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A SOCIAL COGNITIVE APPROACH TOWARDS UNDERSTANDING THE EFFECTS
OF POPULAR POKER TELEVISION SHOWS ON COLLEGE STUDENTS

by

MARC LONDO
B.S. University of Houston, 2001

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Arts
in the Nicholson School of Communication
in the College of Arts and Sciences
at the University of Central Florida
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ABSTRACT

Tournament poker shows have become a leading ratings draw on American television. Since ESPN and the Travel Channel began airing their innovative poker shows in 2003, the game has reached a new following, particularly among college students. There are unique and psychologically significant factors that characterize the college population that make students particularly receptive to popular characterizations in media. This study investigates the potential exacerbating effect that these widely popular poker television shows have on the gambling behavior of college students. 444 college students completed a survey designed to assess gratifications sought through media along with measures of attitudes, gambling behavior, and social systems. Using Social Cognitive Theory as a framework of influence, exposure to these shows – ranging from the individual student to the overall college environment – was assessed and evaluated. Results indicated that student gambling is strongly correlated to viewership of poker shows, particularly among younger students. This was especially seen among students who utilized the online gambling option. Gambling behavior of peers wasn't shown to be a strong influence for student gambling. However, excitement was shown to be a strong variable that should be looked at closer.

This thesis is dedicated to my family and friends, without whom I wouldn't be the person I am today.

To my parents, Bert and Marcia Londo, who continue to offer their strength and guidance while I strive to live up to the example they have set for me, a very special thank you for giving me the vision, to set high goals for myself, and resolve to keep reaching for my dreams.

To my older brother and sisters, who have all attained degrees of their own, many thanks for giving me higher expectations by which to live my life. Your guidance has helped me realize the importance of an education, while giving me a better understanding of my own responsibilities as a big brother. For my younger sisters, Kelli and Hayley, special thanks for always asking about my thesis. You have both changed my life in so many ways.

For the friends I have made while at UCF, thank you for enriching my education with your insights and support. A special thanks to Diana Acevedo and Juliana Llano for their encouragement while I was going through the process of writing this thesis. Their enthusiasm and interest in my progression helped me maintain my own interest as I progressed in this study.

Last but not least, special thanks to Alvin, my first roommate at UCF, who inspired the subject of this thesis. If I wouldn't have lost so many quarters and dimes, in our one and only time we ever played poker together, I'm not sure what I would have written my thesis about.

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I would also like to express sincere gratitude to Dr. Dan Shaver for his guidance throughout this study. He showed me step-by-step how to take an idea and thoroughly study each aspect of it. His advice has allowed me to grow as a researcher.

Special thanks to Dr. Andrea Scott and Dr. Sam Lawrence for their added perspectives and help with editing this study. It was truly a team effort.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Student gambling is a wide-spread social behavior on college campuses. Student
newspapers across the country have debated ways to curb this growing problem. However,
very little of the public debate has been based on scientific evidence about the causes of
student gambling because there have been few studies addressing the issue (Neighbors, 2002;
Shaffer et al., 1999). This lack of understanding about the causes of student gambling is
significant because of the negative effects shown to accompany such behavior. Consequences
include increased rates of suicide and attempted suicide (Bland, Newman, Orn, & Stebelsky,
1993; Frank, Lester, & Wexler, 1991), disruption of work and educational endeavors,
criminal arrests and other legal issues (Bland et al., 1993; Rosenthal & Lorenz, 1992),
financial distress and familial disruption (Lesieur, 1979; Lorenz & Shuttlesworth, 1983).
Student gambling has also been positively correlated with anxiety, depression, smoking,
eating disorders, alcohol use and other drug use (Buchta, 1995; Griffiths & Sutherland, 1998;
Lesieur et al., 1991; Miller & Westermeyer, 1996; Phillips, Welty, & Smith, 1997; Specker,
Carlson, Edmonson, Johnson, & Marcotte, 1996).

That student gambling has a significant impact on other social behaviors is not
surprising considering the many risk factors in this population. Research has shown that
students experience more stress-related psychological and emotional problems while enrolled
in institutions of higher education (Bishop, Bauer, & Becker 1998; Murphy & Archer, 1996;
Reisburg, 2000). These predispositions make students more susceptible to the attention
grabbing media content that is directed towards this highly coveted demographic. In a society
that glorifies ingenuity and risk taking, it is reasonable that college students may be more
drawn to media content that promotes problematic gambling behavior. A 2002 study

conducted at the University of Washington found that college students were three times more

likely to be at risk for gambling problems than the general population (Bergeson, 2002).

Given the wide-range of at-risk behaviors – including the heavy use of alcohol (Windle,

1991) - during this period, and since the legal age for gambling is 18 in many states, the

college years may represent a pronounced risk for developing gambling problems.

Within a year of the University of Washington study, media consumption of

gambling-related content increased significantly. In 2003, ESPN and the Travel Channel

debuted their new poker-based reality television shows. These shows were an instant hit,

drawing very high ratings for a game that was once considered unwatchable. The primary

demographic responsible for these high rating increases has been the 18- to 34-year age

range; including a substantial portion of the 18-25 male demographic (Wilstein, 2005). These

rating increases have mirrored a surge of interest in playing the game, both socially and

online, which reaches across boundaries and has been especially high among the college

population (Carlson, 2005). Media analysts have credited this poker obsession to the addition

of a small camera, located at each player's table position (to catch a glimpse of each player's

hand). This modification effectively brought viewers into the inner workings of the game

(Tyrangiel, 2003), and turned inconspicuous back-room card players into television stars.

The subsequent rise in popularity of poker on college campuses has led to speculation

that excessive gambling behavior among college students may result from the identification

viewers' form with the characters they see in the poker broadcasts (Carlson, 2005; Saraceno,

2005). Bandura's (1986) Social Cognitive Theory (SCT) provides an all-encompassing

foundation for understanding how identification with media may produce modeling and

imitation through the vicarious perspectives that these shows provide into the consequences

of future behavior. SCT is a derivative of Social Learning Theory (SLT) and was adapted to account for such environmental influences that SLT could not (such as identification with television characters). According to SCT, these behavioral changes result from a reciprocal interaction between one's behavior, one's environment, and one's personal influences. This would suggest that college students may be highly susceptible to the influence of popular media both directly and indirectly through their environment.

The impact of popular media on one's personal influences is best measured using a contemporary uses and gratifications framework. According to Palmgreen and Rayburn (1984), personal influences are a reflection of ones beliefs and evaluations that are manifested in gratifications sought through media. It is through these gratifications sought that media exposure impacts attitude. Whether or not these gratifications are met drive the individual's perceptions, further motivating them to use the media to advance their gratification evaluations.

For college students who watch televised poker, the media's influence on their personal perceptions is significant because it precipitates an attitude shift in which their reasons for watching these shows can change from entertainment to an instruction in the finer points of gambling. This shift is more likely to take place when viewers feel a higher degree of identification with the shows. Cohen (2001) defined identification as the mechanism through which viewers experience reception and interpretation of media content from the inside, as if the events were happening to them. This change in reception can be facilitated in many ways, ranging from a production feature that allows the audience member to adopt the character's perspective (Wilson, 1993), to an audience member's fondness towards a specific character (Cohen, 1999), or a realization that an audience member shares something in

common with a character (Maccoby & Wilson, 1957). When considering identification as a primary gratification of poker viewership, it is important to recognize the entertainment value of the shows and the seductive images of the gamblers who bet thousands of dollars on every hand. Viewers are more likely to form relationships with television characters they view as appealing (Bandura, 1994).

Social Comparison Theory offers a compatible identification-based explanation for why many students may be drawn-in by the images of fast, easy-money, that these shows propagate. According to Festinger (1954), people look to images they perceive as attainable and make comparisons among themselves, others, and the idealized images. Since a great number of amateur and college-age players are winning large sums of money in televised poker tournaments, many students may view poker as a realistic career choice, and become motivated to achieve that goal. These are considered upward comparisons because the poker players serve as role models, teaching and motivating the viewing audience that similar success is within their reach.

The success of numerous amateur online players in televised tournaments can be directly attributed to a billion dollar poker industry online. Online poker has changed the game because it allows amateurs to gain experience by playing an unlimited amount of hands at all hours of the day. Increased availability online may be especially troubling for college students since the omnipresent access provided through the internet opens them up to 24 hour temptation. Activation Theory suggests that where there is a moderate to heavy viewership of a particular television genre or show, there will be a moderate supplemental increase in other media forms related to that show or type of show. That would seem to suggest that the success of televised poker may be inextricably linked to the booming online poker business.

The ramifications of that may be significant for college students, because these shows could serve to indoctrinate them into the limitless gambling opportunities over the internet.

Previous studies (Gupta & Derevensky, 1997; Hardoon & Derevensky, 2001) have shown Bandura's model of social learning to be a viable explanation for the acquisition and maintenance of gambling behavior among the young. However, there is a lack of literature regarding the antecedents of student gambling (Shaffer et al., 1999). Most current research is based on prevalence rates and demographics that preceded the televised poker phenomenon. Given the significant change in the media environment, the literature regarding this area appears to be largely underdeveloped.

In a media environment that keeps reinventing itself, it is crucial for researchers in many divergent fields to stay abreast of the current trends in programming and the impact they have on the attitudes of the public. The purpose of this study is to examine the implications of the media effects generated by changes in content (televised poker) and access (online gambling) on the behavior of college students. According to Platz (2001), interventions designed to deal with problem gambling may be most effective when focused on college age populations (i.e. before pathological patterns are firmly established). The questions addressed in this study may provide relevant information for addressing public policy issues related to media content and potential public health issues.

Previous Research on College Student Gambling

Most of the research that has addressed student gambling behavior focuses on problem or pathological gamblers. Pathological gamblers are characterized by an irrational impulse to gamble at all costs. Between 4 and 8 percent of college students can be classified

as pathological gamblers, with the rates for males being significantly higher than for females (Lesieur, 1995; Oster & Knapp, 1998; Platz & Millar, 2001; Shaffer, Hall, & Vander Bilt, 1997). Problem gamblers are those whose gambling behavior is seen as harmful but not severe enough to be classified as pathological. College students are a high-risk population for experiencing both pathological and problem gambling disorders, with rates nearly double that of the general population of adults (Lesieur et al., 1991; Neighbors, Lostutter, Larimer & Takushi, 2001; Shaffer et al., 1999; Winters, Bengston, Dorr, & Stinchfield, 1998).

Winters et al., in a 1998 study of Minnesota college students, found that 87 percent of students reported they had gambled in the previous year – more than twice the state estimate for older adults. Another study by Lesieur et al. (1991) concluded that college students are four to eight times more likely to experience a gambling problem. They found that 85 percent of college students in five states had gambled and 23 percent gambled at least once a week. Another 15 percent had experienced gambling-related problems, while 5.5 percent experienced pathological gambling. A Harvard meta-analysis by Shaffer et al. (1997) examined more than 20 studies of college student gambling behavior and concluded that 9.3 percent of college students are probably problem gamblers and 4.7 percent pathological gamblers. Those rates were similar to adolescents but are considerably higher than that of the adult population. Shaffer et al. (1997) concluded that nearly 700,000 college students were addicted to gambling. Oster and Knapp (1998) found that 90 percent of college males and 82 percent of females gambled at least once in the past year, while 33 percent of male college students and about 15 percent of female college students gamble at least once a week. Several other studies have shown that nearly 25 percent of college students gamble at least once a week (Ackerman & Piper, 1996). Ladouceur et al. (1994) found significant gender

6

differences with men (5.7 percent) exceeding women (0.6 percent) at the pathological gambling level. In 2002, Neighbors identified about 15 percent of college students as being at risk for gambling problems. This number was much larger than the general population, which he said runs between three and five percent (Bergeson, 2002).

Most students are able to gamble recreationally without doing serious harm to their emotional well-being. The major factor that separates casual gamblers from problem gamblers are their motives for engaging in gambling activities. A study by Platz (2001), found that casual gamblers had motives for engaging in gambling that were similar to their motives for other recreational activities. Their primary motivations to gamble were socially oriented and included exploration, being with friends, and being with similar people. By comparison, the only motive that problem gamblers rated in their top five motives for both recreational and gambling activity was excitement. Identifying the motivations for gambling among individuals that span the entire continuum is necessary to better understand what differentiates problem from casual gamblers (Lostutter, 2002).

Considering the culture that permeates gambling on college campuses, it is important to acknowledge the issue of student gambling as a whole rather than focus on varying degrees of pathology. It is clear that men who have friends who gamble are more likely to gamble themselves. Social norms represent an essential element in the field of social psychology and are believed by many experts in the field to represent a powerful source of influence on behavior (Berkowitz, 1997; Cialdini, Reno, & Kallgren, 1990; Fishbein & Ajzen, 1975). However, social psychological investigations into gambling behavior have been predominantly focused on cognitive biases, heuristic processing, and control constructs (Larimer & Neighbors, 2003). Virtually no research has examined social influences on

gambling behavior, in spite of the fact that social reasons are the most frequently reported reasons for gambling among college students (Neighbors et al., 2001). The college environment is a composite of complex social interaction extending from the classroom, to student organizations, and students in dorms and university-sponsored housing. Since peers serve as models for their cohorts, simply participating in group behavior promotes the action itself. In studies by Devlin and Peppard (1996), and Frank (1990), college students reported that their friends show the highest rate of problem gambling. LaBrie et al. (2003) found that members of fraternities and sororities were more likely to gamble than non-Greek affiliated college students. Cross (1999) found that 72 percent of athletes gambled.

Certain characteristics of the college population, including the frequency of stress, impulsivity and depression, likely put students at greater risk for irresponsible gambling behavior. Coman, et al. (1997) found stress and anxiety were highly correlated with varying degrees of gambling. Self-reported variables that can contribute to rising stress levels include; academic pressure, work-related problems, interpersonal difficulties, death of loved ones, illnesses, and loss of relationships (Butler, Novy, Gagan, & Gates, 1994).

Lopez-Ibor and Carrasco (1995) found high levels of impulsivity in college populations. Impulsivity has often been observed in the histories of people who develop pathological gambling (Rugle & Melamed, 1993). Depression was also found to be common, particularly during students' initial years in college (Lopez et al., 1986). [In a correlational study] Becona et al. (1996) suggested that depression may actually lead to pathological gambling, which was supported in other studies which showed depression (along with general affective disorders) as being present in a significant number of pathological gamblers (Pope & Jonas, 1986). Since previous studies have found that impulsivity and depression are

common during this period, wouldn't it stand to reason that students may be particularly at risk in an environment where gambling is widely accepted and promoted?

Gambling and the Internet

In 1997, when many studies on gambling were conducted, it was estimated that there were 12 gambling websites (Sheldon, 2002). In 1999, there were between 300 and 400 gambling sites (Wilcox, 1999). A 2003 policy paper by the Illinois Higher Education Center, estimated that there were more than 2,000 gambling websites that take in more than $4 billion annually. In 2005, Websense, Inc, an employee internet management solutions company, placed the number of online gambling sites at 66,000 (Manning, 2005). According to Griffiths (1999, 2000), the increased access and availability to gambling provided by online sites has the potential to encourage excessive gambling behavior. Research evidence in other countries have shown that greater access to gambling leads to an increase not only in the number of regular gamblers but also in the number of problem gamblers (Custer, 1982; Dielman, 1979; Kallick-Kaufmann, 1979; Marcum & Rowen, 1974; Rosecrance, 1985; Skolnick, 1978; Weinstein & Deitch, 1974).

The difference between online gambling and social gambling can be significant. A study by the UK Home Office (1988) found that those who played in groups often exerted social influence on problem gamblers to moderate their behavior. This is noteworthy because most problem gamblers report that at the height of problem gambling, it becomes a solitary activity. According to Griffiths (1999), one of the major influences of technology appears to be a shift from social to asocial forms of gambling.

Online gambling presents various regulatory issues, including use of work-based and school-based computers, electronic cash, and underage access. Since most students have 24 hour access to a personal computer, they have the freedom to gamble at any time, even when their judgment may be impaired by alcohol or stress. College students don't have extensive credit histories, so they may lack judgment about wise use of credit cards. Since no tangible cash is involved, the perception of the value of money is decreased (Griffiths, 2002). Underage access is a major issue that hasn't been adequately addressed. Since many online gambling sites are outside of U.S. jurisdiction, there is very little the government can do to ensure that gamblers are "of age" and, with the use of a credit card, a 17 year-old freshman can easily build up substantial gambling debts in the virtual environment.

Other characteristics of online gambling make it potentially more dangerous for students than social gambling. Features that make online gambling distinct from social gambling, include; anonymity, disinhibition, interactivity, dissociation, event frequency, escape, and convenience (Griffiths, 2003). Anonymity has been shown to provide the student with a greater sense of perceived control over the content, tone, and nature of the online experience (Young et al., 2000), which may furnish the user with a higher degree of comfort that could eventually lead to disinhibition. According to Joinson (1998) the Internet tends to make people less inhibited, an effect that is multiplied because of the interactive nature of the experience. Since the Internet provides a more active form of entertainment, the user's sense of engagement is increased. Increased engagement may lead to a feeling of dissociation – a trance-like state characterized by an apparent loss of time. It is at the stage of dissociation that addictions may start to take hold. The frequency of the behavior, when linked to two other factors – the result (win or loss) and the speed with which the winnings are received

can produce an "operant conditioning" effect that reinforces the act through rewarding the behavior (Moran, 1987). Some players may experience a certain level of escapism through the experience, gaining a subjectively and/or objectively experienced "high". Chasing such a mood-modifying experience is characteristic of addictions (Griffiths, 2003).

The Mainstreaming of Poker

In the summer of 2003, the debuts of ESPN's World Series of Poker (WSOP) and the Travel Channel's World Poker Tour (WPT) drew record numbers of viewers. Steve Lipscomb, the producer of the WPT, was credited with popularizing poker with his idea to imbed a small camera into each player's table position (Tyrangiel, 2003), allowing viewers into the inner workings of the game. The instant success of the new format was a stark contrast to viewer reaction 10 years earlier when ESPN first aired the WSOP without the spy cam.

In 2003, ESPN's WSOP averaged 1,248,000 viewers in its eight-week run (Tyrangiel, 2003), a big jump from 2002 when the same time slot averaged 408,000 viewers. The Travel Channel's WPT experienced equally large gains that season pulling in 844,000 viewers, nearly triple the viewership for the previous year (Tyrangiel, 2003), becoming the highest-rated program on the network (Lapin, 2003).

While the Travel Channel's WPT gets most of the credit for the overnight success of the new genre for their pioneering use of the spy camera, it was ESPN's World Series of Poker that gained the most notoriety in 2003. That year, Chris Moneymaker, an accountant from Tennessee, won the $2.5 million prize by outlasting 839 players. What made it all the more amazing was that Moneymaker won his place in the tournament with a $40 stake in an

amateur online poker site. His Cinderella story drew attention to the game that summer and, along with the added success of numerous other amateur online players in televised poker shows, receives much of the credit for sparking a thriving online poker industry.

According to Miller (2005), it was the underdog appeal, particularly among the college crowd, that brought many to the game, along with the opportunity to make extra money and the compelling image projected by the characters. The popularity of the shows among the 18-25 male demographic made the poker concept appealing to other networks and, in 2004, Bravo introduced The Celebrity Poker Showdown. It was an instant hit, averaging 587,000 adults 18-49 and 620,000 adults 25-54 – while posting increases of 153 percent and 135 percent over the same time slots from the previous year (Larson, 2004). ESPN and the Travel Channel built on the success of the previous year, with the WPT delivering 1.2 million viewers (a 50% increase) and ESPN's WSOP drawing 1.5 million viewers (a 44 percent increase over 2003) (Larson, 2004).

Between 2004 and 2005, the poker genre grew in such popularity that five established cable networks – ESPN, ESPN2, Travel Channel, GSN, and Bravo – now have their own "original" tournament card shows. ESPN went a step further by debuting a new dramatic television series based on the televised poker games (Larson, 2004). The abundance of poker on television has reached such levels that at any time of day, somewhere in the U.S. there is likely to be a poker show on television. Many networks that don't have regular series have begun offering ratings-boosting specials. There are even two new independent networks in the works devoted solely to competitive gaming (Larson, 2004).

While televised poker has continued to make its way to more television sets, the number of people playing the game has risen noticeably. A survey by the Annenberg Public

Policy Center at the University of Pennsylvania in 2003-2004, found an 84 percent increase in weekly card playing among young men between the ages of 14 and 22 (Needham, 2005). Another survey, by the New Jersey Council on Compulsive Gambling, found that the number of compulsive gamblers who bet on card games rose from four percent to 28 percent from 2003 to 2004 (Carlson, 2005).

The increase in online poker playing has been equally significant. According to PokerPulse, a web site that tracks online poker sites, the average daily number of players in the Internet's most frequented poker rooms had increased dramatically, from around 2,400 in 2003 to about 60,000 by early 2005 (Hughlett, 2005). It is estimated that 1 million to 2 million Americans are playing poker online (Benston, 2005), and many of them are college students. Card Player Magazine estimated that on any given night, there are around 50,000 (college) students playing at over 1,800 gambling sites (Urness, 2005). There is even an online tournament, currently in its second year, to crown the best college poker player in the world (Bartlett, 2004).

Media Influences on Student Gamblers

According to Hoffner (1996), identification occurs when the viewer shares a media characters' perspective and vicariously participates in the character's experiences while viewing. The ability to participate vicariously in the experiences of media characters, at times to the point of identity loss, is an important cognitive function and has implications on viewers' perceptions (Eyal & Rubin, 2003). These perceptions direct the viewer through the process of abstract modeling (Bandura, 2001), which allows viewers to not only learn how to act but extract rules governing a specific judgment or situation that was encountered by a

media model. Thus, using the players in the poker broadcasts as a model may provide viewers with a template for how to act when confronted with a similar situation. Erikson (1968) reported that the connection between identification and identity is most pivotal during adolescence when identification shifts from parents to peers and a more stable personal identity is formed. So, while most college students are experiencing life on their own for the first time, their social influences make them more susceptible to media influences. Consequently, peer influence combined with increased access to gambling opportunities, may have a marked effect on gambling attitudes and behavior.

Through identification, audience members experience reception and interpretation of the text from the inside, as if it were happening to them (Cohen, 2001). These associations may create a vicarious experience, which can be manifested in many forms. The vicarious experience capability allow us to encounter things we cannot, or have not yet had the chance to, interact with in person, try on alternative identities, or adopt the goals, feelings, or thoughts imagined to be those of the target of our identification. The result can range from losing oneself in a great story to internalization of the modeled behavior. When identification involves internalization, it is likely that, through repetition of this process, powerful and seductive media images and alternative identities of media characters may produce long-term effects (Cohen, 2001).

It is the camera that provides the viewpoint for the audience and determines the target of audience identification (Flitterman-Lewis, 1987). A commonly used technique in films is for the camera to actually take on the perspective of one of the characters. Perhaps that is why the "pocket cam" was so instrumental in popularizing poker on television. The utilization of such a production feature can lead the audience member to adopt a character's

perspective (Wilson, 1993), facilitate their fondness for a specific character (Cohen, 1999), or lead them to the realization that a similarity exists between them and a certain character (Maccoby & Wilson, 1957). John Saraceno (2004), in his commentary in USA Today, made reference to the growing popularity of the players in the shows, likening their images to that of cult-like pop figures, particularly to impressionable high school and college students.

The influence of media portrayals has previously been observed on college campuses. In 1978, the movie 'Animal House' set box office records. The rowdy college movie, portraying a dysfunctional circle of friends in a fraternity house, captured the imagination of teenagers everywhere as an appealing ideal of what college would be like. At the time, membership in fraternities across the country had reached record low numbers. The counterculture and anti-war protests of the 60's and 70's had labeled Greek life as an arm of the establishment. However, after watching the colorful and somewhat endearing characters stumble through college in their drunken haze, adolescents began to perceive Greek-life as being separate from the establishment. Greek affiliation became identifiable to many as a rite of passage. So much so that in 1983, Newsweek citing a dramatic increase in fraternal memberships, proclaimed "It's Back", meaning "The Rise of Fraternities" (Sirhal, 2000).

Ethnographic audience studies have found that when asked to discuss their reactions to shows, TV viewers often focus on their feelings and reactions to characters, mentioning the strong identification they feel towards them (Liebes & Katz, 1990). In that respect, the larger than life characters that have come to define the TV poker genre serve as the models for those who get caught up in the shows. Identification, according to Wollheim (1974), involves imagining being someone else and embracing their behavior – to the point that we assume their identity, goals, and perspectives. Liebes and Katz (1990) distinguished between

three types of reactions toward characters: liking, being like (similarity), and wanting to be like (modeling).

Social Cognitive Theory

According to Social Cognitive Theory (SCT), identification can produce modeling and imitation because it provides a glimpse of "what if" and these glimpses are powerful predictors of future behavior (Bandura, 1986). Within SCT, behavior is an observable act, and the performance of behavior is determined, to an extent, by the expected outcomes of behavior. These expectations may be formed by direct experience or mediated by vicarious reinforcement through others (LaRose & Eastin, 2004). When learning vicariously through mass media, viewers position themselves as learners trying to pay close attention to the learned behavior and assess the outcomes that follow (Maccoby & Wilson, 1957). These assessments may result in a behavioral imitation of the observed model. Behavioral imitation is often exhibited by people who watch quiz shows when they shout out the answers in that crucial moment of choice. Similarly, the vicarious experience of viewing the hands of the poker players on TV allows viewers the opportunity to learn how to react when confronted by a similar situation.

SCT was developed to explain findings for which Social Learning Theory did not account, such as identification with television personalities (Eyal & Rubin, 2003). Social Learning Theory has been successfully employed in the past (Browne & Brown, 1994; Gupta & Derevensky, 1997; Hardoon & Derevensky, 2001) in gambling studies involving adolescents who were shown to model the gambling behavior of their family members. Wood and Griffiths (2004) also used Social Cognitive Theory as an explanation for how the

national lottery appeals to adolescents in the U.K. because of the use of celebrities in the national media.

In SCT, human thought and action function within a system of "triadic reciprocal action" (Figure 1) in which action, personal factors (cognitive, physical, and affective), and environmental factors act together to influence behavior. The influence these factors exert on each other are neither simultaneous nor equal in strength. In media studies, SCT provides a framework for analyzing the determinants and psychosocial mechanisms through which symbolic communication influences human thought and action (Bandura, 2001). This framework offers an explanation for the potential effects of mass mediated portrayals based on modeled rewards, motivations, perceived self-efficacy, and situational appropriateness (Atkin & Mastro, 2002).
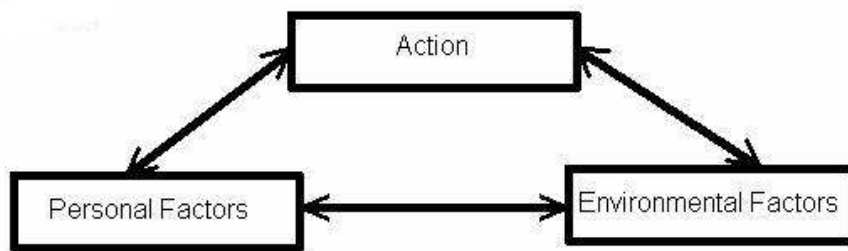
Figure 1. Bandura's model of reciprocal determinism

Bandura's system of "triadic reciprocal action" (Figure 1) shows how personal factors (cognitive, physical, and affective), action (motor responses, verbal responses, and social interaction), and environmental factors (social influences), interact and can influence gambling behavior. While certain antecedents within the college community are known to predispose that population to gambling behavior, it is the reciprocated interaction of these social and cognitive factors that direct the process of identity shaping as the student matures

into adulthood. This process is further accommodated by the under-developed personal identity of the college student along with a shift in identification from parents to peer groups.

The triadic model of Social Cognitive Theory operates through five human capabilities: symbolizing capability, forethought, self-regulatory capability, self-reflective capability, and vicarious capability (Bandura, 1994). Each of these capabilities provides a filter through which to view the world. This includes the virtual (mass mediated) world as well as the concrete world. Given their role in governing human cognition, each capability provides explanatory power in understanding how media influences can increase the susceptibility of college students to gambling activity.

It is through the symbolizing capability that humans make meaning of their environment (virtual and real) and create and regulate events that direct their lives. Thus, all vicarious and real influences are cognitively filtered through the symbolizing processes, providing college students with the ability to learn, create, and test gambling scenarios without actual participation. Such cognitive, symbolic representations of anticipated future events can serve as incentives and motivators to re-enact such scenarios in the future (Bandura, 1989). Similarly, cognitive approaches to gambling are based on the assumption that individuals are motivated to gamble by the desire to win money or acquire wealth. This fosters an environment in which problem gambling disorders are likely to arise, largely out of erroneous estimates of one's chances of winning (Ladouceur & Walker, 1998). Media portrayals can influence the ways in which the consequences are perceived by emphasizing positive rewards while limiting sanctions (Atkin & Mastro, 2002). It is through forethought that college students are able to devise future plans to participate in gambling activity, while they weigh the consequences against the projected rewards.

The self-regulatory capability recognizes that satisfaction obtained from personal accomplishments is a strong incentive for action (Bandura, 1994). As one evaluates his or her performance through positive and negative feedback, a sense of self is created that brings with it a strong sense of satisfaction (Bandura, 2001). In our society, money is viewed as the major incentive for action. The lure of "easy money" depicted in poker shows may provide justifications for irresponsible gambling behavior among college students by allowing them to reconstruct the value they place in the behavior, justify its social acceptance, and escape personal culpability. Glamorous characterizations of professional gamblers glorify a lifestyle that may be so appealing that it overrides the judgment and financial realities of the college student. Essentially, the shows supply validation for risky behavior by emphasizing the rewards over the risks, thereby displacing the responsibility.

Bandura defines the self-reflective capability as a dimension of self-influence that allows individuals to reflect upon oneself and the adequacy of one's thoughts and actions (Bandura, 2001). This function allows individuals to evaluate the validity and value of their thoughts by comparing how well the thoughts measure up to reality. There are four different forms of thought verification: enactive, social, logical, and vicarious. Enactive verification relies on the competency of one's thoughts in regard to the actions they generate. When this is not feasible, social verification allows one to evaluate the soundness of one's views by comparing them to the views of others in their environment. Logical verification allows people to check for flaws in their thinking by using common knowledge and what follows from it. And, when first-hand knowledge isn't accessible, vicarious verification enables people to correct their own thinking by observing the experiences of others in their environment and the effects they produce (Bandura, 2001).

However, Bandura (1994) warns that using the media to verify thoughts may lead to distorted versions of social reality. This is particularly relevant to college students who are influenced by the poker shows. While they are identifying with someone else (vicarious verification), they lack a deeper knowledge of the game necessary for logical verification because they lack the experience of the players. This may lead viewers to overestimate their poker playing capabilities.

Much of human knowledge is procured vicariously, by design or unintentionally, through observing other people's actions and consequences either directly or symbolically from media. Since most people interact with only a small portion of the world, their perceptions about social reality are often shaped by vicarious learning. And, to an important extent, people act on their images of reality. The more people's images of reality are defined by the media's symbolic environment, the greater it's social impact (S. Ball-Rokeach & DeFleur, 1976).

Social Comparison Theory

Research on modeled behavior reveals that exposure to the attainments of others has significant impact on how one views their own capabilities (Bandura et al., 1982; Brown & Inouye, 1978; Kazdin, 1979; Schunk, 1986). Prince (1984) goes further, noting that perceived similarity to the models strengthens the impact. Many in the media feel that college students are attracted to poker because they see amateur online players winning substantial amounts of money on television. Nolan Dalla, media director for the World Series of Poker, has observed that the success of amateur online players in tournaments like the

WSOP has boosted the game's popularity by showing that "anyone in their home can become a poker player" (personal communication, May 24, 2003).

Festinger's (1954) social comparison theory asserts that individuals have a drive to compare their opinions and abilities to others. These comparisons have a profound effect on self-efficacy appraisals (Jacobs, Prentice-Dunn, & Rogers, 1984; Litt, 1988), which in turn influence the level of goal setting, affective self-evaluation, and the quality of analytic thinking. These appraisals do not require conscious or direct personal contact. In fact, media characters often represent meaningful standards of comparison (Frisby, 2004).

The affective consequences of the comparison process are influenced by the characteristics of the media figures and by the direction of the comparison (which may be upward or downward). Downward comparisons (comparing oneself to someone perceived as less capable) are believed to make people feel better about their own situation, whereas upward comparisons (comparing oneself to someone who is perceived as being better off in the dimension of interest) serve as motivation to change (Frisby, 2004). Additionally, universalistic targets (those coming from distant sources of influence such as mass media) are perceived as eliciting greater pressure to conform to idealistic standards than particularistic targets such as friends and family (Irving, 1990).

College students may be especially susceptible to social comparisons. Among the many personality constructs that influence social comparison processes and outcomes, self-esteem is known to play a particularly prominent role and has received the most empirical attention (Aspinwall & Taylor, 1993; Buunk et al., 1990; Gibbons & McCoy, 1991; Wheeler & Miyake, 1992). The fact that self-esteem has been so strongly associated with Social Comparisons is significant given the mercurial level of self-esteem that characterizes the

college population. And, in a social environment, such as a college campus, the context of a comparison becomes particularly important, given the influence that social groups exert on social identity.

Activation Theory

Previous media studies into the influence that a single medium can exert over the use of another medium have shown a positive relationship (Levy & Windahl, 1985; Rosengren & Windahl, 1989; Leung & Wei, 1999). Known as the "activation effect" this phenomenon occurs when there is an increase in the use of a particular form of media resulting in a moderate, supplemental increase in the use of other media technologies. Previous research has shown that television viewing may be supportive of other activities such as movie-going and family viewing at home (Wei & Tootle, 2002). In a study concerning the media habits of Swedish children, Rosengren and Windahl (1989) found moderate to heavy use of a particular medium led to the increased use of other forms of media.

Recently, the Dutch reality show Big Brother scored high ratings and stimulated similar programming in many other countries, including the U.S. American producers took the Big Brother concept a step further and supplemented the show with twenty-four hour a day webcasting (Wei & Tootle, 2002) which, according to Hamilton (2000), was consistently among the Top 50 websites, peaking at 573,536 visitors (a typical day for Amazon.com). According to Wie and Tootle (2002), the more respondents seek vicarious participation from viewing a reality show, the more they visit its website. The "activation effect" posits that extra media options encourage more media consumption since it offers added content. For

college students who can't get enough of the World Series of Poker on ESPN, the gaming options offered online may be too inviting to pass up.

A Uses and Gratifications Approach

Social Cognitive Theory offers a view of media attendance that provides a theoretical explanation for the often-observed (Papacharissi & Rubin, 2000) empirical relationship between media gratifications and media usage (LaRose & Eastin, 2004). Fundamentally, SCT attributes human behavior to be an interaction of personal factors, environmental factors, and action, in a triadic reciprocal causation model. Within SCT, gambling would be viewed as an observable act and, in order for gambling to be manifested as a behavior, certain expectations would need to exist. These expectations could be shaped through either direct experience or mediated by vicarious reinforcement through others. Thus, media usage is the product of gratifications sought and is determined by the anticipated outcomes that follow consumption (LaRose & Eastin, 2004). Since these gratification outcomes may also be formulated through vicarious observation of the behavior of others (Eastin, 2002), they may also explain consumption among college students who gamble, as well as those who may have the proclivity to gamble in the future.

A central concept to most models of uses and gratifications is "expectancy" (Palmgreen & Rayburn, 1984). Katz et al. (1974, p. 20) defined the uses and gratifications approach as being "concerned with the social and psychological origins of needs, which generate expectations of the mass media or other sources, which lead to differential patterns of media exposure, resulting in need gratifications and other consequences, perhaps mostly unintended ones." From the SCT perspective, the expectations we have regarding media

alternatives (which are produced by our media consumption and organized according to gratifications sought) affect future media consumption (LaRose & Eastin, 2004), which ultimately influences future behavior.

Palmgreen and Rayburn (1982) proposed the integration of the expectancy-value model within the uses and gratifications framework. The integrated model showed behavior, gratifications sought and/or attitudes as being mediated by expectancy and evaluation. Paramount to the framework was the interrelationship among beliefs, evaluations, gratifications sought, and media exposure, in which gratifications sought (GS_i) was viewed as a function of both beliefs (b_i) and evaluations (e_i). They combine in an additive, compensatory manner ($\Sigma b_i e_i$) to influence attitudes. The implication is that persuasive communication affects attitudes indirectly through the formation of cognitive structures of knowledge derived from processing-messages (Gill, Grossbart, & Laczniak, 1988). It is the processing of these messages that determine the gratifications sought, which subsequently directs individual media exposure. Toy (1982) captured the essence of the expectancy-value model in his cognitive structure approach to the communication process:

Message Exposure $\rightarrow$ ($\Sigma b_i e_i$) $\rightarrow$ A $\rightarrow$ Behavioral Intention $\rightarrow$ B

Figure 2. Toy's cognitive structure approach

Through this model, Toy demonstrated Fishbein's (1967) assertion that attitudes determine behavioral intentions, which in turn are causally related to behavior, as moderated by situational factors.

These moderating situational factors are essential in characterizing the college population as an at-risk group for gambling behavior. Figure 3, offers a model that is a

synthesis of the expectancy-value models and Bandura's triadic model of Social Cognitive

Theory. The personal factors in Bandura's model are given greater detail in Figure 3, with

gratifications sought serving as a product of beliefs and evaluations. Attitudes are shown as a

product of the gratifications sought, as well as Media exposure and social systems, which

have an aggregate effect in affecting gambling behavior. These attitudes then feed back to

reinforce or alter the individual's beliefs regarding the gratification related attributes of the

poker shows (Palmgreen & Rayburn, 1984). The resulting perceptions influence future

viewing patterns. Media exposure influences attitudes both directly and mediationally

through connection to influential social systems (Bandura, 1986). Activation Theory offers

an explanation for how exposure to the poker shows may cause attitudes to be more disposed

towards online gambling, to the extent that viewers may actively pursue the online gambling

option. Social Comparison Theory accounts for the viewer's identification with the colorful

characters in the shows and how they may influence attitudes towards gambling behavior.

Bandura's "triadic reciprocal action" (which is noticeable in the model) provides the

framework through which the behavior is modeled and reinforced. These personal factors

(attitudes), environmental factors (social systems), and behavioral factors (gambling

behavior), influence each other bidirectionally and serve as determinants for future behavior.
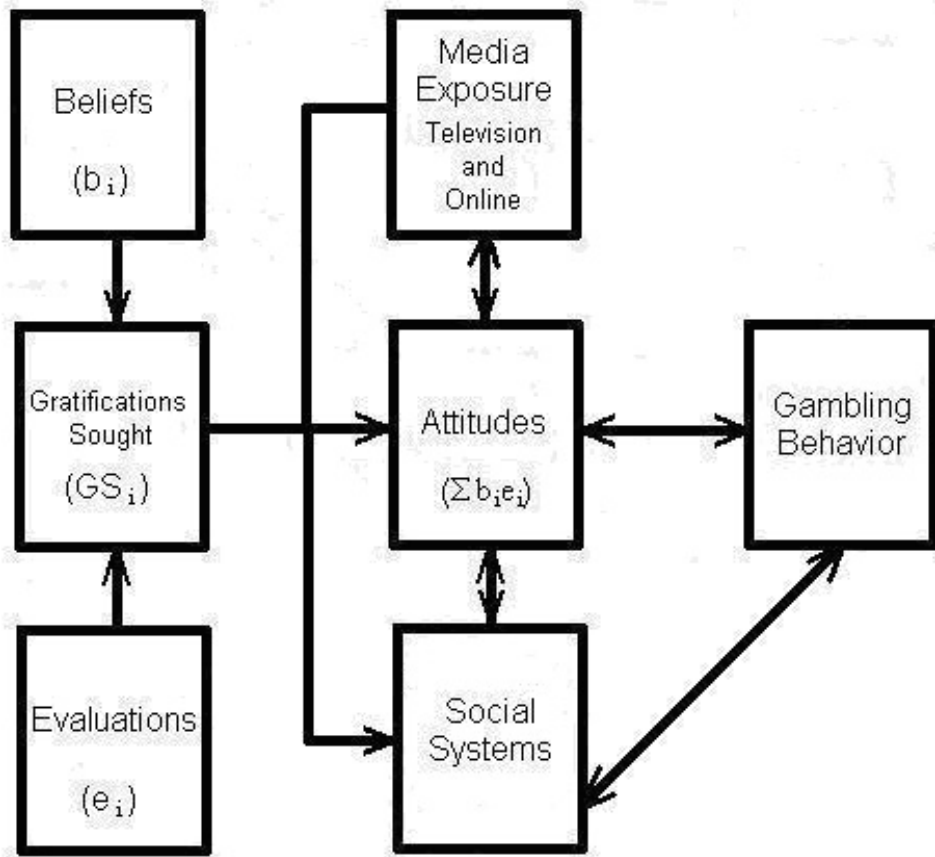
Figure 3. Hypothesized model

HYPOTHESES AND RESEARCH QUESTIONS

Previous research has linked media usage (instrumental and ritualized use) with media selection and attitudes (Rubin, 2002). In studies regarding televised violence, researchers discovered a positive relationship between exposure and aggressive attitudes (Bandura et al., 1963, Greenberg, 1975). This is consistent with uses and gratifications, which recognizes that different levels of exposure can have different impact. Thus:

H_1: Higher exposure to gambling programming on television will be associated with more positive attitudes regarding gambling.

Social Cognitive Theory states that modeling occurs through observing the rewards and punishments associated with the behavior of others. These outcome expectations are learned through modeled rewards, motivations, perceived self-efficacy, and situational appropriateness. According to Bandura, a significant amount of information regarding behavioral patterns is gained from the extensive modeling in the symbolic environment of the mass media (Bandura, 1986). Thus:

H_2: Higher exposure to gambling programming on television will be associated with increased levels of gambling behavior.

Wie and Tootle (2002) found support for the "activation effect" in their study of reality television. Activation theory asserts that an increase in a particular medium will result in a moderate, supplemental increase in other activities. In Wie and Tootle's study, they found that the level of reality TV viewing was significantly correlated with the amount of

browsing on that programs website. In light of how the online poker industry has grown at an equally impressive rate as the television shows, I hypothesize:

H$_3$: Televised poker viewership will be positively associated with the level of online gambling behavior.

Many leading attitude theorists (McGuire, 1969; Sherif, Sherif, & Nebergall, 1965) have asserted that post-communication attitude change is a function of how similar the persuasive media may be to pre-communication attitudes. Social Cognitive Theory offers an explanation for how the college environment lends itself to the formation of these attitudes. According to Erikson (1968), identification with media shapes the development of self-identity and social attitudes. Thus:

H$_4$: Higher identification with the characters that are featured in the televised poker shows will be associated with more positive attitudes regarding gambling.

The effect of identification with media figures has been observed in past studies. Huesmann et al. (1984) found that identification with aggressive characters on television increased the learning of aggressive behaviors by children. In a study of celebrity endorsers, Basil (1996) found that identification with celebrities who were promoting health messages increased the adoption of these messages.

Previous expectancy-value models (Palmgreen & Rayburn, 1984), have shown a causal relationship between gratifications sought from mass media and behavior. In this study, identification is viewed as a gratification sought from media selection. Therefore:

H_5: Higher identification with the characters that are featured in the televised poker shows will be associated with increased levels of gambling behavior.

There is no single pattern of influence. The media can implant ideas either directly or through social networks (Bandura, 1986). In many instances, the media influences the adoption of trends by giving the perception that it's the in-thing and everyone else is doing it.

Studies by Devlin and Peppard (1996), and Frank (1990), showed that college students perceive their friends as having the highest rate of problem gambling. It is conceivable that televised poker may have a significant impact on these perceptions, and could further influence reckless gambling behavior by making the practice appear even more wide-spread. To address the impact of perceived peer gambling behavior on the behavior of college students, the following hypotheses were formulated:

H_6: Higher exposure to gambling programming on television will be associated with perceptions of greater peer gambling behavior.

H_7: Students that have friends who gamble with a greater frequency will have more positive attitudes regarding gambling.

H_8: Students that have friends who gamble with a greater frequency will be more likely to gamble themselves.

The shift from social to asocial forms of gambling is significant, as it is usually indicative of increased problematic gambling behavior. Online gambling is increasingly problematic because it distances the player from the reality of the moment. This creates a feeling of disassociation in which gamblers often lose track of time and their inhibitions.

Student gamblers are even more susceptible, since the risk factors (i.e. high stress, depression, etc) that characterize that population are stimulated by the introverted nature of the internet. Given that a student can sit in on an unlimited number of hands, and electronic money is readily at their disposal, it is easy to see how a gambling habit can easily turn problematic. Thus:

H_9: Those students who display increasingly problematic gambling behavior will make greater use of the online gambling option.

Social Comparison Theory suggests that, through identification, students will be driven to compare their opinions and abilities to the media models. These comparisons will then effect the self-appraisals of their gambling acumen. Thus, their gratifications sought from gambling will be affected. This would lead one to surmise that identification would show a significant relationship with the desire to make money through gambling. At the same time, Social Cognitive Theory suggests that students will be attracted to poker through social influences, which would make social interaction (since poker is the "in thing") an important gratification sought through gambling.

According to Bandura (1986), expected outcomes are organized into six basic types of incentives for human behavior: novel sensory, social, status, monetary, enjoyable activity, and self-reactive incentives. Neighbors et al. (2002) polled college students and found that more than 70% of respondents listed Money, Enjoyment, Social Interaction, Excitement, and Boredom, as their primary reasons for gambling. This following research question seeks to ascertain which of these gratifications sought from gambling are most strongly associated with identification to the poker shows.

RQ$_1$: Which gratifications sought from gambling are positively associated with higher degrees of identification with televised poker?

According to Lostutter (2002), it is necessary to identify the motivations for gambling, among individuals across the entire continuum, in order to gain a better understanding of what differentiates problem from casual gamblers. Research has shown that gambling is most problematic when it becomes a solitary activity. This is why gamblers who turn to the online option may be especially at risk. Considering that social interaction is cited as one of the primary gratifications for gambling among college students, a complete analysis is in order to better understand which gratifications are associated with increasingly problematic gambling behavior. This will help in determining the potential safeguards against problem gambling behavior. Thus, the following question concerning the effect of gambling gratifications on the degree of gambling behavior was asked:

RQ$_2$: Which gratifications sought from gambling are positively associated with higher degrees of problem gambling?

The influence of perceptions obtained through watching the poker shows begs the question, "Why do college students watch televised poker?" It is through asking this question that one begins to fully understand how the poker shows influence gambling behavior. Since television and online usage are so connected through content, it is through a complete understanding of the issues regarding media interactivity that one develops a better picture of how to approach salient public policy issues. Thus, this question sought to ascertain which television gratifications effect online usage.

RQ$_3$: Which gratifications sought from televised poker are positively associated with higher

degrees of online gambling?

METHOD

Sample

Data was obtained from students at selected universities across the United States. Approximately 444 self-report questionnaires were obtained from a regionally diverse range of public universities that allow public access to student email address listings. The universities that were chosen represented a variety of population sizes and geographical characteristics. Subjects were made aware that their participation would be voluntary and that their privacy would be protected. Self-reports have their limitations because of concerns regarding accuracy and/or risks of social desirability response bias. However, a central assumption of uses and gratifications is that people can articulate their reasons for communicating and using media (Katz et al. 1974).

Measurement

Figure 3 reflects the variables that were measured based on a Uses and Gratifications model detailing the link between media exposure and gambling behavior in a college environment. The model is rooted in the principles set forth in Bandura's Social Cognitive Theory and was arranged in an expectancy-value configuration. As such, the measurements consisted of Personal factors (beliefs, evaluations, gratifications sought, and attitudes), Environmental factors (social systems and media exposure), and Behavioral factors (intensity and nature of gambling behavior).

Attitude. Ajzen and Fishbein (1980) suggest attitudes are a function of beliefs (b_i) and evaluations (e_i) which combine in an additive, compensatory manner ($\Sigma b_i e_i$). These attitudes reflect the individual's perception of acceptable behavior and his or her subjective norm. These perceptions are affected by experience and have a tendency to persist. Thus, behavioral change is a function of an attitudinal change. For that reason, attitudes were at the core of this model. To measure attitudes, Strong et al.'s (2004) Gambling Attitudes and Beliefs Scale (GABS) was used. The GABS was developed to predict gambling involvement among college students. Involvement of students is assessed through a set of 10 items that rank-order subjects according to their positive attitudes and beliefs about gambling.

Gratifications Sought. According to Palmgreen et al. (1985) gratifications sought (GS) explains individual media consumption. In figure 3, GS is displayed as a product of beliefs and evaluations (Palmgreen et al., 1984). To gain a complete perspective of gratifications sought through televised poker, I employed measures of identification along with scales relative to media choice and choices in gambling behavior.

Identification. Two unidimensional measures of identification were used to rank the distance between the viewers and the television personalities (Newton & Buck, 1985; Newton et al., 1986; Reeves & Miller, 1978). The specific questions were:

How much would you like to be like the players you see on TV?

Are there things that you see the players do that you would like to do?
The first question was rated using a 5-point scale, ranging from "not at all" to "exactly like them". The following question was answered by using a simple "yes" or "no".

Media Choice. The Television Viewing Motives Scale (Rubin et al., 1994) was used to assess the following motives for watching television: relaxation, companionship, habit,

pass time, entertainment, social interaction, information, arousal, and escape. This 27-item

measure was set on a 5-point Likert scale (1 =not at all; 5 =exactly) and was averaged to

create an index of the motives for television viewing.

Choices in Gambling Behavior. Neighbors et al. (2002) polled college students on

their motives for gambling and found that more than 70% of respondents endorsed money,

enjoyment, social, excitement, and boredom. A 15-item measure, designed to measure

expected gratifications from gambling behavior, was constructed using the reasons that were

given as an example for each motive in the study as the basis for a 5-point Likert scale (1

=not at all; 5 =exactly). These items included; Money (e.g., "make money," "win money,"

and "get rich"); Enjoyment (e.g., "to have a good time," "it's enjoyable," and "it's fun");

Social (e.g., "social interaction," "to be with friends," and "to socialize"); Excitement (e.g.,

"for the rush," "excitement," and "it's exciting"); and Boredom (e.g., "something to do,"

"pass time," and "bored"). They were then averaged to create an index of the motives for

college student gambling.

Media exposure. Each participant was asked to indicate the number of times that

they watched poker shows on television within the last month. Their responses were scored

using a 5-point scale, ranging from "never" to "5 or more times a week".

Online Activity. Online activity was assessed by asking participants to estimate the

number of hours they spend online playing poker per week.

Social systems. To assess the effect of social relationships on gambling behavior,

respondents were asked whether friends and family played poker and how frequently the

friends and family played. An index of social influence was created by averaging the

individual items.

Gambling behavior. The gambling behavior of each respondent - online as well as social - was measured by asking two questions pertaining to their poker playing. These questions were, "how many hours do you spend online playing poker per week?", and "how frequently do you play cards for money each month?" The answers to these questions were then added and average for a cumulative index of gambling behavior.

Problem gambling behavior. The South Oaks Gambling Screen (SOGS) was used to measure problem gambling behavior. This 16-item device is widely used to screen individuals for pathological gambling or problem gambling behavior in the general population and clinical settings. Participants answered "yes" or "no" to initial questions regarding gambling behavior and, in later items, chose from a list of responses relating to frequency of gambling and amount of money spent on gambling. One point is assessed for each "yes" response. Responses were then summed. Scores of three or above were classified as problem gamblers, while those who score 5 or more were classified as probable pathological gamblers (Lesieur et al., 1993).

Indexes

Indexes were generated to create multi-dimensional measures for the following variables: identification, the Gambling Attitudes and Beliefs Scale (GABS), the Television Viewing Motives Scale, gratifications associated with college gambling, online activity, social systems (including measures of friend and family poker playing), gambling behavior, and the South Oaks Gambling Screen.

Two measures of identification (questions 9 and 10) asked participants to indicate how much they would like to "be like" or "do things like" the poker personalities they see on

television. These were added together and then averaged to provide an assessment of each individual's identification with the characters in the poker shows. Cronbach's alpha for the identification index was .66.

The Gambling Attitudes and Beliefs Scale (GABS) was developed by taking the average of 10 items (questions 76 through 85), that ranked-ordered students in regard to their attitudes and beliefs about gambling. Cronbach's alpha for the GABS was .91.

The Television Viewing Motives Scale is a 27-item collection of smaller indexes that yields many uses of television gratifications in 9 dimensions: Relaxation (questions 11, 19, and 27; Cronbach's alpha = .91), Companionship (questions 14, 33, and 23; Cronbach's alpha = .66), Habit (questions 17, 29, and 37; Cronbach's alpha = .74), Pass Time (questions 20, 25, and 34; Cronbach's alpha = .88), Entertainment (questions 21, 26, and 31; Cronbach's alpha = .96), Social Interaction (questions 12, 22, and 36; Cronbach's alpha = .80), Information (questions 16, 28, and 35; Cronbach's alpha = .79), Arousal (questions 15, 24, 30; Cronbach's alpha = .84), and Escape (questions 13, 18, and 32; Cronbach's alpha = .77).

Indexes were created for gambling gratifications based on Neighbors et al. (2002) which explored college student gambling motivation. These indexes consisted of 3 items each and were averaged to create gambling motivation measures pertaining to: Money (questions 61, 72, and 74; Cronbach's alpha = .89), Enjoyment (questions 64, 67 and 68; Cronbach's alpha = .97), Social (questions 65, 70, and 73; Cronbach's alpha = .95), Excitement (questions 63, 66, and 71; Cronbach's alpha = .94), and Boredom (questions 62, 69, and 75; Cronbach's alpha = .88).

The influence of social systems was gauged through a composite of two indexes which assessed each student's perception of their friends and family's gambling behavior. Gambling behavior of friends was measured through questions 40, "do your friends play poker", and 41, "how often do your friends play poker". The responses were then averaged. Cronbach's alpha for the gambling behavior of friends was .64. Family gambling behavior was similarly measured, using questions 42, "do any members of your immediate family play poker, and 43, "how often do your family members play poker". Cronbach's alpha for the gambling behavior of family was .71.

In contrast, the gambling activity of each respondent - online as well as social - was measured by using questions 39 ("On average, how many hours do you spend online playing poker per week?"), and 45 ("On average, how frequently do you play cards for money each month?"). The answers to these questions were then added and average for a cumulative index of gambling behavior. Cronbach's alpha for this measure was .67.

Finally, a modified index of the South Oaks Gambling Screen was used to assess potential pathological gambling behavior. The SOGS was originally designed as a 20 question measure with the final item possessing 9 separate components. However, just one of these components was pertainant to this study. Thus, for the purposes of making the survey instrument more user-friendly, a modified 12-item SOGS was used consisting of questions 46 to 59. Positive answers were given one-point each while negative answers weren't counted. The results were then summed to asses each individuals potential as a pathological gambler. Three or four positive answers registered as a potential pathological gambler while five or more denoted a probable pathological gambler. Cronbach's alpha for the SOGS was .74.

ANALYSIS

For Hypothesis 1, exposure to gambling programming was measured using question 8. This was compared to the measure of gambling attitudes in questions 76 through 85.

For Hypothesis 2, exposure was measured with regard to gambling behavior. Gambling behavior was assessed using questions 39 and 45.

For Hypothesis 3, exposure was measured and compared with level of online gambling behavior. Online behavior was measured using question 39.

The following variables were used to analyze the data with regard to Hypothesis 4. Level of identification was measured using questions 9 and 10, while gambling attitudes were measured using questions 76 through 85.

For Hypothesis 5, higher identification was measured with regard to gambling behavior. Gambling behavior was measured using questions 39 and 45.

For Hypothesis 6, exposure to gambling programming was measured using question 8 and perceptions of peer gambling were assessed using questions 40 through 43.

For Hypothesis 7, gambling behavior of friends was obtained by using questions 40 and 41. This was compared to the measure of gambling attitudes in questions 76 through 85.

For Hypothesis 8, gambling behavior of friends were assessed through questions 40 and 41, and compared to the measures of individual gambling behavior in questions 39 and 45.

For Hypothesis 9, problem gambling behavior was measured through questions 46 to 59, while a measure of online gambling was taken using question 38.

The following variables were analyzed using the data in regard to Research Question 1. Gambling gratifications pertaining to Money, Enjoyment, Social, Excitement, and

Boredom, were analyzed using questions 61 through 75. Identification was assessed with questions 9 and 10.

In Research Question 2, gratifications sought from gambling (Money, Enjoyment, Social, Excitement, and Boredom) were assessed with questions 61 through 75, and compared with an assessment of problem gambling in questions 46 through 59.

In Research Question 3, gratifications sought from viewing televised poker were assessed from questions 11 through 37. These gratifications were compared to the measure of online gambling in question 39.

Pearson's r correlation and Regression were chosen as the appropriate means by which to analyze the relationships of the model (Figure 3). Frequency distribution and T-tests were also used to give depth to many issues inherent in the data.

THE SAMPLE

The sample was generated from online databases at 10 universities of varying sizes and geographical characteristics. The email addresses of 22,800 college students were selected at random and invitations were sent to their listed addresses inviting them to take part in the study. However, 2,082 invitations bounced and never reached their recipients. Thus, 20,718 solicitations were emailed to potential participants between 12/11/05 and 1/16/06. Of those who received the invitation to participate, 669 viewed the survey website and 444 completed the instrument for a 2% response rate.

Each email address in the system was tracked through QuestionPro's (www.questionpro.com) automatic respondent tracking system. However, unless the student viewed the website, there was no way of tracking how many students actually viewed the survey invitation. Once the last group of respondents received invitations and filled out the instrument, the raw data was downloaded into an SPSS file for analysis.

Of the universities represented in this sample, three were from the Pacific Northwest, two were from the Southwest, two were from the Midwest, two were from the Southeast, and one was from the Northeast.

Gender. A total of 49.7% (n=219) of the respondents were male and 50.3% (n=222) of the respondents were female.

Age. While the largest proportion of those who responded to the study were in the 22 years and older age category (39.4%), 21 year olds had the highest percentage of respondents for any single year (18.8%). The number of 18 and 19 year olds were closely represented (14.3% and 15.2% respectively) while there was a slight drop off in the 20 year age category at 12.4%.

Classification. A cross-tabulation shows the breakdown of classification by age. This table shows the survey population to be rather normal in terms of what you'd expect in a mixture of traditional and non-traditional student populations.

Table 1

Cross-Tabulation Showing Age and Classification

What is your age? * What is your classification? Crosstabulation

Count

		What is your classification?					
		Freshman	Sophomore	Junior	Senior	Other	Total
What is your age?	18	47	13	3	0	0	63
	19	26	34	7	0	0	67
	20	0	14	36	5	0	55
	21	2	5	27	48	1	83
	22+	0	2	19	71	81	173
Total		75	68	92	124	82	441

Major. The following frequency distribution shows the sample population according to major. Some of the majors more frequently represented were in arts and humanities (16.7%), business administration (16%), and science/mathematics and engineering/computer science (both at 14.9%).

Table 2

Frequency Distribution According to Major Fields of Study

What college is your major in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Undecided	11	2.5	2.6	2.6
	Science and Mathematics	66	14.9	15.3	17.9
	Business Administration	71	16.0	16.5	34.3
	Education	21	4.7	4.9	39.2
	Engineering and Computer Science	66	14.9	15.3	54.5
	Health	41	9.2	9.5	64.0
	Arts and Humanities	74	16.7	17.2	81.2
	Social Sciences	55	12.4	12.8	94.0
	Public Affairs	9	2.0	2.1	96.1
	Agriculture	17	3.8	3.9	100.0
	Total	431	97.1	100.0	
Missing	System	13	2.9		
Total		444	100.0		

GPA. An analysis of the Grade Point Averages shows this group to be above-average in academic performance. 50.1% of the population has a GPA between 3.5 and 4.0 while 27.5% reported a GPA of 3.0 to 3.4. Most of the remaining students (17.6%) have GPA's in the 2.5 to 2.9 range and less than 5% reported GPA's lower than that (with 2.8% reporting a GPA of 2.0-2.4, 1.6% having a GPA of 1.0-1.9, and .5% a GPA of 0.0-0.9).

Greek Affiliation. The percentage of students who were currently members of a Greek organization on campus was 11%. This was slightly higher than the national average of 9% (Conneely, 2006).

Student Housing. About 28.2% (n=124) of the respondents live in student housing. Cross-tabulation shows that these students are predominantly 18 and 19 years old.

Table 3

Cross-tabulation demonstrating the Age of Resident Students

What is your age? * Do you live in student housing? Crosstabulation

Count

		Do you live in student housing?		Total
		No	Yes	
What is your age?	18	11	52	63
	19	28	39	67
	20	39	15	54
	21	73	10	83
	22+	165	8	173
Total		316	124	440

Estimated Family Income. Respondents tended to come from affluent backgrounds with more than 50% reporting household incomes above $80,000 in 2004. Only 9.2% reported household incomes under $25,000.

Table 4

Frequency Distribution Showing Estimated Family Income for 2004

What was your estimated family (parental) income in 2004?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under $25,000	41	9.2	10.1	10.1
	$25,000 - $39,999	39	8.8	9.6	19.8
	$40,000 - $59,999	47	10.6	11.6	31.4
	$60,000 - $79,999	75	16.9	18.5	49.9
	$80,000 - $99,999	63	14.2	15.6	65.4
	$100,000 or more	140	31.5	34.6	100.0
	Total	405	91.2	100.0	
Missing	System	39	8.8		
Total		444	100.0		

Estimated Personal Income. The majority of those who responded (77.7%) reported

less than $25,000 for tax purposes in 2004. This number tapered off quickly with 6.5%

reporting between $25,000 to $39,999 and 4.5% reporting between $40,000 and $59,999.

Only 3% reported earnings of more than $60,000, with 1.4% reporting $60,000-$79,999,

0.7% reporting $80,000-$99,999, and 0.9% reporting $100,000 or more. Cross-tabulation

revealed that for those who reported under $25,000, only 55% were employed. For those who

were unemployed, only 33.7% were seeking employment.

Table 5

Cross-tabulation Referencing Employment Status with Personal Income

Which of the following best describes your current employment situation? * What was your personal income reported for tax purposes for 2004? Crosstabulation

Count

		What was your personal income reported for tax purposes for 2004?						Total
		Under $25,000	$25,000 - $39,999	$40,000 - $59,999	$60,000 - $79,999	$80,000 - $99,999	$100,000 or more	
Which of the following best describes your current employment situation?	Employed	189	23	17	5	2	2	238
	Not employed but seeking employment	52	2	0	1	1	2	58
	Not employed and not seeking employment	102	4	3	0	0	0	109
Total		343	29	20	6	3	4	405

44

RESULTS

Hypothesis 1: Higher exposure to gambling programming on television will be associated with more positive attitudes regarding gambling.

A Pearson correlation coefficient was calculated for the relationship between exposure to poker shows and the Gambling Attitudes and Beliefs Scale. A positive correlation was found ($r(373) = .435$, $P<.001$). The effect of exposure to gambling programming on attitudes toward gambling is statistically significant. Hypothesis 1 is supported.

Hypothesis 2: Higher exposure to gambling programming on television will be associated with increased levels of gambling behavior.

To calculate the relationship between exposure to gambling behavior and gambling behavior, a Pearson correlation coefficient was used. Table 9 shows a positive correlation ($r(427) = .563$, $P<.001$). The influence that exposure to gambling programming has on gambling behavior is statistically significant. Hypothesis 2 is supported.

Hypothesis 3: Televised poker viewership will be positively associated with the level of online gambling behavior.

A Pearson correlation coefficient was used to calculate the relationship between poker viewership and online gambling behavior. A positive correlation was found ($r(427) =$

.461, P<.001). Poker viewership is shown to have a statistically significant influence on the level of online gambling behavior. Hypothesis 3 is supported.

Hypothesis 4: Higher identification with the characters that are featured in the televised poker shows will be associated with more positive attitudes regarding gambling.

A Pearson correlation coefficient was utilized to calculate the relationship between identification with the personalities in poker shows and gambling attitudes. A positive correlation was found (r(365) = .447, P<.001), denoting a statistically significant relationship between the two variables. Increased identification is positively correlated with more positive attitudes towards gambling. Hypothesis 4 is supported.

Hypothesis 5: Higher identification with the characters that are featured in the televised poker shows will be associated with increased levels of gambling behavior.

A Pearson correlation coefficient was used to determine the relationship between identification with the personalities that are seen in poker shows and gambling behavior. A positive correlation was found (r(412) = .563, P<.001), denoting a statistically significant relationship between the two variables. Increased identification is positively correlated with higher levels of gambling behavior (social as well as online). Hypothesis 5 is supported.

Hypothesis 6: Higher exposure to gambling programming on television will be associated with perceptions of greater peer gambling behavior.

A Pearson correlation coefficient was utilized to calculate the relationship between viewing poker shows and perceptions of peer gambling behavior. A positive correlation was

found (r(428) = .337, P<.001), denoting a statistically significant relationship between the two variables. Poker viewership is positively correlated with a perception of greater peer gambling. Thus, Hypothesis 6 is supported.

Hypothesis 7: Students that have friends who gamble with a greater frequency will have more positive attitudes regarding gambling.

A Pearson correlation coefficient was used to calculate the relationship between perceptions of greater peer gambling behavior and attitudes towards gambling. A positive correlation was found (r(374) = .251, P<.001), denoting a statistically significant relationship between the two variables. Attitudes toward gambling are positively correlated with perceptions of greater peer gambling. Hypothesis 7 is supported.

Hypothesis 8: Students that have friends who gamble with a greater frequency will be more likely to gamble themselves.

A Pearson correlation coefficient was utilized to calculate the relationship between perceptions of friend gambling behavior and individual gambling behavior. A positive correlation was found (r(428) = .337, P<.001), denoting a statistically significant relationship between the two variables. Friend gambling is positively correlated with an increase in individual gambling behavior. Hypothesis 8 is supported.

Hypothesis 9: Those students who display increasingly problematic gambling behavior will make greater use of the online gambling option.

A Pearson correlation coefficient was utilized to calculate the relationship between problem gambling behavior and online gambling behavior. A positive correlation was found ($r(428) = .442$, $P<.001$), denoting a statistically significant relationship between the two variables. Problem gambling is positively correlated with increased online gambling activity. Hypothesis 8 is supported.

Research Question 1: Which gratifications sought from gambling are positively associated with higher degrees of identification with televised poker?

The strongest positive correlation was between identification and excitement. Enjoyment shared the next biggest correlation with identification. The correlation with boredom, money, and social, showed a weaker association with identification.

Table 6

Correlations between Identification and Gambling Gratifications

Correlations

		Identification	Money	Enjoyment	Social	Excitement	Boredom
Identification	Pearson Correlation	1	.413**	.512**	.400**	.528**	.418**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	415	380	376	379	376	375

**. Correlation is significant at the 0.01 level (2-tailed).

Research Question 2: Which gratifications sought from gambling are positively associated with higher degrees of problem gambling?

The strongest correlation that problem gambling had with gratifications was with money, excitement and enjoyment. Boredom and Social showed weak positive correlations.

Table 7

Correlations Between Problem Gambling and Gambling Gratifications

<center>Correlations</center>

		SOGS_Score	Money	Enjoyment	Social	Excitement	Boredom
SOGS_Score	Pearson Correlation	1	.435**	.311**	.158**	.339**	.247**
	Sig. (2-tailed)		.000	.000	.002	.000	.000
	N	444	391	387	390	386	386

**. Correlation is significant at the 0.01 level (2-tailed).

Research Question 3: Which gratifications sought from televised poker are positively associated with higher degrees of online gambling?

The strongest correlations that online gambling had with TV gratifications was with arousal ($r(404) = .390$, $P<.001$), information ($r(410) = .378$, $P<.001$), entertainment ($r(405) = .370$, $P<.001$), relaxation ($r(405) = .357$, $P<.001$), and habit ($r(412) = .353$, $P<.001$). Social interaction ($r(414) = .269$, $P<.001$), escape ($r(408) = .251$, $P<.001$), and companionship ($r(409) = .243$, $P<.001$) showed weaker positive correlations.

Testing the Model. Considering the weakly significant positive correlations in hypothesis 6, 7, and 8, concerning peer gambling, regression analysis was run on the hypothesized model in figure 3 to refine the relationships within the model. Using identification as the primary gratification of poker watching, a multiple linear regression was performed to determine the cumulative effect of social systems (i.e., friends and family gambling behavior), media exposure (both television and online), and identification, on college students attitudes towards gambling. Significant relationships were found between identification and attitudes ($F(1,365) = 91.104$, $p<.001$), with an R^2 of .200, as well as identification, media exposure, and attitudes ($F(2,364) = 57.272$, $p<.001$), with an R^2 of .239.

The regression equation excluded the effect of social systems on gambling attitudes, as well as social systems and media exposure on attitudes.

A second multiple linear regression was run to measure the effect of social systems and attitudes on gambling behavior. A significant relationship was found between attitudes and gambling behavior ($F(1,374) = 69.238$, $p<.001$), with a R^2 of .156. There was also a significant relationship for attitudes and social systems on gambling behavior ($F(2,373) = 40.711$, $p<.001$), with an R^2 of .179. However, social systems was excluded from the equation as a lone predictor of gambling behavior.

The Influence of Social Systems on Gambling Behavior. The fact that social systems had a weakly significant impact on the model of individual gambling behavior was surprising. However, since the premise of identification is that you learn through media models, perhaps it isn't that important that your friends and family play poker. It is conceivable that social systems exert a greater impact on the model through media selection and gratifications. Since it was the popularity of the television shows that ignited the poker phenomenon, it's a reasonable assumption that friends served as facilitators through their own fondness for the show. There was a significant linear correlation ($r(58) = .624$, $P<.001$) between using television for social interaction and identification with poker shows among 18 year olds. Given that younger college students are in the process of shifting their identification from parents to peer groups, it would stand to reason that their population would show the greatest effect.

The Target Demographic. Analysis of the data, suggests varying susceptibility of college students to poker programming. Considering the diversity of the college population, it's important to understand which students are most affected.

Gender. According to the cross-tabulation in Table 8, males are a strong majority of the college-age viewing audience.

Table 8

Cross-tabulation Between Gender and Poker Viewing

What is your gender? * How frequently have you watched poker shows in the last month? Crosstabulation

Count

		How frequently have you watched poker shows in the last month?					
		Never	Less than once a week	1-2 times a week	3-4 times a week	5 or more times a week	Total
What is your gender?	Male	37	88	48	29	11	213
	Female	80	92	35	7	2	216
Total		117	180	83	36	13	429

Correlation analysis indicates that for college males exposure to poker programming shares significant positive correlations with hours spent playing poker online ($r(211) = .493$, $P<.001$), frequency of social card playing ($r(211) = .542$, $P<.001$), identification ($r(202) = .588$, $P<.001$), gambling attitudes ($r(191) = .478$, $P<.001$), and gambling behavior ($r(211) = .596$, $P<.001$). Those are significant differences from the entire population, which shows the following correlations with exposure: hours spent playing poker online ($r(427) = .461$, $P<.001$), frequency of social card playing ($r(427) = .516$, $P<.001$), identification ($r(413) = .620$, $P<.001$), gambling attitudes ($r(373) = .435$, $P<.001$), and gambling behavior ($r(427) = .563$, $P<.001$).

In females, the same correlations were significantly weaker regarding exposure: hours spent playing poker online ($r(213) = .210$, $P=.002$), frequency of social card playing ($r(213) = .293$, $P<.001$), identification ($r(208) = .558$, $P<.001$), gambling attitudes ($r(180) = .261$, $P<.001$), and gambling behavior ($r(213) = .339$, $P<.001$).

Age. The concept of identification with media characters emerged from psychological notions of child identification as a part of the developmental process (Cohen, 2001). Erikson

(1968) noted that the link between identification and identity is most crucial during the period of adolescence when identification shifts from parents to peer groups and a more stable personal identity is formed. For most students, this occurs when they leave the home and begin their freshman year of college. According to Cohen, this period is crucial "because if identification involves internalization, it is likely that repetitive internalization of powerful and seductive images and alternative identities of media characters may have some long term effects" (2001, p. 247). Thus, the effect of identification on college students is expected to be stronger and more threatening to the younger students. Table 9 shows the strength of the relationships identification shares with exposure, online behavior, and overall gambling behavior, according to age.

Table 9

Correlation between Identification and Exposure, Online Gambling, and Gambling Behavior According to Age

Age	18	19	20	21	22+
Exposure to Poker Programming	n = 58 r = .640 P<.001	n = 62 r = .551 P<.001	n = 51 r = .582 P<.001	n = 77 r = .631 P<.001	n = 157 r = .620 P<.001
Online Poker Playing	n = 58 r = .668 P<.001	n = 62 r = .460 P<.001	n = 51 r = .514 P<.001	n = 77 r = .265 P=.018	n = 156 r = .337 P<.001
Gambling Behavior	n = 58 r = .721 P<.001	n = 62 r = .604 P<.001	n = 51 r = .486 P<.001	n = 77 r = .432 P<.001	n = 156 r = .508 P<.001

Since the correlation between identification to poker shows and online poker playing was so much stronger among 18 year olds, a question was raised as to whether Internet poker was being played more among younger students. To gauge the differences in online poker playing according to age, independent-samples t tests were used to evaluate the differences in online poker playing between 18 year old college students and older college students. The results in Table 10 confirm that younger college students are spending more time online playing poker.

Table 10

T-tests Show Differences in Online Poker playing Between 18 Yr Olds and Older Students.

Age	18	19	20	21	22+
18	N = 61	N = 66	N = 54	N = 80	N = 169
	m = 1.49	m = 1.318	m = 1.259	m = 1.10	m = 1.18
	t = 2.992	t = 1.21	t = 1.54	t = 3.43	t = 2.436
		p = .03	p = .012	p < .001	p < .001

Major. Cross tabulation revealed trends in the sample regarding college major and viewing frequency. Of the colleges represented with more than 50 respondents, the greatest percentage of students watching poker shows at a frequency of more than once a week were in the field of Business Administration (42%). The next closest school was that of Engineering and Computer Science at 35%.

Table 11

Cross tabulation Showing Viewing Frequency According to College of Major

How frequently have you watched poker shows in the last month? * What college is your major in? Crosstabulation

Count

	What college is your major in?										Total
	Undecided	Science and Mathematics	Business Administration	Education	Engineering and Computer Science	Health	Arts and Humanities	Social Sciences	Public Affairs	Agriculture	
Never	1	20	15	7	16	13	20	14	3	6	115
Less than once a week	4	27	25	11	26	18	30	30	3	3	177
1-2 times a week	3	12	19	2	13	8	14	5	2	3	81
3-4 times a week	1	5	8	1	7	0	7	3	0	3	35
5 or more times a week	1	0	2	0	3	2	2	0	0	2	12
Total	10	64	69	21	65	41	73	52	8	17	420

Grade Point Average. The detrimental effect of increased and excessive gambling among college students (especially the younger students) is far too complex to be gauged by a simply survey. The consequences can be immediate as well as long term and they make affect both life circumstances and emotional health. Nevertheless, academic performance is a relevant measure for this population. A correlation analysis between Grade Point Average and poker viewership, identification, gambling attitudes, and gambling behavior, showed negative relationships between G.P.A. and the other variables.

Table 12

Correlation between G.P.A. and Exposure, Identification, Attitudes and Behavior

		What was your GPA last semester?	How frequently have you watched poker shows in the last month?	ID_index	GABS_index	Gambling_Behavior
What was your GPA last semester?	Pearson Correlation	1	-.120*	-.079	-.136**	-.126**
	Sig. (2-tailed)		.013	.111	.009	.009
	N	433	423	408	369	423

** . Correlation is significant at the 0.01 level (2-tailed).

Social Systems. Previous studies have reported on increased gambling behavior within college student segments. Groups that have typically been reported as particularly susceptible to increased gambling behavior have included athletes, Greeks, and students that live in campus housing. Since these university sponsored student groups make up a substantive portion of the social systems surrounding college life, any of these groups could be included in the environmental factors that serve in Bandura's triadic model of reciprocal interaction.

Student housing is one such environment in which interaction between students has a profound effect on the social norms. It is quite common for there to be regular poker games in certain dorms/apartments. It is just as common for neighbors to gather around the television to catch their favorite shows. For those that watch poker, correlation analysis shows a strong positive relationship between poker watching and identification (r = .638), indicating a strong positive linear relationship between the two variables. Considering the increased opportunities to participate in a poker game in and around student housing, it may not be surprising if those who identified with the shows would seek out a poker game. Table

13 shows strong significant correlations between identification and social card playing, as well as online poker playing.

Table 13

Correlation between Identification and Social and Online Poker Players that Live in Student Housing

Correlations

		Identification	On average, how frequently do you play cards for money each month?	On average, how many hours do you spend online playing poker per week?
Identification	Pearson Correlation	1	.608**	.612**
	Sig. (2-tailed)		.000	.000
	N	115	115	115

**. Correlation is significant at the 0.01 level (2-tailed).

The South Oaks Gambling Screen. The South Oaks Gambling Screen (SOGS) is a reliable indicator of problem gambling (Lesieur & Blume, 1987). According to Custer (1982), most pathological gamblers report beginning to gamble during their college years. Various studies of college gambling (Lesieur, 1995; Oster & Knapp, 1998; Platz & Millar, 2001; Shaffer, Hall, & Vander Bilt, 1997) have reported that between 4 and 8 percent of college students can be classified as pathological gamblers, with the rates for males being significantly higher than for females. According to our sample, 11% of males and 2% of females were at the problem gambler level, while 6.3% of all college students were classified as problem gamblers.

The X Factor. In a study comparing the motives for gambling with other recreational activities, Platz (2001) found that problem gamblers cited excitement as one of their top five motives for participating in gambling and other recreational activities. This supports assertions made by Lesieur (1979), and others that some pathological gamblers are "action

56

seekers" who don't gamble for the money, but rather for the excitement associated with being in the action. Roy, et al. (1989) attributed the connection between excitement and gambling to a biological need, due to low levels of norepinephrine. This chemical of the brain is secreted under stress, arousal, and excitement, so pathological gamblers may engage in activities such as gambling to increase their levels of norepinephrine.

Through analyzing the correlations across gratifications scales (poker viewership gratifications along with student gambling gratifications) the correlation between watching poker for arousal and gambling for excitement showed an unusually strong significance (in comparison with the other correlations). That this cross-correlation between gambling and television gratifications was noticeably stronger than the rest, raises the question of whether these measures were drawing on a common factor(s) and, if so, whether the combining of these two measures into an overall index of excitement would provide a greater insight into how excitement influences the other motivations across measures.

Table 14

Correlation between the Excitement Gratification in Student Gamblers and Arousal in Poker Viewers

Correlations

		Gambling_Excitement
TV_Arousal	Pearson Correlation	.629**
	Sig. (2-tailed)	.000
	N	369

**. Correlation is significant at the 0.01 level (2-tailed).

According to the American Psychiatric Association, late adolescents are highly vulnerable to depression because their biochemistry sometimes causes "deficiencies in two chemicals in the brain, serotonin and norepinephrine, which are thought to be responsible for

certain symptoms of depression, including anxiety, irritability, and fatigue." When put in the context of Roy's (1989) study on excitement and considering the various studies focused on students, depression (Lopez et al., 1986), and pathological gambling (Becona et al., 1996; Pope & Jonas, 1986), one must question whether there is certain "factor X" within the excitement variables underlying the surface of this issue. Thus, combining the two excitement gratifications might increase clarity regarding where identification with the characters in poker shows (a television measure) aligns with the Gambling Attitudes and Beliefs Scale (a gambling measure). Table 15 shows a strong significant correlation between this "factor X", and identification, as well as the GABS Index.

Table 15

Correlation Showing how Excitement Corresponds to Identification and the GABS

Correlations

		Factor_X	Identification	GABS_Score
Factor_X	Pearson Correlation	1	.677**	.674**
	Sig. (2-tailed)		.000	.000
	N	369	363	354

**. Correlation is significant at the 0.01 level (2-tailed).

When comparing the correlations across scales, factor X (with a Cronbach's alpha of .90) shows strong correlations with student gambling gratifications: Money (r(365) = .627 , P<.001), Enjoyment (r(361) = .807 , P<.001), Social Interaction (r(363) = .591 , P<.001), and Boredom (r(360) = .595 , P<.001). Among poker viewing gratifications, this factor X registered strongly significant correlations with relaxation (r(360) = .682 , P<.001), habit (r(365) = .724 , P<.001), pass time (r(366) = .529 , P<.001), entertainment (r(359) = .800 , P<.001), social interaction (r(366) = .573 , P<.001), information (r(363) = .717 , P<.001),

and escape (r(360) = .605 , P<.001). There was also a moderate correlation with companionship (r(362) = .344 , P<.001).

Not surprisingly, factor X was significantly correlated with frequency of poker viewing (r(366) = .642, P<.001). Poker viewing was strongest among males viewing poker shows (r(187) = .651, P<.001), while among females this factor showed a moderately weaker correlation (r(177) = .542, P<.001). Also, consistent with earlier age-related findings, factor X was negatively correlated to age (r(367) = -.143, P=.006) and classification (r(367) = -.156, P=.003).

For the question "What's the most you ever gambled in one day?" this factor X showed a moderately strong significant correlation (r(367) = .503, P<.001). There was also a moderately strong significant correlation with social card playing (r(367) = .554, P<.001).

DISCUSSION

This study provides a profile of students who are being most affected by the poker explosion. A significant proportion of them are young, male, living in student housing, watching poker, playing poker online and identifying strongly with the stars they see on television. Since this new pattern of poker consumption is a relatively new phenomenon that has been gaining in momentum since it was introduced in late 2003, and many of the upper classmen were already attending classes before the introduction of the shows, it's not surprising that the youngest students show the greatest effects in this sample. The significant issue is how these effects will manifest over time.

Gambling behavior is affected by a complex range of variables, some of which aren't addressed by this study. According to Bandura, our actions are a product of a reciprocal interaction between our environment and our personal factors (cognitive, physical, and affective) to influence behavior. The influence these factors exert on each other are neither simultaneous nor equal in strength. One of the more surprising observations in this study was that student gambling wasn't more affected by peer and family gambling habits. Considering that gambling begins for many as a social exercise, it seemed likely that cohorts would have a greater impact on the gambling habits of their friends. However, it appears as though there are certain personal factors that play a greater role in deciding who is most affected in their gambling behavior. These personal factors are reflected through ones beliefs and evaluations which are determinative of their gratifications sought.

Revising the Model. The finding that social systems weren't as influential in the gambling behavior of college students suggests the model in Figure 3 should be modified. That would entail a more individualistic approach and reducing the emphasis on the college

environment as a major precipitator of gambling behavior. This would best be achieved by giving greater attention to the beliefs and evaluations that make up the gratifications sought.

According to Palmgreen and Rayburn (1984), behavior is a function of beliefs or the expectancy that an object possesses a particular consequence, along with an evaluation of positive or negative affect toward a behavioral outcome. For poker viewers, the implications are that identification with popular television poker personalities could lead them to believe themselves capable of winning big in the game, and thus they evaluate whether or not to act on that feeling. Beliefs and evaluations are vital to Palmgreen and Rayburn's expectancy-value model of media usage (shown in Figure 4) in that they propel ones motivations for using a specific media. The degree to which ones gratifications are obtained influence further beliefs toward using the specific media.

Beliefs (b_i) → Gratifications Sought (GS_i) → Media Consumption $(\Sigma b_i e_i)$ → Perceived Gratifications Obtained → Beliefs (b_i)

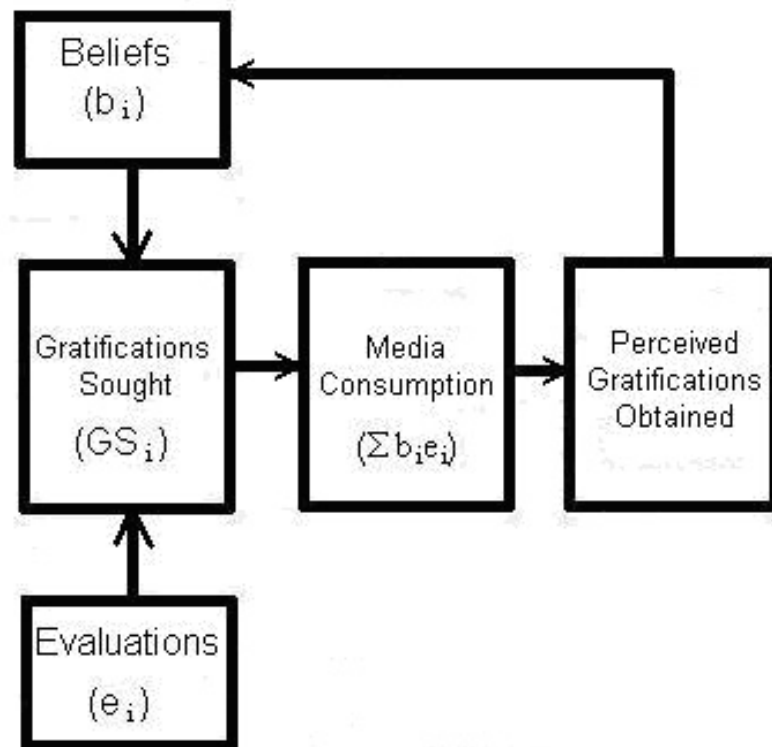Evaluations (e_i) → Gratifications Sought (GS_i)

Figure 4. Palmgreen et al's Expectancy Value model (1984)

61

This model provides insight towards interpreting some of the findings in this study. In figure 4, "gratifications obtained" are representative of the gambling attitudes that result from watching poker shows. The data from this study suggests that social systems are most strongly felt on attitudes (gratifications obtained in figure 4) and act as a filter as these resulting attitudes feed back into the belief system.

The effects that these resulting attitudes have on gambling behavior are moderated by a pre-existing psychological predilection towards excitement. This predisposition serves as the X factor in determining how strongly the effects of the altered attitudes effect gambling behavior. It also strengthens the connection between identification and attitudes (occurring at the point of media consumption, as seen on the right in figure 5). Figure 5 offers a revised model (right) for the dynamics observed in this study.
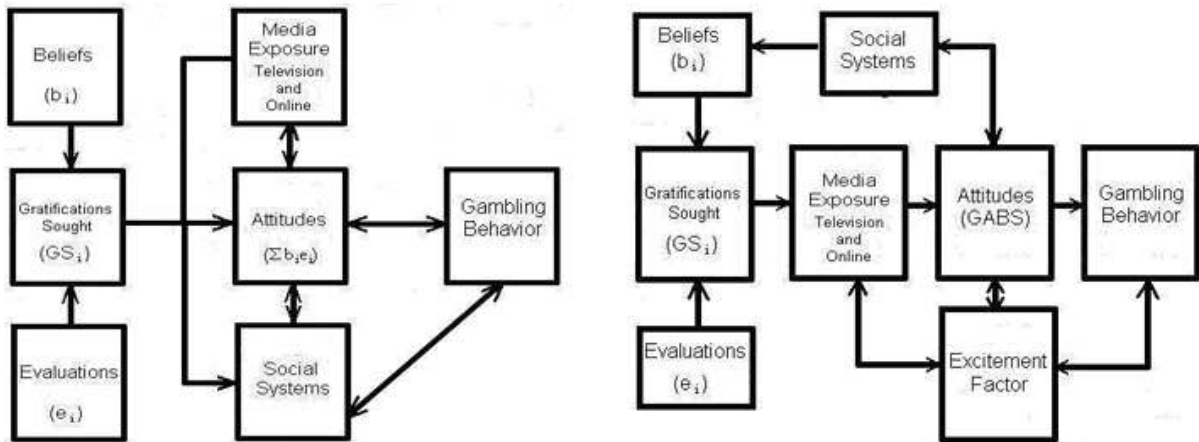

Figure 5 & Figure 6. Hypothesized model and revised model

Implications. The implications for those who produce this programming are that they should hold themselves reasonably accountable for the youth-oriented perspectives they project in airing the shows. All too often, the shows revolve around themes such as "the youth movement in poker" and how the "young Internet players" are taking it to the old veterans. Last year, an entire episode (along with a steady reel of highlights that were played on subsequent shows) was devoted to the World Series of Poker bracelet winner who was days removed from his 21st birthday. Throughout the broadcast, the announcers kept making light of the fact that he'd been playing on the Internet until he turned 21. Their endorsing of the young, underage (in this case), online, poker players may be what has caused the glaring disproportion of underage internet players observed in this study.

Celebrities should also be more mindful of the behavior that they lend their endorsement to. Since the arrival of the Celebrity Poker Showdown on the Bravo network, a great number of celebrities have been making appearances on the more popular tournament shows. These appearances have gone a long way towards bringing poker into the mainstream.

Without going so far as to regulate these shows, producers should be more responsible with the themes involved in these shows in much the same way that cigarette companies must be when marketing their product. It is also apparent that more work needs to be done towards regulating underage poker playing on the internet.

SUMMARY

The current study was designed to test the impact that the increasing popularity of poker television shows is having on the gambling behavior of college students. The hypotheses were fashioned around basic principles of Social Cognitive Theory (SCT) which attributes behavioral change to a reciprocal interaction between various personal, environmental, and behavioral, factors. It was hypothesized that through identification with the personalities that compete in the poker shows, college students would experience a change in attitude that would manifest in increased gambling behavior. This attitude change would be reinforced and made stronger through interaction with their social networks. While the influence of social systems was shown to have a weakly significant impact on the model, identification was shown to have a significant impact on attitude, which in turn had a moderate to strong significant impact on gambling behavior. These effects were felt to the greatest degree among the younger students. Most interesting was the finding that online poker playing was affecting the younger students to a much greater degree than their older counterparts.

The research questions were equally revealing. Through studying the television and gambling gratifications and how they impact identification, problem gambling behavior, and online gambling, the gambling and television gratifications for excitement/arousal showed strong significance across the two scales. When aligned into one measure, they showed strong significance with many of the other gratifications along both measures. This X factor, which is inherent in the excitement measure, showed equally strong significance in the GABS scale as well as the identification index. Considering the extensive literature on excitement as a primary element of gambling addiction, the fact that it resonated so strongly

64

in this study leads one to question if there is a biological component involved among college

students (particularly among young students with an under-developed psyche).

   Limitations. By anticipating a theory driven emphasis on social systems as a

precipitator of student gambling, less attention was given the individual student and measures

of beliefs and evaluations (as seen in figure 5). The college environment, probably more than

any other, is comprised of a very diverse set of young minds. With so much diversity, more

questions regarding personality might have provided a more detailed profile of who is being

affected by poker shows the most. Nevertheless, with 88 questions in the instrument, it just

wasn't possible to incorporate other measures.

   The 2% response rate to the mailings is another concern. However, there could be

various reasons for the response rate. Many people may have perceived the mailing as just a

mass marketing ploy. Others may have deleted it simply because they didn't recognize the

email address. Since it was sent out during the holiday season, many students likely weren't

checking their account at that time. There also may be a great many students who do not use

their student email account.

   While there were some concerns with using student email as a way of distributing the

survey, the rewards justified the costs. It allowed for a random sample. Data collection and

data entry were both a lot more efficient and didn't require random checks to see that the

forms were being entered in properly. Using a website made filling out an 88 item survey

much less stressful on the respondents. Considering the number of variables in the

instrument, it is a positive that two-thirds of the students that logged on to the site took the

time to complete the survey.

FUTURE RESEARCH

Since televised poker only began to gain such popularity in the last 2 ½ years, a longitudinal study is needed to gauge the effect the shows have on college students over time. Since younger students were most strongly affected in this study, it raises the question of whether those effects will strengthen or manifest themselves in other ways. Future studies should include personality measures with an emphasis on beliefs and evaluations. There should also be a refined measure to determine how susceptible each student is to the factor that is inherent in the excitement variables.

A longitudinal study should also place a strong emphasis on Internet poker. Online poker is growing at an even faster rate than its television counterpart and the introverted nature characteristic of this form of entertainment exposes the student to an even more complex set of psychological considerations.

There are many complexities within this data that, when put together, are forewarning of considerable problems in the future. In light of the potential excitement factor that may lead to increased gambling-related problems, it becomes especially troublesome that the youngest students are playing Internet poker at a greater frequency than the older students. Given that problem gambling has been most often classified as a solitary activity, the dissociation of the computer coupled with the lack of inhabition and dealer frequency, present a slippery slope for these young gamblers. Since depression (and low norepinephrine levels) is common among younger students, the desire to dissociate from friends and play poker in their rooms may prove too enticing . By continually chasing that optimum level of excitement, these students run the risk of long-term addiction and financial ruination.

APPENDIX A: SURVEY

TV POKER SURVEY

Please help us by filling out this entire survey as accurately as possible.

Demographics Questions

1. What is your age?
___ 17   ___ 18   ___ 19   ___ 20   ___ 21+

2. What is your gender?
___ Male   ___ Female

3. What is your classification?
___ Freshman   ___ Sophomore   ___ Junior   ___ Senior   ___ Other

4. What is your GPA last semester?
___ 0-0.9   ___ 1.0-1.9   ___ 2.0-2.4   ___ 2.5-2.9   ___ 3.0-3.4   ___ 3.5-4.0

5. Are you currently a member of a Greek organization on campus?
___ yes ___ no

6. Do you live in student housing?
___ yes ___ no

7. What is your major?
_____

Televised Poker Questions

Please answer the following questions pertaining to your viewing habits of poker on television.

8. How frequently have you watched poker shows (like ESPN's World Series of Poker, the Travel Channel's World Poker Tour, Bravo's Celebrity Poker Showdown, etc.) in the last month?
___never
___less than once a week
___1-2 times a week
___3-4 times a week
___5 or more times a week

9. How much would you like to be like the players you see on TV?
___not at all
___not much
___somewhat
___a lot
___exactly like them

10. Are there things that you see the players do that you would like to do?
___yes
___no

Please circle the number to indicate whether each reason is exactly (5), a lot (4), somewhat (3), not much (2), or not at all (1) like your own reasons for watching poker on television.

I watch poker on television…

	Always	*Usually*	*Sometimes*	*Rarely*	*Never*
11. Because it relaxes me.	A	U	S	R	N
12. So I can talk with other people about what's on.	A	U	S	R	N
13. So I can get away from what I'm doing.	A	U	S	R	N
14. So I won't have to be alone.	A	U	S	R	N

15. Because it's exciting.	A	U	S	R	N
16. So I can learn how to do things which I haven't done before.	A	U	S	R	N
17. Just because it's there.	A	U	S	R	N
18. So I can get away from the rest of the family or others.	A	U	S	R	N
19. Because it allows me to unwind.	A	U	S	R	N
20. When I have nothing better to do.	A	U	S	R	N
21. Because it entertains me.	A	U	S	R	N
22. Because it's something to do when friends come over.	A	U	S	R	N
23. Because it makes me feel less lonely.	A	U	S	R	N
24. Because it peps me up.	A	U	S	R	N
25. Because it passes the time away, particularly when I'm bored.	A	U	S	R	N
26. Because it amuses me.	A	U	S	R	N
27. Because it's a pleasant rest.	A	U	S	R	N
28. Because it helps me learn things about myself and others.	A	U	S	R	N
29. Because I just like to watch.	A	U	S	R	N
30. Because it's thrilling.	A	U	S	R	N
31. Because it's enjoyable.	A	U	S	R	N
32. So I can forget about school, work, or other things.	A	U	S	R	N
33. When there's no one else to talk to or be with.	A	U	S	R	N
34. Because it gives me something to do to occupy my time.	A	U	S	R	N
35. So I could learn about what could happen to me.	A	U	S	R	N
36. So I can be with other members of the family or friends who are watching.	A	U	S	R	N
37. Because it's a habit, just something I do.	A	U	S	R	N

Questions about Gambling Behavior

Please answer the following questions concerning your personal gambling habits.

38. How frequently have you gambled online in the last month?
___never
___less than once a week
___1-2 times a week
___3-4 times a week
___5 or more times a week

39. On average, how many hours do you spend online playing poker per week?
___none
___1-5 hours per week
___5-10 hours per week
___10-20 hours per week
___more than 20 hours

40. Do your friends play poker?
___yes
___no

41. (If you answered "yes" to question 40): How often do your friends play poker?
___never
___less than once a week
___1-2 times a week
___3-4 times a week
___5 or more times a week

42. Do any members of your immediate family (parents, siblings, etc) play poker?

___yes

___no

43. (If you answered "yes" to question 42): How often do your family members play poker?

___never

___less than once a week

___1-2 times a week

___3-4 times a week

___5 or more times a week

44. Since you came to college, do you gamble more frequently, less frequently, or about as often as you had before you arrived?

___more frequently

___less frequently

___about the same

45. On average, how frequently do you play cards for money each month?

___ not at all

___ less than once a week

___ once a week or more

46. What is the largest amount of money you have ever gambled with on any one day?

___ never have gambled

___ $1 or less

___ more than $1 but less than $10

___ more than $10 but less than $100

___ more than $100 but less than $1000

___ more than $1000 but less than $10,000

___ more than $10,000

47. Do any of the following people in your life have (or have they had) a gambling problem?

___ father

___ mother

___ brother or sister

___ boyfriend or girlfriend

___ spouse or partner

___ grandparent

___ another relative

___ no one in my family has (or has had) a gambling problem

48. When you gamble, how often do you go back another day to win back money you lost?

___ never

___ some of the time (less than half the times I lost)

___ most of the times I lost

___ every time I lost

49. Have you ever claimed to be winning money gambling, even though you were actually losing money?

___ never (or never gamble)

___ yes, less than half the times I lost

___ yes, most of the time

50. Do you feel you have ever had a problem with gambling?

___ no

___ yes, in the past, but not now

___ yes

51. Have you ever gambled more than you intended?

___ yes

___ no

52. Have people criticized your gambling?

___ yes

___ no

53. Have you ever felt guilty about the way you gamble or what happens when you gamble?

___ yes

___ no

54. Have you ever felt like you would like to stop gambling but didn't think you could?
___ yes
___ no
55. Have you ever taken extra measures to hide your gambling from important people in your life?
___ yes
___ no
56. Have you ever argued with people you like over how you handle money?
___ yes
___ no
57. (If you answered "yes" to question 56): Have money arguments ever centered on your gambling?
___ yes
___ no
58. Have you ever borrowed from someone and not paid them back as a result of your gambling?
___ yes
___ no
59. Have you ever lost time from work or missed classes as a result of gambling?
___ yes
___ no
60. Have you ever needed a credit card to gamble or pay a gambling debt?
___ yes
___ no

Why Do You Gamble?

Please circle the number to indicate whether you, Agree strongly (5), Agree (4), are Undecided (3), Disagree (2), or Disagree strongly (1) with the following statement.

I gamble…

	Agree Strongly	Agree	Undecided	Disagree	Disagree Strongly
61. To make money.	AS	A	U	D	DS
62. To pass time.	AS	A	U	D	DS
63. Because it's exciting.	AS	A	U	D	DS
64. To have a good time.	AS	A	U	D	DS
65. For social interaction.	AS	A	U	D	DS
66. For the rush.	AS	A	U	D	DS
67. Because it's fun.	AS	A	U	D	DS
68. Because it's enjoyable.	AS	A	U	D	DS
69. To have something to do.	AS	A	U	D	DS
70. To be with friends.	AS	A	U	D	DS
71. For excitement.	AS	A	U	D	DS
72. To get rich.	AS	A	U	D	DS
73. To socialize.	AS	A	U	D	DS
74. To win money.	AS	A	U	D	DS
75. Because I'm bored.	AS	A	U	D	DS

Please circle the number to indicate whether you, Agree strongly (5), Agree (4), are Undecided (3), Disagree (2), or Disagree strongly (1) with the following statement.

	Agree Strongly	Agree	Undecided	Disagree	Disagree Strongly
76. It is important to feel confident when I gamble.	AS	A	U	D	DS
77. I know when I'm on a streak.	AS	A	U	D	DS

78. No matter what the game is, there are betting strategies that can help you win.	AS	A	U	D	DS
79. Gambling makes me feel really alive.	AS	A	U	D	DS
80. Sometimes I know I'm going to have good luck.	AS	A	U	D	DS
81. To be successful at gambling, I must be able to identify streaks.	AS	A	U	D	DS
82. If I have been lucky lately I should press my bets.	AS	A	U	D	DS
83. If I have lost my bets recently, my luck is bound to change.	AS	A	U	D	DS
84. Some people bring bad luck to other people.	AS	A	U	D	DS
85. If you have never experienced the excitement of making a big bet, you have never really lived.	AS	A	U	D	DS

Background Questions

Please answer the following questions regarding your economic status.

86. What was your estimated family (parental) income in 2004?
___ under 25,000
___ $25,000 - $39,999
___ $40,000 - $59,999
___ $60,000 - $79,999
___ $80,000 - $99,999
___ $100,000 or more
87. What was your personal income reported for tax purposes for 2004?
___ under 25,000
___ $25,000 - $39,999
___ $40,000 - $59,999
___ $60,000 - $79,999
___ $80,000 - $99,999
___ $100,000 or more
88. Which of the following best describes your current employment situation?
___ employed
___ not employed but seeking employment
___ not employed and not seeking employment

Thank You For Your Cooperation!

APPENDIX B: CONSENT LETTER

Dear Student,

Hello, my name is Marc Londo. I am a graduate student from the University of Central Florida conducting a survey about poker shows on television. The purpose of this research study survey is to explore how college students perceive the content that makes up these shows. Participants must be over 18 years of age. We estimate that 400 students will participate in this study. You will be asked to complete a series of questions about your viewing habits and your observations. The questions are multiple choice and will be presented through an online website. This should take about 7 to 10 minutes. If you elect to participate, you have the right not to answer any question that you prefer not to answer. Just skip that question and go on to the next one.
Your participation in this survey is voluntary. This means that you do not have to participate in this survey unless you want to. There is no monetary compensation for your participation. However, your participation will provide very useful information toward addressing relevant issues concerning television content directed at your demographic.
Some of the questions are probative in nature and you may feel uneasy about answering. If that happens, simply skip that question and go on to the next one. Rest assured, all the information I receive from you will be strictly confidential. I will not identify you or use any information that would make it possible for anyone to identify you in any presentation or written reports about this study. When I have received a sufficient response to this survey, I will group all the answers together. There will be no way to identify individual participants. You have the opportunity to ask, and have answered, any questions that you may have about this research at any point during the study. If you have such questions, you can reply by email to MLNumber01@aol.com, anonymously if you wish, and I will answer any question you may have in a timely manner. You may also reach me by phone at 817-881-9445. If you prefer, you may also contact the supervisor of this study, Dan Shaver, at dshaver@mail.ucf.edu. He can also be reached by phone at 407-758-7962.
Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board. Questions or problems regarding these activities should be addressed to: UCF IRB Office, University of Central Florida Office of Research, Orlando Tech Center, 12443 Research Parkway, Suite 301, Orlando, FL 32826. Their phone number is 407-823-2901.
If you feel comfortable that all your questions have been answered to your satisfaction, you may continue on with the study. Upon completing and submitting the survey, you are giving your consent for the information you provided to be used in this study. Finally, if you would like to participate, please click on the following link to begin the survey:
(link provided here)
Please complete the survey by February 01, 2006 in order for your responses to be included in the results. Thank you for your participation in this study!

Sincerely,
Marc Londo
Master's Degree Candidate, University of Central Florida
Mass Communications
Advisor: Dr. Dan Shaver

APPENDIX C: FOLLOW-UP LETTER

Dear Participant,

We have concluded our study regarding the effects of televised poker. Thanks to your participation, we have been able to engage in this research.

This study investigated how the popularity of televised poker has impacted the gambling habits of college students. If you are interested in this study and would like to know more, please reply to this email at ma736323@pegasus.cc.ucf.edu and I will send you a brief synopsis once we conclude our analysis.

If you have any further questions, feel free to contact me at (817) 881-9445.

We would not have been able to conduct this study without your participation. Thank you again for your time and consideration.

Sincerely,
Marc Londo
Master's Degree Candidate, University of Central Florida
Mass Communications
Advisor: Dr. Dan Shaver

APPENDIX D: IRB APPROVAL LETTER

Office of Research & Commercialization

November 22, 2005

Dan Shaver, Ph.D. and
Mark Londo
University of Central Florida
Nicholson School of Communication
COMM 227
Orlando, FL 32816-1344

Dear Dr. Shaver and Mr. Londo:

With reference to your protocol #05-3046 entitled, **"A Social Cognitive Approach towards Understanding the Effects of Popular Poker Television Shows on College Students"** I am enclosing for your records the approved, expedited document of the UCFIRB Form you had submitted to our office. **This study was approved on 11/23/05. The expiration date will be 11/22/06.** Should there be a need to extend this study, a Continuing Review form must be submitted to the IRB Office for review by the Chairman or full IRB at least one month prior to the expiration date. This is the responsibility of the investigator. **Please notify the IRB office when you have completed this research study.**

Please be advised that this approval is given for one year. Should there be any addendums or administrative changes to the already approved protocol, they must also be submitted to the Board through use of the Addendum/Modification Request form. Changes should not be initiated until written IRB approval is received. Adverse events should be reported to the IRB as they occur.

Should you have any questions, please do not hesitate to call me at 407-823-2901.

Please accept our best wishes for the success of your endeavors.

Cordially,

Barbara Ward

Barbara Ward, CIM
UCF IRB Coordinator
(FWA00000351, IRB00001138)

Copies: IRB File

BW:jm

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