Motives for recreational gambling and other recreation activities among Internet users

Laurie Platz

University of Nevada, Las Vegas

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ABSTRACT

Motives for Recreational Gambling
And Other Recreational Activities
Among Internet Users

by

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This research examined whether there was a qualitative or quantitative difference between recreational gamblers' motives for participating in their one favorite gambling activity and their one favorite recreational activity. The rationale is to demonstrate that gambling is comparable to other recreational activities. The sample for this study was recruited on the Internet through newsgroups with bulletin boards. After deletion of cases that did not qualify for analysis, 133 people qualified for full analysis by scoring 0 on the NODS gambling screen (classified as recreational gamblers) and by completing the Recreation Experience Preference scales for both gambling and other recreational activities. In the overall group, seven of the top ten ranked motives were common to each activity: skill development, being with friends, being with similar people, excitement,
competence testing, autonomy, and escaping daily routines. Data was also split along games of chance vs. games of skill. Those who played games of chance had the highest agreement (number of common motives) between gambling and other recreational activities (90%): escaping role overloads, tension release, escaping daily routine, being with friends, excitement, slowing down mentally, being with similar people, autonomy, and skill development. The full sample qualitative data from this study (N=133) was compared to previous data collected with college students (N=349) in a paper and pencil version of the same REP scales for recreation and gambling (Platz, 1999). As with the current sample, seven of ten motives were found to be common to recreation and gambling activities among college students. Five of the seven motives found common to both recreational gamblers’ recreation and gambling activities were found consistent across the two diverse samples and different means of data collection. Motives included: excitement, being with friends, being with similar people, autonomy, and escaping daily routines. Nonsignificant quantitative motives between activities ranged from 9/20 to 13/20 REP motives. Qualitative comparisons ranged from 5/10 to 9/10 common motives for participating in both activities. These findings add construct and convergent validity to a developing area of research on gambling as a positive human experience within the context of recreational behavior.
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promises and opportunities! This time is our time to explore those possibilities!! Let’s be happy!!!
CHAPTER 1

INTRODUCTION

GAMBLING AS RECREATION

Americans spent $689 billion on leisure goods and services in 2003 (Christensen, 2004). Gambling contributed $72.9 billion to that figure, or 11% of leisure income was spent gambling (Christensen). Gambling as measured by *The Gross Annual Wager of the United States* is also considered a form of destination entertainment. Destination entertainment includes racetracks / racinos, casinos, resorts, theme parks, cruise ships, spectator sports and other live entertainment. Destination gambling, including racetracks / racinos, neighborhood charities, and card rooms, accounted for about 42% of every dollar (or $47.3 billion) spent on the gambling destinations (Christensen). Total gambling expenses of $111.9 million were spent to go to leisure destinations, or put another way, gambling accounted for 40% of the category of destination entertainment (Christensen). Harrah’s (2001) reported that Californians alone spent $303 million in casino trips, subsequently, they considered this as a sign that gambling as a destination resort was a healthy, quality, leisure, entertainment experience (Ader, 2002). Gambling has been reported as a larger American leisure expense than film, recorded music, sporting events, and theme parks combined (Walker, 2002).

In 1975, Nevada was the only state where casino gambling was legal. Gambling is a long time revenue source for Nevadans and is even written into the Nevada Statutory law.
as “vitally important to the economy of the state and the general welfare of the inhabitants” (as cited in Walker, 2002, p. 374). By 1988, 46 states had sanctioned some kind of gambling for entertainment and tax revenue. In 2004, Pennsylvania was facing a huge budget deficit and authorized up to 61,000 slot machines to raise revenue. This brought the total number of slot machines and gambling devices to 629,000 in North America (Walker). The number of states offering casino gambling during the last three decades increased dramatically from one (Nevada) to 31 states in 2001 (Walker).

Although land based casinos increased dramatically during those decades, they appear to have leveled off as supply and demand became balanced (Christensen, 2004). Forty states faced budget deficits in 2004. Those preaching the ills of gambling have had to shift their focus from the State level to Capitol Hill, and, the debate over the rights of those who may choose to gamble in cyberspace (Walker). The unprecedented proliferation of sanctioned gambling across the United States peaked during the last quarter of the 20th century, while the introduction and wild debate over Internet gambling had just begun.

In the 1990s when the propagation of casino-style gambling was leveling off in the United States, the Internet was revolutionizing communication and had reached 50 million people worldwide by 2002 (Walker, 2002). In 2002, 25 million people were gambling online and that number was projected to reach 300 million by 2005. Internet gambling revenue was reported at about $1.5 billion in 2001, and was projected to reach $5 billion by 2003 (Ader, 2002). Predictions were not far off target as United States consumers reportedly spent $5,691,400,000 while Internet gambling in 2003 (Christensen, 2004).
Nevada was the first – and only – State for a very long time to socially accept casino gambling and to make it a legislated vital source of income for the state (Walker, 2002). Paradoxically, Nevada initially voiced a loud prohibitionist attitude toward Internet gambling. Nevada was also the first state to change its mind when it saw the opportunity for revenue by seeking a form of regulation for the activity. In all 50 states, the United States forbids operation of on-line gambling, so many ventures to date have been off-shore. According to Whittier (2002, as cited in Walker), the federal government has been busy lobbying, but to date the only federal crime regarding online gambling is sports book betting. It falls under the 1974 Federal Wire Act established to fight bookmaking by organized crime. Regardless of government opinion or ambiguity, 50% of the $5.7 billion bet online in 2004 came from the United States (Christensen), a substantial increase over figures reported for 2003.

Considering that recreational gambling is such a large part of the economy, it is ironic that most studies of gambling have focused on the prevalence and characteristics of pathological gamblers, often to the exclusion of other participants. Researchers have gathered preliminary data concerning the reasons “why” participants gamble recreationally (e.g. Lorenz, 1983; Yuan, Yuan, & Janes, 1996), but fewer investigations have directly assessed the motives for this behavior (Cotte, 1997; Platz & Carruthers, 2000; Platz & Millar, 2001). The major goal of this research is to determine if there is a qualitative or quantitative difference between the reported motives of recreational gamblers for participating in both their favorite gambling activities and their favorite other recreational activities. The rationale being to demonstrate that gambling is comparable to other recreational activities.
CHAPTER 2

REVIEW OF RELATED LITERATURE

The overwhelming majority of published gambling research has come from an addictive standpoint with a focus on pathological prevalence and sickness. At the start, and at the extreme, of the addictive gambling theories is Bergler’s (1958, 1970) view of gambling as evil. His book, *The Psychology of Gambling*, was considered the definitive source on gamblers for decades and influenced much of psychology’s research and the public’s opinion. Bergler believed gamblers were menacing psychomasochists who wanted to lose because of suffering from a pleasure/pain syndrome and that they were dedicated to their own destruction. He became entrenched in these views through his personal experience with 60 hospitalized patients diagnosed as neurotics (something that is no longer even diagnosed). Bergler’s opinion was not contested in gambling research for several decades, yet not everyone who gambled became sick from the experience.

Most of psychology’s gambling research, although approaching the topic from different perspectives, tends to look at the unfortunate few who are diagnosed as being either problem or pathological gamblers. Pathological gambling is an impulse disorder that is usually only applied when gambling behavior disrupts (or more) one’s personal, family, or work life. Problem gamblers show a substantial, but sub-clinical amount of negative consequences associated with their gambling behavior. Pathological and problem gamblers approximate between one and five percent of the North American...
adult population (Shaffer, Hall, & Vander Bilt, 1997). The majority of disordered gambling research has not been as severe as Bergler’s (1958, 1970), but currently refers to the subject as an addictive behavior (Jacobs, 1987). Jacobs, Marston & Singer’s (1985), *Theory of Addictions*, defines addiction as “... a dependent state that is acquired over time with the goal of releasing stress”. These feelings often manifest as escape actions of a dissociative nature (Carruthers, 1999).

Pathological gambling from an addictions perspective is exemplified by the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.) (DSM-IV) approach, where it is defined as a disorder of impulse control (American Psychiatric Association, APA; 1994). The defining feature of an addictions model of gambling is that it is understood within a medical model of disease, which you either have or do not have. The two criteria in the model for a predisposition to pathological gambling include a chronically hypo-tensive or hyper-tensive state and a history of inadequate feelings as a child (Jacobs, 1987). Once a person is predisposed, at any time an environmental trigger can start the behavior. Gambling has repeatedly been found to be positively correlated with such variables as alcohol and drugs (e.g. Linden, Pope, & Jonas, 1986) and criminal behavior patterns (Brown, 1986). Gupta and Derevensky (1998) tested Jacob’s Theory of Addiction with gamblers and found pathological gamblers had abnormal physiological resting rates (e.g. pulse rates), greater emotional distress, greater dissociation, and high co-morbidity with other substances. Jacobs, Marston and Singer (1985) claim the dissociative states of compulsive gamblers, overeaters, and alcoholics to be the same. The strength of addiction theory is that it addresses the behavioral and psychological processes that govern pathological gambling to the extent that pathological gambling is
similar to other addictions such as substance abuse. However, the major limitation of addiction theory is that it does little to inform researchers concerning the vast majority of individuals who gamble without becoming addicted. Recreational gambling is one activity that has been traditionally understudied. It accounts for approximately 97.5% of people who do gamble and do not exhibit any diagnostic symptoms of problem or pathological gambling (Shaffer, Hall, & Vander Bilt, 1997).

Gambling Motivation

The motivational approach to gambling behavior has taken several tracts including the examination of cognitive distortions, personality variables, and the motivational cognitions associated with gambling. Cognitive distortion theories of gambling have operated under the assumption that irrational thinking leads to problem gambling once misattributions have begun. Gambling motivation as with the majority of gambling research in general has focused on the few who become sick from the activity. Personality theorists have also explained both the occurrence leading to disordered gambling behavior and maintenance of that behavior once acquired. Personality theories coalesce around the primary underlying assumption that regular traits exist and can be successfully predicted with respect to an individual’s long-term behavior. Motivational cognitions attempt, mostly through self-report instruments, to reflect the mental state of those involved in an activity and the satisfactions or meaning derived from the experience.
Cognitive Distortions

Cognitive distortions which lead to the persistence of gambling behavior have been well-documented in gambling literature (e.g. Ladouceur & Walker, 1996; Toneatto, 1999). Among the most prevalent cognitive distortions are the illusion of control (Langer, 1975), the misconception of the independence of chance events (Ladouceur & Walker), and the gambler’s fallacy. The illusion of control occurs under similar circumstances to the misconception of chance events. For example, gamblers often misperceive random events as if they are subject to their own control due to personal skill, ability, or knowledge. The misconception of the independence of chance events occurs when gamblers assume a relationship between events that does not exist. The gambler’s fallacy occurs when one believes future gambling events can be predicted by past gambling events (e.g. after exhausting their gambling stake, gamblers may continue to play with more money, because the machine is “due” to hit).

As another example of this cognitive distortion, gamblers often refer to chance events that are random and independent in nature, but favorable, as luck. Luck / perseverance has also been proposed as a separate cognitive distortion (Walker, 1992) because it leads gamblers to overestimate their chances of winning. Again, these gamblers believe they can beat chance. Regardless of terminology many of these irrational thoughts are seemingly similar in nature. Think aloud exercises preceded self-report instruments to identify hypothesized irrational beliefs of gamblers (e.g. Gaboury & Ladouceur, 1988).

Steenbergh, Meyers, May, and Whelan (2002) conducted a series of studies to develop an instrument to measure cognitive distortions to be used along-side clinical assessment instruments of pathology. They created a 21 item self-report questionnaire
regarding cognitive distortions both reported by gamblers and those theoretically attributed to gamblers. The Gambler's Belief Questionnaire (GBQ) loaded on two theoretically established (and closely related) factors (Walker, 1992): luck / perseverance and the illusion of control accounting for 43% of the variance in GBQ scores. They also found that GBQ scores were positively correlated with scores on gambling instruments, or those with more gambling problems exhibited more cognitive distortions. This study was unique in that it provided the first empirical differentiation between other cognitive distortions and the illusion of control as it applies to gambling (Steenbergh et al.). There is growing support for problem gambling interventions to address cognitive distortions (e.g. Bujold, Ladouceur, Sylvain, & Boisvert, 1994; Ladouceur, Boisvert, & Dumont, 1994; Sylvain, Ladouceur, & Boisvert, 1997; Toneato & Sobell, 1990).

Jefferson and Nicki (2003) developed a 25 item self-report instrument to identify cognitive distortions specifically among video machine players (e.g. slots, video poker). Their participants were recruited at bars. They were given a self-report questionnaire with return postage, and they were mailed $15 for returning completed forms. Their Informational Biases Scale (IBS) measured one factor accounting for 37% of the variance in IBS scores attributed to the misperception of chance events. Raylu and Oei (2004) developed a 23 item self-report measure of cognitive distortions, The Gambling Related Cognitions Scale (GRCS). They were able to account for 70% of the variance in GRCS scores attributable to the following five factors: perceived inability to stop gambling, gambling related expectancies, predictive control (ability to predict outcomes), the illusion of control (ability to control outcomes), and interpretive control bias superstitions.
or good luck routines). Unique to Raylu and Oei's instrument is that it was developed to examine nonproblem or recreational gamblers.

**Personality Correlates of Gambling**

The most influential personality correlates to gambling in general have been found to be risk-taking and sensation seeking (Hardoon & Derevensky, 2002). The greater the risk-taking and sensation seeking, the greater the gambling involvement (positive correlations). Risk-taking can be thought of in cognitively distorted expectancy-valence terms. The actions are perceived as having probable positive consequences (Jessar, 1998; Moore and Ohtsuka, 1997; and Platz, 1999), although, gambling almost always involves the negative consequences associated with losing money.

**Risk Taking**

Risk taking is hypothesized as a personality trait reflecting the degree to which one engages in activities containing a considerable level of risk. Gambling has also specifically been shown to be perceived as mastery, especially among males (Griffiths, 1990). Males have been shown to be greater risk takers than females (Gupta & Derevensky, 1996), and adolescents have been shown to be greater risk takers than adults (Arnett, 1994). Moore and Gullone (1996) stated that gamblers engaged in these risky behaviors because the positive consequences appeared to be peer acceptance, pleasure, and satisfaction of needs. Jessar and Jessar (1978) believed risky behaviors gave one a sense of control over their lives, as a means of access to gain admission to peer groups, and as a way to downplay anxiety, failure, frustration, or any other inadequacy a person might have been feeling.
Sensation Seeking

Sensation seeking has been defined as “the need for varied, novel, and complex sensations and experiences, and the willingness to take physical and social risks for the sake of such experiences” (Zuckerman, 1979, p. 10). Sensation seeking has an established history with gambling. Sensation seeking has also been shown to be positively related to a variety of sexual experiences (Zuckerman, 1979), alcoholism (Schwarz, Burkhart, & Green, 1978), dangerous driving (Arnett, 1990), drug use (Satinder & Black, 1984), and minor criminal behavior (Perez & Torrubia, 1985). Sensation seekers are thought to possess a number of common personality traits (Blaszczynski, Buhrich, & McConogly, 1985).

Derevensky and Gupta (2000) used several established instruments to show that other personality variables significantly correlated to problem and pathological gambling in addition to risk taking and sensation seeking. These variables included: apprehension, cheerfulness, conformity, emotional stability, excitability, intelligence, self-discipline, self-sufficiency, sensitivity, and tension. Gambling has even been shown to temporarily alleviate depression (Dickerson, 1984). These findings lead these researchers to conclude that there are qualitative personality differences between problem and non-problem gamblers. Stated another way, there are naturally occurring individual differences between those persons who do and those persons who do not become addicted to gambling. Ste-Marie (2001) found recreational gamblers scored lower on state and trait anxiety, anti-social behavior, and criminal offenses.
Motivational Cognitions

The cognitive motivational approach is generally characterized by the assumption that a particular behavior is observed because of a specific motivational style or disposition. Motivational cognitions assess the emotions, moods, satisfactions, attitudes and beliefs one holds about the value of the recreational experience (Mannel & Kleiber, 1997). Emotionality is an essential component in motivation as the physiological responses are implicated in each context of recreation and gambling.

With specific regard to social reinforcement as a gambling motivator, it has been shown to be a positive reinforcer (Bandura, 1977). Positive reinforcements are thought to be strengthened by an individual’s peer group depending on their level of maturity and social status (Gupta, 1994). Males may be more susceptible to seeking peer group approval (Shaffer, Hall, & Vander Bilt, 1997). Inherent in social motivation is the idea that people must be socialized to gamble (Wallisch, 1998).

Lopez Viets (2001) investigated whether social motivation played a role in the association or prediction of gambling behavior. She hypothesized that social support would not only be associated with, but also predictive of, recreational gambling. She found increased social support to be both a significant predictor of recreational gambling and problem gambling behavior.

Also within the framework of social motivation, Gupta and Derevensky (1997) examined whether parents and other family members were significant models for juvenile (ages 9 to 14 years) gambling behavior. They found that 86% of those who gambled reported doing so with family, 75% with friends. These findings were interpreted to mean that gambling was a socially acceptable behavior. One of the strengths of this approach is
that socialization has been shown to be an important motivation of gamblers. One of the
limitations of social motivators to gambling is that they do not consistently discriminate
well between gamblers. It may be that social motivation discounts individual differences
or personality factors.

Another technique to look at the motivation of gamblers is to adapt recreation
motivation scales with regard to gambling (e.g. Platz & Millar, 2001; Chantal, Vallerand,
& Valleries, 1991; Beard & Ragheb, 1983). Chantal et al. (1991) developed the
Gambling Motivation Scale (GMS) based on Deci and Ryan’s (1985, 1991) theory of
cognitive evaluation. Cognitive evaluation theory describes motivation along the
following three dimensions: amotivation, extrinsic motivation, and intrinsic motivation.
Amotivation describes acting with no perceived relationship between one’s conduct and
an outcome. Extrinsically motivated behaviors are associated with compliance and are
commonly performed as a means to an end. The phenomenon of intrinsic motivation
explains why people engage in behaviors for their own sake, behaviors that yield no
obvious external rewards. Extrinsic motivation can be described as having three
characteristics: regulation, introjection, and identification. Regulation describes
participation to avoid negative outcomes or to gain rewards. Introjection progresses from
regulated to be governed by internal pressures such as anxiety and guilt. Identification
describes the point extrinsic reasons become internally regulated and self-determined.
Intrinsic motivation can be described as focused in one of three directions: to know,
toward accomplishments, or to experience stimulation. Intrinsic motivation to know
describes participation for the satisfaction of learning, exploring or comprehending
something new. Intrinsic motivation toward accomplishment simply is when participation
provides a sense of creativity or accomplishment. Intrinsic motivation to experience 
stimulation induces a feeling of excitement or having fun. Chantal and Vallerand (1996) 
used the GMS to contrast gamblers who play games of luck vs. those who play games of 
skill. They found those who played games of skill to be more self-determined along the 

B. L. Driver wanted to look at the motivational basis for people’s recreation choices. 
He developed an inventory to quantify psychological benefits obtained through recreation 
participation. Between 1968 and 1984, the inventory was refined through use in over 50 
studies (e.g. Driver & Knopf, 1977; and Williams, Ellis, Nickerson and Schafer, 1988). 
Original development of the scales began with a personality trait based unmet needs 
hypothesis. Consequently, people engaged in recreational activities to fulfill needs not 
met in other areas of their lives (Driver & Knopf). During the process of refining the 
scales, the author incorporated an approach put forth by Lawler (1973) that observable 
behavior can be explained by examining what determined the motivation to engage in the 
behavior. Over the years, the instrument was called Unmet Needs, Preferred 
Psychological Outcomes (Driver, 1977), Perceived Immediate Benefits, and today, The 
Recreation Experience Preference Scales (REP scales).

The final theoretical influence on today’s REP scales (Driver, 1983) came from the 
theory was based on expectancy-valence formulas for decision making, such that people 
chose certain behaviors for their favorable consequences. In turn, leisure / recreation 
benefits [freely chosen regarding importance to enjoyment of favorite activities] were 
perceived as advantageous outcomes or desired consequences. While applying the scales
through the years, items were further refined, statistical properties were confirmed, and reliability and validity were advanced (e.g. Graefe, Ditton, Roggenbuck, & Schreyer, 1981; Rosenthal, Waldman, & Driver, 1982; Tinsley, Driver, Ray, Manfredo, 1986; Tinsley, Kass, & Driver, 1981).

Although there is no literature base for comparing samples of recreational gamblers, when recreation scales have been used to examine gamblers, there is evidence that pathological and recreational gamblers may have different motives for gambling. Coyle and Kinney (1990) used Driver's (1973) REP scales to examine compulsive gamblers' reasons for participating in both gambling and other recreational activities. Within the group they found common motives for participating in both activities including achievement, leadership, and escaping personal and social pressure. Risk and sensation seeking were cited more prevalently for gambling, whereas relating to nature, exercise, and being with family were ranked higher in importance for recreational activities.

Recently Platz and colleagues have extended this initial work on motives of gamblers. Platz and Carruthers (2000) used the GMS (Chantal, Vallerand, & Valleries, 1991) to distinguish between pathological gambler's motives for favorite gambling and favorite other recreational activities. Items were collapsed into subscales (intrinsic, extrinsic, or amotivation). They found an inverse relationship between pathological gamblers reasons for participating in favorite gambling or favorite other recreational activities. With regard to gambling, pathologically classified individuals scored highest from amotivation to extrinsic motivation to intrinsic motivation where they scored the lowest. With regard to their other recreational activities, the above order was reversed.
In prior research, Platz and Millar (2001) used Driver’s (1983) REP scales to examine recreational and pathological gamblers’ motives for participating in their one favorite gambling activity and their one favorite other recreational activity. Statistically, pathological gamblers scored higher on every measure. Of practical importance was the qualitative finding that the two divergent groups shared seven of their top ten motives for participation in gambling activities.

Recreational gamblers top 10 ranked motives for gambling were as follows (in order of importance): 1) winning*, 2) exploration*, 3) excitement*, 4) being with friends*, 5) being with similar people, 6) risk*, 7) observing other people, 8) autonomy*, 9) escaping daily routine*, and 10) meeting new people. Pathological gamblers top 10 ranked motives for gambling were as follows (in order of importance): 1) winning*, 2) excitement*, 3) risk*, 4) autonomy*, 5) independence, 6) escaping daily routine*, 7) exploration*, 8) being with friends*, 9) competence testing, 10) control / power. [* denotes motives common to both groups] These motives were rated on the perceived importance to the participant’s enjoyment of their chosen favorite gambling activity.

Also of interest from the Platz and Millar study is what recreational and pathological gamblers did not commonly list in their top ten ranked motives for gambling. Recreational gamblers listed being with similar people, observing other people, and meeting new people as important reasons for gambling where pathological gamblers did not. These highly ranked motives of recreational gamblers are common with those mentioned in social motivation theories. Pathological gamblers listed independence, competence testing, and control / power which is also consistent with addictions theory. It appears that gambling is a multi-faceted human behavior, not just a diagnosable one.
Due to this evidence, it is important to study recreational gamblers separately, as they comprise approximately 97.5% of the general adult population (Shaffer, Hall, & Vander Bilt, 1997).

One of the investigations that have directly assessed the motivations for recreational gambling was conducted by Cotte (1997) in a large northeastern casino. She engaged in ethnographic participant observation in order to explore the motives of recreational gamblers, and inconspicuously interviewed or recorded observations of nearly 100 gamblers. Her study produced the following reasons for recreational gambling: seeking a "rush", self-determination, risk-taking, learning and evaluating, competing, communing, as well as cognitive and emotional self-classification.

Dumont and Ladouceur (1990) inquired about why recreational video poker players played the game. Recreational gamblers were chosen by process of elimination using DSM-III criteria (APA, 1980) and their participants were recruited from the general public. Instruments included Beard and Ragheb's (1983) Leisure Motivation Scale adapted for gambling with 5 additional items to assist in assessing motivation. They found that the most frequently cited reason for gambling was excitement. Those who gambled more often were also more likely to extend time playing than those who gambled less often. Those who gambled more often also listed fun, thrills, and winning money as priority gambling motivators.

Gambling has been proposed to exist along a continuum by different researchers who have employed different terminology (Abt, 1985; Shaffer, Hall, & Vander Bilt, 1997). Gambling has been proposed as a fluid construct with people in the problem category (in particular) moving in and out to other categories (Shaffer et al., 1997), before settling on
a prevalence rate. It's as if there is a natural curve for gambling as with many activities. Those who settle as recreational gamblers may not be only beginning gamblers, but also those who have learned from their misjudgments instead of repeating them.

This research is important as a serious problem exists, but the problem exists for only a minority of gamblers. Those in the majority, recreational gamblers, have not been fully explored in the literature. The purpose of the proposed research is to examine whether there is a qualitative or quantitative difference between recreational gamblers' motives for participating in their favorite gambling and favorite other recreational activities. The rational is to demonstrate that gambling is comparable to other recreational activities.
CHAPTER 3

METHOD

INTERNET RESEARCH

As experimental psychology has evolved as a science over the past century, so have its methods of research. From introspection of conscious thought to systematic manipulation of variables in the laboratory, these methods have progressed and advanced, or have been abandoned and replaced by new innovations (Boring, 1950). Modern psychology holds in high esteem the use of the scientific method of research to test causal hypotheses. Experiments may be true experiments which are systematically controlled and characterized by random assignment to conditions, (e.g. Baum & Davis, 1980) or they may be quasi-experiments (e.g. Tellegen, Lykken, Bouchard, Wilcox, Segal, & Rich, 1988). Quasi-experimental research does not have control over the independent variable. For instance, researchers studying a person’s gender or a person’s customary gambling behavior cannot employ random assignment to conditions.

Questionnaires and interviews are a descriptive method of research (e.g. Platz & Millar, 2001). Instruments usually consist of a set of questions dealing with a certain topic or group of related topics whose purpose is information-gathering. Participants complete a questionnaire or interview, either in person, by mail, over the telephone, or on the Internet. They may also occur in the field as opposed to the laboratory, (e.g. The Roper Organization, 1992). Much of the quantitative gambling research to date has been
done with self-report questionnaires ensuring anonymity or assuring confidentiality, because of the difficulty in gathering this information in some other way. Self-report methods are useful in situations where the topic is sensitive, and verifying the requested information would be impractical. Research on gambling meets both of these criteria.

With the development of the Internet came a new mode of computer automated assistance in experimental research. It promised even more advantages as the second computer revolution in psychological research: large diverse demographic samples (e.g. Gosling, Vazire, Srivastava, & John, 2004, or Nosek, Banaji, & Greenwald, 2002), greater statistical power (Buchanan & Smith, 1999; Kraut, Olson, Banaji, Bruckman, Cohen, & Couper, 2004), the convenience of bringing the experiment to the subject when access is not limited by time of day (Reips, 2000), and lower costs of administration (Murray & Fisher, 2002). It is professed to reduce volunteer bias as Internet participants can drop out at any time while traditional subject pool students may feel pressured to sign-up and stay in for class credit (Sproull & Kiesler, 1991). Error variance due to the aforementioned difference in reasons for participation is reported to be less, while there is increased control over experimenter bias and demand characteristics (Smith & Leigh, 1997; Hewson, Laurent, & Vogel, 1996; Mehta & Sivadas, 1995).

Questionnaires obviously and easily lend themselves to Internet research. In less than a decade there have been hundreds of surveys made available in many diverse areas, such as: disease, medicine, nursing, counseling, market research, and information technology. Psychology has used the Internet to study the following areas: addiction, personality, psycholinguistics, experimental, cognitive, developmental, social, and industrial/organizational. The Internet has also been used to study the following
processes: prejudice, word recognition, perceptual learning and visual perception, decision making, peer behavioral nominations, attitudes, and worker motivation (Murray & Fisher, 2002).

Research has compared the results of studies administered on the Internet and with traditional paper and pencil instruments (Buchanan & Smith, 1999; Murray & Fisher, 2002; Pasveer & Ellard, 1998). Similar results were found among Internet samples when compared to traditional samples. Finding similar results with different samples furthers the construct validity of the research. Finding similar results using different means of administration adds convergent validity to the research. Due to the advantages of Internet research, this study used the Internet to recruit participants primarily through newsgroups with bulletin boards.

Traditionally, the social sciences have conducted research with convenience samples of university undergraduate students (Buchanan & Smith, 1999), primarily from social science subject pools (Birnbaum, 1999). University students are generally restricted by age range, averaging less than 30 years old. They tend to be of higher socioeconomic status, they are more educated than the general United States population, and they are mainly of European descent (Smith & Leigh, 1997). Also, many studies may have far more women than men in their samples, depending on the topic of research and the composition of subject pools, as women have traditionally been over-represented in the social sciences (Smith & Leigh). With the widespread growth of the Internet during the past decade, psychological research is now more accessible to the masses than ever before. Admittedly, it is still a convenience sample, but one regarded as a more
heterogeneous group than traditional college student samples (Birnbaum, 1999; Murray & Fisher, 2002).

More heterogeneous samples may not yet be representative of the US population as a whole (Gosling et al., 2004), but are usually considered by Internet researchers to be more representative than college students (Kraut, Olson, Banaji, Bruckman, Cohen, & Couper, 2004; Smith & Leigh, 1997). However, at this time, it is an impressive resource for targeting special populations, destigmatizing the collection of sensitive data, and collecting large diverse demographic samples (e.g. Kraut et al., 2004; or Nosak, Banaji, & Greenwald, 2002) which facilitates statistical power (Kraut et al.; Buchanan & Smith, 1999). The Internet has actually made possible research that was traditionally difficult (Murray & Fisher, 2002) or nonexistent (Kraut et al.).

To disseminate research and recruit subjects, there are literally thousands of Newsgroups and automated mailing lists (e.g. Listserv) that reach worldwide and make access to diverse and hard to find specialty populations easy (Murray & Fisher, 2002; Schmidt, 1997; Stone, 1998). Newsgroups are a domain on the Internet devoted to the discussion of a specific topic. Because the Internet provides a convenience sample, at this time targeting special populations may be more productive than attempting to be representative of the population in general (Buchanan, 2000). Munger, Anderson, Benjamin, Busiel, & Paredes-Holt (1999) reported there were more than 20,000 newsgroups online with an estimated ten million users. Newsgroups can easily be accessed through search engines or, for example, from Web pages such as (please see, http://www.liszt.com/news), or (please see, http://groups.google.com).
To get a planned and specific sample of individuals, distinct Newsgroups and automated mailing lists, or even specific email addresses may be targeted (Mehta & Sivadas, 1995; Reips, 2000). Several studies have used these recruitment methods alone (Hewson, 1994; Quartaro & Spier, 2002; Smith & Leigh, 1997). This strategy is comparable to survey methods already used. Hewson, Laurent, and Vogel (1996) studied proper methodologies for psychological and sociological studies conducted on the Internet. They recommended using cross postings to multiple groups rather than multiple individual postings when recruiting subjects. This is a sampling strategy that can help improve the generalizability of group results. Because the Internet has also been shown to facilitate the recruiting of participants for studies dealing with sensitive topics (Quartaro and Spier), it was employed in this study of gambling behavior. Cross-posting and targeted specific populations were also utilized in the current research.

Procedure

Participants for this study were recruited from websites with newsgroups and bulletin boards catering to people with interests in recreation and gambling. Please refer to Appendix 1 for a full list of web-links posting the invitation to participate and the reminder to participate before the study went offline, as well as their dates of access. The link was also listed with the American Psychological Society (APS; 1996) on their Psychological Research on the Net Web page at, (http://psych.hanover.edu/Research/exponnet.html). The APS site maintains the most extensive list of psychology based web surveys and experiments and is maintained by Dr. John Krantz. The survey was available online from July 7th, 2005 through October 25th,
Due to slow participation over the summer, recruitment of subjects was pursued more diligently beginning September 9th, 2005 through September 30th, 2005, by a research assistant who applied to newsgroups on the Internet. Communication usually occurred through a moderator before the posting was accepted as pertinent to the group. The research assistant’s intention was a straightforward approach of informing group members of the opportunity to provide data. This resulted in 528 accepted postings and a total of 620 hits to the survey predominantly in the last 7 weeks of its posting. A reminder to participate and a notice of going offline were also posted at the aforementioned sites between October 13th, 2005 and October 21st, 2005. As in most Internet research that is not pass coded (most anonymous research); the survey was also offered to friends of those who had already participated.

Participants for this study were limited to those individuals 18 years or older and who had also gambled within the past 12 months. The first requirement is generally the lower limit for legal age gambling in the United States (e.g. state lotteries), although 21 is generally the age for casino-type games. The second requirement for participation, gambling activity within the past 12 months, was chosen to advance a recent comparison between favorite gambling and favorite other recreational activity. The NODS gambling screen was used to score and group participants for analysis, to screen for recreational gamblers. The NODS provides both lifetime and past year gambling prevalence scores. Past year scores were used to group gamblers and facilitate comparisons.
Prior to signing up to participate, people were asked to read the following definition of gambling (included in the informed consent):

Gambling is the act of wagering money on all games of chance. Questions concern all gambling you may do whether it’s at a casino or at some other location, for instance: a convenience store, restaurant, gas station, bar, at home with friends, or on the Internet. Gambling also includes: personal wagers made with friends on televised sporting events (e.g. office pools), your golf or pool games, etc.

Participants were asked to answer questions in a self-report format administered and hosted on the Internet by Psychdata.com (2001). Their security meets or exceeds both industry and IRB board standards, and they are an approved vendor for major research institutions (please see, http://www.psychdata.com/content/aboutus.asp).

*Instruments*

The first page the participant encountered when beginning the survey was a description of the study, contact information, and the opportunity to provide informed consent. Informed consent was obtained by providing a button on the page for the participant to either accept the terms and give informed consent to continue with the study or they could simply leave the site. The description of the study is usually left vague to minimize the probability of guessing the true purpose of the research (which can introduce bias), and to minimize the probability of return visits (Montgomery & Ritchie, 2002). After choosing to participate, a secure window was opened and the survey was displayed. The second and third pages of the survey began with reassurance of data privacy, and demographic questions including the participant’s one favorite gambling game. Pages four and five assessed the REP dimensions as related to their chosen favorite
gambling activity. Page six asked respondents to choose their one favorite recreational activity. Pages seven and eight assessed the REP dimensions regarding the participant’s favorite recreational activity. The remaining pages of the survey were composed of the NODS gambling screen. The NODS began with the presentation of the first question of the instrument, and then presented subsequent questions to the participant based on answers to previous responses. Upon completion of the survey, the respondent clicked on a “submit” button, and the debriefing page was automatically displayed, accompanied by the opportunity for the participant to provide feedback directly to the researchers. Respondent feedback was very positive and can be very valuable in future study design and refinement. To summarize, questions included: demographic questions, questions regarding recreation participation, gambling participation, motives for recreation and motives for gambling. Questions also included the REP Scales (Driver, 1983), and the NODS (Shaffer, Hall & Vander Bilt, 1997) gambling screen. Answers from this survey were then transferred to a file in the server for later retrieval. Data was written in string form, (e.g. comma delineated) and easily downloaded into Microsoft Excel. From Excel it was then transferred into SPSS 12.0 for analysis.

Demographic Questions

Demographic questions included, from what type of link the participant accessed the survey, their sex, age, geographic location, (IF USA, THEN State), education, and ethnicity. This section also included general descriptive questions about participants’ gambling experiences, for example, the usual amount of money gambled, the largest amount of money gambled, the largest amount of money won at once, the biggest jackpot they had ever won, and their age at the time of winning that “big jackpot” (if applicable).
Also, included were questions about participants' gambling experiences, their age at the time of their first gambling experience, and whether they believe "beginners luck" was involved in their first gambling experience. Questions also included participants' favorite gambling activity and their frequency of play, as well as their favorite recreational activity.

*The NODS*

Instruments used to assess level of gambling involvement up to the extent of pathology are almost always based on the Diagnostic and Statistical Manual of Mental Disorders (DSM) pathologic gambling criteria checklist (APA; American Psychiatric Association, 1994). Some may find the candor of subsequent instruments based on DSM criteria threatening, intimidating, or offensive (e.g., the NODS or the SOGS; South Oaks Gambling Screen, Lesieur & Blume, 1987). These instruments are structured as questionnaires, but scored on the same principle as a diagnostic checklist. Based on raw scores, gamblers are grouped traditionally as having recreational, at risk, problem, or pathological levels of gambling involvement (Shaffer, Hall & Vander Bilt, 1997). Self-report measures used with gambling research should benefit in participant candor from the increased anonymity of Internet data collection.

The gambling instrument chosen for this study is the NODS. It provides both lifetime and past year prevalence rates. The reason for the choice of gambling assessment tool in this study, when so many others are currently being debated (e.g. the SOGS), is because regardless of the substantial amount of data that have been collected to date with the SOGS, the NODS is based on more current DSM-IV criteria. It was specifically developed for a normal population during the National Gambling Impact and Behavior
Study (1999). The NODS allows for less false positives (pathological identification) in the general population. There are 17 items on the NODS gambling screen, although scores range between 0 and 10. Scale developers determined that more than one question was necessary to address some of the items on the DSM-IV criterion checklist. The constructs assessed include: preoccupation, tolerance, withdrawal, loss of control, escape, chasing, lying, illegal acts, risking significant relationships, and having to be bailed out of gambling debts. Across studies and instruments there is usually agreement that among researchers that a score of 0 signifies recreational gambling (although the terminology is imprecise, e.g. no problem), and that a score of 5 or more indicates pathology (or probable pathology, again imprecise). These standards of scoring were adapted for this study also. Each participant was given a continuous and a grouped score for answers to NODS questions. Continuous and grouped past year scores were used for comparison and statistical analysis.

The Recreation Experience Preference Scales

The Recreation Experience Preference Scale (REP; Driver, 1983) is a self-report questionnaire found to be repeatedly reliable and valid with recreational activities (Tinsley, Driver, & Kass, 1982). Extensive research has been done utilizing the REP scales, thus providing a considerable amount of reliability and validity information (Graefe, Ditton, Roggenbuck, & Schreyer, 1981; Rosenthal, Waldman, & Driver, 1982; Tinsley et al, 1982). The instrument has been used a few times with regard to gambling as a recreational activity and again was found to be very reliable (Platz & Millar, 2001). The dynamic feature about construct validity is that it is further defined each time data is collected with an instrument. For example, construct validity is advanced if similar
results are found among different groups of people. This illustrates the importance of replication and introducing the instrument among divergent populations to see if the same underlying psychological variables are driving the research rather than the experimental medium. As another advantage, data collection on the Internet may provide initial construct validity (e.g. varied samples) and convergent validity (e.g. different mediums) for the REP scales in the context of gambling.

Presently, there are nineteen general recreation experience preference "domains" (scales) into which forty-three REP "dimensions" (subscales) are empirically grouped. The REP scales (Driver, 1983) and subscales were designed to measure the extent to which specific experiences are desired (their value) and expected from individuals choosing to engage in specific leisure activities. Forty items were chosen from 20 dimensions of Driver's REP scales to assess different motives for participation in gambling and other recreational activities. Scales were chosen based on previous research to reflect twenty dimensions relevant to gambling: autonomy, being with friends, being with similar people, competence testing, control-power, escaping daily routine, escaping role overloads, excitement, exploration, general learning, independence, meeting new people, observing other people, physical rest, reinforcing self-image, releasing tension, risk taking, skill development, slowing down mentally, and social recognition. Participants were asked to indicate the degree to which each statement is an important motivation for an enjoyable gambling experience. The identical format was used to assess favorite other recreation experiences. Participants were asked to answer the REP scales referring to their one favorite gambling activity and their one favorite other recreational activity respectively. Responses were made on a 5-point scale ranging from (1 = not at all
important) to (5 = extremely important). Subscales were then summed and averaged for analysis, (Cronbach's $\alpha=.953$, N=40 items for recreation; Cronbach's $\alpha=.955$, N=40 items for gambling).
CHAPTER 4

RESULTS

Sample Characteristics

There were 620 hits to the survey website from 36 different countries. Only respondents who had filled out all three instruments (NODS, REP scales for gambling, and REP scales for recreation) were included in the final sample of 310 usable surveys. Fifty percent response to offers of participating in academic Internet research is near average (Musch & Reips, 2000). Of the 310 in the final sample N=9, 2.9%, scored 5 or more and were eliminated from final analysis basis on their NODS score classification as probably pathological. At-risk (those scoring 1 or 2) and problem gamblers (those scoring 3 or 4) represented N=113, 36.5%, and N=40, 12.9%, of the sample respectively and were also eliminated from final analysis because of their total past year NODS scores. Fifteen people who logged on through a gambling site and also cited gambling as their favorite recreational activity were eliminated from qualitative and quantitative analysis of motivation for activities. Tables 1 shows gambling groups formed by past year NODS scores according to sex.
Table 1

NODS Classifications of Gamblers by Sex

<table>
<thead>
<tr>
<th></th>
<th>Males (N=240) Past Year</th>
<th></th>
<th>Females (N=68) Past Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Recreational</td>
<td>108</td>
<td>45.0%</td>
<td>40</td>
</tr>
<tr>
<td>At Risk</td>
<td>93</td>
<td>38.8%</td>
<td>19</td>
</tr>
<tr>
<td>Problem</td>
<td>33</td>
<td>13.3%</td>
<td>7</td>
</tr>
<tr>
<td>Pathological</td>
<td>7</td>
<td>9.0%</td>
<td>2</td>
</tr>
</tbody>
</table>

Recreational gamblers accessed the survey from recreation sites (N=62, 41.9%), gambling sites (N=26, 17.6%), psychology sites (N=13, 8.8%) or unspecified email invitations (N=38, 25.7%). Email invitations took on a life of their own with many being issued by newsgroups to members while others were sent from friend to friend, etc.

The demographic sample characteristics for recreational gamblers were as follows:
Sex: Male, (N=108, 73%); Age: range (18 to 89 years), mean (39 years), standard deviation (13.16 years), median (37 years). The most prominent country of origin was the United States (N=128, 87.2%), although 11 other countries are represented in the final sample of recreational gamblers. Of those respondents from the USA, 39 states were represented, the highest being California at 13.4%. Most were employed full-time (N=97, 65.6%), and 12.8% of recreational gamblers employed full- or part-time reported having gambling available where they work. There were no significant correlations between those working where gambling opportunities were available and their overall past year or lifetime NODS scores.
The average age of those gamblers who recalled their first gambling experience was (N=144) 18.3 years, the standard deviation (8.3 years). Eighteen was the overwhelming age for the recreational sample’s first gambling experience. Ninety-six people (64.9%) reported they did not experience beginner’s luck the first time they gambled, and the primary reason cited by the sample for gambling was entertainment (N=118, 79%).

One hundred seven recreational gamblers (72.3%) claim to budget their money when gambling. Twenty-four point three percent (N=36) of the sample reported gambling almost every day, while another 20.3% (N=30) claimed to gamble once a week. Almost half the recreational gamblers in this study gambled at least weekly. Categorical responses to the largest amount of money one had played in a day, the largest amount of money won in a day, and the largest amount of money lost in a day were correlated with NODS categories of gambling to see if those who gambled more prevalently also gambled with more money (N=310). However, we found no correlation between level of gambling involvement and amounts of money bet, won, or lost in one day. We did find that those who had bet the most in one day had also won ($r = .66$) and lost ($r = .80$) the most money in one day.

Poker was the most frequently cited favorite gambling game (N=89/307, 28.7%) among the group as a whole. Please refer to Table 2 for a list of recreational gamblers’ favorite gambling and favorite other recreational activities. Respondents reported gambling live more often, (N=103, 69.6%) than gambling online or via another remote gambling technology (N=45, 30.4%).

Gambling was the largest category of recreational activities (N=148) chosen as respondents’ favorites (N=15, 10.1%) followed by golf (N=10, 6.8%). Favorite
recreational activities are widely dispersed. Recreational gamblers listed 52 different choices with regard to their favorite recreational activities. Please refer to Table 3 for a list of the top ten motives chosen for participating in both favorite gambling and favorite other recreational activities.

Table 2

Recreational Gamblers Top Ten (N=148)

Favorite Gambling and Other Favorite Recreational Activities*

<table>
<thead>
<tr>
<th>Favorite Recreational Activities</th>
<th>N</th>
<th>Percent</th>
<th>Favorite Gambling Activities</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gambling</td>
<td>15</td>
<td>10.1%</td>
<td>1. Poker</td>
<td>38</td>
<td>25.7%</td>
</tr>
<tr>
<td>2. Golf</td>
<td>10</td>
<td>6.8%</td>
<td>2. Black jack</td>
<td>27</td>
<td>18.2%</td>
</tr>
<tr>
<td>3. Movies</td>
<td>8</td>
<td>5.4%</td>
<td>3. Slot machines</td>
<td>17</td>
<td>11.5%</td>
</tr>
<tr>
<td>4. Football</td>
<td>6</td>
<td>4.1%</td>
<td>4. Craps</td>
<td>14</td>
<td>9.5%</td>
</tr>
<tr>
<td>5. Dining out</td>
<td>6</td>
<td>4.1%</td>
<td>5. Race / Sports book</td>
<td>12</td>
<td>8.1%</td>
</tr>
<tr>
<td>6. Televised sporting events</td>
<td>6</td>
<td>4.1%</td>
<td>6. Lottery</td>
<td>11</td>
<td>7.4%</td>
</tr>
<tr>
<td>7. Pinball</td>
<td>6</td>
<td>4.1%</td>
<td>7. Video poker</td>
<td>9</td>
<td>6.1%</td>
</tr>
<tr>
<td>8. Baseball</td>
<td>5</td>
<td>3.4%</td>
<td>8. Bets with friends</td>
<td>8</td>
<td>5.4%</td>
</tr>
<tr>
<td>9. Fishing</td>
<td>5</td>
<td>3.4%</td>
<td>9. Other video machines</td>
<td>4</td>
<td>2.7%</td>
</tr>
<tr>
<td>10. Visiting friends &amp; relatives</td>
<td>5</td>
<td>3.4%</td>
<td>10. Bingo</td>
<td>3</td>
<td>2.0%</td>
</tr>
</tbody>
</table>
Hypothesis Test

Before beginning analysis between activities, the 15 cases where participants chose ‘gambling’ as their recreational activity were removed from further analysis to avoid cross-contamination of data and possible introduction of error variance. All of the following tests were performed on a total of 133 respondents. The first part of the hypothesis asks if there a qualitative difference between motives for recreational gambling and favorite other recreational activities among recreational gamblers?

Recreational gamblers, as a group, shared seven of their top ten motives for participating in both activities including: skill development, excitement, competence testing, autonomy, being with friends, escaping daily routine, and being with similar people, please refer to Table 3.
Table 3
Recreational Gamblers' Top Ten Motives
For Participation in Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Favorite Recreation Motives</th>
<th>Mean</th>
<th>Favorite Gambling Motives</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Skill development *</td>
<td>3.41</td>
<td>1. Skill development *</td>
<td>3.55</td>
</tr>
<tr>
<td>2. Escape role overloads</td>
<td>3.47</td>
<td>2. Excitement *</td>
<td>3.04</td>
</tr>
<tr>
<td>3. Being with friends *</td>
<td>3.28</td>
<td>3. Competence testing *</td>
<td>2.96</td>
</tr>
<tr>
<td>4. Being with similar people *</td>
<td>3.22</td>
<td>4. Autonomy *</td>
<td>2.85</td>
</tr>
<tr>
<td>5. Tension release</td>
<td>3.15</td>
<td>5. Being with friends *</td>
<td>2.77</td>
</tr>
<tr>
<td>7. Competence testing *</td>
<td>3.10</td>
<td>7. Reinforcing self-image</td>
<td>2.69</td>
</tr>
<tr>
<td>8. Autonomy *</td>
<td>3.06</td>
<td>8. Escape daily routine *</td>
<td>2.68</td>
</tr>
<tr>
<td>10. Slow down mentally</td>
<td>3.02</td>
<td>10. Control power</td>
<td>2.67</td>
</tr>
</tbody>
</table>

* denotes motive common to both activities (7/10)
[Raw scores ranged between (1=not at all important to 5=extremely important)]

The second half of the hypothesis asks, is there a quantitative difference between favorite recreational gambling and other favorite recreational activities among recreational gamblers? Using a repeated measures test, overall, among recreational gamblers, there was a significant difference with regard to motives cited for favorite other recreation activities and favorite gambling activities ($F_{1,147} = 25.7, p<.01$). This difference was based on overall higher mean ratings for recreational activities. Recreational gamblers scored significantly higher on their motivation to participate in their favorite other recreational activities as opposed to their favorite gambling activities. Subsequently paired-T tests were run independently to exact more detailed responses.
regarding the recreational gambling motives within the group as a whole and within subsequent sub-groups. The independent variable was the type of activity; the paired DVs were the 20 REP motivation scales for favorite gambling activities matched with the 20 REP motivation scales for favorite other recreational activities. Please refer to Table 4 for a list of what was found nonsignificant, significant at the $p<.05$ level, and significant at the $p<.01$ level.

Table 4

Recreational Gamblers (N=133)

Paired T-tests between Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Nonsignificant differences</th>
<th>(p&lt;.05)</th>
<th>(p&lt;.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing other people there</td>
<td>Risk taking (G&gt;R)</td>
<td>Escape role overloads (R&gt;G)</td>
</tr>
<tr>
<td>General learning</td>
<td>Social recognition (R&gt;G)</td>
<td>Physical rest (R&gt;G)</td>
</tr>
<tr>
<td>Control power</td>
<td></td>
<td>Meeting new people (R&gt;G)</td>
</tr>
<tr>
<td>Excitement</td>
<td></td>
<td>Being with similar people (R&gt;G)</td>
</tr>
<tr>
<td>Skill development</td>
<td></td>
<td>Tension release (R&gt;G)</td>
</tr>
<tr>
<td>Competence testing</td>
<td></td>
<td>Being with friends (R&gt;G)</td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td>Slowing down mentally (R&gt;G)</td>
</tr>
<tr>
<td>Reinforcing self image</td>
<td></td>
<td>Escape daily routine (R&gt;G)</td>
</tr>
<tr>
<td>Independence</td>
<td></td>
<td>Exploration (R&gt;G)</td>
</tr>
</tbody>
</table>

R=recreation, G=gambling.
R>G, expresses higher ranked mean scores for motivation regarding favorite other recreational activities rather than favorite gambling activities
G>R, expresses higher ranked mean scores for motivation regarding favorite gambling activities rather than favorite other recreational activities

In the above analyses, motives were evenly matched on the number that scored significantly different at the $p<.01$ level and those that did not show significant
differences. Risk taking was found to be significantly different with regard to recreational
gamblers’ favorite gambling vs. favorite other recreational activities. Risk taking was
ranked higher in importance for favorite gambling activities rather than favorite other
recreational activities.

Other Analyses

Different Access Sites

Comparisons of multiple site entry has been shown to facilitate the examination of
sampling bias which is much more likely to occur with true volunteers than in subject
pools (e.g. Reips, 2000). True volunteers have been shown to be more motivated to
participate in the research experience than those in subject pools (Reips). This study used
cross postings to multiple sites (N=529) which has been shown to improve the
generalizability of results (Quartaro and Spier, 2002).

Because of the volume of newsgroups accepting the posting, comparisons of
individual sites would have been unmanageable. Sites were grouped for comparison
based on the first question on the survey which asked respondents where they had
accessed the survey. Based on responses the following four groups were formed:
recreation, gambling, psychology, or email. The email group included those who did not
specify how they had received the email. Those who did specify the source of the email
were classified into the other defined groups.

We used mixed model analyses of variance with IVs (the between subjects variables):
as separate access sites including recreation, gambling, psychology, and email invitations.
The within subjects multiple dependent variables, were the 20 dimensions from the REP
sub-scales used to measure both recreation and gambling behavior. No significant differences were found between access sites regarding recreation motives ($F_{3,129} = 1.09$, $p=ns$) or gambling motives ($F_{3,129} = .85$, $p=ns$). Considering the extent of unequal N regarding the groups and the exploratory nature of this research, each site was then examined individually. That is, each site was examined for; a) favorite recreation and gambling activities, b) motives for participation in each activity, and c) significance of motives between activities within groups using paired t-tests. Tables 5 through 7 refer to recreation access sites, tables 8 through 10 refer to gambling access sites, tables 11 through 13 refer to psychology access sites, and tables 14 through 16 refer to email access sites.
Respondents from Recreation Access Sites

Table 5

Recreational Access Site (N=58)

Favorite Gambling and Favorite Other Recreational Activities

<table>
<thead>
<tr>
<th>Favorite Recreational Activities</th>
<th>N</th>
<th>Percent</th>
<th>Favorite Gambling Activities</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dining out</td>
<td>5</td>
<td>8.6%</td>
<td>1. Poker</td>
<td>14</td>
<td>24.1%</td>
</tr>
<tr>
<td>2. Pinball</td>
<td>5</td>
<td>8.6%</td>
<td>2. Black jack</td>
<td>10</td>
<td>17.2%</td>
</tr>
<tr>
<td>3. Movies</td>
<td>4</td>
<td>6.9%</td>
<td>3. Slot machines</td>
<td>7</td>
<td>12.1%</td>
</tr>
<tr>
<td>4. Visiting friends or relatives</td>
<td>4</td>
<td>6.9%</td>
<td>4. Video poker</td>
<td>6</td>
<td>10.3%</td>
</tr>
<tr>
<td>5. Chess</td>
<td>3</td>
<td>5.2%</td>
<td>5. Race / sports book</td>
<td>6</td>
<td>10.3%</td>
</tr>
<tr>
<td>6. Baseball</td>
<td>2</td>
<td>3.4%</td>
<td>6. Bets with friends</td>
<td>4</td>
<td>6.9%</td>
</tr>
<tr>
<td>7. Bridge</td>
<td>2</td>
<td>3.4%</td>
<td>7. Other video machines</td>
<td>3</td>
<td>5.2%</td>
</tr>
<tr>
<td>8. Golf</td>
<td>2</td>
<td>3.4%</td>
<td>8. Bingo</td>
<td>2</td>
<td>3.4%</td>
</tr>
<tr>
<td>9. Hiking</td>
<td>2</td>
<td>3.4%</td>
<td>9. Lottery</td>
<td>2</td>
<td>3.4%</td>
</tr>
<tr>
<td>10. Soccer</td>
<td>2</td>
<td>3.4%</td>
<td>10. Pool</td>
<td>1</td>
<td>1.7%</td>
</tr>
</tbody>
</table>
Table 6

Recreational Access Site Top Ten Motives

For Participation in Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Favorite Recreation Motives</th>
<th>Mean</th>
<th>Favorite Gambling Motives</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Being with similar people</td>
<td>3.53</td>
<td>1. Skill development *</td>
<td>3.57</td>
</tr>
<tr>
<td>2. Being with friends *</td>
<td>3.51</td>
<td>2. Competence testing *</td>
<td>3.26</td>
</tr>
<tr>
<td>4. Excitement *</td>
<td>3.40</td>
<td>4. Autonomy *</td>
<td>3.15</td>
</tr>
<tr>
<td>5. Escape role overloads</td>
<td>3.37</td>
<td>5. Being with friends *</td>
<td>2.98</td>
</tr>
<tr>
<td>6. Tension release *</td>
<td>3.34</td>
<td>6. Reinforcing self-image</td>
<td>2.92</td>
</tr>
<tr>
<td>7. Competence testing *</td>
<td>3.23</td>
<td>7. General learning</td>
<td>2.81</td>
</tr>
<tr>
<td>8. Escape daily routine *</td>
<td>3.19</td>
<td>8. Escape daily routine *</td>
<td>2.78</td>
</tr>
<tr>
<td>9. Autonomy *</td>
<td>3.18</td>
<td>9. Control power</td>
<td>2.75</td>
</tr>
<tr>
<td>10. Exploration</td>
<td>3.15</td>
<td>10. Tension release *</td>
<td>2.71</td>
</tr>
</tbody>
</table>

* denotes motive common to both activities (7/10)

The first part of the hypothesis asks if there is a qualitative difference between recreational gambling and favorite other recreational activities among recreational gamblers? Those accessing the survey from a recreation access site shared 7 of their top ten motives for both favorite gambling activities and favorite other recreational activities.
Table 7

Recreational Access Site Recreational Gamblers

Paired T-tests between Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Nonsignificant differences</th>
<th>(p&lt;.05)</th>
<th>(p&lt;.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing other people there</td>
<td>Physical rest (R&gt;G)</td>
<td>Escape role overloads (R&gt;G)</td>
</tr>
<tr>
<td>Risk taking</td>
<td></td>
<td>Meeting new people (R&gt;G)</td>
</tr>
<tr>
<td>General learning</td>
<td></td>
<td>Being with similar people (R&gt;G)</td>
</tr>
<tr>
<td>Control power</td>
<td></td>
<td>Tension release (R&gt;G)</td>
</tr>
<tr>
<td>Excitement</td>
<td></td>
<td>Being with friends (R&gt;G)</td>
</tr>
<tr>
<td>Social recognition</td>
<td></td>
<td>Slowing down mentally (R&gt;G)</td>
</tr>
<tr>
<td>Skill development</td>
<td></td>
<td>Escape daily routine (R&gt;G)</td>
</tr>
<tr>
<td>Competence testing</td>
<td></td>
<td>Exploration (R&gt;G)</td>
</tr>
</tbody>
</table>

R=recreation, G= gambling,
R>G, expresses higher ranked mean scores for motivation regarding favorite other recreational activities rather than favorite gambling activities

Examining the recreation access group with regard to the second part of the hypothesis, is there a quantitative difference between motivation for favorite gambling activities and favorite other recreational activities? Eleven motives showed no significant difference between activities. All motives showing significant differences between activities had higher mean levels of importance assigned to other recreational activities rather than gambling activities.
Respondents from Gambling Access Sites

Table 8

Gambling Access Site (N=20)

Favorite Gambling and Favorite Other Recreational Activities

<table>
<thead>
<tr>
<th>Favorite Recreational Activities</th>
<th>N</th>
<th>Percent</th>
<th>Favorite Gambling Activities</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Golf</td>
<td>3</td>
<td>15%</td>
<td>1. Poker</td>
<td>9</td>
<td>45%</td>
</tr>
<tr>
<td>2. Movies</td>
<td>2</td>
<td>10%</td>
<td>2. Craps</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>3. Snow skiing</td>
<td>2</td>
<td>10%</td>
<td>3. Video poker</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>4. Televised sporting events</td>
<td>2</td>
<td>10%</td>
<td>4. Black jack</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>5. Sunbathing</td>
<td>2</td>
<td>10%</td>
<td>5. Race / sports book</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>6. Football</td>
<td>1</td>
<td>5%</td>
<td>6. Slot machines</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>7. Swimming</td>
<td>1</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Reading</td>
<td>1</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Flying light aircraft</td>
<td>1</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Clubbing</td>
<td>1</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Table 9
Gambling Access Site Top Ten Motives
For Participation in Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Favorite Recreation Motives</th>
<th>Mean</th>
<th>Favorite Gambling Motives</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Escape role overloads</td>
<td>3.65</td>
<td>1. Skill development *</td>
<td>4.15</td>
</tr>
<tr>
<td>2. Tension release</td>
<td>3.38</td>
<td>2. Competence testing*</td>
<td>3.88</td>
</tr>
<tr>
<td>5. Exploration *</td>
<td>3.18</td>
<td>5. Excitement *</td>
<td>3.23</td>
</tr>
<tr>
<td>7. Excitement *</td>
<td>3.10</td>
<td>7. Social recognition</td>
<td>2.93</td>
</tr>
<tr>
<td>8. Escape daily routine</td>
<td>3.03</td>
<td>8. Control power</td>
<td>2.92</td>
</tr>
<tr>
<td>9. Being with similar people</td>
<td>2.98</td>
<td>9. Independence</td>
<td>2.90</td>
</tr>
<tr>
<td>10. Autonomy *</td>
<td>2.95</td>
<td>10. Exploration *</td>
<td>2.83</td>
</tr>
</tbody>
</table>

* denotes motive common to both activities (5/10)

Five motives were found to be common between the two activities: skill development, competence testing, exploration, excitement, and autonomy. Escaping role overloads, tension release, slowing down mentally, escaping daily routine, and being with similar people were ranked as more important for favorite other recreation activities (also characterized as, relaxation, passive, or escape motives). Whereas, general learning, reinforcing self-image, social recognition, control power, and independence (active motives) were cited more prevalently for gambling activities.
Table 10

Gambling Access Site Recreational Gamblers

Paired T-tests between Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Nonsignificant differences</th>
<th>(p&lt;.05)</th>
<th>(p&lt;.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing other people</td>
<td>General learning (G&gt;R)</td>
<td>Escape role overloads (R&gt;G)</td>
</tr>
<tr>
<td>Risk taking</td>
<td>Skill development (G&gt;R)</td>
<td>Physical rest (R&gt;G)</td>
</tr>
<tr>
<td>Meeting new people</td>
<td></td>
<td>Tension release (R&gt;G)</td>
</tr>
<tr>
<td>Being with similar people</td>
<td></td>
<td>Slow down mentally (R&gt;G)</td>
</tr>
<tr>
<td>Excitement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social recognition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competence testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being with friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reinforcing self-image</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Escape daily routine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exploration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R=recreation, G=gambling, R>G, expresses higher ranked mean scores for motivation regarding favorite other recreational activities rather than favorite gambling activities
G>R, expresses higher ranked mean scores for motivation regarding favorite gambling activities rather than favorite other recreational activities

13 motives (the highest agreement within the group comparison) showed nonsignificant differences from the gambling access sites. Among the six motives that did show significant differences, those at the (p<.05) were ranked higher in importance for gambling activities (general learning and skill development). Those showing
differences at the ($p<.01$) level of significance ranked as higher in importance for favorite other recreation rather than gambling.

Respondents from Psychology Access Sites

Table 11

Psychology Access Site (N=12)

<table>
<thead>
<tr>
<th>Favorite Gambling and Favorite Other Recreational Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorite Recreational Activities</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>1. Basketball</td>
</tr>
<tr>
<td>2. Football</td>
</tr>
<tr>
<td>3. Gardening</td>
</tr>
<tr>
<td>4. Bowling</td>
</tr>
<tr>
<td>5. Camping</td>
</tr>
<tr>
<td>6. Community Activities</td>
</tr>
<tr>
<td>7. Golf</td>
</tr>
<tr>
<td>8. Shopping</td>
</tr>
<tr>
<td>9. Sight seeing</td>
</tr>
</tbody>
</table>
Table 12

Psychology Access Site Top Ten Motives

For Participation in Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Favorite Recreation Motives</th>
<th>Mean</th>
<th>Favorite Gambling Motives</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Escape role overloads</td>
<td>3.96</td>
<td>1. Excitement *</td>
<td>3.13</td>
</tr>
<tr>
<td>2. Being with friends *</td>
<td>3.87</td>
<td>2. Being with friends *</td>
<td>3.04</td>
</tr>
<tr>
<td>3. Being with similar people</td>
<td>3.75</td>
<td>3. Escape daily routine *</td>
<td>2.96</td>
</tr>
<tr>
<td>4. Escape daily routine *</td>
<td>3.63</td>
<td>4. Observing other people</td>
<td>2.88</td>
</tr>
<tr>
<td>5. Autonomy *</td>
<td>3.50</td>
<td>5. Skill development</td>
<td>2.83</td>
</tr>
<tr>
<td>6. Competence testing *</td>
<td>3.46</td>
<td>6. Physical rest</td>
<td>2.83</td>
</tr>
<tr>
<td>7. Tension release</td>
<td>3.38</td>
<td>7. Independence</td>
<td>2.75</td>
</tr>
<tr>
<td>8. Slow down mentally</td>
<td>3.33</td>
<td>8. Competence testing *</td>
<td>2.71</td>
</tr>
<tr>
<td>10. Excitement *</td>
<td>3.29</td>
<td>10. Slow down mentally</td>
<td>2.67</td>
</tr>
</tbody>
</table>

*denotes motive common to both activities (5/10)

Only half of the top ten motives from the psychology access site (very small N for comparison) were found to be common between the two activities. These included being with friends, escaping daily routine, autonomy, competence testing and excitement.
Table 13
Psychology Access Site Recreational Gamblers

Paired T-tests between Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Nonsignificant differences</th>
<th>(p&lt;.05)</th>
<th>(p&lt;.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing other people</td>
<td>General Learning (R&gt;G)</td>
<td>Escape role overloads (R&gt;G)</td>
</tr>
<tr>
<td>Risk taking</td>
<td>Social recognition (R&gt;G)</td>
<td>Being with similar people (R&gt;G)</td>
</tr>
<tr>
<td>Physical rest</td>
<td>Being with friends (R&gt;G)</td>
<td>Tension release (R&gt;G)</td>
</tr>
<tr>
<td>Control power</td>
<td>Slow down mentally (R&gt;G)</td>
<td></td>
</tr>
<tr>
<td>Meeting new people</td>
<td>Exploration (R&gt;G)</td>
<td></td>
</tr>
</tbody>
</table>

Excitement
Skill development
Competence testing
Autonomy
Reinforcing self-image
Independence
Escape daily routine

R=recreation, G=赌博。
R>G, expresses higher ranked mean scores for motivation regarding favorite other recreational activities rather than favorite gambling activities.

Twelve motives showed nonsignificant differences from the psychology access sites; those eight that did show significant differences at the (p<.05 or p<.01 level) were all ranked higher for favorite other recreation activities than for favorite gambling activities.
Respondents from Email Access Sites

Table 14

Email Access Site (N=43)

Favorite Gambling and Favorite Other Recreational Activities

<table>
<thead>
<tr>
<th>Favorite Recreational Activities</th>
<th>N</th>
<th>Percent</th>
<th>Favorite Gambling Activities</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Golf</td>
<td>4</td>
<td>9.3%</td>
<td>1. Blackjack</td>
<td>11</td>
<td>25.6%</td>
</tr>
<tr>
<td>2. Baseball (softball)</td>
<td>3</td>
<td>7%</td>
<td>2. Craps</td>
<td>7</td>
<td>16.3%</td>
</tr>
<tr>
<td>3. Fishing</td>
<td>2</td>
<td>4.7%</td>
<td>3. Lottery</td>
<td>7</td>
<td>16.3%</td>
</tr>
<tr>
<td>4. Football</td>
<td>2</td>
<td>4.7%</td>
<td>4. Poker</td>
<td>7</td>
<td>16.3%</td>
</tr>
<tr>
<td>5. Movies</td>
<td>2</td>
<td>4.7%</td>
<td>5. Slot machines</td>
<td>5</td>
<td>11.6%</td>
</tr>
<tr>
<td>7. Televised sporting events</td>
<td>2</td>
<td>4.7%</td>
<td>7. Bets with friends</td>
<td>2</td>
<td>4.7%</td>
</tr>
<tr>
<td>8. Video games</td>
<td>2</td>
<td>4.7%</td>
<td>8. Video poker</td>
<td>1</td>
<td>2.3%</td>
</tr>
<tr>
<td>9. Reading</td>
<td>2</td>
<td>4.7%</td>
<td>9. Bridge</td>
<td>1</td>
<td>2.3%</td>
</tr>
<tr>
<td>10. Camping</td>
<td>1</td>
<td>2.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 15

Email Access Site Top Ten Motives

For Participation in Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Favorite Recreation Motives</th>
<th>Mean</th>
<th>Favorite Gambling Motives</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Skill development *</td>
<td>3.33</td>
<td>1. Skill development *</td>
<td>3.27</td>
</tr>
<tr>
<td>2. Tension release</td>
<td>3.29</td>
<td>2. Excitement *</td>
<td>3.12</td>
</tr>
<tr>
<td>3. Escape role overloads</td>
<td>3.29</td>
<td>3. Autonomy</td>
<td>2.85</td>
</tr>
<tr>
<td>5. Being with friends *</td>
<td>3.02</td>
<td>5. Competence testing *</td>
<td>2.77</td>
</tr>
<tr>
<td>6. Competence testing *</td>
<td>3.02</td>
<td>6. Being with similar people *</td>
<td>2.66</td>
</tr>
<tr>
<td>7. Slow down mentally</td>
<td>2.99</td>
<td>7. Escape daily routine *</td>
<td>2.65</td>
</tr>
<tr>
<td>8. Being with similar people *</td>
<td>2.95</td>
<td>8. Control power</td>
<td>2.55</td>
</tr>
<tr>
<td>9. Escape daily routine *</td>
<td>2.80</td>
<td>9. General learning *</td>
<td>2.52</td>
</tr>
<tr>
<td>10. General learning *</td>
<td>2.79</td>
<td>10. Risk taking</td>
<td>2.49</td>
</tr>
</tbody>
</table>

* denotes motive common to both activities (7/10)

Seven motives were found to be common between the two activities. Tension release, escape role overloads and slowing down mentally (escape motives) were ranked as more important for favorite other recreation activities, whereas autonomy, control power and risk taking (action motives) were cited more prevalently for gambling activities.
Table 16

Email Access Site Recreational Gamblers

Paired T-tests between Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Nonsignificant differences</th>
<th>(p&lt;.05)</th>
<th>(p&lt;.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing other people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meeting new people (R&gt;G)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Escape role overloads (R&gt;G)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk taking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reinforcing self-image (R&gt;G)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tension release (R&gt;G)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical rest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control power</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being with similar people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excitement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skill development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competence testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being with friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Escape daily routine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R=recreation, G=gambling,
R>G, expresses higher ranked mean scores for motivation regarding favorite other recreational activities rather than favorite gambling activities

Thirteen motives showed nonsignificant differences from the email access sites, those seven that did show significant differences at the ($p<.05$ or $p<.01$ level) were all ranked higher for favorite other recreation activities than for favorite gambling activities.

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Games of Skill vs. Games of Chance Analysis

To further explore the current data, it was split in a manner to reflect those who play gambling games of skill vs. those who play games of chance (Chantai & Vallerand, 1996). Please refer to tables 17 and 18 for those who played games of skill and tables 19 and 20 for those who played games of chance. To form groups, eight participants who chose “betting with friends” were initially eliminated from analysis due to the unknown nature of their gambling activities (N=133). Second, those choosing “other, please specify” (N=3) as their favorite gambling game were examined individually and included in the skill group as their choices reflected competitive card games and shooting pool. Also included in games of skill were poker, blackjack, and race / sports book activities (N=70). Chance activities include slot machines, video poker, other video machines, bingo, craps, keno, and the lottery (N=55). In accordance with the original research question, data was examined for the qualitative and quantitative differences that might exist between motives for favorite gambling activities and favorite other recreation activities. The first part of the hypothesis asks is there a qualitative difference between favorite gambling and favorite other recreational activities among skill or chance gamblers? The qualitative part of the hypothesis is addressed in tables 17 and 19. The second part of the hypothesis asks is there a quantitative difference between favorite gambling and favorite other recreational activities among skill or chance gamblers? The quantitative results are illustrated in tables 18 and 20.
Table 17

Games of Skill Players Top Ten Motives

For Participating in Favorite Gambling and Favorite Other Recreational Activities

<table>
<thead>
<tr>
<th>Favorite Recreation Motives</th>
<th>Mean</th>
<th>Favorite Gambling Motives</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Skill development*</td>
<td>3.94</td>
<td>1. Skill development*</td>
<td>3.50</td>
</tr>
<tr>
<td>2. Competence testing*</td>
<td>3.53</td>
<td>2. Being with similar people</td>
<td>3.36</td>
</tr>
<tr>
<td>3. Autonomy*</td>
<td>3.18</td>
<td>3. Competence testing*</td>
<td>3.34</td>
</tr>
<tr>
<td>5. Reinforcing self-image*</td>
<td>3.00</td>
<td>5. Being with friends*</td>
<td>3.31</td>
</tr>
<tr>
<td>6. General learning</td>
<td>2.97</td>
<td>6. Excitement*</td>
<td>3.21</td>
</tr>
<tr>
<td>7. Control power</td>
<td>2.92</td>
<td>7. Tension release</td>
<td>3.19</td>
</tr>
<tr>
<td>8. Being with friends*</td>
<td>2.74</td>
<td>8. Exploration*</td>
<td>2.98</td>
</tr>
<tr>
<td>10. Observing other people</td>
<td>2.66</td>
<td>10. Autonomy*</td>
<td>2.95</td>
</tr>
</tbody>
</table>

* denotes motive common to both activities (7/10)

Seven motives were found to be common between the two activities. Tension release, escape role overloads and slowing down mentally (passive or escape motives) were ranked as more important for favorite other recreation activities, whereas autonomy, control power and risk taking (more action oriented motives) were cited more prevalently for gambling activities.
Recreational gamblers who play games of Skill (N=55)

Paired T-tests between Favorite Gambling and Favorite Other Recreational Activities

<table>
<thead>
<tr>
<th>Nonsignificant differences</th>
<th>(p&lt;.05)</th>
<th>(p&lt;.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing other people</td>
<td>Physical rest (R&gt;G)</td>
<td>Escape role overloads (R&gt;G)</td>
</tr>
<tr>
<td>Risk taking</td>
<td>Skill development (G&gt;R)</td>
<td>Meeting new people (R&gt;G)</td>
</tr>
<tr>
<td>General learning</td>
<td></td>
<td>Being with similar people (R&gt;G)</td>
</tr>
<tr>
<td>Control power</td>
<td></td>
<td>Tension release (R&gt;G)</td>
</tr>
<tr>
<td>Excitement</td>
<td></td>
<td>Being with friends (R&gt;G)</td>
</tr>
<tr>
<td>Social recognition</td>
<td></td>
<td>Slow down mentally (R&gt;G)</td>
</tr>
<tr>
<td>Competence testing</td>
<td></td>
<td>Escape daily routine (R&gt;G)</td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td>Exploration (R&gt;G)</td>
</tr>
<tr>
<td>Reinforcing self-image</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R=recreation, G=gambling.
R>G, expresses higher ranked mean scores for motivation regarding favorite other recreational activities rather than favorite gambling activities.
G>R, expresses higher ranked mean scores for motivation regarding favorite gambling activities rather than other favorite recreational activities.

Ten motives showed nonsignificant differences from the games of skill group. As the one significant difference at the (p<.05), skill development ranked higher in importance for gambling activities. Whereas, all other significant differences ranked higher in importance for recreational activities rather than favorite gambling activities.
Table 19

Games of Chance Players Top Ten Motives Top Ten Motives
For Participating in Favorite Gambling and Favorite Other Recreational activities

<table>
<thead>
<tr>
<th>Favorite Recreation Motives</th>
<th>Mean</th>
<th>Favorite Gambling Motives</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Escape role overloads*</td>
<td>3.50</td>
<td>1. Excitement*</td>
<td>3.15</td>
</tr>
<tr>
<td>2. Tension release*</td>
<td>3.47</td>
<td>2. Escape daily routine*</td>
<td>3.04</td>
</tr>
<tr>
<td>3. Escape daily routine*</td>
<td>3.28</td>
<td>3. Being with friends*</td>
<td>2.96</td>
</tr>
<tr>
<td>5. Excitement*</td>
<td>3.15</td>
<td>5. Autonomy*</td>
<td>2.77</td>
</tr>
<tr>
<td>6. Slow down mentally*</td>
<td>3.11</td>
<td>6. Tension release*</td>
<td>2.74</td>
</tr>
<tr>
<td>7. Being with similar people*</td>
<td>3.10</td>
<td>7. Escape role overloads*</td>
<td>2.69</td>
</tr>
<tr>
<td>8. Autonomy*</td>
<td>3.06</td>
<td>8. Being with similar people*</td>
<td>2.68</td>
</tr>
<tr>
<td>10. Skill development*</td>
<td>3.02</td>
<td>10. Slow down mentally*</td>
<td>2.67</td>
</tr>
</tbody>
</table>

* denotes motive common to both activities, (9/10)

Nine motives (the highest agreement within the group comparison, and the highest agreement found in this study) showed 90% common motives between favorite gambling and favorite other recreation activities.
Table 20

Recreational Gamblers who Play Games of Chance (N=70)

Paired T-tests between Favorite Gambling and Other Favorite Recreational Activities

<table>
<thead>
<tr>
<th>Nonsignificant differences</th>
<th>(p&lt;.05)</th>
<th>(p&lt;.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing other people</td>
<td>Risk taking (G&gt;R)</td>
<td>Escape role overloads (R&gt;G)</td>
</tr>
<tr>
<td>Physical rest</td>
<td>Meeting new people (R&gt;G)</td>
<td>General learning (R&gt;G)</td>
</tr>
<tr>
<td>Control power</td>
<td>Being with similar people (G&gt;R)</td>
<td>Tension release (R&gt;G)</td>
</tr>
<tr>
<td>Excitement</td>
<td></td>
<td>Slow down mentally (R&gt;G)</td>
</tr>
<tr>
<td>Social recognition</td>
<td></td>
<td>Exploration (R&gt;G)</td>
</tr>
<tr>
<td>Skill development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competence testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being with friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reinforcing self-image</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Escape daily routine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R=recreation, G=gambling.
R>G, expresses higher ranked mean scores for motivation regarding favorite other recreational activities rather than favorite gambling activities.
G>R, expresses higher ranked mean scores for motivation regarding favorite gambling activities rather than other favorite recreational activities.

Twelve motives showed nonsignificant differences within the games of chance group.

Of the three significant differences at the (p<.05) risk taking and being with similar people were ranked higher in importance for gambling activities. Whereas, all other significant differences ranked higher in importance for recreational activities rather than favorite gambling activities.
Incidental findings

There was a significant correlation between past year continuous gambling scores on the NODS and one’s perception of beginner’s luck the first time they had gambled (N=307, \( \rho = .14, p < .05 \)). This finding supports cited by Knapp (1997) that those who perceived themselves to have had beginner’s luck at gambling were positively correlated with those scoring higher on gambling pathology screens. The primary reason cited by the sample for gambling was entertainment (N=118, 79%) which is also consistent with prior research (e.g. Custer, Meeland, & Krug, 1984).
CHAPTER 5

DISCUSSION

Hypothesis Test

Seven common motives were found in this study for recreational gamblers (N=133) top ten reasons for participating in both favorite gambling and favorite other recreation activities. The motives common among activities included: skill development, being with friends, being with similar people, excitement, competence testing, autonomy, and escaping from daily routines. These motives (70%) can be assumed to be of similar or equal in importance (or unimportance) across activities. Therefore, gambling can be considered a recreational activity for the majority of participants.

Recreational gamblers cited escaping role overloads, tension release, and slowing down mentally more often for their recreational activities. They also cited general learning, reinforcing self-image, and control power more often for their gambling activities. In the overall sample, risk taking ranked higher for favorite gambling as opposed to favorite other recreational activities (p<.05). There were no significant differences cited between activities for: observing the other people there, general learning, control power, excitement, skill development, competence testing, autonomy, reinforcing self-image, and independence.

Prior research by Platz (1999) also showed seven of the top ten motives cited by college student recreational gamblers (35% of the total sample) as common to both their
gambling and other recreational activities. Common motives included winning, exploration, excitement, being with friends, being with similar people, escaping daily routine, and meeting new people. Winning was subsequently dropped from further Platz gambling analyses as it did not discriminate between gamblers. Research showed that all gamblers wanted to win. In the paper and pencil college sample, all motives for both recreational and pathological gambling were chosen by subject pool participants as having higher mean motivation for recreational rather than gambling activities (Platz, 1999).

Regarding generalization of results; excitement, being with friends, being with similar people, autonomy, and escaping daily routines each emerged as a common motivation across studies and between activities when comparing the two diverse samples. There were 7 common motives in each study, comparing the two studies, 5 of these motives remained the same. Both samples of college students and Internet users are considered drawn from special [unique] populations (Shaffer, Hall, and Vander Bilt, 1997). This is contrary to previous results found by Platz with college students (1999) in that no gambling activities in that study were ever found to rank higher in motivation than other recreation activities. Escaping role overloads, physical rest, meeting new people, being with similar people, tension release, being with friends, slowing down mentally, escaping daily routine, and exploration were found significant at the $p<.01$ level with favorite other recreation activities being ranked higher in motivational importance than favorite gambling activities. This is the traditional direction of significant findings by Platz (1999).
In the overall sample of this study, REP motives were evenly matched on the number that scored significantly different at the $p<.01$ level and those that did not show significant differences with regard to motivation between gambling and recreational activities.

Other Analyses

_Different Access Sites_

Among the four group access site split, golf was the only favorite other recreational activity that was cited by all groups, while blackjack and race / sports book were the only common gambling activities across groups. Among the top ten motives cited by the four groups for participating in their favorite gambling vs. favorite other recreational activities, excitement, tension release and competence testing were cited by all four groups. Also across the four groups nonsignificant common motives included excitement and competence testing. Tension release was found common among groups at the $p<.01$ level with higher means reflecting higher importance to favorite other recreational activities.

In the access sites group analysis, specifically within the email access site group, the motives of general learning, and skill development were ranked higher for favorite gambling activities than for favorite other recreational activities. This is however consistent with prior research with other populations (e.g. Coyle & Kinney, 1990; compulsive gamblers). Regarding the limited generalization of results; excitement, being with friends, being with similar people, and escaping daily routines each emerged as a
common motivation across studies and between activities when comparing college students taking the paper and pencil version of the test and Internet respondents. Thirteen motives (the highest qualitative agreement within the access site group comparison) showed nonsignificant differences from the gambling access sites. Among the seven motives that did show significant differences, those at the \( p < .05 \) were ranked higher in importance for gambling activities (general learning and skill development). Whereas, those showing differences at the \( p < .01 \) level of significance were consistent with most other analyses within this study, such that recreation was valued higher than gambling with regard to REP motives.

Other Analyses

Games of Skill vs. Games of Chance

Games of chance and their respective recreational activities favored escape motives. The research hypothesis bears out particularly well in the skill vs. chance analysis, such that people who gamble for reasons of escape, also want escape in their leisure. Within the players of chance games group, 90% showed common motives between favorite gambling and favorite other recreation activities (the highest qualitative agreement between activities found in this study). The chance group cited four social recreational gambling motives (which are not reflected in the skill category): escaping daily routine, being with friends, escaping role overloads, and being with similar people. The physiological motives of tension release and slowing down mentally also reflect the tone of the social recreational motives cited above. When comparing chance vs. skill gambling
games in this analysis, people gambling games of chance are gambling for the escape and social functions which parallel their motives for favorite other recreation activities.

Games of skill and their respective recreational activities favored action motives. For example, there was 70% agreement between cited motives including, skill development, competence testing, autonomy, excitement, reinforcing self-image, being with friends, and independence. Tension release, escape role overloads and slowing down mentally (escape and relaxation motives) were ranked as more important for favorite other recreation activities, whereas autonomy, control power and risk taking (more active motives) were cited more prevalently for gambling activities. Of the one significant difference at the level ($p<.05$) skill development ranked higher in importance for gambling activities, whereas all other significant differences were consistent with other analysis, such that motives for favorite other recreational activities ranked higher in importance than favorite gambling activities.

Regarding generalization of results, this sample was compared to a prior sample of college students. Excitement, being with friends, being with similar people, and escaping daily routines each emerged as a common motivation across studies and between activities when comparing the two diverse samples. There are accepted limits to how far you can generalize beyond any special population, but if a broader understanding is sought, future participants may be targeted and recruited to achieve large enough groups of individual activities to make statistical comparison between them and their motivation for engaging possible.
Limitations of the study

Problems with self-report instruments are well known, however with certain sensitive topics, they may be the best investigative tools. An issue with gambling survey instruments is the fact that they are extremely face valid methods of gathering sensitive data. They remain a popular research tool among gambling studies (along with assured confidentiality or anonymity) because of the impracticality of verifying the requested information. It is therefore an accepted trade-off or sacrifice in a research design measuring a construct that is not easily observed under controlled conditions. With any face valid self-report measure is the concern of how socially desirable responding effects results.

Platz and Hoefer (1999) investigated the nature and extent of socially desirable responding among college students (N=297) in a prior gambling study involving students under anonymous conditions. Instruments included the SOGS (Lesieur & Blume, 1987), the REP dimensions (Driver, 1983) for both recreational and gambling activities, and the Paulhus Deception Scales (BIDR-6; Paulhus, 1994). The BIDR-6 separates socially desirable responding into two orthogonal types; impression management, in which the individual knowingly responds to questions that place them in a favorable light (lying), and self-deceptive enhancement, that refers to a form of self-enhancing attributions believed to be true by the subject and that do not reflect a form of test bias. Level of gambling behavior was unrelated to impression management scores in their study.

Lack of control over the testing situation is a concern of true experimental researchers (those manipulating variables) with regard to the Internet (Mush & Reips, 2000). There may be motivational confounding, because psychological states can vary greatly

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compared to a more controlled experiment (Murray & Fisher, 2002; Reips, 2000). Motivational variability may lead to response bias or substantial missing data. This has also been a concern of traditionally administered studies. To attempt to correct for this type of bias, data can be screened for response biases (e.g. selecting the same answer repeatedly on a Likert-type scale), and for substantial missing data, so that these cases may be omitted before analysis (Gosling et al., 2004). Both of these data cleaning techniques were employed in this study. The more free a participant feels to drop out at any time, the less motivational confounding is likely to occur (Gosling et al.).

Half of the respondents in this study provided a substantial amount of data, although they didn’t finish the entire study. It is understandable how academic research can become arduous to the general public. The first public encounter with this survey brought the potential participant an 8000 character Intuitional Review Board dictated Informed Consent Form. This was followed by 144 variables used to collect data. Many lost interest at specific points in the study. It required a substantial commitment of personal time without remuneration, in other words, just for the sake of the scientific research.

Sample bias may also a problem when targeting special populations on the Internet because not everyone has access to the Internet (Mehta & Sivadas, 1995; Kraut et al., 2004). Again, one has to be vigilant when generalizing from results of a convenience sample. For example, when examining data from hidden populations that are invariably hard to find, (e.g. lesbian clients of lesbian feminist therapists, the homeless, or illegal immigrants) one must realize that the data represents only the often small and skewed sample it was drawn from (Quartaro & Spier, 2002). We can not always know how respondents differ from non-respondents, although the Internet makes it easier to tell the
difference as to who completed vs. who did not, as with this study. To deal with the matter of self-selection, examination of multiple site entry may help to estimate its influence on results (Reips, 2000; Subramanian, 1997). By offering links to the study from several different locations on the Web, participants from different sources can be compared. If divergent entry paths lead to the same type of responding, self-selection is probably not biasing the data (Reips, 2000; Gosling et al., 2004). As reported earlier in the multivariate site analysis, this study were spared sample bias as we employed the suggestions of Reips (2000), and Subramanian (1997) about using multiple site entry.

Also of concern in Internet research is multiple responding by participants (Murray & Fisher, 2002; Nancarrow et al., 2001; Pasveer & Ellard, 1998; Schmidt, 1997). The least invasive way to check for multiple submissions is to check IP addresses to see if multiple submissions from the same IP address were received during close proximity of time. IP address were collected and examined for multiple responding in this study. Duplicate data may be identified by examining response patterns or demographics and then deleted. Two respondents were eliminated for response bias, 5 for inflammatory data. Studies giving immediate feedback, or offering compensation, or the chance of winning a prize, are more likely than others to need to be vigilant in guarding against multiple submissions (e.g. Birnbaum, 1999). IP addresses were collected and examined in this study, and multiple responding was not an appreciable issue.

Conclusions, Implications, and Suggestions for Further Research

Christensen (2004) does not believe reasons for specific gambling activities (e.g. slot play) are comparable to those of specific other recreational activities (e.g. a night at the
movies). At this time, he may be right in the fact that much motivational evidence is lacking. Time will tell as more evidence accumulates. Also, those studying pathological gambling are beginning to see the utility of cognitive / motivational approaches to treating the behavior (Tavares, Zilberman, & el-Guebaly, 2003). Implications of this study would agree with those legislating gambling as a recreational or non harmful way to raise economic revenue.

Future research using motivational approaches to examine recreational gambling behavior need to initiate a more empirical focus on asking recreational gamblers for detailed and diverse information about why they gamble and how important it is in their recreation hierarchy. However, as interest in this area of research and subsequent data sets continue to grow, individual activities with similar motivational patterns may emerge. Future participants may be targeted and recruited to achieve large enough groups of individuals engaging in specific activities to make statistical comparison between activities and their motivation for engaging in them possible. With the Internet as a tool of research, large enough groups of cross-cultural participants may be recruited to examine similarities and differences internationally. This would add richness to the literature that at this time is very limited. Also of interest would be the motivations of people choosing not to gamble. This may also assist clinicians studying more prominent gambling involvement.

In a more global view, Blaszczynski (2000) offers the perspective that research on gambling behavior should incorporate all available theories where applicable. He believes that biological, cognitive, developmental, and environmental learning, as well as personality variables should all be included when examining gambling behaviors. It is
clear from the research presented here that all theories contribute a piece of the puzzle. Gambling behavior, as with many psychological questions, has many parts and points of view that contribute to the whole.
APPENDIX I

ACCESSSED WEBSITES

List of posted websites and newsgroups, last accessed from September 9th, 2005 through September 30th, 2005.

http://games.groups.yahoo.com/group/bingoonline/
http://games.groups.yahoo.com/group/bingoplayersof2000/
http://games.groups.yahoo.com/group/b12b12ihavebingo/
http://games.groups.yahoo.com/group/thebingopalace/
http://games.groups.yahoo.com/group/olivchromo/
http://games.groups.yahoo.com/group/Bingo_Roomies/
http://games.groups.yahoo.com/group/bingoparty/
http://games.groups.yahoo.com/group/bingold2003/
http://games.groups.yahoo.com/group/hottestbingo
http://games.groups.yahoo.com/group/bingochat/
http://games.groups.yahoo.com/group/abingoraffleclub/
http://games.groups.yahoo.com/group/goldlottery
http://games.groups.yahoo.com/group/bingorus
http://games.groups.yahoo.com/group/thugsofbingo/
http://games.groups.yahoo.com/group/SubbieKanDoo/
http://games.groups.yahoo.com/group/bingopartyn
http://games.groups.yahoo.com/group/bjtournament
http://games.groups.yahoo.com/group/BlackjackPlayers
http://games.groups.yahoo.com/group/blackjackstrategy
http://games.groups.yahoo.com/group/AFUNCANGROUP
http://games.groups.yahoo.com/group/yCanasta
http://games.groups.yahoo.com/group/canasta
http://games.groups.yahoo.com/group/queeniescanastaaddictsleague
http://games.groups.yahoo.com/group/canastahallofshame2
http://games.groups.yahoo.com/group/canastafortall
http://games.groups.yahoo.com/group/nasta_freaks
http://games.groups.yahoo.com/group/Canastamania
http://games.groups.yahoo.com/group/funfairtourney
http://games.groups.yahoo.com/group/purrrfeci0scanastahaven
http://games.groups.yahoo.com/group/paradise_league_canasta
http://games.groups.yahoo.com/group/canastalover
http://games.groups.yahoo.com/group/therealcanastauruguay
http://games.groups.yahoo.com/group/friendlycanastacuba
http://games.groups.yahoo.com/group/canastaholics
http://games.groups.yahoo.com/group/addictedtocanasta
http://games.groups.yahoo.com/group/mozzacans
http://games.groups.yahoo.com/group/vcribbage
http://games.groups.yahoo.com/group/climbthatladder
http://games.groups.yahoo.com/group/C9wingnuts
http://games.groups.yahoo.com/group/elitecribbage
http://games.groups.yahoo.com/group/cribforfun
http://games.groups.yahoo.com/group/laddermonkeycribbage
http://games.groups.yahoo.com/group/bobsterscribclub
http://games.groups.yahoo.com/group/thetourneyclub
http://games.groups.yahoo.com/group/myleague
http://games.groups.yahoo.com/group/cribpals
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