display as opposed to one appearing in either the personal or business sections of the want ads. The ad was developed by the study team and then edited by a Foundation board member familiar with advertising and marketing. The display ad (see Appendix A) appeared in four regional newspapers[35] and, due to costs, as a personal ad in the state's largest paper. In addition, an announcement of the study, similar in text to the display ad, was placed on the Foundation's web site. As a courtesy, and in conjunction with interest expressed by three of the treatment agencies dispersed throughout the state, a bulletin board announcement was also developed and disseminated to them.

PROCEDURES

Prospective participants, calling into the toll-free number assigned to the project in response to recruitment activities (discussed below) were provided an explanation of the study and the level of their involvement (see Appendix B). During the initial call, prospective participants were asked 11 questions. The first ten of these questions were derived from the DSM-IV-TR and have been previously used in epidemiological studies in Oregon (Moore, 2001b; Volberg, 2001, 1997). The eleventh question was to determine if prospective respondents had been formally diagnosed with bi-polar disorder to initially flag individuals as potentially exhibiting pathological gambling in conjunction with manic episodes as discussed in the DSM-IV-TR (APA, 2000, p.673) for which the diagnosis of pathological gambling is to

be ruled out.[36] Individuals who failed to endorse a minimum of five of the ten questions did not meet DSM criteria (APA, 2000, p. 674) and were excluded from the study as not being pathological gamblers.[37] (see Appendix C for screening format)

Once it was determined that prospective participants met the criteria for inclusion in the study, they were invited to continue participation. Participants were asked for general demographic information including gender (if not readily evident by name and voice), date of birth, contact information including mailing address and telephone number, and whether or not messages could be left on their voice mail or with others who might answer the given telephone. Once this basic information was obtained, the first telephone interview was scheduled and participants were informed that they would be receiving a welcoming letter (Appendix D), participation authorization (informed consent) (Appendix E), and a guide that contained topic areas that the interviewer would be discussing with them.

Serious consideration was given to determining whether telephone interviews would be used as opposed to face-to-face interviews. Since participants were to be recruited from public sources throughout the state, a major concern was evident regarding the logistics necessary for completing face-to-face interviews. Secondary to this concern was that of inter-rater reliability which would become an issue if interviewers were needed in remote portions of the state where travel would be precluded due to time and budget.

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[35] Regional papers included: The Bulletin serving the south-central region; The East Oregonian, serving the north-eastern region; The Oregonian, serving the major metropolitan area of Portland; The Register-Guard, serving the central and central coast regions; and, The World, serving the south-coast region.

[36] The history of this criteria is interesting since there was no evidence at the time the DSM criteria was being developed that there was even one case where an individual met the criteria only during a manic episode. (Personal correspondence by Dr. Lesieur to the Gambling Issues International @ Yahoogroups.com, July 29, 2002.) Therefore, this data element was collected for informational purposes.

[37] None of those calling in scored less than five points on the screen.

Once the initial interview was scheduled, participants were mailed the welcoming letter that included five "memory joggers" as they were referred to in the letter (Appendix D). These memory jogger assignments included listing the five most memorable events as well as the influential people in their lives. Both these activities have been frequently used to establish anchor points along the lifespan continuum for both reassimilating events and to aid in the experiential discovery process towards creating a better understanding of one's life experiences and life choices. Other areas of interest included in the initial letter were trauma, imagination, and gambling. The purpose of including the memory joggers was to facilitate the use of recognition memory techniques as apposed to attempting to rely on cold recall memory at the time the questions were asked. An informed consent to participate in the study was included in the welcoming letter with a copy for the participant to sign and return and a copy for them to keep for future reference.

In designing the study, preparations were made for the unlikely event that someone participating in the study might experience unexpected distress as a result of their gambling, or less much likely, from participation in the study. These are standard procedures that are in place at the researchers' office for all telephone follow-up and research conducted throughout the US.

The main body of the interview schedule (see Appendix F) was separated into three sessions to facilitate memory recollection and to establish rapport. The first telephone session, usually about five to seven days following the initial call from the participant, obtained basic demographic information (e.g., years of education, marital status, employment, and race or ethnicity) and began the process of collecting information regarding smoking, alcohol and other drug use, and general gambling history. A mental health history was

collected including questions pertaining to organicity and suicidal ideation. This first session also included questions regarding the participant's possible exposure to neglect and abuse (i.e., physical, emotional, and sexual) from the J-ANAP (Jacobs, 2001). Family history and interrelationships were queried and documented. This first session was the most structured of the three and lasted approximately 45 to 75 minutes.

The second interview, conducted typically within five to seven days of the first interview, focused extensively on reconstructing the mosaic of the participant's life establishing major anchor points along the lifespan as well as identifying people and events that were instrumental in shaping the individual's perspective, values, behaviors, and experiences. Preliminary information collected during the first interview was then woven into the life story by the interviewer through questions as the participant responded to the "memory jogger" elements included in the initial letter. This process allowed for the creation of a clear perspective of the sequence of significant life events and when pathological gambling emerged.

The third, and typically last, session of the interview, was again conducted approximately 5 to 10 days following the second data gathering session. The focus of this interview was threefold. First, to inquire about any elements of data that were not completed during the first two sessions (a review of the interview notes was conducted prior to the third interview to ensure all questions had been asked and to identify any answers that were not clear). Second, to solicit any additions or corrections the participant felt of importance to the interviewer's understanding the development of gambling problems in their lives. The third focus of the interview was designed to provide closure to the data collection process and

solicit critiques of the process from the participants. Although this was included in the design phase, it's importance was keenly reinforced throughout the interviews.

Throughout the interview, participants were asked what they thought and felt about the various elements of the information they were sharing. In the design, it was felt to be of critical importance to attempt to discover how the participants integrated their lifespan experiences to better understand the potential gateways to pathological gambling. A large number of the participants found the structure and process of the interview sessions and the manner in which questions were posed to be helpful in gaining personal insight into their gambling.[38]

The process of life review has been demonstrated in the literature as a natural process especially for older adults to reflect on unresolved conflicts of the past in order to come to terms with themselves and find new meaning. This "reminiscence" helps to evaluate and integrate the pieces of their lives (Molinari & Reichlin, 1985) and has even been demonstrated to be of therapeutic value (Haight, 1992, 1988) although that was not the intent of this study.

For consistency, all initial interviews were conducted by the same doctorate level clinical psychologist who had previous research experience in the problem and pathological gambling field (Jadlos, 2001; Moore, Jadlos, Carlson, 1999). Interviews were monitored by the principal investigator and preliminary impressions discussed with the clinical psychologist frequently throughout the project. The principal investigator conducted some follow-up interviews and interviews with hard to reach participants. Although the use of a clinical psychologist in this type of research is not of absolute necessity, the skill level proved to be of

[38] A few participants even reported during follow-up calls that the interview process had, at least temporarily, interrupted their gambling.

value ferreting out nuisances in understanding the potential linkages between what participants were reporting and what the significance was to the understanding of the potential etiology.

4. FINDINGS

PARTICIPANT CHARACTERISTICS

A total of 100 individuals (51 males, 49 females) responded to the recruiting efforts. Of these, 75 completed the study.[39] Sixty-eight percent of the completers were recruited from the general public (newspaper, web, friend/family), nearly half (46.7%) from newspapers, 12.0% from the announcement on the Foundation's web page, and, unexpectedly, 9.3% were informed of the study by family members or friends who had learned of the study through the planned sources. Approximately one-third (32.0%) were recruited from three treatment programs in the state. (Table 2.)

Table 2. Recruitment Sources - Completers (In Percent)

Source	Total	Males	Females
Newspaper	46.7	48.6	36.8
Treatment Programs	32.0	32.4	31.6
Web	12.0	10.8	13.2
Friend/Family	9.3	8.2	18.4
	100.0	100.0	100.00

The average age of participants was 48.3 years, males average age was 47.3 years and females was 49.3 years. There was no statistically significant[40] difference between the ages of males and females. (Table 3.)

Table 3. Participant Gender & Age (In Years)

Gender	n	Mean	sd
Males	37	47.3	10.7
Females	38	49.3	9.7
All	75	48.3	9.9

[39] Twenty-four individuals dropped from the study prior to the first interview. Of this group, most simply did not return multiple phone messages. One individual participated in the first interview and then was lost due to a disconnected phone and no forwarding address.

The youngest male was 25 years, the oldest 81 years and the median was 46 years. For females, the youngest was 29 years, the oldest 73 years, and the median was 50 years. There was no statistically significant difference between the sample's age in this study and that for the most recent population based prevalence study (Moore, T., 2001c). However the average age of participants in this study was significantly[41] older (48.3 years versus 42.2 years) than those entering treatment in the state (Moore, T. 2001a).

The average number of years of education overall was 13.8 years. Males reported slightly more education (14.3 years) than females (13.4 years) but the difference was not statistically significant. The least amount of education reported for males and females was 10 years and the highest for males was 24 years while the highest number of years education for females was 20 years. This group was significantly[42] more educated than those enrolling for treatment (13.8 years versus 12.9 years).[43] (Table 4.)

Table 4. Participant Education (In Years)

Education	n	Mean	sd
Males	37	14.3	3.3
Females	38	13.4	2.3
All	75	13.8	2.9

Nearly 40.0% of the participants reported being married, 36.0% were divorced, 14.7% single, 5.3% widowed, and 4.0% separated. There were slight, but insignificant, differences in the marital status of males compared to females. For those who had been married, the average number of marriages was 1.7, males were slightly less likely to report as many marriages as females (1.3 marriages compared to 2.0 respectively). There were no significant

[40] Statistical significance is only presented where the probability of chance is equal to or less than 5% ($p < .05$).
[41] t test $p < .01$
[42] t test $p < .01$
[43] Comparison of education between this study and the population study was not possible due to differing data recording protocols.

Table 5. Marital Status (In Percent)

Status	All	Males	Females
Married	36.0	37.8	42.1
Divorced	14.7	35.1	36.8
Single	14.7	18.9	10.5
Widowed	5.3	2.7	7.9
Separated	4.0	5.4	2.6

differences between the marital status of the participants of this study and that reported for the sample in the population study nor the treatment study (Moore, T., 2001a; 2001c). (Table 5.)

Slightly over 94% of the participants were Caucasian. This distribution is not reflective of the population in Oregon which is approximately 88%. (Table 6.)

Table 6. Race (In Percent)

Race	All
Caucasian	94.7
Other	5.3

Table 7. Employment & Income Source (In Percent)

Status	All	Males	Females
Employed Fulltime	53.3	51.4	55.3
Wages	54.7	51.4	57.9
Disability	13.3	13.5	13.2
SSI	10.7	13.5	7.9
Unemployment Ins	6.7	5.4	7.9
No Income	5.3	8.1	2.6
Pension	2.7	0.0	5.3
Other	6.6	8.1	5.2
	100.0	100.0	100.0

Approximately 53.3% of the participants were employed fulltime (51.4% of males and 55.3% of females). Slightly over 54.7% derived their income from wages, 13.3% from disability insurance, 10.7% from Social Security Insurance, 6.7% from unemployment insurance, and 2.7% from pension. Slightly over 5.3% reported no income while 6.6% reported income from other sources (e.g., parents, child support, real estate sales). (Table 7.)

GAMBLING CHARACTERISTICS

The average number of items endorsed on the DSM-IV-TR gambling screen was 8.6. Males endorsed, on average, 8.4 items while females endorsed an average of 8.8 items. All participants were considered as pathological gamblers.[44] (Table 8.)

Table 8. DSM Screening Scores (Number of Items Endorsed)

Education	n	Mean	sd
Males	37	8.4	1.6
Females	38	8.8	1.0
All	75	8.6	1.4

Although lifetime gambling losses, in and of themselves, are not a reliable indicator of the severity of the problems associated with gambling, they can provide some insight into the potential problem severity. The average amount of lifetime gambling losses overall was reported at $97,490. Males were significantly[45] more likely to report larger losses than females. Reported losses ranged for males from a low of $3,000 to a high of $1,000,000 (median $45,000) and for females the low was reported at $5,000 and the high was $300,000 with median losses of $25,000. (Table 9.)

Table 9. Lifetime Gambling Losses (In Dollars)

Losses	n	Mean	sd
Males	37	159,139	260,727
Females	38	39,086	52,000
All	75	97,490	195,089

Frequency of gambling is also a loose indicator of the severity of problems. The average number of days gambled per week by the participants was 3.8 days. Males were

[44] The initial screening would result in a more precise classification as "probable" pathological gambler. However, since all participants were interviewed in depth, the classification of pathological gambler was confirmed.

significantly[46] more likely to gamble more frequently (4.2 days per week) than were females (3.3 days per week). The median frequency for males was 4 days and for females it was 3 days. (Table 10.)

Table 10. Frequency of Gambling (In Days per Week)

Frequency	All	Males	Females
Days/Week	3.8	4.2	3.3

The primary game of choice overall was video poker (52.0%) followed by slots (21.3%), cards (10.7%), sports betting (5.3%), and other, e.g., bingo, Keno, etc., (10.7%). There were noticeable, but not significant, differences in the primary choice of games played between males and females. (Table 11.)

Table 11. Primary Game of Choice (In Percent)

Game	All	Males	Females
Video Poker	52.0	56.8	47.4
Slots	21.3	8.1	34.2
Cards	10.7	16.2	5.3
Sports	5.3	10.8	0.0
Other	10.7	8.1	13.1
	100.0	100.0	100.0

The preferred venue for gambling was at bars or taverns (42.7%) where typically video poker is available. The second preferred location was at Indian gaming centers (IGC) or casinos (34.7%). Other responses to this question included a diversity of locations ranging from one participant's bookie to the internet and included convenience stores where traditional lottery games are sold. Games of choice for the participants of this study were similar to those presenting for treatment as well as for those in the most recent population study (Moore, T., 2001a; 2001c).

ONSET OF PATHOLOGICAL GAMBLING

[45] t test ($p < .05$)
[46] t test ($p < .05$)

The average age of the onset of pathological gambling overall was reported at 36.1 years. Males were significantly[47] more likely to report a younger age of onset (32.5 years) than females (39.5 years). (Table 12.)

Table 12. Age of Onset Pathological Gambling (In Years)

Losses	n	Mean	sd
Males	37	32.5	12.8
Females	38	39.5	11.4
All	75	36.1	12.6

Table 13. Length of Problem Gambling (In Years)

Losses	n	Mean	sd
Males	37	14.9	12.2
Females	38	9.3	8.0
All	75	12.1	10.7

The length of time that participants reported experiencing problems with gambling was 12.1 years. Males were significantly[48] more likely to report longer periods of problem gambling (14.9 years) than females (9.3 years). (Table 13.)

At the time of the study, 15 individuals reported they had not gambled in the past 90 days. The average length of abstinence was approximately 1.9 years. The shortest length of abstinence for the eight males reporting no current gambling was approximately 120 days, the longest 2.0 years, and the median was one year. The

Table 14. Length of Abstinence (In Years)

Losses	n	Mean	sd
Males	8	0.96	0.56
Females	7	3.04	5.91
All	15	1.9	4.2

[47] t test ($p < .01$)
[48] t test ($p < .05$)

shortest period of abstinence for females reporting no current gambling was approximately 150 days, the longest was approximately 17.5 years, and the median was approximately 212 days. (Table 14.)

PREOCCURRING FACTORS

This study assessed a variety of conditions that may have been influential in the development of pathological gambling in the participants. These factors are separated into three general groups including traumatic life events, preoccurring mental problems, and family history.

ABUSE AND NEGLECT

Trauma from abuse and neglect was the most influential predictor of later mental illnesses including pathological gambling of all factors. Slightly over 73% of the participants indicated they had experienced abuse or neglect prior to the pathological gambling. Females were significantly[49] more likely (84.2%) to report any abuse or neglect than males (62.2%).[50] Emotional abuse was most frequently indicated (57.3%) followed by physical abuse (57.3%), sexual abuse (33.3%), and neglect (22.7%). Females (47.4%) were significantly[51] more likely to report sexual abuse than males (18.9%). (Table 15.) Participants were asked to rate the relative

Table 15. Abuse and Neglect (In Percent)

Experience	All	Males	Females
Any Abuse or Neglect	73.3	62.2	84.2
Emotional Abuse	57.3	48.7	65.8
Physical Abuse	57.3	45.9	63.2
Sexual Abuse	33.3	18.9	47.4
Neglect	22.7	13.5	31.6

[49] chi square ($p < .05$)
[50] Impressions by the interviewers supported the notion that males were, in general, more reluctant to identify and discuss abuse than females.
[51] chi square ($p < .05$)

severity of the abuse on a seven-point Likert-type rating scale with one being tolerable and seven being severe. The average ratings across all scales were between 5.1 and 6.0 points.

The average age reported for abuse or neglect was 14.6 years (n = 54, sd = 9.5). This was distributed with 7.4% reporting abuse or neglect at or before age 5, 35.2% between the ages of 6 and 12 years, 29.6% between the ages of 13 and 17 years, and 27.8% reported first abuse or neglect as occurring at the age of 18 years old or older. (Table 16.)

Table 16. Age First Experience Abuse or Neglect (In Percent)

Age Group	In Percent of Sample
5 Years or Younger	7.4
6 to 12 Years	35.2
13 to 17 Years	29.6
18 or Older	27.8
	100.0

PREOCCURRING MENTAL HEALTH CONDITIONS

As discussed above in the review of the literature, numerous mental health and substance abuse conditions have been widely reported in the literature as being found to cooccur with pathological gambling. One of the critical intentions of this study was to identify the existence of these disorders and then to anchor them within the participants' lifecycles in an effort to identify which disorders emerged before, or with, pathological gambling.

More than 81% of the participants reported mental health or substance abuse and dependence disorders as occurring prior to the onset of their pathological gambling. These

Table 17. Preoccurring Conditions (In Percent)

Condition/Disorder	All	Males	Females
Any Condition	81.3	78.4	84.2
Any Mental Condition	70.7	59.4	81.6
Dissociative Disorder	53.3	37.8	68.4
Mood Disorder	30.7	21.6	39.5
Anxiety Disorder	8.0	8.1	7.9
Personality Disorder	5.3	8.1	2.6
Psychotic Disorder	2.7	5.4	0.0
Other	9.3	13.5	5.3
Alcohol & Drug	36.0	51.4	21.1
Alcohol Abuse/Dependence	32.0	48.6	15.8
Drug Abuse/Dependence	25.3	37.8	13.2

disorders were present in 78.4% of the males and 84.2% of the females. Overall, the most common premorbid condition were dissociative disorders (53.3%).

Females were significantly[52] more likely to report premorbid dissociative disorders (68.4%) than males (37.8%), while males were significantly[53] more likely to report premorbid alcohol and drug disorders (alcohol 48.6%, drug 37.8%, alcohol or drug combined 51.4%) than females (alcohol 15.8%, drug 13.2%, alcohol or drug combined 21.1%). Inferentially, this finding supports the notion that males, in general, respond more aggressively towards stress or threats by acting out than females who have been characteristically described as withdrawing from stress or threats to wellbeing (Sigelman, 1999). (Table 17.)

Only 16.2% of the males (8.0% of all participants) reported substance dependence without any other premorbid mental health problem while 45.3% of the participants reported premorbid mental health problems without substance dependence. As would be expected from the other data reported, males were less likely (27.0%) to report mental health problems without substance problems than females (63.2%). (Table 18.)

[52] chi square ($p < .01$)
[53] chi square ($p < .01$)

Table 18. Preoccurring Mental Health/Substance Dependence (In Percent)

Experience	All	Males	Females
Mental Health/No Substance Dependence	45.3	27.0	63.2
Substance Dependence Only/No MH	8.0	16.2	0.0

Of the 20 (26.7%) individuals who did not report abuse, five (6.7%) reported premorbid mental health problems, five (6.7%) reported premorbid substance problems, and one (1.3%) reported both premorbid conditions. Of the nine (12.0%) who reported no abuse, mental health, or substance problems, five (6.7%) reported mental health or substance problems were present in a mother or father. Of the remaining four who reported no premorbid mental health or substance problems, and no such conditions in a mother or father, 3 (4.0%) reported such conditions present in other blood relatives.

One participant was diagnosed with Parkinson's disease and his pattern of problem gambling appeared to support the literature cited above in that the gambling was associated with the administration of medications.

Head injuries were reported by 44.0% of the participants (males 48.6% and females 39.5%). These ranged from being knocked out playing baseball as a child to injuries sustained in serious automobile accidents. (Table 19.)

Table 19. Head Injuries (In Percent)

Condition/Disorder	All	Males	Females
Head Injuries	44.0	48.6	39.5

FAMILY HISTORY

Slightly over 86.7% of the participants reported a history of mental health or substance abuse and dependence were present in their family or origin.[54] Additionally, nearly 50.7% of the participants reported problem gambling[55] was present in their families (excluding themselves).

Table 20. Family History - Substance Abuse/Dependence (In Percent)

Disorder	Any	Mother	Father	Other
Alcohol Dependence	69.3	20.0	37.3	54.7
Males	64.9	21.6	29.7	51.4
Females	73.7	18.4	44.7	57.9
Drug Dependence	22.7	4.0	4.0	18.7
Males	16.2	8.1	2.7	10.8
Females	28.9	0.0	5.3	26.3
Alcohol or Drug Dependence	76.0			
Males	70.3			
Females	81.6			

Seventy-six percent of the participants indicated that alcohol or drug problems were present in their families. This was reported more frequently by females (81.6%) than by males (70.3%), although the difference was not statistically significant. Fathers were more likely to be reported with alcohol problems than mothers, while mothers were slightly more likely to be reported with drug problems. (Table 20.)

[54] This includes blood relatives encompassing parents, grandparents, aunts, uncles, and siblings.
[55] This study did not attempt to classify family member gambling as pathological in regards to DSM-IV-TR criteria but relied on the participants' assessment of the family situation.

The second most frequently cited family problem was, as mentioned above, problem gambling. Nearly 50.7% of the participants reported a family member with a gambling problem. Fathers were more likely to be identified (13.3%) than mothers (4.0%), but, for the most part, the gambler was another family member (40.0%) other than a mother or father. Males were more likely to report a family member as a problem gambler than females. (Table 21.)

Table 21. Family History - Gambling (In Percent)

Disorder	Any	Mother	Father	Other
Problem Gambling-All	50.7	4.0	13.3	40.0
Males	59.5	5.4	18.9	45.9
Females	41.2	2.9	7.9	34.2

Mood disorders (depressive and dipolar disorders) were the third most frequently cited mental health problem in the family history. Approximately 29.3% of the participants (21.6% of males and 36.8% of females) reported a family history of mood disorders. Overall, the mother was more likely to be the family member afflicted (16.0%) when compared to the father (5.3%), but the major source of the family history was from other relatives (14.7%). (Table 22.)

Table 22. Family History – Mood Disorders (In Percent)

Disorder	Any	Mother	Father	Other
Mood Disorder-All	29.3	16.0	5.3	14.7
Males	21.6	10.8	5.4	10.8
Females	36.8	21.1	5.3	18.4

Family histories were also examined for other disorders and a relatively small frequency of disorders such as anxiety (2.7%), psychotic (6.7%), personality (2.7%), obsessive-compulsive (1.3%), and unspecified or other disorders (26.7%) were identified.

Table 23. Family History – Other Disorders (In Percent)

Disorder	Any	Mother	Father	Other
Anxiety	2.7	1.3	0.0	1.3
Psychotic	6.7	2.7	1.3	2.7
Personality	2.7	0.0	2.7	0.0
Obsessive-Compulsive	1.3	0.0	1.3	0.0
Unspecified/Other	26.7	8.0	6.7	17.3

The unspecified category was comprised mainly of reports of treatment of family members for "nervous breakdowns" where the participant was not sure of the actual diagnosis but reported the family member had been unable to function due to a mental condition and was treated by a physician or hospitalized for the problem. (Table 23.)

COMPARATIVE DISTRIBUTION OF PREOCCURRING CONDITIONS

Of the 55 participants reporting abuse and neglect, 51 (92.7%) reported a family history of mental illnesses (including substance abuse and pathological gambling) with 26 (47.3%) of this group specifically reporting a family member with pathological gambling. Thirty-seven (67.3%) of those reporting abuse and neglect indicated the onset of personal mental and substance abuse problems prior to the onset of pathological gambling (28 or 50.9% mental health and 21 or 38.2% alcohol and drugs). (Table 24.)

Table 24. Participants Reporting Abuse or Neglect - Preoccurring Conditions

Disorder	n	Percent
Abuse or Neglect	55	100.0
Preoccurring Mental Health	28	50.9
Preoccurring Substance Abuse	21	38.2
Preoccurring Mental Health or Substance Abuse	37	67.3
Preoccurring Mental Health and Substance Abuse	12	21.8
Family History Mental Health/Substance Abuse	51	92.7
Family History of Pathological Gambling	26	47.3

Of the 61 participants reporting preoccurring mental illness or substance abuse, 42 (68.9%) reported a family history of mental illness, substance abuse, or pathological gambling, and 22 (36.1%) specifically reported a family history of pathological gambling. (Table 25.)

Table 25. Participants Reporting Preoccurring Mental Illness or Substance Abuse - Preoccurring Conditions

Disorder	n	Percent
Preoccurring Mental Health or Substance Abuse	61	100.0
Family History Mental Health/Substance Abuse	42	68.9
Family History of Pathological Gambling	22	36.1

POTENTIAL HIGH-RISK BEHAVIORS AS EARLY MARKERS

The next five topics look at the age of first experience of gambling, tobacco, alcohol, and drug use. Age of first gambling experience and first use of alcohol and drugs are not to be considered premorbid conditions, although they may be predictors or markers for later problems.[56] Care must be taken in looking at potential markers such as first gambling experience, especially the potential cohort effect of being born in a particular historical context. For example, Carlson & Moore (1998, p. 19) reported that among adolescents in Oregon, younger individuals were significantly more likely to have had their first gambling experience at an earlier age than older participants in that study of 13 to 18 year olds. In the Oregon older adult prevalence study, the average age of first gambling experience was reported as 31.2 years among those over 62 years old (Moore, 2001b, p. 45). During that

[56] It has long been known that earlier use is associated with the development of later problems among alcohol and drug dependent persons (U.S. Department of Health and Human Services, 1993)

same year, the adult prevalence study revealed that the average age of first gambling experience was 22.7 years (Moore, 2001c, p. 60). Looking at these three population based studies, it is evident that as the prevailing cultural attitudes became more accepting of gambling, and the availability of gambling opportunities increased, the age of first gambling experience dropped.

Nonetheless, in comparing the average age of participants (n = 1500, mean = 46.2 years, sd = 18.1) in the Oregon adult prevalence study (Moore, 2001c, p 12.) and the average age in this study, there was no significant difference as mentioned above. Conversely, the average age of first gambling experience in the general population study was significantly[57] older (n = 1118, mean 22.6 years, sd = 9.5) than that age of first gambling experience for participants in this study. Controlling at least for the age effect, this finding suggests that pathological gamblers, in general, begin gambling for money or things of value at a much earlier age, which is similar to other study findings for those who reported dependence on alcohol or drugs.

In this study, males reported their first experience gambling at a significantly[58] earlier age (10.0 years) than females (17.2 years). The first gambling experience was defined as any game of chance where money and/or items of value are placed at risk in

Table 26. Age First Gambled (In Years)

Losses	n	Mean	sd
Males	37	10.0	3.8
Females	38	17.2	11.6
All	75	13.7	9.4

[57] t test ($p < .01$)
[58] t test ($p < .01$)

lieu of money. (Table 26.)

Table 27. Age of First Tobacco Use (In Years)

Losses	n	Mean	sd
Males	37	14.0	3.6
Females	38	16.2	5.5
All	75	15.1	4.8

Sixty-three (84.0%) participants reported using tobacco and the average age of first use was 15.1 years. Males were slightly younger (14.0 years) than females (16.2 years), but the difference was not significant. Although the average age overall of first use of tobacco was one year older than that of first gambling experience, that difference was also not significant. (Table 27.)

Table 28. Age of First Alcohol Use (In Years)

Losses	n	Mean	sd
Males	31	14.7	3.9
Females	32	17.1	4.9
All	63	15.9	4.6

The average age of first use of alcohol was 15.9 years. This was not significantly different than age of first gambling. Males were more likely[59] to reporting first alcohol use at an earlier age (14.7 years) than females (17.1 years). (Table 28.)

The average age of first marijuana use was 19.4 years. This was significantly[60] older than first gambling experience. Males were significantly[61] more likely to first use marijuana at an earlier age (16.4 years) than females (22.2 years). (Table 29.)

Table 29. Age of First Marijuana Use (In Years)

Losses	n	Mean	sd
Males	30	16.4	3.0
Females	32	22.2	8.7
All	62	19.4	7.2

[59] t test ($p < .05$)
[60] t test ($p < .01$)
[61] t test ($p < .01$)

The average age of first use of other non-prescribed or illicit drugs was reported as 20.6 years. There was no significant difference between males and females. (Table 30.)

Table 30. Age of First Use Other Drugs (In Years)

Losses	n	Mean	sd
Males	27	19.3	4.2
Females	16	22.8	7.7
All	43	20.6	6.0

Unfortunately, the previous population studies on gambling prevalence conducted in Oregon did not include these questions so a more precise comparison to the general population is not possible.

COOCCURRING CONDITIONS

Approximately 53% of the participants indicated they had a disorder that was cooccurring with the pathological gambling. There was no significant difference between males (56.8%) and females (50.0%). Nonetheless, males were much more likely to report cooccurring alcohol and drug abuse and dependence (alcohol 37.8%, drugs 32.4%) than females (alcohol 7.9%, drugs 7.9%). Males were also more likely to report cooccurring mood disorders (27.0%) than females (13.2%) while females were more likely to report dissociative disorders with the dissociation occurring at times other than when gambling (21.1%), than males (5.4%). (Table 31.)

Table 31. Cooccurring Conditions (In Percent)

Condition/Disorder	All	Males	Females
Any Condition	53.3	56.8	50.0
Alcohol Abuse/Dependence	22.6	37.8	7.9
Drug Abuse/Dependence	20.0	32.4	7.9
Mood Disorder	20.0	27.0	13.2
Dissociative Disorder	13.3	5.4	21.1
Psychotic Disorder	2.7	2.7	2.6
Anxiety Disorder	1.3	0.0	2.6
Personality Disorder	1.3	2.7	0.0
Other/Unspecified	5.3	5.4	2.6.

5. DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

From data and information collected by this study through the literature review as well as from the participants interviewed, it is demonstrated that no one clear causal pathway into pathological gambling exists. Instead, pathological gamblers, characterized by a score of five or more, as measured by the current version of the APA's DSM, present a complex mosaic (see Appendix H for case examples).

CAUSAL FACTORS

This study confirmed what has been previously reported, that gambling is not an activity that will afflict the unwitting individual with pathological gambling. To the contrary, while 87% of the adult population in Oregon gambles, fewer than 1% were reported as pathological gamblers in a 2001 population study of Oregonians (Moore, 2001c; Volberg, 2001). Based on the findings of this study, it is hypothesized that four-fifths of pathological gamblers will have experienced some form of mental illness (including substance abuse) prior to the pathological gambling; four-fifths will have come from a family with a history of mental illnesses (including substance abuse); nearly three-quarters will have experienced abuse or neglect prior to the pathological gambling; and half will have had a pathological gambler as a blood relative.

This study, finding that approximately 80% of the pathological gamblers reporting mental illnesses, including substance abuse, prior to the onset of pathological gambling, clearly suggests the existence of a link between pathological gambling and other mental illnesses. The most likely commonality is abuse or neglect as was reported by approximately

75% of the pathological gamblers and has been linked to alcohol and drug dependence and other mental illnesses in the literature.

A second probable pathway to pathological gambling exists for an estimated 20% of pathological gamblers who come from families that have histories of mental illnesses in blood relatives, including alcohol and drug dependence and pathological gambling.

The final, and least common, pathway appears to be one where there is no family history of mental illness and no experience of prior mental illnesses for the individual. These individuals are hypothesized to initially gamble because they enjoy it and, because of lack of insight or poor judgment, gamble to the point of experiencing serious problems. It is further hypothesized that many of these individuals, once realizing the extent of their problems associated with gambling, simply stop or regulate their activity to a point that does not create problems. This phenomenon has been referred to in the literature as natural recovery. This group may account for less than 5% of the pathological gamblers.

Abuse and Neglect

As discussed above, the estimated past-year prevalence of child abuse in the U.S. is 11.8 per thousand (1.2%) while other studies have suggested as high as 25% lifetime prevalence in some populations. The literature suggests that child abuse is on the rise, indicating a possible age related cohort effect, in that at the time the participants of this study were children, the prevalence rate of child abuse may have been less. Nonetheless, this study finding that approximately 75% of the participants reported abuse or neglect suggests that pathological gamblers are much more likely to have experienced abuse than individuals in the general population.

PREOCCURRING MENTAL ILLNESS

Nearly 81% of the participants reported preoccurring mental illness including substance dependence. Slightly over 70% included preoccurring lifetime mental illnesses which when compared to the expected prevalence of approximately 20% in the general population, is a 3.5 times greater likelihood than would normally be expected. Based on national estimates, the study participants were slightly more than two times as likely to report lifetime alcohol dependence problems those in the general population who began drinking at approximately the same age as the study participants.[62] When compared to the general population, participants were five times as likely to report alcohol dependence. These finding are likely to also be true for most individuals diagnosed with mental health or substance related disorders.

It should be noted that 44.0% of the participants reported head injuries that ranged from relatively minor (being knocked out temporarily from a baseball) to severe (automobile accident). This study was unable to make any association between head injuries and pathological gambling and was also unable to find reliable estimates of head injuries for this cohort in the literature.

FAMILY HISTORY

When looking at substance dependence the family history (including biological relatives only, i.e., mother, father, grandparents, blood related aunts and uncles, or siblings) more than three-quarters of the participants reported its presence. A family history of mental illness was reported by more than 86% of the participants.

[62] Keeping in mind that those that started drinking at the same age as participants in this study were three times more likely than the general population to report lifetime dependence.

Pathological gambling appears, for the most part, to emerge within a cluster of other mental disorders, including alcohol and drug dependence. Although the information collected as a result of this study is not to be viewed as definitive, it appears to support the those who propose theories of multicausality.

By far the largest group of pathological gamblers are those individuals who, as Jacobs and others postulate, have abnormal resting arousal states as a result of trauma. These individuals at some point during their lives experienced an event, or series of events, that overwhelmed their coping mechanisms, which led to their first dissociative experiences. Over time the dissociative state became a place of refuge and, based on learning theory and operant conditioning, became the primary mechanism for coping with stress at the expense of losing or not learning more appropriate coping and decision-making methodologies. These individuals are far more likely to have family histories of mental illnesses and report premorbid mental illnesses themselves. This study found 55 (73.3%) of the participants fitting into this category.

One the major barriers to more fully understanding this potential pathway is the interaction between mental illness, including alcohol and drug dependence, and the perpetuation of abuse by parents or care givers to their children. The literature suggests that either one may precede the other, greatly confounding the potential intergenerational transmission of a "propensity" for the pathological gambling.

The second causal pathway into pathological gambling would be those who are predisposed to mental illness due to factors relating to their family histories. These factors may be genetically related. These individuals would report no abuse, a family history of mental illness, and may, or may not, report premorbid mental illness themselves. This study

found 19 (25.3%) of the participants might fit this category. Of course, without extensive genetic testing, this can only cautiously be assumed to be correct, and it may alternately be explained by learning theory as a result of living with an individual who is afflicted with a mental illness.

Based on the literature there is most certainly a small group of individuals who have crossed the threshold into pathological gambling as a result of operant conditioning. It is theorized that this group began gambling as a social activity, found it rewarding (exciting, adventuresome), continued to gamble to the point of experiencing serious problems (poor choices), at some point had the realization that this type of behavior was not acceptable to them, and simply chose to either stop gambling or alter their gambling behavior sufficiently to not cause further problems. Blaszczynski called these individuals the "normal pathological" gambler. These are the individuals who would rarely be expected to be seen in treatment (natural recovery) and if they did present, would most likely be model clients quickly grasping the psychoeducational material and moving on. This group may contain some individuals who had experienced trauma, but were able to alter their behaviors and move away from problem gambling through plasticity and resilience. The data from this study suggested one individual who would fit into this category. Nonetheless, based on what is known regarding the functioning of the brain and the evidence that repetitious activity can change underlying brain functions, it is possible that some of this group may persist with their gambling to a point at which they actually create an abnormal resting state.

CONCLUSIONS

The ecological model of Engel is useful as a framework for understanding and grouping the potential etiological factors. Clearly, early childhood trauma must be considered a major factor in the development of pathological gambling. Neither this study, nor the literature, was able to delineate the interrelationship between a family history of substance abuse, mental illness, and the perpetuation of child abuse and neglect. Certainly, not all abused, neglected, nor abandoned children grow up to experience mental health problems, addictions, or behavioral disorders. The concept of plasticity, the "remarkable capacity to change in response to experience and to get off one developmental pathway and onto another" (Sigelman, 1999) is the key to healthy life-long wellbeing. The concept of plasticity goes beyond protective factors and resilience. It encompasses both the biological and psychological ability to change, not simply endure. And for those who are abused, successfully overcoming the potential post-traumatic stress in a manner that facilitates growth is usually associated with having strong relationships with others that support future development.

Much hope for understanding pathological gambling and other disorders has been placed on the burgeoning body of physical science that maps brain functions, especially responses to gambling stimulus and drugs. The question remains, and will remain until long-term longitudinal studies are completed, as to what came first, the brain's functional pattern or the introduction of dysfunctional behavior or substances which caused the brain dysfunction. As has been discussed, brain functions can be changed over time but in order to do so, the individual must have sufficient time in which these types of changes can occur. Physiological

plasticity, supported by appropriate therapeutic interventions may be the long-term answer to the high rates of relapse reported in the literature.

The available knowledge, confirmed by this study, underscores the complex nature of pathological gambling and the ill-defined boundaries of the milieu in which the pathological gambling emerges. Over the past 25 years, the treatment field, including addictions and mental illness, has seen an economically driven, sometimes byzantine trend towards briefer treatment conducted by lesser trained clinical personnel in an effort to save costs. This situation can have a profound impact on how treatment of the disorder is conducted and gives rise to some potentially perplexing questions regarding treatment approaches and therapist qualifications.

Based on the findings of this study, it is hypothesized that an accurate assessment of underlying causal factors may be a critical element of the treatment process. For example, this study employed a doctorate level clinical psychologist with research experience in pathological gambling to collect data. Could the same quality of data have been collected by a trained surveyor? Most likely not. Even with intense training regarding the presentation of questions and the coding of information into data, a highly skilled surveyor would have most likely missed the nuisances of the participants' life stories as there were being told, which allowed the semi-structured interview design to probe more deeply into sensitive issues. Even in this study, it is suspected that some participants remained very guarded about childhood abuse, especially some males, and that the findings reported above likely understate the frequency of experience among the study participants. This supposition is expected to hold true also in the treatment milieu.

This suggests that the assessment process must be thorough and conducted by an individual who is qualified to accurately and legitimately render a wide spectrum of DSM diagnoses. Realistically speaking, incorporating an in-depth clinical evaluation of the gambling client might be difficult. Experience suggests that clients reporting the greatest severity of symptoms, who would more likely benefit from an in-depth clinical assessment to identify multiple diagnoses, are also more likely to leave treatment early (Moore, 2000, p.31). Anecdotal information reported by counselors[63] indicates that clients reporting more severity require more immediacy in the application of therapeutic assistance as opposed to in-depth assessment. Since counselors, for the most part, are responsible for both providing services and conducting the evaluation, the crisis management occurs before a proper clinical assessment can be conducted and the client then leaves treatment experiencing at least temporary relief (Moore, 2001a; 2000).

It is apparent that abuse and trauma, especially in early childhood, may be the most influential predictor of later mental illnesses including pathological gambling. This, and other findings from the study, also suggest that the individual treatment plan of the pathological gambler incorporate prioritized therapeutic interventions. The authors believe that pathological gambling should continue to be viewed and treated as a primary illness.

It would be convenient if there were a preferred, or standardized, treatment approach. However, when there are perhaps more than 400 varying orientations to psychotherapy (U.S. Department of Health & Human Services, 1999b) and a multitude of personal eccentricities introduced by the individual clinician's interpretation of the approach, that is unlikely.

[63] This information has been informally collected by the principal investigator since 1993 as part of the statewide gambling program evaluation efforts.

Additionally, few controlled studies exist regarding the efficacy of treatment approaches for pathological gambling. Nonetheless, there is a surfeit of published literature regarding efficacious treatments for the myriad of other disorders that this study suggests are commonly cooccurring with pathological gambling. This large body of knowledge should be condensed and made available through training to counselors and therapists who treat pathological gamblers and their families.

The implications for prevention based on this study's findings are as important as those for treatment. Since it appears that pathological gambling is infrequently a lone diagnosable condition, it seems logical that prevention activities be coupled with existing efforts such as those for the prevention of alcohol and drug abuse to increase the opportunity for individuals at higher risk (e.g., trauma, abuse, family history of mental illnesses and substance dependencies, and high-risk behaviors) and their family members to learn the potential warning signs of pathological gambling.

RECOMMENDATIONS

As the title of this report implies, the study was conducted as a step towards understanding the causal pathways to pathological gambling and to improve prevention and treatment. The study design has some inherent weaknesses which restrict its generalizability. The findings were based on an opportunity sample of volunteers who may or may not represent the general population, the sample did not include the general non-pathological gambling population for comparisons, and the sample was relatively small.

The study did confirm expectations exposed by theorists and poses poignant questions for the treatment and prevention communities. The technology and experience gained by this

study appears be an invaluable resource for future research that begs to be accomplished within the general population.

As a result of this study, the following recommendations are made:

1. Clients entering gambling treatment programs should receive a thorough mental health assessment by a qualified mental health professional. Pathological gambling should continue to be treated as a primary illness, and underlying issues, such as those commonly associated with post-traumatic stress disorder for example, should be identified and incorporated into the plan of treatment.

2. Controlled studies should be undertaken to determine efficacious treatment strategies for blending known best practices for cooccurring mental illness and addictions with the emerging knowledge base for the treatment of pathological gambling.

3. Gambling counselor training and certification programs should be reviewed to ensure the inclusion of protocols for the effective identification of post-trauma related disorders, the long-term effects of trauma, promising treatment interventions, and the efficient integration of these interventions into the plan of treatment.

4. Awareness, education, and prevention efforts should take into consideration the role that trauma from abuse and neglect plays in the etiology of pathological gambling. These efforts must recognize the association with pre- and co-occurring mental disorders and family history, yet stress the uniqueness of pathological gambling in order to foster compassionate understanding that the disorder is similar to other mental disorders and is treatable.

5. Finally, randomized, population based research should be conducted on a large heterogeneous sample following a design similar to this effort testing the generalizability of these findings.

There is much work yet to be done in the quest to understand pathological gambling. The answers are there. It is the authors' hope that this study has lit a small candle in the darkness and shed at least a small ray of light on the path.

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APPENDICES

APPENDIX A: NEWSPAPER AD FORMAT

Seeking Serious Gamblers

Serious gamblers wanted for a study. Participation includes brief initial phone interview and up to three additional interviews over 3 week period. Completely confidential. Interviews can be done by phone. $50.00 paid to qualified participants who are 18 years or older, have experienced problems related to excessive gambling, and complete the interviews. Study sponsored by the Oregon Gambling Treatment Foundation www.gamblingaddiction.org. Principal investigator is Dr. Thomas L. Moore of Herbert & Louis LLC. Interested participants are encouraged to call toll-free (866) 215-xxxx.

APPENDIX B: INITIAL PHONE RECEPTION SCRIPT

Thank you for calling. First, what I would like to do is tell you about the purpose and time commitment involved in our study. The purpose is to identify factors that lead people to gamble. The results will be used to assist treatment professionals learn what attracts people to gambling and why they sometimes gamble more than they should. We anticipate a total time commitment of approximately 3 ½ hours, not counting this screening, over approximately three weeks. A $50 stipend will be paid to those who qualify and complete the study. Do you have any questions?

If no questions complete page one of the <u>Intake Questionnaire and Criteria.</u>.

A. Respondent Qualifies for the Study.

Thank the participant for their time and tell them that you will be sending a copy of an Informed Consent form (confirming their agreement to participate in the study) for them to sign and return and a letter and worksheet outlining the areas of their life that Dr. ____ will be interested in talking to them about during the interviews.

Schedule the first interview.

B. Respondent <u>Does Not</u> Qualify for the Study

Thank the respondent for their interest in the study. "The responses you gave to the screening questions indicated you did not exhibit the gambling pattern of individuals that we would like to include in this study." Once again, thank them for their time.

APPENDIX C: INITIAL SCREENING FORM

Date of Intake: _____ Interviewer Initials: _____
Participant Name: _____ Participant ID: _____
Date of Birth: _____ Age: _____ Gender: _____
Referral Source: _____

DSM-IV-TR CRITERIA (APA, 2000)

1.	Have there ever been periods of time when you spent a lot of time thinking about your gambling experiences, planning out future gambling ventures or bets or spent a lot of time thinking about ways of getting money to gamble with?	YES - NO
2.	Have there ever been periods when you needed to gamble with increasing amounts of money or with larger bets in order to get the same feeling of excitement?	YES – NO
3.	Have you made unsuccessful attempts to stop, cut down, or control your gambling? If yes, how many times would you say this has happened?	YES – NO
4.	During time(s) when you tried to stop, cut down, or control your gambling, did you become restless or irritable?	YES – NO
5.	Have you ever gambled as a way to escape from personal problems or to relieve uncomfortable feelings such as guilt, anxiety, helplessness, or depression?	YES – NO
6.	Has there ever been a time when, if you lost money gambling one day, you would return another day to get even?	YES – NO
7.	Have you ever lied to family members, friends, or others about how much you gamble or how much money you lost on gambling?	YES – NO
8.	Have you ever committed illegal acts such as forgery, fraud, theft, or embezzlement to pay for your gambling?	YES – NO
9.	Has your gambling ever caused serious or repeated problems in your relationships with family members, friends, at work? OR has gambling hindered your career or educational, plans, success, or advancement?	YES – NO
10.	Have you ever needed to ask family members or anyone else to loan you money or otherwise bail you out of a desperate money situation that was largely caused by your gambling?	YES – NO
11.	Have you ever been diagnosed with bipolar or manic depressive disorder?	YES – NO

Score: _____/10 MINIMUM QUALIFYING SCORE IS 5/10. NOT COUNTING #11

If the respondent qualifies ask for their mailing address, phone number(s), and set up a date for the next interview. If not refer to Part B of the Introductory Telephone Script.

Address: _____
Email: _____
Home Phone: _____ Additional Phone(s): _____
Can we leave messages on VM? Yes – No:
Additional Comments: _____

APPENDIX D: PARTICIPANT COVER LETTER

Herbert & Louis LLC

CREATING EXCELLENCE IN BEHAVIORAL HEALTH CARE

May 8, 2002

title firstname lastname
mailing address
city, state, zip

Dear *title lastname*:

Again, thank you for your interest in the gambling study. As we discussed, Dr. _____ will be calling you on May 15th at 5 PM to conduct your first interview. This interview should last approximately 45 minutes to one hour. Listed below are areas that we will be interested in talking to you about.

If you would read the enclosed authorization to participate in the study, sign, and return it in the enclosed post-paid envelop it will be helpful (an extra copy of the authorization is enclosed for your files). All the information you provide is strictly and completely confidential. At the completion of the interviews I will have a $50.00 (fifty dollar) check order mailed to you at this address as a stipend to compensate you for the time it will take to complete the interviews. If you would prefer a postal money order please let me, or one of my staff know, and we will gladly accommodate your request.

For the interviews, when we talk about gambling, we will be using the term in its broadest sense. Gambling will be viewed as any game of chance where money and/or items of value, for example, watches, cars, property, etc. or in the case of children marbles, baseball cards etc. are placed at risk in lieu of money.

For the first interview, the areas of your life that I would like you to think about are:

- The five most memorable events, things that stand out, in your life. These events do not have to be gambling related. They could be positive or negative. You may think of them as relatively inconsequential, however, most people's lives are shaped by relatively minor but for them meaningful events. It may be helpful for you to list these events in advance of our interview in the spaces provided below:

Event	Age

- Family. We will be talking about your formative years and as such discussing your family, for example, were you raised by your biological parents, siblings, how you were disciplined, your high school years, and important people (role models) in your life. In essence, who or what were the influential people and/or events that contributed to your becoming the person you are today. It may be helpful for you to list those people who helped shape your life in advance of our interview in the spaces provided below:

Person	Age

- Trauma. Have you ever been the victim of emotional, physical, or sexual abuse? Have you ever been personally involved, witnessed, or learned of a life threatening or potentially life-threatening event. This could involve a crime, accident, natural disaster, or military service. If so, at what age did this occur?

- Fantasy. Do you have a good imagination? Did you like to dream when you were younger?

- Phenomenology of gambling. Phenomenology is a big word for "What does it feel like when you gamble?" Physically, do you tremble, does your heart beat faster, do you go "into action" and if so what does that mean to you? Mentally, do you go into another world or maybe your own world? Did you ever lose track of time when you gamble? I would like to develop an in-depth understanding of how <u>you</u> feel when you gamble.

- Progression of gambling. How did your gambling get to where it is today? I will be interested in knowing how your gambling progressed, that is, how and why it changed.

This list is intended to be used as a "memory jogger" as opposed to an all-encompassing list. *We are interested in developing an understanding of you, your life, and how gambling became a part of it.* We will be talking to see if we can identify trends or develop insight into how you got to where you are today in relationship to gambling.

Again, please sign the enclosed Informed Consent form and return it in the return envelope. If you have any questions regarding your participation in this study, feel free to contact me on our toll free number (866) 215-xxxx. If you are unable to keep our interview date, please contact our office at your earliest convenience.

Sincerely,

original casual signature

Thomas Jadlos, PhD

Enclosures

HERBERT & LOUIS LLC
PO Box 304
Wilsonville, Oregon 97070-0304
Voice: (503) 625-6100 Facsimile: (503) 625-3653
herblou@herblou.com

APPENDIX E: INFORMED CONSENT

INFORMED CONSENT
TO PARTICIPATE IN GAMBLING STUDY

I give my consent to Herbert & Louis LLC (the research firm conducting this study) to interview me and collect information about my gambling. This information will be used in conjunction with a study focusing on the origins of problematic gambling. The data will be used to understand my reasons for gambling and to help develop an understanding as to the reasons why people gamble to excess. I am aware that the results of my interview will be kept confidential and that Herbert & Louis LLC will follow the American Psychological Association's Ethical Standards, including those for research with human subjects. *I understand that I can withdraw from the study at any time.*

I give consent to have the interview recorded by the Researcher. I understand that if audiotapes are used they will be transcribed with identifying information removed and immediately erased to ensure confidentiality is maintained. I will be informed if the interviews are going to be recorded at the time of the interviews. This consent form will be kept in a secure location, separate from the interview transcripts. I give consent for quotations from my interview to be used in any publication that may follow, provided the quotation is anonymous. I agree to participate in follow-up interviews, a minimum of 3 and maximum of 4, to the extent that it is necessary to clarify previously given information.

I, the participant, understand that this study presents little potential risk to my person physically, psychologically, socially, or otherwise. This study may allow me to gain a more objective view of my behavior and reasons for my behavior. *It is possible, however, that participating in this study may cause discomfort and/or emotional distress. If this occurs at any time during your participation, please do not hesitate to contact the office of Herbert & Louis, LLC toll free at (866) 215-xxxx. If you require additional assistance, you will be referred to an appropriate health resource.*

I understand that at the completion of my interviews I will be provided with a $50.00 (fifty dollar) stipend for my efforts.

If you have any questions regarding this study please feel free to call the study's Principal Investigator, Thomas L. Moore, PhD toll free at (866) 215-xxx.

firstname lastname

_____ _____

Participant Signature Date

☐ Please check the box to the left if you would like to receive notification when the final report from this study will be available. At that time, if you like, you can receive a copy of the study free of any charges.

HERBERT & LOUIS, LLC
PO Box 304
Wilsonville, Oregon 97070-0304
Voice: (503) 625-6100 Facsimile: (503) 625-3653
herblou@herblou.com

APPENDIX F: INTERVIEW SCHEDULE – OVERVIEW

1. Opening Questions
   a) What were the 5 most memorable or significant events (positive or negative) in your life? What is their significance to you?
   b) Who were the most influential people in your life (positive or negative, a good - bad example)? How did or have these people influence you (positively or otherwise)? Who was the most influential?
   c) What was the most influential period in your life? What makes you say that?

2. Family History
   a) What was it like to live in your family?
   b) What were some of the memorable events that took place in your family?
   c) What one word would your parents use to describe you?
   d) Where were your born?
   e) With whom did you live? Who raised you?
   f) # of siblings.
   g) # of times relocated?
   h) What games did you play as a child?
   i) How would you characterize your childhood?
   j) What one word characterizes your family?
   k) When you were growing up would you say that you had an active imagination? Did you daydream a lot?

3. Grammar School
   a) What do you remember about your grammar school years?
   b) What were some of the memorable events that took place during your grammar school years?
   c) What one word would your grammar school teachers use to describe you? What would make them say that?
   d) What did you do or how did you cope with difficult situations when you were in grammar school, e.g., frequent relocations, being poor, not being popular, not being athletically inclined, being over-weight?
   e) Did you enjoy going to school?
   f) What kind of grades did you achieve?
   g) Did you participate in extracurricular activities? If yes, what activities?

4. High School
   a) Tell me about your high school years.
   b) What were the most memorable events that took place during your high school years?
   c) How was your transition to high school?
   d) Did you enjoy high school?
   e) What type of grades did you achieve?
   f) What one word would your high school teachers use to describe you? What would make them describe you in that manner?
   g) What one word would you use to describe yourself?

h) How did you cope with the difficult situations you were faced with in high school, e.g., poor marks, dating, college, or career decisions?

5. College (If appropriate)
   a) What were the most memorable events that took place during your college years?
   b) Describe your transition to college?
   c) Did you enjoy college? What did you enjoy?
   d) What type of grades did you achieve?
   e) Did you participate in extracurricular activities? If yes, which activities? If not, why not?
   f) What one word would your college instructors use to describe you?
   g) How did you cope with the difficult situations you faced in high school, e.g., poor marks, relationship difficulties, or career decisions?

6. Military Service (If appropriate)
   a) Did you serve in the military? Yes No Age entered military: _____
   b) What branch? Army Navy Air Force Marines Coast Guard
   c) Did you enjoy being in the military? What did you enjoy?
   d) What is your most vivid memory?

7. Adulthood and Employment
   a) Talk me through your life from graduation from (high school – college) up to the present time. I would like you to talk about relationships, work history, successes, things you would have done differently, events that will help me get to know you as a person.

8. Developmental Summary
   a) Overall, what would you say was the happiest time of your life?
      0 – 10 11 – 20 20 – 30 30 – 40 40 – 50
   b) What makes you say that?
   c) Overall, what would you say was the most difficult or saddest time of your life thus far?
      0 – 10 11 – 20 20 – 30 30 – 40 40 – 50
   d) How so?
   e) Overall, what is the most significant event that has taken place in your life to date?

9. Gambling History.
   a) What is your very first memory of gambling?
   b) Who is the first person you can remember gambling? Can you describe it to me?
   c) At what age do you remember first gambling? Can you remember what it felt like? If yes, describe it to me.
   d) What was your initial impression or feelings about gambling?
   e) How did your family view gambling?
   f) Who in your family gambled?

10. Relationship History
   a) In one word how would you describe your relationships with others? How so?
   b) In one word how would you describe your relationship with your spouse or significant other?
   c) Do you think that there could be a connection between gambling and your relationship difficulties

11. Mental Health (If appropriate)
    a) Do you think that there is a possible relationship between your mental health problems and gambling? If yes, how so? What purpose do you think it could serve?

INTERVIEW WORKSHEETS

Name: _____ Height: _____ Weight: _____

Years of education: _____ Marital Status***** _____ Ethnicity/race* _____

Are you employed: Yes No If yes, what is your occupation: _____

Primary source of income***** _____ Amount of gambling losses: _____

Days gambled per week: _____ Days gambled per month: _____

Primary game of choice***** _____ Venue***** _____

Secondary game of choice***** _____ Venue***** _____

I would like you to think about gambling as any game of chance where money or items of value are placed at risk, for example, in the case of children playing marbles or pitching pennies.

Age first gambled: _____

What prompted you to begin gambling? _____

_____

Did you gamble within your family of origin? Yes No

Description: _____

_____

Addictions History

Smoking

Have you ever smoked: Yes No Age of first use: _____

What prompted you to begin smoking? _____

What did smoking do for you, "it made you feel … "?_____

Gambling

Are you currently gambling: Yes No Time abstinent: _____

Received tx: Yes No Age of first tx: _____ Estimated age of onset: _____

Do you think that you have or have ever had a problem with gambling: Yes No

Is there a friend or family member who has or may have had a gambling problem? Yes No

Who: _____

Substance Abuse

- Have you ever drunk **ETOH**: Yes No Age first used ETOH: _____

What prompted you to begin drinking ETOH? _____

What did drinking ETOH do for you, "it made you feel …" _____

- Have you ever used **THC**: Yes No Age first used THC: _____

What prompted you to begin using THC? _____

What did smoking THC do for you, "it made you feel …" _____

- Have you ever used **drugs** other than those prescribed by a physician: Yes No

Age first used: _____ Substance(s) used: _____

What prompted you to begin using drugs? _____

What did using drugs do for you, "it made you feel …" _____

Ever received tx for ETOH, THC, or Drugs: Yes No Age of first tx: _____

Do you continue to use: Yes No Time abstinent: _____

Have any of your blood-relatives had a problem with substance abuse? Yes No

Identify: _____

Mental Health History

Based on what your mother (person who raised the participant) has told you you did were you a fussy baby, did you walk on time, talk on time, have any concerns about your health while you were growing up? _____

_____

Have you ever sustain a head injury? Yes No What age? _____

Have you ever lost consciousness? Yes No What age? _____

For how long? _____ Circumstances: _____

Have you ever been dx or treated for a mental or emotional disorder?

Diagnoses: _____ If yes, at what age: _____

Have you ever been prescribed medication for a psychiatric or emotional problem (Prozac,etc)?

Yes No If yes, what and at what age: _____

If no, have you ever experienced what you would consider a serious emotional problem? If yes, at what age and then refer to the DSM criteria. Prompt for yes no responses.

Have you ever experienced suicidal ideation: Yes No Age of first experience: _____

Suicide Attempts: Yes No Number of times: ___ Age of first attempt: _____

Have any blood-relatives experienced an emotional problem or mental disorder? Yes No

Identify: _____

Neglect, Physical, Emotional, and Sexual Abuse History[64]

Neglect

Were you ever the victim of serious neglect? (That is, the parents or adults responsible for your care failed to provide what you consider minimally sufficient food, clothing, shelter from rain, cold or heat, necessary medical attention, or protection from harm.) Yes No

At what age did this neglect begin and end: _____

On a scale of 1 to 7 with 1 being Tolerable, 4 being Moderate, and 7 being Severe, how severe was the neglect you experienced?

1Tolerable 2 3 4Moderate 5 6 7Severe

Who was responsible for this neglect: _____

Respond Yes or No for each of the following reactions that may have occurred while you were experiencing this **neglect**.

Reaction	Frequency
Did you feel like you were in a trance?	Rarely Frequently All the time
Did you feel like you were a different person?	Rarely Frequently All the time
Did you feel like you were outside of yourself, like watching yourself and what was happening was a dream?	Rarely Frequently All the time
Did you have memory blackouts for things that happened during the time of the neglect?	Rarely Frequently All the time
Did you lose rack of time while the neglect was occurring?	Rarely Frequently All the time

[64] The definitions for abuse and neglect, the severity scale, and the reaction matrix were adapted from the Jacobs – Neglect and Abuse Protocol J-NAP © (Jacobs, 1999)

How or what did you do to cope with the neglect: _____

Physical Abuse

Have you ever been the victim of physical abuse? (That is, were you ever hit, bitten, burned, beaten with a belt or other object, kicked or thrown, so that you bled, suffered pain, broken bones, bruises or welts.) Yes No

At what age did this physical abuse begin and end: _____

On a scale of 1 to 7 with 1 being Tolerable, 4 being Moderate, and 7 being Severe, how severe was the physical abuse you experienced?

1Tolerable 2 3 4Moderate 5 6 7Severe

Who was responsible for this physical abuse: _____

Respond Yes or No for each of the following reactions that may have occurred while you were experiencing this **physical abuse**.

Reaction	Frequency
Did you feel like you were in a trance?	Rarely Frequently All the time
Did you feel like you were a different person?	Rarely Frequently All the time
Did you feel like you were outside of yourself, like watching yourself and what was happening was a dream?	Rarely Frequently All the time
Did you have memory blackouts for things that happened during the time of the physical abuse?	Rarely Frequently All the time
Did you lose track of time while the physical abuse was occurring?	Rarely Frequently All the time

How or what did you do to cope with the physical abuse: _____

Emotional Abuse

Have you ever been the victim of emotional abuse? (That is, you were repeatedly made to feel unwanted, worthless, unloved, or inferior; or were repeatedly told that you were no good or could do nothing right; or were made to feel guilty or ashamed.) Yes No

At what age did this emotional begin and end: _____

On a scale of 1 to 7 with 1 being Tolerable, 4 being Moderate, and 7 being Severe, how severe was the emotional abuse you experienced?

1Tolerable 2 3 4Moderate 5 6 7Severe

Who was responsible for the emotional abuse: _____

Respond Yes or No for each of the following reactions that may have occurred while you were experiencing this **emotional abuse**.

Reaction	Frequency
Did you feel like you were in a trance?	Rarely Frequently All the time
Did you feel like you were a different person?	Rarely Frequently All the time
Did you feel like you were outside of yourself, like watching yourself and what was happening was a dream?	Rarely Frequently All the time
Did you have memory blackouts for things that happened during the time of the emotional abuse?	Rarely Frequently All the time
Did you lose track of time while the emotional abuse was occurring?	Rarely Frequently All the time

How or what did you do to cope with this emotional abuse: _____

Sexual Abuse

Have you ever been the victim of sexual abuse? (That is, you were fondled, seduced, or forcibly raped, or you were otherwise led by a person in a position of power or control to participate in, or observe, sexual activities involving genital, oral, or masturbatory contacts.) Yes No

At what age did this sexual abuse begin and end: _____

Who was responsible for the sexual abuse: _____

On a scale of 1 to 7 with 1 being Tolerable, 4 being Moderate, and 7 being Severe, how severe was the sexual abuse you experienced?

1 Tolerable 2 3 4 Moderate 5 6 7 Severe

Respond Yes or No for each of the following reactions that may have occurred while you were experiencing this **sexual abuse**.

Reaction	Frequency
Did you feel like you were in a trance?	Rarely Frequently All the time
Did you feel like you were a different person?	Rarely Frequently All the time
Did you feel like you were outside of yourself, like watching yourself and what was happening was a dream?	Rarely Frequently All the time
Did you have memory blackouts for	Rarely Frequently All the time

things that were happening during the time of the sexual abuse?	
Did you lose track of time while the sexual abuse was occurring?	Rarely Frequently All the time

How or what did you do to cope with this sexual abuse: _____

What one word would you use to describe your family: _____

Dissociation

Have you ever had blank spells or periods of missing time that you cannot remember, not counting times you have been using drugs, alcohol, or gambling? Yes No

Describe context: _____

Age first noticed: _____ # of instances: _____

Have you ever found evidence that you have done things that you do not remember doing, not counting times you have been using drugs, alcohol, or gambling? Yes No

Describe context: _____

Age first noticed: _____ # of instances: _____

Have you ever experienced periods of feeling detached from your body, that is, as if you were an outside observer of your mental processes or your actions? Possibly feeling like you are in a dream or feeling like what you are going through is not real, not counting times you have been using drugs, alcohol, or gambling? Yes No

Describe context: _____

Age first noticed: _____ # of instances: _____

While gambling, have you ever:

(a) had blank spells or periods of missing time Yes No

(b) found evidence that you have done things that you could not remember doing Yes No

(c) experienced periods of feeling detached from your body, that is, as if you were an outside observer of your mental processes or your actions? Yes No

Age first noticed: _____ # of instances: _____

DEVELOPMENTAL HISTORY – GENERAL LIFESPAN TIMELINE WORKSHEET

Participant ID: _____

[----------]
0 5 10 15 20 25 30 35 40 45

0 – 5

_____

_____

_____

_____

5 – 10

_____

_____

_____

_____

10 – 15

_____

_____

15 – 20

20 – 25

25 – 30

APPENDIX G: STIPEND TRANSMITTAL

Date

name
address
city,state, zip

Dear *firstname*:

I would like to thank you for participating in the study we are conducting for the Foundation. Your insights and the information you provided have been invaluable in adding to our understanding of the issues we are studying.

To compensate you for the time involved in participating in the interviews with Dr. Jadlos, I have enclosed a stipend of $50.00.

If you indicated on the initial paperwork for the study that you would like a copy of the finished report we will mail it to you at this address. We are expecting to have copies of the study available in July of this year.

If you have any questions please feel free to contact me directly and again many thanks for all your assistance.

Sincerely,

casual original signature

Thomas L. Moore, PhD
CEO

HERBERT & LOUIS
PO Box 304
Wilsonville, Oregon 97070-0304
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APPENDIX H: EXAMPLES OF CASE HISTORIES

On one inlay of the mosaic of pathological gambling is "Jim # 76",[65] a white, quiet 80-year-old, first generation European male retired teacher, who described his childhood immigrant family as "not close"[66] and began experiencing problems with gambling when he was 60 years old. He gambled at his local lodge playing poker. He now estimates that he has lost more than $100,000. He reported that he did not gamble to escape from problems but enjoyed the social interaction and the challenge of the game. His father was strict and physically punished him from the age of 10 until the age of 15 years old. Jim reported the physical abuse as tolerable – the lowest score possible on the scale. Jim reported no history of mental health problems in his family, except for a brother who had problems with alcohol and he, himself, had no previous history and no report of cooccurring disorders.

"Sam # 69" is a 47-year-old white male with six children. Sam reported his lifetime losses at $500,000. When asked his primary game of choice he replied "black jack, but it's not a game of choice, it's a lifestyle!" The start of the pathological gambling was reported as 19 years old. Conversation with Sam is rapid and staccato. As his story unfolds, the listener is swept up in the pace of the action. When he talks about gambling he is there, at the tables. In the background Sam's wife can be heard coming into the room "who you talking to?" she asks. Sam responds, the guy with that gambling study, maybe they can help me [with a chuckle]" and then "I do need help" as a statement of fact rather than a query for support. Sam's father was an alcoholic and Sam reported both physical and emotional abuse as a child and heavy drinking when he was in his 30s. Sam has been known to occasionally spend two to four days at the tables without sleep.

"Mary # 4" a white, 31-year-old married female who described her early childhood family environment as "Camelot tarnished" but reported no neglect, abuse, nor premorbid disorders. She reported a grandfather who was alcoholic, a grandmother who experienced a nervous breakdown, and an aunt who was a pathological gambler. Her first gambling experience was at 22 years old, at 23 she broke up from a serious relationship and by the time she was 24 considered herself a pathological gambler, gambling mainly at casinos to escape the feelings. Now that she's married, Mary reports gambling only occasionally with her husband at casinos and "it's under control."

"Pete # 36," a white 47-year-old divorced male that reported coming from a highly competitive, hard-working family with no family nor personal history of potentially premorbid conditions. Parents were divorced when he was around five years old and no one in his family gambled. Pete began playing penny-ante poker at about 17 years old, by the time he was 28 realized he had a problem, and at 31 enrolled in a gambling treatment program. He continues to gamble, reports his lifetime losses at $250,000, and says the reason

[65] Fictitious name and participant number for reference.
[66] All participants were asked to describe their childhood family with one word.

he continues to gamble is the challenge of winning. He did report winning a contest when he was five years old and the prize was a trip to Disneyland and his picture was in the paper.

Pete was the only participant out of the 75 completers who did not report multiple factors that might have been present and contributory to the development of pathological gambling. The interview record noted that he was not freely forthcoming with information and from that one might speculate that the divorce of his parents at a formative age, or possibly the "big win" of the contest at five, might be contributory factors. And in fact they might, but Pete might also be one of those individuals Blaszczynski (2000) labeled as a "normal pathological gambler."