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Author(s): Roberts, Amanda D.L; Coid, Jeremy W.

Article title: Personality disorder and offending behaviour: findings from the national survey of male prisoners in England and Wales

Year of publication: 2009

Citation: Roberts, A.D.L., & Coid, J.W (2009) 'Personality disorder and offending behaviour: findings from the national survey of male prisoners in England and Wales.' *Journal of Forensic Psychiatry and Psychology*

Link to published version: <http://dx.doi.org/10.1080/14789940903303811>

DOI: 10.1080/14789940903303811

Abstract Word Count: 161

Article Word Count: 5,548

26th March 2008

Personality Disorder and offending behaviour: Findings from the national survey of prisoners in England and Wales.

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ABSTRACT

Previous studies have related mental disorder and antisocial personality disorder to criminal behaviour, but little is known about the associations with other personality disorders. The aim of this study was to examine independent associations between offending behaviour over the lifetime and personality disorder in a representative sample of male and female offenders. A two-stage survey was carried out among prisoners in all prisons in England and Wales. DSM-IV personality disorder was measured using SCID-II in the second stage among 497 male and female prisoners. Independent relationships between personality disorder scores and lifetime offences were examined using multiple regression. Findings demonstrated several independent relationships between personality disorders and offending behaviour. Initial associations observed with Borderline personality disorder were confounded. Strongest associations were found between the conduct disorder and adult antisocial components of Antisocial personality disorder, with no evidence that these were the consequence of the other Axis II disorders. Future research should investigate the functional links between personality disorder and offending behaviour.

Keywords:

Personality Disorder, Offending behaviour, prisoners, criminality, gender.

INTRODUCTION

The relationship between mental disorders and criminal behaviour and has been well documented (Hodgins, 1992; Hodgins et al., 1996; Modestin & Ammann, 1995; Tiihonen et al., 1997; Wallace et al., 1998). However, less is known about the relationship between criminal behaviour and the Axis II personality disorders. Measurement of personality disorder is infrequently carried out in studies of major mental disorder and criminal outcomes (Brennan et al., 2000), and few have studied the specific association between personality disorder and offending behaviour (Coid, 2005). Those which have examined the association have focused mainly on antisocial personality disorder (ASPD). Previous studies of ASPD have demonstrated a stronger association between self-reported violent behaviour in a representative household sample than other categories of psychiatric morbidity (Coid et al., 2006), that it is associated with high rates of criminal violence, and plays a role in the relationship between mental disorder and crime (Hodgins, 1998). Hodgins and Côté (1993) found that mentally disordered offenders with a diagnosis of ASPD exhibited more criminal versatility than those without ASPD. In other studies, male offenders with a diagnosis of ASPD were shown to be 10 to 20 times more likely to commit homicide than men in the general population (Tiihonen & Eronen, 1993; Eronen et al., 1996). In a study of prisoners with serious offences, Coid (1998) found significant associations between ASPD and robbery, theft, burglary, and firearm offences.

The relationship between other personality disorders and criminal behaviour is a relatively neglected area of research. However, a small number of studies have shown that other personality disorders, predominantly those in cluster B, independently predict criminal behaviour among those with substance misuse (Keeney et al., 1997). Keeney et al., (1997) found that narcissistic and paranoid personality disorders, in addition to ASPD, were associated with an increased number of crimes against persons, after controlling for the

severity of alcohol and drug use. Similarly, Hernandez-Avila et al., (2000) found that patients with a diagnosis of ASPD, together with borderline and schizoid personality disorders, reported a greater number of violent crimes. Coid (1998) demonstrated significant associations between paranoid personality disorder and serious violent offences, narcissistic personality disorder and homicide, schizoid personality disorder and kidnapping, and borderline personality disorder and arson. Among women offenders, associations between narcissistic personality disorder and violent crime have also been observed (Warren et al., 2002). In a community based sample of adolescents, Johnson et al., (2000) reported that paranoid, narcissistic, and passive-aggressive personality traits were associated with self-reported violent acts.

Although offender populations have high prevalences of personality disorder (Coid, 2003), few previous studies have examined the relationship between all categories of personality disorder and offending behaviour in large samples of male and female offenders. Most have restricted their measures of personality disorder to a global diagnosis (Putkonen et al., 2003; Wallace et al, 1998), have measured only ASPD (Eronen et al., 1996; Hodgins, et al., 1996), or have included general measures of crime (Keeney et al., 1997).

The aim of this paper was to examine the independent associations between all DSM-IV, Axis II personality disorders and offending behaviour in a representative sample of male and female offenders from an entire correctional jurisdiction. Due to the tautological nature of the association between ASPD and offending behaviour, we anticipated a strong association between the two. However, as little is known about the relationship between criminal behaviour and the other personality disorders, we tested independent associations between continuous scores of all Axis II disorders in relation to categories of offending behaviour in the criminal careers of our participants, using multiple regression.

METHODOLOGY

Survey of psychiatric morbidity in prisoners

The national survey of psychiatric morbidity in prisoners in England and Wales was carried out by Office for National Statistics in 1997 (Singleton et al., 1998). The survey was commissioned by the UK Department of Health for England and Wales to give a national estimate of prevalence, severity, and duration of mental health problems in different types of prisoner (remand and sentenced, men and women). The design of the survey involved two stages: an initial screen in the first stage by lay interviewers who administered a self-report questionnaire using laptop computers, and a structured clinical interview by trained raters with every fifth person in the second stage. All prisons in England and Wales were included in the survey.

Response

Sampling was based on 131 penal establishments that contained 61,944 prisoners. This included 46,872 male sentenced prisoners, 12,302 male remand prisoners and 2,770 women prisoners. Different sampling fractions were applied to each group to assure the requisite number of interviews for each group of prisoner. Samples were also taken from all locations within the prison to avoid over or under sampling those with mental health problems in locations such as healthcare. Sampling included 1 in 34 male sentenced prisoners, 1 in 8 male remand prisoners and 1 in 3 women prisoners (either remand or sentenced). In the last 4 weeks of the survey the sampling fraction was changed to 1 in 50 for the male sentenced group as a larger number of this group had been interviewed. Substitution of prisoners no longer available for interview (those transferred or released) for new prisoners was performed for those on remand.

All 131 prisons agreed to take part in the survey and 3563 prisoners were selected for the

first phase: 3142 (88%) of prisoners completed full interview, 37 failed to complete the full interview, 198 (6%) refused to take part, and 53 (1%) were unable to take part- mainly due to language problems. The interviewers could not contact 118 (3%) and were advised not to interview 15. In the second stage of the survey, 661 prisoners were selected for interview: 505 (76%) were interviewed, 105 (16%) could not be contacted, and 50 (8%) refused. A smaller subsample of prisoners completed the full SCID-II and SCAN interview (n=496; Males=391, Females=105) in the second stage (see below). The interval between the first and second stage interviews was approximately 2 weeks. The sociodemographic and socioeconomic characteristics of the total sample interviewed in the second stage are demonstrated in table 1.

Assessment instruments (Stage 1)

Self-report questionnaires on laptop computers were administered by lay interviewers. These included questions on sociodemography, alcohol consumption and drug use and a previous history of convictions. Information on criminal convictions was also obtained from prison records. Index offence and previous convictions were combined to create a category of lifetime offences (i.e. whether or not an offence had occurred at any time during a prisoner's lifetime). These were used as the outcome measures of offending behaviour. Each of the outcome measures of offending behaviour were dichotomous and hence did not include the number of convictions for each prisoner within each offence category. Criminal versatility scores were obtained from prison records of criminal convictions.

Assessment instruments (Stage 2)

The 1 in 5 subsample was interviewed by clinicians (5 psychiatrists and 3 psychologists) using the Structured Clinical Interview for Axis II disorders (SCID-II; First et al., 1997) to

measure categories of DSM-IV personality disorder. The scoring of the SCID-II allowed us to present our results using continuous scores. The Schedule for Clinical Assessment in Neuropsychiatry (SCAN; Wing et al., 1990; World Health Organisation, 1999) was used to measure ICD-10 clinical syndromes.

Statistical analysis

Data was analysed using the Statistical Package for the Social Sciences (SPSS) 11.0. Spearman's correlation coefficients were calculated for the personality disorder scores in relation to continuous variable scores of criminal behaviour (i.e. age of first criminal conviction and number of previous prison spells). Multiple Normal regression was applied to investigate the association between personality disorder and criminal behaviour, controlling for age, social class, schizophrenia, alcohol disorder, drug disorder, remand or sentenced prisoner and the other personality disorder scores (The latter was not used when investigating the relationship with conduct disorder). The association is presented by z-score of the partial regression coefficient over its standard error where appropriate. The same regression analysis was applied to model the dimensional scores of personality disorders. Adjustments were again made for age, social class, schizophrenia, alcohol disorder, drug disorder, remand or sentenced prisoner and the other personality disorder scores (The latter was not used when investigating the relationship with conduct disorder). Personality disorder scores were assessed in relation to lifetime offences-a dichotomous score of whether or not an individual had been convicted of a certain offence in their lifetime. This included previous and index offences.

Ethical approval

The study was undertaken with full ethical approval given to The Office of National Statistics. An informed consent form was signed by each subject prior to interview. All

subjects were told of their right to withdraw from the study at any time.

RESULTS

Among the total sample of 496 male and female prisoners, the mean scores of the Axis II disorders among men were Avoidant: 2.34 (sd: 3.37), Dependent: 1.50 (sd: 2.63), Obsessive-compulsive: 3.12 (sd: 3.10), Paranoid: 4.24 (sd: 4.01), Schizotypal: 2.14 (sd: 2.78), Schizoid: 2.60 (sd: 2.77), Histrionic: 1.66 (sd: 2.46), Narcissistic: 3.19 (sd: 3.74), Borderline: 5.04 (sd: 4.83), Conduct disorder: 8.67 (sd: 7.63), Adult Antisocial: 7.84 (sd: 4.26); among women they were Avoidant: 2.17 (sd: 3.41), Dependent: 1.63 (sd: 3.08), Obsessive-compulsive: 2.81 (sd: 2.92), Paranoid: 3.14 (sd: 3.76), Schizotypal: 2.41 (sd: 2.91), Schizoid: 1.47 (sd: 2.64), Histrionic: 1.66 (sd: 2.91), Narcissistic: 2.54 (sd: 3.95), Borderline: 4.68 (sd: 4.88), Conduct disorder: 4.13 (sd: 5.63), Adult Antisocial: 6.01 (sd: 4.46).

First court appearance and previous imprisonment

Among men, age at first court appearance demonstrated negative correlations with avoidant (-0.11, $p < 0.05$), obsessive compulsive (-0.11, $p < 0.05$), paranoid (-0.23, $p < 0.001$), schizotypal (-0.14, $p < 0.01$), schizoid (-0.21, $p < 0.001$), narcissistic (-0.11, $p < 0.05$), borderline (-0.21, $p < 0.001$), adult antisocial personality disorder scores (-0.47, $p < 0.001$) and conduct disorder scores (-0.58, $p < 0.001$). However, following adjustments, associations with age at first court appearance in terms of z-scores remained significant only for schizoid (-2.17, $p < 0.05$), adult antisocial personality disorder scores (-4.37, $p < 0.001$), and conduct disorder scores (-4.82, $p < 0.001$).

Among women, age at first court appearance demonstrated negative correlations with obsessive compulsive (-0.28, $p < 0.01$), paranoid (-0.31, $p < 0.001$), schizotypal (-0.26,

$p < 0.01$), schizoid (-0.30, $p < 0.01$), histrionic (-0.26, $p < 0.01$), narcissistic (-0.20, $p < 0.05$), borderline (-0.48, $p < 0.001$), adult antisocial personality disorder scores (-0.59, $p < 0.001$) and conduct disorder scores (-0.66, $p < 0.001$). However, following adjustments, associations remained significant between age at first court appearance and adult antisocial personality disorder scores (-3.87, $p < 0.001$), and conduct disorder scores (-4.82, $p < 0.001$).

There were significant correlations between the total number of previous periods of imprisonment among men and paranoid (0.16, $p < 0.01$), schizotypal (0.12, $p < 0.05$), schizoid (0.23, $p < 0.001$), narcissistic (0.12, $p < 0.05$), borderline (0.18, $p < 0.001$), adult antisocial personality disorder scores (0.38, $p < 0.001$), and conduct disorder scores (0.36, $p < 0.001$). However, following adjustments, associations remained significant between previous imprisonment and schizotypal (2.10, $p < 0.05$), schizoid (4.14, $p < 0.001$), narcissistic (2.34, $p < 0.05$), adult antisocial personality disorder scores (5.19, $p < 0.001$), and conduct disorder scores (6.39, $p < 0.001$).

Among women, there were significant correlations between number of previous periods of imprisonment and borderline (0.23, $p < 0.05$), adult antisocial personality disorder scores (0.37, $p < 0.001$), and conduct disorder scores (0.25, $p < 0.01$). However, following adjustments, associations remained significant only between previous imprisonment and adult antisocial personality disorder scores (2.66, $p < 0.01$), and conduct disorder scores (3.03, $p < 0.001$).

Personality disorder and offending

Tables 2 and 3 demonstrate mean personality disorder scores for each category of offending. Categories of offending that had low prevalence among women (i.e. $n < 5$) were omitted. This included murder and manslaughter, arson, kidnap, criminal damage and

firearm offences. The tables indicate similar patterns in both men and women. Among men, the highest overall mean personality disorder scores were observed for criminal damage. Arson and Fraud offences scored highly in relation to narcissistic personality disorder. Likewise, among women, the highest mean total score for most personality disorders was observed for obstruction of justice. The exceptions were driving, in relation to avoidant personality disorder, violence in relation to violence and robbery, and blackmail in relation to obsessive-compulsive personality disorder scores. Low mean scores for most personality disorders were observed among men convicted of murder and manslaughter. Low mean scores were observed for those convicted of burglary and theft in relation to obsessive-compulsive personality disorder. Low mean scores were generally observed for all personality disorders among women convicted of drug offences.

Table 2 and Table 3

Table 4 demonstrates independent associations between lifetime offending and personality disorder scores among men. Conduct disorder scores were significantly related to all offence categories except criminal damage, driving, drug, sex offences, and murder and manslaughter. Similar patterns of association were observed with adult antisocial personality disorder scores for obstruction of justice, firearms, robbery and blackmail, escape and breach, fraud, burglary and theft. There was an additional association with violence.

Avoidant personality disorder scores were significantly associated with criminal damage, but negatively associated with firearm offences. Conversely, dependent personality disorder scores were negatively associated with criminal damage but were significantly associated with firearm and violent offences. Obsessive-compulsive personality disorder scores were associated with firearm offences. Paranoid personality disorder scores were associated with robbery and blackmail but negatively associated with driving offences.

Schizotypal personality disorder scores were significantly associated with arson but negatively associated with robbery and blackmail. Schizoid personality disorder scores were associated with both kidnap and burglary and theft. Narcissistic personality disorder scores were significantly associated with fraud and drug offences. There were no associations between histrionic and borderline personality disorder scores and any offences over the lifetime among women.

Table 4

Table 5 demonstrates independent associations between Axis II disorder scores and lifetime offending among women prisoners. As previously observed among men, the strongest and most frequent associations observed were between adult antisocial and conduct disorder scores. Conduct disorder scores were significantly associated with robbery and blackmail, violence, escape and breach, fraud, and obstruction of justice. Adult antisocial scores were associated with Escape and Breach, Fraud, Burglary and theft, violent and driving offences.

Avoidant personality disorder scores were significantly associated with driving offences, but negatively associated with obstruction of justice. Conversely, dependent personality disorder scores were negatively associated with driving offences. They were also negatively associated with sex offences. Schizoid personality disorder scores demonstrated associations with violence, obstruction of justice, and robbery and blackmail. Sex offences were significantly associated with histrionic personality disorder but negatively associated with narcissistic personality disorder scores. There were no associations between obsessive-compulsive, paranoid, schizotypal or borderline personality disorder scores and any offences over the lifetime among women.

Table 5

DISCUSSION

Personality disorder and criminal careers

The study demonstrated associations between early onset of a criminal career and personality disorders among both male and female prisoners, specifically for those with adult antisocial and conduct disorder. Women who had previous convictions appeared to have started their criminal careers slightly earlier than men. This is consistent with recent criminal statistics in which the peak age of known offending for girls is 15, compared to 18 for men (Coid, 2005; Home Office, 2002). Men and women with personality disorders also had more previous periods of imprisonment. However, these associations appeared to be slightly stronger in men, compared to women offenders. The weaker association with previous imprisonment in women could be explained by the lower prevalence of personality disorders in women compared to men. However, a larger proportion of women prisoners were experiencing their first imprisonment (77% compared to 31% in men) and had a smaller number of periods of imprisonment compared to men (0-12 previous periods in women compared to 0-30 previous periods in men).

Women with personality disorders may avoid prison sentences because they are dealt with more leniently in courts than men, they may be placed in other institutional settings after offending, such as psychiatric hospitals, or simply they may have committed fewer serious offences over their lifetimes. Research suggests that, following arrest, women are more likely than men to be cautioned and are less likely to have their cases classified as 'No Further Action' or be charged (Home Office, 2002). This partly reflects the fact that women are more likely than men to admit their offences and to be arrested for less serious offences. In addition, the proportion of offenders convicted only once is higher for women than for men. For example, of offenders born in 1953, 78% of female offenders have been convicted on only one occasion before the age of 40, compared to 55% of male offenders

(Home Office, 2002). Overall, female prisoners received fewer criminal convictions than men, suggesting the latter explanation.

Violent and sexual offending

Murder/manslaughter was not associated with any specific personality disorder according to scores among men in this population, probably reflecting the relatively low homicide rate in England and Wales (Barclay et al, 2003) and where a significant proportion had committed homicides in domestic settings. Sex offending was also not specifically correlated with personality disorder scores among male prisoners. Among representative samples of sex offenders, paraphilias are likely to be of greater importance than abnormal personality features measured by personality disorders, particularly against child victims. This was supported by observations that sex offenders in this population tended to be older than other prisoners, of higher social class, more had educational qualifications, and fewer had ASPD. The small group of women sex offenders differed from men. There was a high association between female sex offenders and histrionic personality disorder scores, and negative associations with dependent and narcissistic personality disorder scores. This is inconsistent with previous studies in which the latter disorders are found in community controlled sex offenders (Chantry & Craig, 1994; Chesire, 2001). However, sex offences are rare among women in England and Wales and less than 1% of all incarcerated rape and sexual assault offenders are female (Greenfeld, 1997). In our sample, convictions for sexual offending in women may therefore have been related to the excessive emotionality, attention-seeking, provocative behaviour and interpersonal relationship disturbance seen in histrionic personality disorder, resulting in sexual assaults of other females and the aiding and abetting of male sexual offenders.

Acquisitive and drug offending

There was a lack of an association between personality disorders scores and drug offences among female prisoners, possibly reflecting the low prevalence of psychiatric morbidity observed in this subgroup. This observation is confirmed by the low mean personality disorder scores and drug offending in women. Among men there was an association between drugs and narcissistic personality disorder scores only. A subgroup were serving sentences for drug importation and included non-UK residents, motivated by financial reward rather than due to a disordered personality or an antisocial lifestyle. Few of the men serving sentences for drug offences had ASPD or were dependent on drugs, in marked contrast to those serving sentences for acquisitive offending and minor crimes of violence in this population, many of whom were dependent on, or heavy abusers of, drugs before imprisonment.

Narcissistic personality disorder scores were also associated with fraud and forgery in males. Narcissistic personality disorder is characterised by a pattern of grandiosity, need for admiration, lack of empathy, and is typically comorbid with antisocial personality disorder in offender samples (Coid, 2003). It has been argued that fraud offences require specific skills which may be associated with higher intelligence (Vitacco et al., 2005; Salekin et al., 2004). Unpublished research has indicated associations between higher IQ and narcissistic personality among offenders and in the general population is associated with life success in terms of career and finance (Ullrich et al., unpublished). This would explain the relationship between narcissistic personality disorder and fraud and forgery in our sample. In addition, Coid (1998) found that serious offenders with narcissistic personality disorder were motivated by the need to exert power, domination and control over their victims, which is consistent with calculated and controlling behaviour in the course of some fraud offences.

Cluster A disorders

There were significant associations between paranoid personality disorder scores and robbery and blackmail in men. This is consistent with a previous study by Keeney et al. (1997) who report that paranoid personality disorder is associated with an increased number of crimes against persons. Coid (1998) also found a relationship between paranoid personality disorder and serious violent offences. The essential feature of paranoid personality disorder is the interpretation of actions of others as deliberately threatening or demeaning. An individual with this disorder will often interpret another's motives as malevolent. Robbery or blackmail of a person may be a retributive or vengeful act in response to the acts they imagine or expect to have occurred or a response to those they see as hostile. On the other hand, paranoid personality disorder is frequently co-morbid with antisocial personality disorder in criminal populations and the independent associations with both forms of Axis II psychopathology may reflect other mediating factors leading to these associations. There were negative associations between paranoid personality disorder scores and driving offences in men. Individuals with such a disorder are known to be highly hypersensitive and vigilant, continually looking for threats. A speculative hypothesis is that these individuals would be constantly aware of their environment and would be less likely to drive recklessly and be convicted of driving offences.

Schizoid personality disorder scores were associated with several offences among female prisoners, including violent offences, obstruction of justice and robbery and blackmail. In a previous study, Coid (1998) found prisoners with schizoid personality disorder to be associated with expressive aggression and offences carried out for excitement and exhilaration. Similarly, Hernandez-Avila et al., (2000) found a relationship between violent crimes and schizoid personality disorder. Violent offences carried out by our sample of women correspond to expressive aggression observed previously in this group.

Individuals with schizoid personality disorder have been shown to have a pervasive pattern of detachment from social relationships and a restricted range of emotions. Crimes such as robbery and blackmail and obstruction of justice may have been carried out for excitement and exhilaration to compensate for such personality traits and interpersonal difficulties. In men, associations were found between schizoid personality disorder scores and kidnap, burglary and theft. Associations between schizoid personality disorder and kidnapping have been found previously (Coid, 1998). These are crimes that could be carried out alone with the emotional coldness and detachment seen in those with schizoid personality disorder.

Arson was the only offence associated with adult schizotypal personality disorder scores in men. Previous studies have shown found those with personality disorder symptoms were significantly more likely than others to commit violent acts, including arson and vandalism (Johnson et al., 2000). Psychopathology, or the manifestation of a mental or behavioural disorder, can be a factor in many cases of arson (Davis & Lauber, 1999). Psychopathologic firesetting may occur in a psychotic state in response to delusions or other symptoms. Schizotypal personality disorder presents with social and interpersonal deficits marked by inappropriate or unusual emotions together with odd, bizarre or deluded beliefs and thoughts. The distorted perceptions or cognitive distortions in those with such a disorder may lead an individual to believe that lighting fires is somehow necessary or appropriate without concern for the consequences. There were negative associations between schizotypal personality disorder scores and robbery and blackmail in men. The disturbances in thinking may result in difficulties in planning and executing these offences, and interpersonal difficulties in these individuals may mean they are less likely to commit crimes that are often carried out together with other criminal associates, particularly robberies of premises.

Cluster C disorders

Avoidant personality scores were significantly associated with criminal damage and were negatively associated with firearm offences in men. Avoidant personality disorder has been shown to have common characteristic features with axis I social phobia (Holt et al., 1992; Turner et al., 1993) Individuals with such a disorder have a pattern of feeling hypersensitive, inadequate and inhibited in social situations. It could be speculated that these individuals may have resorted to destructive behaviour towards objects rather than persons when overwhelmed with anxiety in response to such situations. They may have been less likely to commit firearm offences because such individuals prefer to be unnoticed and lack the confidence for active, high-risk, threatening crime often involving other criminal associates. In the same vein, avoidant personality scores were significantly associated with driving and negatively associated with obstruction of justice in women. A speculative possibility is that women with avoidant personality disorder may be more likely to be convicted of driving offences as this reflects instability and anxiety under stress, which in turn could manifest in reckless driving, similar to criminal damage, as an alternative to physical aggression. These individuals may be less likely to commit obstruction of justice as they are fearful of intentionally committing erroneous acts that would make them more conspicuous. On the other hand, such offences are more likely to occur in the criminal careers of those with marked antisocial features and with extensive criminal histories.

Conversely, dependent personality disorder scores were significantly associated with firearm offences and violence in male offenders and were negatively associated with criminal damage. Dependent personality disorder describes a compliant submissive person who requires excessive reassurance and advice. These individuals subordinate their needs to the needs of others. The offences associated with this sample of offenders could have

been committed for or with others due to fear of abandonment or rejection according to the criteria for this Axis II disorder, or reflect a tendency to conform to the criminal norms of their peer group in taking part in a group activity in which some were not dominant participants or leaders. The crimes committed by a person with dependent personality disorder would be more likely to be of benefit to the other people they fear rejection from rather than destructive crimes such as criminal damage. In women, dependent personality disorder scores were negatively associated with driving offences. This may simply reflect dependent women being less likely to drive themselves.

Obsessive-Compulsive personality disorder scores were significantly associated with firearm offences in males only. These individuals are preoccupied with orderliness, perfectionism and control. The firearm offences carried out by these individuals would then be more likely to have been carried out following careful planning. The crimes may also have been carried out to exert domination and control over individuals they consider having lower standards/ are less perfect than themselves, or as a reaction to an unexpected change or loss of control in their ordered lives.

Methodological Strengths and Limitations

The sampling frame for this survey resulted in the participants included being highly representative of prison population and the attrition rate at both stages was low. Attrition was largely accounted for by movement of prisoners between institutions or unexpected release, and few refused to participate. The study did not examine personality disorder categorically and examined correlates with personality disorder scores dimensional scores. However, collateral information on previous criminal behaviour was relatively limited in the context of the survey as previous psychological and psychiatric reports were rarely available to interviewers.

Moreover, there were limitations in the number of prisoners in our sample. As well as clinical interviews being limited to one-fifth of the sample, we omitted categories of offending that had a small prevalence in women (i.e. $n < 5$) as findings may be superficial based on inadequate numbers. This included murder and manslaughter, arson, kidnap, criminal damage and firearm offences. We therefore could not make direct comparisons of these offences between men and women. A larger sample would be needed to facilitate this in future studies.

Another limitation of the study was the use of categories of offending behaviour which were sometimes heterogeneous, including more than one offence category. For example, the violent offending category included numerous violent offences. A more thorough identification of the specific kind of violence being studied would have enhanced our understanding of its specific relationship with personality disorder. In addition, information on modus operandi and the motivation for previous patterns of criminal behaviour was not present. Certain hypotheses concerning the relationship between certain crimes and personality disorder must be considered speculative without this additional data.

Regardless of the above methodological limitations, our study did have certain strengths. These included the representative sample of male and female prisoners, the inclusion of all personality disorders, and a larger range of offending behaviour measures than in many previous studies. The relationship between personality disorder, and offending behaviour was assessed independently, controlling for confounding effects of comorbidity from both Axis I and Axis II disorders. Previous studies examining the relationship between offending behaviour and personality disorder in prisoners have used smaller samples and

tended to focus only on global or antisocial personality disorder. It is thus clear from our findings that independent relationships between personality disorders and offending behaviour do exist.

Antisocial personality disorder

A surprising finding was that there were no associations found between borderline personality disorder scores and types of offending behaviour in either male or female offenders. It is well documented that borderline personality disorder is highly comorbid with other personality disorders (Becker et al., 2000; Oldham et al. 1995; Nurnberg et al., 1991; Zanarini et al., 1998; 2004), especially ASPD in offender samples. Hence, the association between borderline personality disorder and criminal behaviour disappeared after controlling for other confounding personality disorders, specifically Adult antisocial and conduct disorder scores. Similar findings have indicated that borderline personality disorder is not associated with a history of violent behaviour due to axis II comorbidity (Berman et al., 1998; Johnson et al., 2000).

Conduct disorder and Adult Antisocial scores demonstrated the highest and most frequent associations with criminal behaviour among men and women. As ASPD is a compound disorder, requiring three or more criteria for both conduct disorder and adult antisocial behaviour, it was necessary to separate these components as we were investigating correlates with dimensional scores. According to the Diagnostic and Statistical Manual-IV (DSM-IV: American Psychiatric Association, 1994), repeated criminal behaviour is a criterion for adult antisocial personality: specifically, a failure to conform to social norms with respect to lawful behaviors as indicated by repeatedly performing acts that are grounds for arrest. Consequently, it can be argued that demonstrating an association between antisocial personality disorder and multiple categories of offending is tautological

and merely confirms criminal versatility, a trait within the item itself. However, ASPD also demonstrates extensive overlap with the criminological construct of the career criminal (Coid, 1993; Farrington, 1995). Previous studies of offending behaviour among individuals with ASPD have consistently shown associations with crimes involving financial gain, including burglary and theft, robbery, and firearm offences (Coid, 1998) together with violent offences (Hodgins et al., 1996; Hodgins, 1998; Rasmussen & Levander, 1996), as found in this study. The present study also found additional associations with crimes such as fraud, drug offences, and escape and breach to be associated with adult antisocial scores, which highlights the criminal versatility of such a group.

The link is firmly established between childhood conduct disorder and adult antisocial personality disorder (Loeber, 1990; Robins & Reiger, 1991; Robins, 1996; Hill, 2003), so it was unsurprising to find strong associations between offending behaviour and conduct disorder in our study. Conduct disorder is known to be an important predictor of adult offending, and previous studies have shown strong support for a relationship between child conduct problems and criminality in adulthood (Farrington et al., 1990; Kratzer & Hodgins, 1997; Robins, 1993). This was confirmed by the present study; the relationship between conduct disorder and offending behaviour in adulthood was robust, with strong relationships with early offending behaviour, previous period of imprisonment, and most of the categories of offending in both men and women.

Criminal versatility is a component of psychopathy and is an item previously identified within the second “factor” of this construct (Harpur et al., 1988; 1989), but now is in Facet 4, using the four facet model according to the Psychopathy Checklist-Revised manual (Hare, 2003). Antisocial personality disorder and the items within the two dimensions,

adult antisocial personality disorder and conduct disorder, demonstrate significant overlap with this facet. Cooke et al.,(2004) have argued that the Antisocial facet is a consequence of the other three facets (interpersonal, affective and lifestyle), which themselves have been demonstrated to correlate with other Axis II disorders both in this prisoner sample (Coid et al., submitted a) and in a representative community sample (Coid et al., submitted b). However, there is little evidence that adult antisocial behaviour and conduct disorder were a “consequence” of the other Axis II disorders in this study (although our findings were inevitably limited by the cross-sectional method). The overwhelming dominance of these two antisocial components in their associations with individual categories of criminal behaviour suggests that alternative hypotheses must be found to account for these associations. These might include freedom of choice on the part of many prisoners within our sample to become career criminals, involving a range of different offending behaviours, and unrelated to other personality characteristics. Motivational factors such as financial gain, obtaining substances, and offences carried out in states of intoxication may have been of greater importance. In this context, the other Axis II measures would be peripheral, influencing certain aspects of modus operandi and motivation, but not explaining the central components of our participants’ criminal lifestyle. This would correspond to previous findings in this sample with regard to psychopathy (Roberts & Coid, 2007). Further research into the motivations and disposition of offenders before their acts of criminal behaviour may demonstrate stronger links with a range of Axis II disorders (see Coid, 1998; 2003). This may also help overcome the tautological difficulties of investigating antisocial personality disorder and criminal careers.

Acknowledgments

The survey was carried out by the Office for National Statistics in 1997.

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Table 1: Sociodemographic and socioeconomic characteristics of the total sample (n=496).

	Category group	Respondents	
		N	(%)
Age group	16-34	379	(76.4)
	35-54	109	(22.0)
	55-74	8	(1.6)
Gender	Male	391	(78.8)
	Female	105	(21.2)
Non-UK born	UK born	442	(89.1)
	Non UK born	54	(10.9)
Ethnic origin	White	412	(83.1)
	Black	59	(11.9)
	Asian	10	(2.0)
	Other	15	(3.0)
Marital status before prison	Single	177	(35.7)
	Divorced/separated	49	(9.9)
	Married/ widowed	72	(14.5)
	Cohabiting	198	(39.9)
Educational Qualifications	None	215	(43.3)
	Any	281	(56.7)
Social class	I & II	52	(10.5)
	IIINM	48	(9.7)
	IIIM	136	(27.4)
	IV	133	(26.8)
	V & VI	64	(12.9)
	Missing label	63	(12.7)
Remanded	No	299	(60.3)
	Yes	197	(19.7)

N.B. The group ‘Missing label’ in social class consists of mostly young men, white, no qualifications, single or cohabiting.

Table 2: Mean (SD) personality disorder scores for each category of offending in men.

LIFETIME OFFENCE	Avoidant	Dependent	Obsessive-compulsive	Paranoid	Schizotypal	Schizoid	Histrionic	Narcissistic	Borderline	Adult Antisocial	Conduct
Criminal Damage (n=13)	5.69 (3.84)	2.31 (3.22)	4.85 (3.78)	8.54 (4.79)	4.85 (3.60)	3.38 (3.25)	3.00 (3.49)	5.54 (5.01)	9.69 (6.26)	10.46 (3.18)	12.77 (9.61)
Obstruction Justice (M=108)	2.97 (4.01)	1.81 (2.87)	3.23 (2.71)	5.31 (4.29)	2.41 (2.88)	3.04 (2.78)	1.84 (2.44)	3.66 (3.74)	6.56 (4.81)	10.36 (3.02)	13.10 (7.79)
Firearm (n=139)	2.47 (3.37)	1.91 (2.97)	3.71 (3.17)	5.39 (4.20)	2.45 (2.90)	2.61 (2.71)	1.94 (2.60)	3.83 (4.04)	6.20 (4.93)	9.91 (3.49)	12.72 (7.90)
Robbery and Blackmail (n=107)	2.97 (3.79)	1.87 (2.92)	3.77 (3.16)	6.11 (3.90)	2.51 (2.41)	3.07 (2.89)	1.94 (2.32)	3.73 (3.43)	6.53 (4.96)	9.75 (3.69)	12.92 (7.48)
Escape and Breach (n=210)	2.49 (3.36)	1.47 (2.30)	3.10 (2.79)	4.74 (4.04)	2.40 (2.80)	2.84 (2.66)	1.65 (2.36)	3.47 (3.71)	5.75 (4.76)	9.72 (3.26)	11.22 (7.69)
Arson (n=24)	3.88 (4.27)	3.13 (3.92)	4.33 (4.02)	6.04 (4.40)	4.71 (4.31)	4.21 (3.80)	1.92 (2.26)	3.88 (3.60)	7.71 (5.71)	8.58 (4.65)	12.96 (7.07)
Kidnap (n=23)	2.70 (4.20)	1.87 (2.55)	3.61 (2.33)	4.96 (4.64)	2.22 (3.33)	3.65 (3.19)	2.22 (2.91)	3.65 (3.92)	5.09 (5.22)	8.43 (3.96)	11.57 (9.30)
Fraud (n=95)	2.71 (3.59)	1.52 (2.50)	3.38 (2.93)	5.08 (4.10)	2.54 (3.08)	2.89 (2.40)	1.91 (2.71)	4.07 (4.27)	6.05 (4.80)	9.73 (3.31)	10.89 (7.94)
Burglary and Theft (n=297)	2.44 (3.43)	1.60 (2.69)	3.03 (2.92)	4.40 (3.95)	2.13 (2.69)	2.77 (2.80)	1.66 (2.41)	3.31 (3.77)	5.40 (4.81)	8.96 (3.71)	10.12 (7.54)
Violence (inc GBH) (n=212)	2.49 (3.51)	1.79 (2.88)	3.19 (3.03)	4.74 (4.17)	2.16 (2.81)	2.66 (2.81)	1.76 (2.44)	3.30 (3.83)	5.73 (5.00)	8.74 (4.10)	10.09 (8.06)
Driving (n=193)	2.31 (3.42)	1.53 (2.61)	3.12 (3.00)	4.25 (3.89)	2.12 (2.97)	2.77 (2.86)	1.65 (2.36)	3.37 (3.76)	5.36 (4.76)	8.99 (3.79)	9.35 (7.93)
Drug (n=181)	2.52 (3.40)	1.80 (2.80)	3.34 (2.94)	4.90 (4.10)	2.27 (2.77)	2.58 (2.69)	1.76 (2.63)	3.70 (3.80)	5.85 (4.99)	8.74 (4.16)	10.06 (7.89)
Murder and Manslaughter (n=31)	1.39 (2.20)	0.58 (1.09)	3.45 (3.92)	3.90 (4.45)	2.00 (2.57)	2.19 (3.08)	1.32 (2.59)	3.39 (4.28)	5.03 (4.58)	7.77 (4.40)	8.77 (7.89)
Sex (n=45)	3.24 (4.24)	2.07 (3.45)	3.98 (3.79)	3.93 (4.09)	2.56 (3.17)	3.13 (2.90)	1.98 (3.14)	3.60 (4.17)	4.89 (5.76)	5.80 (4.44)	5.80 (7.31)

Table 3: Mean (SD) personality disorder scores for each category of offending in women.

LIFETIME OFFENCE	Avoidant	Dependent	Obsessive-compulsive	Paranoid	Schizotypal	Schizoid	Histrionic	Narcissistic	Borderline	Adult Antisocial	Conduct
Obstruction Justice (n= 8)	2.38 (2.26)	1.63 (2.00)	3.88 (2.03)	7.25 (4.56)	5.63 (2.97)	5.38 (3.74)	4.88 (5.59)	7.13 (6.56)	10.63 (3.70)	11.75 (1.67)	13.88 (9.45)
Robbery and Blackmail (n= 11)	3.18 (2.82)	2.36 (4.08)	4.36 (3.04)	6.27 (4.41)	4.18 (3.25)	3.91 (3.91)	3.18 (4.31)	4.64 (5.46)	9.45 (5.39)	10.00 (2.57)	12.91 (7.57)
Escape and Breach (n= 22)	2.95 (3.74)	2.86 (3.43)	3.59 (2.87)	4.68 (3.72)	3.55 (3.07)	3.14 (3.45)	3.00 (4.08)	4.32 (5.23)	7.77 (4.77)	11.36 (1.87)	10.00 (8.01)
Fraud (n= 32)	2.22 (3.11)	1.66 (2.56)	3.19 (3.20)	3.19 (3.46)	2.53 (3.27)	1.59 (2.65)	1.25 (2.18)	2.75 (3.79)	5.09 (4.45)	8.25 (4.09)	6.16 (7.18)
Burglary and Theft (n= 46)	2.33 (3.46)	2.02 (3.36)	3.24 (2.93)	3.52 (3.66)	3.13 (3.23)	2.15 (3.03)	2.04 (3.23)	3.35 (4.83)	6.24 (5.22)	8.65 (3.78)	6.20 (6.83)
Violence (inc GBH) (n= 28)	3.68 (4.00)	3.00 (4.05)	4.32 (2.80)	5.11 (4.00)	4.07 (3.02)	3.89 (3.74)	2.71 (3.41)	4.46 (4.73)	8.14 (4.90)	9.82 (3.31)	8.25 (7.65)
Driving (n= 15)	4.00 (4.77)	1.60 (2.29)	3.47 (3.20)	4.13 (4.02)	2.93 (2.49)	1.53 (3.18)	1.73 (3.03)	2.33 (2.79)	6.67 (4.91)	10.00 (3.46)	8.20 (6.57)
Drug (n= 53)	1.47 (2.91)	1.00 (2.35)	2.26 (2.44)	2.47 (3.53)	1.60 (2.46)	0.77 (1.94)	1.30 (2.58)	1.80 (2.92)	3.38 (4.35)	5.42 (4.55)	3.94 (5.89)
Sex (n= 9)	2.11 (2.03)	0.67 (1.41)	3.00 (2.24)	5.11 (4.62)	3.44 (3.54)	2.78 (3.53)	4.33 (4.69)	4.22 (6.42)	7.11 (5.18)	9.11 (4.48)	7.67 (6.22)

Table 4: Associations between personality disorder scores and lifetime offending in men.

LIFETIME OFFENCE	Avoidant β	Dependent β	Obsessive-Compulsive β	Paranoid β	Schizotypal β	Schizoid β	Histrionic β	Narcissistic β	Borderline β	Adult Antisocial β	Conduct β
Criminal Damage (n=13)	0.08 *	-0.09 *									
Obstruction Justice (M=108)										0.20 ***	0.23 ***
Firearm (n=139)	-0.10 **	0.08 *	0.11 *							0.22 ***	0.29 ***
Robbery and Blackmail (n=107)				0.16 ***	-0.09 *					0.14 ***	0.26 ***
Escape and Breach (n=210)										0.32 ***	0.20 ***
Arson (n=24)					0.10 **						0.12 **
Kidnap (n=23)						0.10 *					0.10 *
Fraud (n=95)								0.09 *		0.16 ***	0.13 **
Burglary and Theft (n=297)						0.14 **				0.30 ***	0.19 ***
Violence (inc GBH) (n=212)		0.08 *								0.10 **	0.11 **
Driving (n=193)				-0.07 *						0.19 ***	
Drug (n=181)								0.07 *			
Murder and Manslaughter (n=31)											
Sex (n=45)											

Note: *p<0.05; **p<0.01; ***P<0.001, two-tailed. Adjustments include: age, social class, alcohol disorder, drug disorder, schizophrenia (from SCAN), being a remand prisoner, and other personality disorders. Adjustments for Conduct Disorder only: age, social class, alcohol disorder, drug disorder, being a remand prisoner.

The association is presented by β as the partial regression coefficient.

Table 5: Associations between personality disorder scores and lifetime offending in women.

LIFETIME OFFENCE	Avoidant β	Dependent β	Obsessive-Compulsive β	Paranoid β	Schizotypal β	Schizoid β	Histrionic β	Narcissistic β	Borderline β	Adult Antisocial β	Conduct β
Obstruction Justice (n= 8)	-0.18 *					0.23 **					0.40 ***
Robbery and Blackmail (n= 11)						0.17 *					0.42 ***
Escape and Breach (n= 22)										0.36 ***	0.36 ***
Fraud (n= 32)										0.25 ***	0.17 *
Burglary and Theft (n= 46)										0.28 ***	
Violence (inc GBH) (n= 28)						0.36 ***				0.24 **	0.30 ***
Driving (n= 15)	0.29 ***	-0.22 *								0.19 *	
Drug (n= 53)											
Sex (n= 9)		-0.20 *					0.21 **	-0.13 *			

Note: *p≤0.05; **p≤0.01; ***P≤0.001, two-tailed. Adjustments include: age, social class, alcohol disorder, drug disorder, schizophrenia (from SCAN), being a remand prisoner, and other personality disorders. Adjustments for Conduct Disorder only: age, social class, alcohol disorder, drug disorder, being a remand prisoner.
The association is presented by β as the partial regression coefficient.