

Antisocial Personality Disorder and Pathological Gambling

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The prevalence of antisocial personality disorder and its relationship to criminal offenses in pathological gamblers was investigated. A semi-structured interview schedule containing DSM-III criteria for antisocial personality and the California Psychological Inventory Socialisation subscale was administered to a sample of 306 pathological gamblers. Of the total sample, 35% reported no offense. Forty eight percent admitted to the commission of a gambling related offense, 6% to a non-gambling related offense, and 11% to both types of offense. Fifteen percent of subjects met DSM-III diagnostic criteria for antisocial personality disorder. Though these subjects were at greatest risk for committing criminal offenses, offenses were committed independently of DSM-III antisocial personality disorder in the majority of gamblers. It was concluded that features of antisocial personality emerged in response to repeated attempts to conceal excessive gambling and gambling induced financial difficulties.

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INTRODUCTION

The observation that pathological gambling is a risk factor for criminal behaviours has been noted by Peterson (1947), Lesieur (1984), Brown (1987), Blaszczynski and McConaghy (1987), and others. Prevalence rates for offending varied between 4% to 83% in Gamblers Anonymous members (Brown, 1987; Meyer & Fabian, 1990; Frank, Lester & Wexler, 1991) and between 46% and 90% in pathological gamblers seeking treatment from hospital based programs (Politzer, Morrow and Leavey, 1981; Blaszczynski & McConaghy, 1987; Meyer & Fabian, 1992).

In his detailed analysis of 50 gamblers, Lesieur (1979, 1984) perceptively outlined the sequence of events by which excessive gambling led to the commission of offenses. Motivated by a need to chase losses, continued gambling resulted in a rapid exhaustion of legal sources of gambling funds. Consequently illegal behaviours formed the only alternative source for funds to maintain habitual patterns of gambling.

To establish that offenses are causally related to pathological gambling it is necessary to exclude the possibility that confounding variables such as the presence of antisocial personality traits or an antisocial personality disorder independently account for both criminal behaviours and excessive gambling.

Since Pinel's classical description of "manie sans delire" in 1801, the concept of antisocial behaviour has undergone considerable modification (Blackburn, 1973; Bartol and Bartol, 1986; The Quality Assurance Project, 1991) but its key elements remain: repeated antisocial acts; drug and alcohol abuse; impulsivity; and an inability to delay self-gratifying behaviours, empathise with others, feel guilt, or form lasting interpersonal bonds. Nevertheless, the disorder is distinct from chronic criminal or deviant behaviour patterns with less than half of those who meet DSM-III-R (A.P.A., 1987) criteria for antisocial personality disorder manifesting a history of criminal conviction for two or more non-traffic offenses (The Quality Assurance Project, 1991).

Many personality features characteristic of antisocial personality disorders are reputedly found to be inherent in pathological gamblers (Lesieur, 1987). Elevated Minnesota Multiphasic Personality Inventory Psychopathic Deviate scale scores have been reported in pathological gamblers (Roston, 1961; Glen, 1979; Lowenfeld, 1979; Moravec and Munley, 1982).

McCormick, Taber, Kruedelbach and Russo (1987) found California Personality Inventory Socialisation sub scale scores for pathological gamblers and alcoholics did not differ but were significantly lower than those of medical patients. While these authors concluded that impulsivity, inability to delay gratification, lack of concern with long term consequences of behaviour, poorly internalised value system, and hyperactivity supported the addiction model of pathological gambling, similar traits are to be found in antisocial personality disorders (Hare and Cox, 1978).

The relationship between pathological gambling and criminal behaviours may take several forms. Antisocial personality disorders may increase the propensity to engage in both criminal and gambling behaviours independently of each other, or increase the risk of offending in response to gambling-induced financial problems. Alternatively pathological gambling may produce personality changes phenotypically similar to antisocial traits as a consequence of attempts to conceal gambling-induced problems.

Pathological gambling is defined in both DSM-III (A.P.A., 1980) and DSM-III-R (A.P.A., 1987) as a disorder of impulse control. Although the formal diagnosis of pathological gambling in DSM-III (A.P.A., 1980) excluded the presence of an antisocial personality disorder, few studies have actually investigated the presence of antisocial personality traits amongst pathological gamblers. As Lesieur (1987) argues, the presence of such personality traits may be underestimated and should not necessarily preclude a diagnosis of pathological gambling. Partly as a consequence of that research, the antisocial personality disorder exclusion was removed from the diagnostic criteria for pathological gambling in DSM-III-R (A.P.A., 1987). The purpose of this study was to investigate the prevalence of antisocial personality disorder in pathological gamblers. As data collection commenced in 1986/87 prior to publication of DSM-III-R (A.P.A., 1987) criteria, DSM-III (A.P.A., 1980) criteria for pathological gambling and antisocial personality disorder was used in this study.

METHOD

Subjects

Subjects were 152 pathological gamblers seeking behavioural treatment from a hospital-based program and 154 Gamblers Anony-

mous members volunteering to participate in the study. Apart from the significantly older mean age of Gamblers Anonymous subjects, the two samples did not differ in respect of demographic and gambling characteristics. Demographic details and a comparison of the Gamblers Anonymous and Hospital samples are provided elsewhere (Blaszczynski & McConaghy, this issue). All subjects met the DSM-III (A.P.A., 1980) criteria for pathological gambling.

The mean age of the sample was 38.38 years ($SD = 11.07$ yrs). There were 271 (88.5%) males and 35 (11.5%) females. Given the relatively small number of females in the sample, separate statistical analysis comparing sex differences was not carried out. Slightly over half (57%) were married or in de-facto relationships. The remainder were either single (25%), divorced (10%), separated (7%) or widowed (1%).

Procedure

Subjects were interviewed using a semi-structured interview schedule. In addition to demographic and gambling details, the semi-structured interview elicited information on the prevalence and nature of gambling and non-gambling-related offenses. Subjects were asked to describe the frequency and nature of any offenses they had committed, whether directly or indirectly related or completely unrelated to gambling, and irrespective of whether or not the offenses were detected by others. 'Directly related' to gambling was defined as those offenses motivated by the desire to obtain money with which to gamble. 'Indirectly related' referred to offenses initiated by a need to cover shortfalls in financial commitments caused by gambling losses.

The schedule also contained DSM-III (A.P.A., 1980) criteria for antisocial personality. Criteria include a history of continuous and chronic antisocial behaviours commencing prior to age 15 years and extending into adulthood. For diagnosis, a current age of 18 years or more, three of twelve clinical features before age 15 years, and four of nine features after 15 years with no intervening antisocial free period of five years are required. Pre-adolescence features include truancy, expulsion or suspension from school for misbehaviour, running away from home on two or more occasions, delinquency, persistent lying, sexual promiscuity, repeated drunkenness or substance abuse, theft,

vandalism, school grades markedly below expectation, chronic misbehaviour at home and/or at school (other than truancy), and initiation of aggressive behaviour. Post-adolescent features include inability to sustain consistent employment, failure to function as a responsible parent, illegal behaviours such as repeated thefts, illegal occupations (pimping, prostitution, fencing, selling drugs), multiple arrest or felony convictions, inability to maintain appropriate long term attachments, irritability and aggressiveness, failure to honour financial obligations, lack of forward planning or impulsivity, repeated lying, "conning" others for personal profit, and reckless driving as indicated by driving while intoxicated or recurrent speeding. Further, antisocial behaviours are not due to either severe mental retardation, schizophrenia or manic episodes.

Items dealing with sexual behaviours were excluded on the grounds of the potentially sensitive issue of eliciting such information from Gamblers Anonymous volunteers.

As part of a battery of psychological tests, the Socialisation subscale of the California Psychological Inventory (Gough, 1987) was administered as a psychometric measure of antisocial personality. The 54 item Socialisation scale is based upon a role-taking theory of sociopathy consistent with Cleckley's (1976) conception of psychopathy. The scale purports to "indicate the degree of social maturity, integrity and rectitude which the individual has attained" (Gough, 1969). Low scorers are described as defensive, resentful, rebellious, undependable, deceitful in dealing with others and as given to excess and exhibition in their behaviour (Gough, 1969). Hare and Cox (1978) regarded this scale as a useful measure of sociopathy when considered in the context of additional clinical indices.

To investigate the relationship between antisocial personality, crime and gambling, subjects were classified into four groups according to the relationship of the offense to gambling:

1. Gambling-related offenses only (Gambling-Only): only offenses reported were those motivated by a specific need to obtain funds for gambling.
2. Non-gambling-related only (Non-Gambling Only): offenses were committed for reasons not directly or indirectly related to gambling or problems caused by gambling behaviour.

3. Gambling and non-gambling-related offenses (Gambling plus Non-Gambling): both types of offenses as described above were reported.
4. No offenses reported (No-Offense).

RESULTS

The proportion of subjects committing various offenses was determined. One hundred and six subjects (35%) denied the presence of any offense (No Offense). Of the remainder, 145 (48%) admitted to engaging exclusively in gambling-related offenses (Gambling-Only), 19 (6%) exclusively in non-gambling-related offenses (Non-Gambling Only), and 35 (11%) to both types (Gambling plus Non-Gambling). Data on the type of offense for one subject was missing.

Of the total sample of 306 subjects, 47 (15.4%) met the requisite criteria for a diagnosis of antisocial personality disorder. This rate compares to a lifetime risk for antisocial personality disorder of 4.5% in males (The Quality Assurance Project, 1991).

Analysis of the types of offenses committed by the 47 subjects meeting antisocial personality criteria revealed that 8 (17%) did not offend, 23 (49%) exclusively engaged in gambling-related offenses, 4 (9%) to non-gambling related offenses only, and 12 (25%) to both types of offenses.

Features of antisocial personality disorder first manifest themselves in early childhood. The American Epidemiological Catchment Studies data revealed that 80% experienced their first symptoms by age 11 years (Robins, Tipp & Przybeck, in press; cited in The Quality Assurance Project, 1991). Consequently, the descriptive statistics for age, age commenced gambling and age at first offending for subjects meeting antisocial personality disorder criteria were calculated and are given in Table 1. The mean age at which the first gambling related offense was committed was compared to that of the mean age for the first non-gambling related offense. T-test comparisons revealed that non-gambling-related offenses were committed at a significantly earlier age than gambling related offenses ($t = 2.691$, $df = 49$, $p < 0.05$).

Table 2 provides a breakdown of the descriptive statistics for age and age at first gambling and/or non-gambling related offense for the

TABLE 1
Age, Age, Commenced Gambling, and Age at First Offense for Pathological Gamblers Meeting DSM-III Criteria for Antisocial Personality Disorder

	<i>Age</i>	<i>Age Commenced Gambling</i>	<i>Age at First Gambling-Related Offense N = 35</i>	<i>Age at First Non-Gambling Related Offense N = 16</i>
			(n = 23 gambling-only and n = 12 gambling plus non-gambling subjects)	(n = 12 gambling and non-gambling and n = 4 non-gambling only related subjects)
Mean	35.7	15.81	20.5	15.38
Standard Deviation	11.4	4.1	6.8	5.0

TABLE 2
Age, Age Commenced Gambling, and Age at First Gambling for Gambling and Non-Gambling Related Offenses, by Type of Offense

<i>Types of Offenses Committed</i>	<i>Gambling N = 145</i>	<i>Non-Gambling N = 19</i>	<i>Gambling & Non-Gambling N = 35</i>	<i>No Offenses N = 106</i>
<i>Age</i>				
Mean	38.06	37.05	33.49	40.68
S.D.	10.76	9.51	8.21	12.09
<i>Age Began Gambling</i>				
Mean	17.15	18.26	16.23	21.61
S.D.	5.34	6.56	6.41	10.25
<i>Age of First Gambling Related Offense</i>				
Mean	26.84	—	24.82	—
S.D.	9.72	—	7.69	—
<i>Age of First Non-Gambling Related Offense</i>				
Mean	—	21.11	18.75	—
S.D.	—	6.94	8.04	—

four sub samples of offenders. A one-way analysis of variance using Least Significant Difference multiple comparison tests was used to determine between group age differences.

Results showed that the Gambling plus Non-Gambling group was significantly younger than the Gambling-Only and No-Offense groups at the time of interview ($F = 4.038$, $df = 3$, 301 , $p = 0.007$). The No-Offense group showed a significant tendency to have commenced gambling at an older age as compared to the Gambling-Only and Gambling plus Non-Gambling groups ($F = 8.49$, $df = 3$, 301 , $p < 0.001$). The Non-Gambling Only group held an intermediate position on both these age variables and did not differ significantly from any other group.

The Gambling and Gambling plus Non-Gambling groups did not differ significantly from each other in respect of the age at which they commenced their first gambling-related offenses ($F = 1.240$, $df = 1,173$, NS). Similarly, the Non-Gambling Only and Gambling plus Non-Gambling groups did not differ significantly from each other in respect of the age at which they commenced their non-gambling related offenses ($F = 1.048$, $df = 1,44$, NS).

To investigate the hypothesis that pathological gambling led to the development of antisocial behaviours in adulthood, changes in the proportion of subjects meeting DSM-III (A.P.A., 1980) criteria for antisocial personality both before and after the age of 15 years were examined. Antisocial behaviours exhibited before the age of 15 years consisted mainly of non-violent behavioural problems such as misbehaving at school (28.1%), lying (25.8%), truancy from school (19.9%), misbehaviour at home (18.0%), stealing (16.7%) and running away from home (11.3%). Delinquent behaviours (8.5%), initiating fights (6.6%), alcohol and drug abuse (6.6%) and vandalism (2.8%) were less common.

Proportionately more subjects reported antisocial features after age 15 years. The most common features were lying (73.5%), failure to meet financial obligations (70.6%), irritability (49.3%), impulsivity (46.1%) and employment instability (32.0%). Interpersonal relationship problems (19.3%) and reckless driving (16.2%) were relatively prominent while not caring for children (5.9%) was less apparent.

Table 3 lists the relative proportions meeting antisocial criteria across the four groups of gamblers. The pattern reveals a consistent trend for more subjects in the Gambling plus Non-Gambling group to

TABLE 3
Proportion of Gamblers Displaying Selected Features of
DSM-III Antisocial Personality Criteria

<i>Activity Prior to Age 15 Years</i>	<i>Offense Group</i>				
	<i>Gambling Only</i> <i>N = 145</i> %	<i>Non-Gambling Only</i> <i>N = 19</i> %	<i>Gambling & Non-Gambling</i> <i>N = 35</i> %	<i>No Offenses</i> <i>N = 106</i> %	<i>Total</i> <i>N = 305</i> %
Truancy	19.3	42.1	31.4	13.2	19.9
Misbehaving at School	26.9	42.1	42.9	21.7	28.1
Running Away from Home	11.0	5.3	14.3	11.3	11.1
Delinquency	9.0	5.3	20.0	4.7	8.5
Lying	26.9	21.1	54.3	16.0	25.8
Stealing	22.1	21.1	25.7	5.7	16.7
Vandalism	4.1	0.0	8.6	2.8	3.9
Starting Fights	7.6	15.8	14.3	6.6	8.5
Drink/Drugs	3.4	10.5	14.3	6.6	6.2
Misbehaving at Home	16.6	15.8	31.4	16.0	18.0
<i>Activity Post Age 15 Years</i>					
Frequent Job Changes	31.7	47.4	48.6	24.5	32.0
Not Caring for Children	7.6	10.5	11.4	0.9	5.9
Not Staying with Partner	15.9	31.6	34.3	17.0	19.3
Irritability	48.3	52.6	77.1	40.6	49.3
Impulsive	57.2	42.1	54.3	29.2	46.1
Lying	77.2	78.9	85.7	63.2	73.5
Not Meeting Financial Obligations	80.0	63.2	68.6	59.4	70.6
Reckless Driving	13.8	31.6	37.1	9.4	16.2

exhibit antisocial features both before and after age 15 years as compared to remaining groups.

A highly significant increase in the number of gamblers engaging in lying after as compared to before age 15 years ($X^2 = 137.42$, $df = 1$, $p < 0.0001$) was found.

Table 4 shows the distribution of subjects across the four gambling groups charged for gambling and non-gambling related offenses, and those meeting the requisite criteria of three features prior to and four features post age 15 years for diagnosis of antisocial personality.

There were no significant differences between the Gambling-Only and Gambling plus Non-Gambling groups in respect of the proportion from each group being charged for gambling related offenses ($X^2 = 0.332$, $df = 1$, NS). Similarly, the Non-Gambling Only and Gambling plus Non-Gambling groups did not differ from each other in respect of the number of subjects charged for non-gambling related offenses ($X^2 = 0.074$, $df = 1$, NS). However, fewer of the gambling-related offenders were charged by police for offenses. Of the 145 who committed only gambling-related offenses, 56 (38%) were charged compared to the 12 (63%) non-gambling-related offenders charged for their offenses, a difference which reached significance ($X^2 = 11.276$, $df = 1$, $p < 0.0001$).

Chi-square analyses revealed that significantly fewer subjects meeting all the criteria for antisocial personality disorder were found in the No-Offense group as compared to the remaining three groups combined ($X^2 = 6.808$, $df = 1$, $p < 0.05$).

A series of 2 X 2 Chi-Square comparisons yielded the following results; significantly fewer antisocial personality disorders were found in the No-Offense group compared to Gambling plus Non-Gambling, and in the Gambling-Only compared to the Gambling plus Non-Gambling sample contrasts (Table 5).

Descriptive statistics for the type of offense and the number and percentage of subjects from different social classes are given in Table 6. Socioeconomic data were missing for four subjects. The relationship between offending and social class was investigated by reducing the data to form a 2 X 4 contingency table for Chi-square analysis. The two upper classes, classes A and B, were combined as were the two lower classes, classes, C and D. There was no significant differences in social class between the four groups of gamblers ($X^2 = 6.112$, $df = 7$, NS).

TABLE 4

Number of Gamblers Charged for Gambling and Non-Gambling Related Offenses, and Proportion Exhibiting Antisocial Features Prior to, and Post, Age 15 Year According to Type of Offenses Committed

	Types of Offenses Committed			
	<i>Gambling Only</i> <i>N = 145</i>	<i>Non-Gambling Only</i> <i>N = 19</i>	<i>Gambling & Non-Gambling</i> <i>N = 35</i>	<i>No Offenses</i> <i>N = 106</i>
Number and % Charged for Gambling Related Offense				
N	56	—	16	—
%	38.6	—	45.7	—
Number and % Charged for Non-Gambling Related Offense				
N	—	12	22	—
%	—	63.2	62.9	—
Number and % Exhibiting Antisocial Features Prior to Age 15 Years				
N	47	6	21	24
%	32.4	31.6	60	22.6
Number and % Exhibiting Antisocial Features Post Age 15 Years				
N	39	5	17	19
%	26.9	26.3	48.6	17.9
Number and % Exhibiting Three or More Signs Both Prior to and Post Age 15 Years				
N	23	4	12	8
%	15.8	21.0	34.3	7.5%

Of the 35 females, 18 (51.4%) had offended. Sixteen female subjects committed gambling-related only, and the remaining two to both gambling- and non-gambling related, offenses. In respect of employment status, a similar proportion of housewives as compared to employed females reported having offended. The majority of offenders from both groups engaged in gambling-only related offenses.

TABLE 5

Chi-Square Values for the Comparison of Antisocial Personality Disorders by Type of Offense

<i>Groups</i>	<i>Gambling Only</i>	<i>Non-Gambling Only</i>	<i>Gambling plus Non-Gambling</i>
Gambling Only			
Non-Gambling Only	0.060		
Gambling Plus Non-Gambling	4.990*	0.497	
No Offense	3.180	2.008	13.336**

* Significant at the $p < 0.05$ level.

** Significant at the $p < 0.001$ level.

TABLE 6

Relationship Between Socioeconomic Status and Gambling/Non-Gambling Motivated Offenses

<i>Socio Economic Status</i>	<i>Gambling Only</i>		<i>Non-Gambling Only</i>		<i>Gambling & Non-Gambling</i>		<i>No Offense</i>	
	<i>N</i>	<i>(%)</i>	<i>N</i>	<i>(%)</i>	<i>N</i>	<i>(%)</i>	<i>N</i>	<i>(%)</i>
Class A	25	(17.2)	0		4	(11.4)	23	(22.1)
B	22	(15.2)	5	(29.4)	10	(28.6)	25	(24.0)
C	33	(22.8)	4	(23.5)	8	(22.8)	21	(20.1)
D	47	(32.4)	3	(17.6)	10	(28.6)	20	(19.2)
Housewife	5	(3.4)	1	(5.9)	0		6	(5.9)
Unemployed	13	(9.0)	4	(23.5)	3	(8.6)	9	(8.7)
Total	145	(100)	17	(100)	35	(100)	104	(100)

Antisocial personality disorders are more likely to be diagnosed in males than females. Consistent with this expectation, 26 (74.3%) of the female sample exhibited no antisocial personality features, nine (25.7%) showed the presence of some features, while none met full criteria for Antisocial Personality Disorder.

The mean score of the sample of 131 pathological gamblers who completed the Socialisation scale of the California Psychological Inventory (CPI) (Gough, 1987) was 23.12 (SD = 6.51). This compared to Gough's (1987) normative data which showed a mean of 29.92 (SD = 6.08). The difference between the sample and normative population was significant ($t = 11.936$, $p < 0.001$) indicating that, as a group, pathological gamblers exhibit traits of unconventionality, resistance to rules, and difficulty adjusting to conformity.

The No-Offense group obtained significantly higher scores on the CPI Socialisation scale than did the Non-Gambling and Gambling plus Non-Gambling groups; and the Gambling-Only had higher scores than the Non-Gambling and the Gambling plus Non-Gambling groups ($F = 3.67$, $df = 1, 3, 125$, $p = 0.01$) (see Table 7).

DISCUSSION

As noted by Lesieur (1979) and others, habitual patterns of excessive gambling are associated with high levels of debt and financial pressures. Consequently, in such cases pathological gamblers are placed at risk for committing criminal offenses either to support continued gambling, to avert crises or to avoid detection by spouses or others. That approximately 60% of subjects in the present study reported the commission of a gambling-related offense lends strong support to previously reported anecdotal and clinical findings of high rates of criminal offenses in samples of pathological gamblers.

It would appear that offenses are not related to a general propensity to engage in criminal behaviours or part of an antisocial personality spectrum but rather emerge in response to gambling induced difficulties. In the majority of cases, it was found that subjects limited themselves to only gambling-related offenses. This is supported by the finding that the prevalence of antisocial personality disorder was relatively low with only 15% of subjects meeting DSM-III (A.P.A., 1980) criteria for such a disorder.

Antisocial personality disorders are diagnosed more frequently in males than females. Therefore, consistent with expectations and probably reflecting differential processes of socialisation and social control, no females were found to have met the essential criterion requirements for diagnosis of Antisocial Personality Disorder.

TABLE 7
California Psychological Inventory Scale Scores for the Four
Subgroups of Pathological Gamblers

	<i>Gambling Only</i> <i>N = 55</i>	<i>Non-Gambling</i> <i>Only</i> <i>N = 11</i>	<i>Gambling &</i> <i>Non-Gamb</i> <i>N = 18</i>	<i>No Offense</i> <i>N = 45</i>
Socialization M	23.60 ^a	19.18 ^b	20.28 ^c	24.71 ^d
Scale				
SD	6.23	3.87	6.00	7.02

Significant differences: $p = 0.01$ $d > b$
 $d > c$
 $a > b$

There is a time-lag of five years or more after commencement of gambling before pathological gambling-related problems become manifest (Blaszczynski, 1988). Antisocial personality disordered individuals on the other hand manifest offending behaviour in adolescence. If offending in gambling is linked to antisocial personality disorder, it could be argued then that the difference between age at which gambling commenced and the age of first offending should be relatively small. As seen in Tables 1 and 2, the antisocial offenders differ from the total sample in respect of the ages at which they committed gambling-related and non gambling-related offenses. The antisocial group was younger at the time of committing both types of offenses suggesting that the gambling offenses were an expression of their personality disorder. Subjects who committed gambling-related only crimes did so at a later age compared to those involved in non-gambling or gambling plus non-gambling offenses. This finding could be interpreted to suggest that offenses were occurring in response to external factors rather than the expression of an intrinsic personality feature.

However, the possibility remains that some antisocial personalities exhibit antisocial traits early in life and only later engage in gambling as yet another expression of their impulsivity and related problems (the authors are grateful to the anonymous reviewer who raised this point). Further research is needed to clarify this issue.

The California Personality Inventory Socialisation scale score was found to be associated with both antisocial personality and the nature

of the type of offense committed. A gradient of scores was observed in which high Socialisation scale scores for non-offenders (high scores reflect lower levels of psychopathy) was followed by lower scores for Gambling-Only, then still lower scores for the Gambling plus Non-Gambling and finally, the lowest for the Non-Gambling Only groups. If it is accepted that trait measures of antisocial personality reflect an endearing stable predisposition to behaviour, then low scores on the California Personality Inventory Socialisation subscale can be accepted as an index of risk for offending in pathological gamblers.

It remains unclear as to whether or not most antisocial features in pathological gambling precede or follow gambling behaviour (Blaszczynski, 1988). It is possible that antisocial personality traits emerge in response to gambling-induced problems rather than acting as a causative factor in their own right. Thus, the presence of a causal link is demonstrated only if it can be established that personality features have emerged both subsequent, and in response, to gambling-induced difficulties.

A significant rise was seen in the percentage of gamblers displaying antisocial-type behaviours after the age of fifteen, such as lying, irritability, and failure to meet financial obligations. Unfortunately, it was not possible to ascertain the age of onset of antisocial features in relation to the age of onset of gambling-related problems to determine the relative contribution of each to the other. However, the nature of these behaviours was consistent with expectations that gamblers were motivated to conceal their level and frequency of gambling behaviour, as well as evidence of debt or failure to meet financial obligations. This interpretation is in accordance with clinical experience. The majority of pathological gamblers do not exhibit overt antisocial behaviours in the period prior to the manifestation of pathological gambling behaviours. A gradual transition is observed in which added responsibilities following marriage or other life circumstance result in either or both reduced access to available legitimate funds for gambling or exposure to financial stresses. These pressures eventually lead to an increase in the frequency and persistence of gambling followed by the cyclical decline associated with attempts to chase losses. As Lesieur (1984) and Becona (1992) noted, the three most common behaviours found in pathological gamblers are the repeated chasing of losses, gambling larger amounts of money over longer time periods than intended, and frequent preoccupation with gambling and means of obtaining money to gamble.

The present study found a higher rate of 15% for antisocial personality disorders in pathological gamblers as compared to a rate of 4.5% in the general adult male population. However, while antisocial personality traits may act as a risk factor to increase the probability of offending, there is no evidence to suggest that the majority of offending pathological gamblers suffer antisocial personality disorders. It may well be that in a minority of cases pathological gambling and antisocial personality disorder do co-exist but independently of each other. In such cases the diagnosis and subsequent management of the problem of pathological gambling in its own right appears justified. Under these circumstances DSM-III-R's (A.P.A., 1987) removal of the antisocial personality disorder exclusion was justified.

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