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Case Conference Report

Gambling-Induced Analgesia: A Single Case Report

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Abstract

This paper describes a single case study of analgesia induced by gambling. The subject is a 48-year-old male diagnosed with pathological gambling

problems, suffering chronic back pain resulting from a road trauma. The reported intensity of arousal associated with slot machines and roulette produced a state of dissociation or distraction that temporarily reduced levels of pain. Consistent with an operant conditioning model, this reduction in pain was a negative reinforcer that acted to elicit further gambling whenever the pain reached a certain level of discomfort. In the absence of any effective analgesic medication, he used gambling as his predominant strategy to manage pain. He began to enjoy gambling, and within a relatively short period, lost more than he intended and commenced chasing losses. Pain levels decreased following chiropractic interventions, but his gambling continued. The additional, positive reinforcing effects of the excitement generated by the slot machines and roulette gaming became sufficient to maintain persistence in gambling independent of pain experienced. This case highlights the possibility that psychological factors involved in establishing a gambling habit may differ from those involved in maintaining persistence.

Introduction

Several authors have suggested that the need to escape negative emotional states partially explains the motivation for persistent gambling in a proportion of participants (Blaszczynski & McConaghy, 1989; Jacobs, 1989; Wynne, 1994). The central concept underlying this view is that gambling is capable of producing sufficient arousal to induce a state of narrowed attention, or an altered state of consciousness characterised by amnesic episodes, trance and dissociation. It is argued that this state of consciousness permits a person who is gambling to temporarily 'switch off' from stressful thoughts, reduce boredom (Blaszczynski, McConaghy & Frankova, 1990), escape emotionally from their current situation or cope with feelings of inadequacy or rejection. Although imprecisely defined, the phenomenon of dissociation, the cornerstone of Jacobs' *General Theory of Addictions* (1989), is claimed to mediate this process.

Studies demonstrate that gambling is associated with subjective and physiological indices of arousal (Anderson & Brown, 1984; Leary & Dickerson, 1985; Dickerson & Adcock, 1987; Roby & Lumley, 1995) and high scores on measures of dissociation (Kuley & Jacobs, 1988; Brown, 1997; Gupta & Derevensky, 1998). Empirical data offered by Diskin and Hodgins (1999) demonstrate the ability of gambling to engross participants during play. The authors demonstrated that reaction time in response to visual stimuli during a laboratory session of gambling was slower and scores on a dissociative scale

higher among 12 people with pathological gambling problems who played video lottery compared to 11 occasional players.

We present an interesting case of a male for whom arousal associated with gambling invoked a dissociative-like state (or level of distraction) that induced analgesia for chronic back pain. His gambling rapidly escalated as it was an effective strategy that distracted him from his chronic back pain. According to principles of operant conditioning, removal of pain negatively reinforced gambling and led to the development of a gambling habit. However, consistent with the behaviour completion mechanism model (McConaghy, 1980; McConaghy, Armstrong, Blaszczynski & Allcock, 1983), once his gambling became a habit, he acknowledged that he played independently of pain. He enjoyed gambling for the excitement it generated, and in response to urges triggered by stresses of any nature or source.

Case history

Mr. S.M. was a 48-year-old married, self-employed businessman. He referred himself for treatment because, for one year, he played slot machines and roulette excessively. He reported a mean net expenditure of AUD $500 to $800 per session (on infrequent occasions, more than AUD $1,000), frequently playing twice a week for two hours. He endorsed seven of 10 DSM-IV criteria and obtained a South Oaks Gambling Screen (Lesieur & Blume, 1987) score of 11. Mr. S.M. produced bank statements verifying recurrent withdrawals of AUD $200 from gambling venues.

Mr. S.M. consented to publication of this case study.

Personal details

Mr. S.M., second youngest of four boys, was born in Germany in 1950, went to school, and then migrated to Australia with his family at age 20. His father, a cabinetmaker, died 20 years ago from a heart condition and his mother lives near his residence. His developmental milestones were normal and his childhood unremarkable. The family was close and he maintains irregular contact with his brothers.

In Australia, he commenced but did not complete a diploma in chemistry. He was employed as a technical assistant in a painting and printing research and

development laboratory. He subsequently embarked on a relatively successful career as a self-employed businessman, importing goods and earning approximately AUD $240,000 per annum. He is a gregarious and talkative person.

At age 21, he married a nurse and they had three children. He described the relationship as "good." In 1984, because they both worked long hours, they experienced marital difficulties, which resulted in a two-month separation.

Mr. S.M. denied the presence of a family or premorbid history of psychiatric illness, alcohol dependency or illicit drug use. He consumed alcohol socially; less than two standard drinks per day on average; although, because of a car accident, he drank more when he experienced severe pain. There was no evidence suggesting a personality disorder, thought disorder, antisocial or conduct-behavioural problem, nor was there evidence of any significant medical illness prior to the injuries sustained in the accident.

History of physical injuries

In June 1997, Mr. S.M. was involved in a motor vehicle accident and sustained severe bruising, soft tissue whiplash injuries and a fractured spine and sternum but did not lose consciousness. He continued to suffer significant back pain and psychological changes characterised by increased irritability, anger and depression. His back pain was located in the lumbar regions L1 and L2 and upper neck and shoulder area. He described it as severe fluctuating episodes lasting a day or two with continual moderate pain. Using the McGill Pain Questionnaire (Melzack, 1975), his pain was rated at a score of three; which is distressing because of its intensity. Using the rank value method, the following pain scale scores were obtained: sensory, 6; affective, 16; evaluative, 10; and miscellaneous, 13; giving an overall total Pain Rating Index of 45. He stated that he was unable to stand or sit for any length of time and said this had hampered his ability to function at work.

Taking analgesic medication such as Panadeine Forte and Efexor (300 mL) daily temporarily alleviated pain but did not eliminate it completely. When the pain was severe, he would consume several glasses of alcohol over a few hours.

Mr. S.M. became depressed due to the pain, which interfered with his capacity to work and restricted his quality of life. He consulted a psychiatrist for counselling and a hypnotist for pain management and he initiated

compensation because of his injuries.

Gambling history

Mr. S.M. commenced gambling at 17, infrequently betting AUD $5 on horse races at off-track betting venues. He also began playing slot machines socially, and infrequently attended a casino with friends and or his wife. There was no reported loss of control over the 15-year period prior to 1998.

In March 1998, Mr. S.M. attended a casino with his wife and won AUD $4,500. Significantly, he noted that gambling (and winning) produced a state of excitement —powerful enough to act as an effective analgesic for his pain. The excitement altered his mood and self-confidence: "Nothing but happy thoughts, I'm on cloud nine."

As a result, Mr. S.M.'s gambling escalated rapidly over the following three months after learning that gambling was effective in reducing his chronic back pain. Whenever the pain increased, he gambled to reduce its intensity. All other concerns and physical sensations were excluded from conscious awareness:

> "…the concentration on the gambling is so intense that I don't feel anything. I talk with people at the roulette table and become very happy and relaxed. The concentration is on the gambling. Very important, when gambling just small amounts it becomes boring and the pain becomes noticeable. To chase gives full concentration. The pain disappears. This does not work without real [meaning substantial amounts] money."

On the Jacobs (1989) four-item dissociative scale, he failed to endorse depersonalization ("…ever felt like you were outside yourself watching…") and reported only occasional memory lapses. The remaining two items were rated as frequently: "I'm really into it [gambling], everybody is a shadow when I am playing" and "I feel totally happy, invincible."

The negative reinforcing effects of gambling led to a cycle where gambling represented a costly approach to pain management. He lost substantial amounts and, given his restricted capacity to earn money, was forced to sell investment properties to cover expenses. He began to chase losses and developed erroneous beliefs about his skills and probability of winning. Over three months, he lost approximately AUD $20,000 and made repeated,

unsuccessful efforts to cease gambling.

Between March and September, Mr. S.M. was offered imaginal desensitisation (McConaghy et al., 1983) and cognitive therapy designed to correct erroneous perceptions. He reported an estimated improvement of 60 to 90 per cent (as assessed by frequency and amount used to gamble).

Chiropractic manipulation partly contributed to this positive outcome of pain reduction, and his back pain stabilised to tolerable limits. In September 1998, he reported that he gambled less frequently, reduced the amount substantially, and that current gambling sessions were not motivated by the need to induce analgesia. His gambling patterns changed significantly and he often gambled within controlled limits motivated by social enjoyment. He made the conscious decision to play for excitement in weekly one-hour sessions with a net expenditure of $100. However, there were additional binge episodes that were triggered by a range of stresses or depressed moods related to worries over his compensation proceedings and inability to work. At these times, he spent more than intended, losing up to AUD $250 to $350 per session.

At his October 1999 follow-up, he reported continued improvement of approximately 80 per cent from pre-treatment levels of amount and frequency of gambling. However, he still had intermittent lapses during the intervening 12 months in which he lost up to $400 (amounts significantly less than those lost in earlier binge episodes). On one occasion, he was under considerable pressure and decided to gamble despite the efforts of his friends to contain him. He acknowledged awareness of his actions but felt the need to release pent-up stresses and the overwhelming drive to gamble. In another episode, conflict with barristers and anxiety associated with the preparation of compensation reports provoked a serious episode where he gambled AUD $1,000 but aborted the session despite having access to money.

When last seen, in December 1999, he reported no subsequent episodes of excessive gambling. On several occasions he entered gambling premises with his wife, but either did not gamble or limited his gambling to a small amount with no difficulty, deciding to cease despite having AUD $2,000 or more in cash. He acknowledged a persistent underlying urge to gamble but claimed it was controllable. Given his fluctuating pattern of improvement, his prognosis was regarded as positive, but uncertain in the longer term. Cognitive therapy and counselling continued to be offered.

Discussion

It makes intuitive sense to argue that gambling represents an exciting activity capable of generating sufficient levels of arousal. Gambling offers an opportunity for emotional escapism by narrowing a player's attention, and altering his or her state of consciousness and sense of disconnection from self and environment. From a behavioural learning perspective, the reduction in aversive mood states is a negative reinforcer. Once immersed in gambling, all extraneous aspects of a person's life can be excluded from conscious thought, while attention and concentration are directed at the single task of winning, anticipating the next outcome and the powerful, ego-boosting fantasy associated with winning.

A number of authors have underscored the desire to escape stressful situations, memories and aversive mood states as a primary motivation for continued participation in gambling. Anderson and Brown (1984) first hypothesised that the physiological arousal and subjective excitement associated with gambling could sufficiently narrow attention to allow participants to escape from their current state of emotional distress.

Jacobs (1989; 1998) incorporated this concept as a central feature of his *General Theory of Addictions*, arguing that such arousal was comparable to dissociative-like phenomena. He has produced convincing empirical data to show that people who gamble experience blurred reality, shift in persona, depersonalisation and amnesia for events occurring during gambling (Jacobs, 1998). According to Jacobs, addiction is defined as "a dependent state acquired over time by a predisposed person in an attempt to relieve a chronic stress condition" (Jacobs, 1989, p. 35). Addiction to gambling specifically arises from an interaction of two predisposing variables: an abnormal state of physiological hyper- or hypo-arousal and negative childhood experiences invoking rejection, inadequacy and low self-esteem.

In this model, the potential to induce a dissociative-like state that diverts attention from chronic aversive arousal states, deflects thoughts of self-perceived inadequacies from consciousness and fosters the emergence of wish-fulfilling fantasies that give gambling its "addictive" qualities. Gambling represents a problem-solving method that permits psychological escape through mechanisms of dissociation.

> "[It is a] normal…defence we all use against distractions in everyday life. We also use dissociation as a defense when high levels of psychological distress, physical pain, or sense of helplessness caused by a traumatic incident or a continuing

> aversive condition overwhelms a person's resources for coping with the stress it engenders" (Jacobs, 1998, p. 4).

That people who gamble obtain elevated scores on measures of dissociation has been found repeatedly; (Gupta & Derevensky, 1998; Kuley & Jacobs, 1988) although with some contrary results. For example, Diskin and Hodgins (1999) found that a small sample of people diagnosed with pathological gambling problems had higher dissociative scores than people who gambled occasionally, but neither differed from normative scores.

However, dissociation is a complex concept that lacks a single framework. It is variously conceptualised as a non-integrated mental module or system, an alteration in consciousness resulting in a disconnection from self or environment, or a psychological defence mechanism (Cardena, 1994). In Jacobs' model, dissociation is used with various meanings with no attempt made to distinguish it from altered states that emerge as correlates of ordinary "distraction." As Cardena (1994) cautions, labelling any simple disconnection between self and perceptions, or emotions and thought as dissociative weakens the utility of the construct. The term should be retained for circumstances where there is a qualitative disconnection from ordinary modes of experience. We are suggesting that there are many normal activities that engross the participant wherein they become so focused they lose perceptions of external and internal stimuli. These activities are enjoyable and participation is sought recurrently. Examples are sporting contests, computer play, reading and board games. Gambling can be conceptualised in the same vein without recourse to more complicated concepts of dissociation.

In the present case study, Mr. S.M. was so engrossed in gambling that he was distracted from pain, which led directly to increased participation. It should be noted that distraction is used effectively in pain management strategies without recourse to dissociation as an explanatory process. Once the habit was established, other factors superseded the analgesic effects as the primary reasons for participation, notably, excitement and erroneous perceptions surrounding the likelihood of winning.

Blaszczynski and McConaghy (1989) adopted a similar position. They argued that gamblers experiencing anxiety selected low-skill games, while dysphoric gamblers chose high-skill games to modulate mood states and achieve optimal levels of physiological arousal (Zuckerman, 1979). However, adopting a neo-Pavlovian, behaviour completion mechanism model, McConaghy and his colleagues (McConaghy, 1980; McConaghy et al., 1983) did not consider dissociation or negative childhood experiences a necessary component of the aetiological process. Rather, a wide range of current external or internal stresses was considered sufficient to trigger the drive to gamble once a

gambling habit was established. This behaviour completion mechanism would drive the person to engage in and complete the sequence of behaviours underlying the urge. The person would experience this as a persistent preoccupation and urge to engage in the behaviour and to carry it through until satisfactorily completed. Attempts to impede this process would lead to an aversive state of increased tension and continued drive to complete the behavioural sequence.

In addition to the operant reinforcing qualities of the excitement of winning, the reduction in aversive arousal associated with the urge to carry out a habitual behaviour to completion and aversive emotional state were seen to represent important negative reinforcers. In the case of Mr. S.M., when the physical pain overwhelmed his coping resources, he gambled as a means of temporarily reducing pain through distraction. Once this became a habitual pattern, this strategy was applied to escape negative emotional states.

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Response to a Case of Gambling-Induced Analgesia

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"In our work with young gamblers..."

By Rina Gupta
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Further Specifying Our Models of Problem Gambling

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Case Conference **Responses**

Response to a Case of Gambling-Induced Analgesia

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I will attempt to cast the case of Mr. S.M. within the context of the *General Theory of Addictions* (Jacobs, 1982; 1986), key elements of which are summarized in the Discussion section of Dr. Blaszczynski's paper. From this perspective, I view the most devastating immediate and continuing result of the patient's accident as the loss of the psychological, social and financial rewards that stemmed from the business that he had created, and in which he had become so involved that at one time it even threatened his marriage.

In effect, the accident robbed this man of the essential substance and quality of his life, and left him virtually adrift from his previously established moorings.

His chronic and episodically severe pain further restricted his former, physically active work and social life. This combination of physiological and psychological stressors set the stage for his later, enthusiastic "discovery" that high

excitement while gambling actually provided an escape from all his stressors: from his preoccupation with feelings of low self-worth; from his worry about his failing business and attending money problems; as well as from his severe pain and its attending physical limitations. Moreover, he stated that he frequently experienced an altered, clearly dissociated, state of consciousness and identity while gambling. In this altered state, his mood and self-confidence were dramatically improved and he felt superior to others —invincible.

That his analgesic release from pain, while gambling, was only one component of the above dissociated experience is evidenced by the fact that his gambling "binges" continued long after the pain had become manageable. As Dr. Blaszczynski relates, the later gambling binges continued to be triggered by a range of situational stressors much like those I have described above.

The patient acknowledged that Dr. Blaszczynski's treatment of his erroneous perceptions and expectations regarding gambling had greatly reduced the frequency and amount spent per period of gambling. Yet, the patient also admitted that, despite his own and others' attempts to control his gambling, he still continued to rely on bouts of gambling to escape the build-up of intolerably frustrating stressors in his life that periodically peaked during the treatment period and continued one year after his treatment.

Fifteen months post-treatment, when last seen by Dr. Blaszczynski, the patient reported no binges during the previous three months but admitted that he had a "persistent, underlying urge to gamble," which he claimed he was controlling.

From the perspective of the *General Theory of Addictions* (and my own clinical experience), I don't believe one can talk or reason anyone with pathological gambling problems (or any person with an addiction) out of his or her chosen pattern of addictive behavior, while it is serving that person's needs. After all, in the case of Mr. S.M., pathological gambling was not the patient's "problem." For him, it was his best available solution to his long-standing underlying problems (Gupta & Derevensky, 1998) that were exposed by the physical and the functional disabilities caused by his accident. Until these underlying physiological (hypotensive) and psychological (self-worth) issues are ameliorated by whatever means, and until the patient acquires more effective coping skills for dealing with his daily stressors, I expect that his episodic gambling binges will continue.

I would like to offer a word about the differences between my view of dissociation and those expressed by Drs. Blaszczynski and Cardena. My

clinical experience and research findings consistently support the position that the phenomenon of (self-induced) dissociation constitutes an unbroken continuum of behaviors. This extends from simple, everyday forms of reverie or concentration or distraction to a middle ground, wherein a commonly held and extensively verified set of dissociative reactions are reported by people with addictions, while they are indulging (Jacobs et al., 1985; Jacobs, 1988). Towards the far end of this continuum are ever more extreme dissociative reactions, such as those reported by patients showing post-traumatic stress disorders, functional fugue states and dissociative identity disorders (Jacobs, 1982).

Consequently, I cannot agree with Cardena's argument (1994) that the concept of dissociation should be restricted to the more clinically abnormal circumstances "where there is a qualitative disconnection from ordinary modes of experience." He would thus relegate involvements with ordinary modes of experiences such as board games, computer play and reading to the (non-dissociative) realm of normal engrossments.

I believe it is far more parsimonious to view dissociation as the unbroken continuum described above. Within this conceptual framework, increases in the frequency and types of dissociative reactions reported would indicate the extent to which the person chooses to progressively separate himself or herself (via self-induced changes in thought, emotion, identity, time and/or memory) from ordinary, mildly challenging to highly aversive reality situations. For example, tables 1 and 2 reveal the progressively increasing use of five different dissociative reactions as direct correlates to the increasing extent of self-reported problems with gambling (Jacobs, 2000).

Table 1: Potential Effects of Gambling on Personality among Ontario Adolescents (N = 400)

Personality Effects (SOGS Scores)	No Problems (0)	Some Problems (1–2) (3–4)		Probable Pathological
Lost track of time while gambling	12%	36%	55%	65%

Felt like you were a different person	3%	10%	26%	53%
Felt like you were outside of yourself watching yourself gamble	2%	8%	9%	29%
Felt like you were in a trance	0%	8%	7%	24%
Experienced a memory blackout for things that happened while you were gambling	0%	3%	2%	12%

Compiled by D.F. Jacobs, PhD

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Table 2: Potential Effects of Gambling on Personality among Alberta Adolescents

Dissociative State	% Non-Problem Gamblers (N = 430)	% At-Risk Gamblers (N = 148)	% Problem Gamblers* (N = 77)
Lost track of time while gambling	24%	56%	75%

Felt like you were a different person	7%	23%	29%
Felt like you were outside yourself, watching yourself gamble	2%	7%	26%
Felt like you were in a trance	1%	2%	27%
Experienced a memory blackout for things that happened while you were gambling	1%	6%	20%

** Classification of gambler categories based on SOGS scores.*

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As one knowledgeable about pain management strategies, I find it unacceptable to propose "distractions" as a freestanding entity arbitrarily and without supportive evidence. Distraction, via reading or meditation, is firmly included within the range of simple to more complex dissociation techniques (e.g., self-hypnosis) regularly taught to hospitalized patients reporting chronic, intractable pain (Jacobs, 1980; 1987).

This is a final comment about the respective motives for gambling, which Dr. Blaszczynski attributes to social and pathological gamblers. Overwhelmingly, both groups enjoy the excitement and opportunity to win money. What

separates them is that social gamblers typically set and hold to time and loss limits for a given playing session. When they win larger amounts, social gamblers tend to pocket their winnings and leave. Gamblers with pathological-level problems, like Mr. S.M., find it very difficult when stressed to set or maintain time or loss limits. They rarely pocket the money and leave even when they win very significant amounts. Their overriding motivation is to use winnings and other sources of money to keep playing. Their primary objective is to maintain and enjoy the dissociated, altered state of consciousness that results from gambling. In the words of one person with pathological gambling problems: "The next best thing to winning is losing – just so I stay in action!"

Submitted: November 6, 2000

Case Conference Response

"In our work with young gamblers…"

By Rina Gupta
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It was a real pleasure reading the article "Gambling-Induced Analgesia: A Single Case Report," as it echoes what we see and experience in our treatment of adolescent gamblers.

The single case report describes a man in his late forties who turned to gambling as a way of escaping the pain of a back injury incurred from a serious car accident. Gambling, for him, resulted in analgesic properties allowing him to escape physical pain for brief periods of time. The article also reported that he experienced depression as a result of his pain, and that he would also engage in binge drinking as a means of escape. One must wonder if he was also intentionally escaping feelings of depression with his gambling and use of alcohol.

What is particularly interesting about this individual is that he continued his gambling despite an improvement in his physical condition, and he was aware

of gambling for reasons other than its analgesic effects; that is, primarily for the excitement. He continued to gamble beyond the limits he set for himself and recognized that the reasons causing him to begin gambling in a problematic fashion were not the same as those maintaining his gambling involvement.

In our work with young gamblers, we often encounter adolescents whose motivations underlying their gambling change over time. However, we are more likely to see youth who start gambling primarily for reasons of socialization and excitement, and then realize over time, the "escape" that gambling provides. Those who feel they benefit from the escape are more likely to continue gambling for this property and less for the excitement and socialization advantages that attracted them in the first place.

Our research efforts have consistently indicated a strong linear relationship between degree of gambling and reported degrees of dissociation experiences by youth while gambling. They report that gambling is a "whole different world" where "problems do not exist," where they "feel good." It is not uncommon for us to work with youth who are either mildly or seriously depressed, and they explain that only when gambling do they feel "not depressed" and "alive."

More likely than not, youth who experience gambling problems lack adequate problem-solving, coping and social skills. They often find themselves having friendships that lack depth and closeness, feeling as though they "don't belong" and as though they are incapable of successfully facing the challenges of adolescence. Most of our adolescents in treatment can reflect back on previous years and honestly admit to feeling dysfunctional in many ways —in terms of interpersonal relationships with friends and family, and often, with respect to their academic performance. More often than not, these youth are struggling with identity issues and issues of belonging.

Many of these youth are anxious or fidgety, and may only feel comfortable when engaged in highly stimulating activities. It is no wonder they quickly come to recognize gambling as a solution to their unhappy states of being; to recognize gambling as their new "best friend." This best friend keeps them busy, does not judge or criticize them, satisfies their need for high arousal and stimulation and allows them to forget that they are not functioning well in the outside world.

These words from an 18-year-old girl sum up what we have come to understand about the motivations underlying gambling very well:

" ..It was a whole fantasy life and I felt happier than I ever did before. I didn't

feel sad or bored, or as if I did not belong. I realized that I did not have any real friends, my whole life. I never really had a friend that I could confide in or cry with, or even really laugh with. Now, I felt satisfied and happy and I thought gambling was the best thing for me. …Now I can't stop. I need it to make me forget my problems at school and with my family, and the fact that I have no real friends."

We have not yet treated any youth who were gambling for analgesic reasons, but we have frequently worked with youth who gambled to numb emotional pain resulting from the death or loss of a parent as well as other traumas. While gambling they can feel good and let go of the pain, resulting in a very powerful situation where gambling serves as a negative reinforcer. Most youth, due to a lack of previous gambling involvement, are unaware that gambling will help them escape pain and unhappiness, but they latch onto gambling for these reasons through repeated exposure and their primary motivations for gambling seem to fall into the background.

In sum, we must acknowledge the strong analgesic and escape properties inherent in gambling participation, as well as the fact that reasons for gambling participation can change over time. This awareness will serve to develop better prevention messages and allow for more successful treatment outcomes.

Submitted: October 24, 2000

Case Conference Response

Further Specifying Our Models of Problem Gambling

By David Hodgins
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This 48-year-old German man living in Australia could easily be living in Calgary, Alberta, playing our infamous video lottery terminals, or he could be anywhere else in Canada or North America. I am struck by how the clinical presentation of gambling problems is so similar from country to country and continent to continent, despite the fact that our gambling venues, habits and

traditions vary considerably. In many ways, people with gambling problems in different countries seem more similar than different. Frequently, the person with gambling problems describes the functional role of gambling as escape from dysphoria. Grief, depression, relationship difficulties, and pain are commonly cited causes of the dysphoria. Also very common is the report of a "big win" early in the course of the development of the problem.

Various models and theories attempt to account for these aspects of problem gambling phenomena. The author draws upon concepts such as arousal, dissociation, excitement, narrowing of attention and operant conditioning among others. Specific reference is made to Jacobs' general theory and the behavior completion mechanism model. The concept of dissociation in the general theory is accurately identified as particularly fuzzy. It is interesting, however, that all these concepts can be invoked in the conceptualization of this case. None, however, seems necessary or sufficient. Our models are ripe for further development and integration, particularly with clearly specified, parsimonious and testable tenets.

Self-reports and observations of people with gambling problems have been helpful in developing our models. These retrospective reports can, however, be misleading. The challenge to theorists and researchers is to specify these models in a way that allows testable hypotheses that do not depend upon the retrospective reports from problem gamblers. Years ago, we believed that the etiology of Down's syndrome, now recognized as a chromosomal disorder, was related to stressful life events during pregnancy. We based these beliefs on research using retrospective reports of mothers who were struggling to understand a very stressful situation compared with mothers of babies without Down's syndrome (Brown & Harris, 1978). It is not surprising that they were more likely to recall stressful events during their pregnancies. Similarly, various self-medication models of substance abuse, albeit intuitively attractive, have failed to yield strong empirical support when prospective designs are used. Likewise, in the gambling area, we need to move away from sole reliance on retrospective reports as the major dependent variables, and instead, use prospective designs and/or non–self-report variables in studying our models.

I have a number of clinical observations about Mr. S.M.'s treatment. Cognitive therapy designed to correct erroneous perceptions appears to have played a central role in this man's treatment. This approach is curious given that the conceptualization of the case does not focus on erroneous perceptions. Mr. S.M.'s gambling was conceptualized as offering "emotional escapism" through distraction, dissociation or some type of narrowed attention. A logical treatment thus would involve training in alternative distraction techniques generally, and cognitive pain management techniques specifically.

Would Mr. S.M.'s progress have been faster with a treatment more consistent with the conceptualization? Or was the conceptualization limited by the lack of integration of cognitive features? The author alludes to fantasies associated with winning and anticipations of the next outcome but does not appear to view them as central in either the development or maintenance of the problem. I am also curious about why this man developed a gambling problem versus an alcohol problem, or even a narcotic problem. He clearly used alcohol and antidepressant medications to cope with pain with at least some positive effect. Presumably these coping options were more accessible than gambling, but gambling became the "analgesic" that became generalized to coping with other aversive states. Why so? We have much to learn about this fascinating disorder.

Submitted: October 16, 2000

Author's Response to Reviewers' Comments

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Author's Response to Reviewers' Comments and References

By Alex Blaszczynski

In this article, we have presented an interesting case describing the development of pathological gambling and attempted to argue that factors instrumental in precipitating impaired control over gambling may no longer be relevant in its maintenance. David Hodgins correctly highlights the fact that there is currently no conceptual model that integrates the myriad factors underlying the development and maintenance of impaired control in pathological gambling.

One can only fully support Hodgins' view that most models make reference to concepts that are neither sufficient nor necessary to explain the onset and continuation of problem gambling behaviours, and that there is an imperative need to advance testable hypotheses and models that rely more on prospective designs, and less on retrospective or subjective reports. Sadly, most efforts to date are founded on the premise that those with pathological gambling problems constitute a homogenous group of individuals influenced by the same complex set of interacting variables. As a consequence, in an effort to explain the aetiological process underlying gambling, there is a tendency to force all gamblers into the one cast. Durand Jacobs' *General Theory of Addictions* models fit into this mould, whereas McConaghy's behaviour completion perhaps less so.

A consistently reported clinical observation is that stresses precipitate bouts of

gambling and that gambling represents a gambler's attempt to escape from emotional turmoil. Gambling produces heightened arousal, narrowed attention and an "altered state of consciousness" variably referring to the gambler as being in a state of dissociation or "in action." The fundamental drive underlying gambling is to maintain this state of arousal with winning as the means by which this state can be prolonged. I endorse Rina Gupta's and Durand Jacobs' views that many gamblers utilise gambling to cope with psychological distress and stresses, but argue that such an explanation applies only to a proportion of those with gambling problems.

Jacobs calls upon a set of predisposing stressors in interaction with hyper or hypo states of baseline arousal. Accordingly, two conditions need to be met in all pathological gamblers: pre-morbid stresses leading a sense of rejection, low self-worth and poor self-image, and a physiological resting state that requires either augmentation or reduction. The psychological motivation underlying gambling is the creation of a state of dissociation that provides temporary relief from psychic pain. Rina Gupta's experiences echo this perspective.

McConaghy's model, on the other hand, invokes the concepts of cortical neuronal substrates and behavioural completion mechanisms to account for recurrent patterns of gambling behaviour. The prerequisite requirements are the development of a habitual pattern of behaviour with no reference to the presence of premorbid psychopathology or negative life experiences. Once a habitual pattern of behaviour is established, a wide range of stressful internal and external events are capable of precipitating the drive to carry out the behaviour. The excitement of gambling distracts the gambler's focus of attention from aversive stresses and thus becomes negatively reinforcing.

I have long argued that it is limiting to conceptualise those with pathological gambling problems as a homogenous population subject to the same pathogenic processes. We must divide this population into at least three subtypes: "normal" pathological; emotionally vulnerable; and biologically disposed impulsive gamblers. Jacobs' model can be legitimately applied to the emotionally vulnerable gambler but falls short of accounting for the normal gambler. McConaghy's model can account for all three groups, and therefore, it is more comprehensive and parsimonious.

Durand Jacobs' clinical assessment that the back injury and resultant chronic pain exerted a profound impact on the client's quality of life, self-image and psychological functioning is not in dispute. But his interpretation that the "enthusiastic discovery that high excitement…provided an escape" through the mechanism of dissociation, while attractive on some levels, is limited in its ability to explain the phenomenon witnessed in this unique and unusual case.

Jacobs correctly observes that gambling is an inherently exciting activity for both social and problem gamblers. He advances the position that the pathological gambler's drive to induce a dissociated, altered state of consciousness is the end consequence of his or her attempt to deal with stresses, and that the primary objective is to maintain this state for as long as possible. This distinguishes the pathological from the social gambler.

However, it is noted that Mr. S.M. described a 15-year history of social gambling yet during this period he did not use the dissociation of gambling as a coping strategy in the context of other life stresses. Why so? If dissociation is to be invoked as the fundamental motivating component underlying impaired control over gambling, it is necessary to provide an explanation of the processes that lead from social to impaired gambling behaviour in individuals with a premorbid history of social gambling and stresses. At the same time, it is important to explain why, in the absence of stress or poor self-image or poor self-worth, a proportion of "normal" gamblers lose control over their behaviour only to regain mastery and resume participation in patterns of controlled gambling.

Part of my argument hinges on the pivotal role purportedly played by dissociation, the key construct forming the foundation of Jacobs' model. Notwithstanding Jacobs' disagreement with Cardena's argument, I must agree with David Hodgins' comments that dissociation is a particularly fuzzy concept.

But have we lost touch with considering the simpler possibility that gambling is an intrinsically exciting and enjoyable pastime pursued for its own sake, much the same as people seek out any other enjoyable activity such as chess, sports or watching movies? Jacobs alludes to this when he refers to the underlying motivation of a gambler as the need to "stay in action." Csikszentmihalyi (2000) defines such recreational activities as "autotelic experiences," ones in which there is no implicit external reward or goal beyond the pursuit of the activity and maximising enjoyment for its own intrinsic sake. Is this not so with gambling? The central feature of this experience is the funnelling of attention toward a limited stimulus field (narrowing of attention), loss of ego or self-consciousness and merging of awareness and activity. In other words, the person pursues the activity for its own sake because it is enjoyable, and in so doing, loses his or her perspective of time, self and environment. The gambler is in action.

The arousal associated with this enjoyment is of a sufficient level, in the case of Mr. S.M., to cause a distraction from pain, perhaps much in the same way that a sportsperson is oblivious to an injury sustained in the height of play, a level of arousal capable of greater distraction than reading or meditation. To call this dissociation imposes an unnecessary complexity on the

epiphenomenona.

Gambling is simply an exciting and enjoyable activity that engrosses one's attention. As such it falls along a dimensional plane as Jacobs suggests. However, in support of Cardena, I would argue that some states of dissociation do not represent an extreme position on a continuum, but a qualitatively different state of consciousness. Therefore, if the term dissociation is to be used in gambling, it is necessary to clarify the term used and to define its operational boundaries. Otherwise, let us just use the simpler term of *distraction* to describe the excitement or enjoyment experienced while gambling.

Hodgins raises a valid point when he questions why cognitive therapy was used rather than training in alternative distraction and pain management techniques. Although not described in the case study, the psychiatrist and hypnotherapist had applied a variety of pain management techniques that together with medication and alcohol use did not prove effective. I would hazard the guess that had such interventions been effective, Mr. S.M. might not have lost control over his gambling. By the same token, alcohol and medication, while ameliorating the severity of pain to some extent, did not match the same profound effect produced by gambling, hence causing gambling to became the effective "drug" of choice.

The inherent arousal produced by the enjoyment of gambling caused a significant reduction in pain, a comparatively greater reduction than was achieved by alcohol, medication or other interventions. Mr. S.M.'s gambling experiences shaped cognitive belief structures leading him to believe that he could eventually win and recoup losses. The cognitive intervention that was formulated and applied was justified on the grounds that, independently of the negative reinforcement produced by the analgesia, his experiences at gambling modified cognitive belief structures that acted to perpetuate further gambling.

Pathological gambling is a major public health problem that exerts a destructive influence on individuals, their families and society in general. To understand the behaviour we need to advance clearly articulated and testable conceptual models. In so doing, we need to be cognisant of several elements: people with pathological gambling problems are not a homogenous population; pathological processes leading to the development of the condition differ between cases; and variables relevant in the development of pathological gambling may not contribute to its persistence.

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