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

Year of publication: 2007

Citation: Roberts, A.D.L., & Coid, J. (2007) 'Psychopathy and offending behaviour: findings from the national survey of prisoners in England and Wales.' *Journal of Forensic Psychiatry and Psychology*, 18 (1), 23–43.

Link to published version: <http://dx.doi.org/10.1080/14789940601012698>

DOI: 10.1080/14789940601012698

Psychopathy and offending behaviour: Findings from the national survey of prisoners in England and Wales

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Abstract

There is debate about whether the psychopath's criminal behaviour is a consequence of abnormal personality traits or a symptom of psychopathy. The aim of this study was to examine independent associations between offending behaviour over the lifetime and psychopathy 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. Psychopathy was measured using the PCL-R in the second stage among 497 male and female prisoners. Independent relationships between the four factors of psychopathy and lifetime offences were examined using multiple regression. Two models of association were compared to test the effects of the fourth (antisocial) factor. Factor 1 (interpersonal) was not associated with any category of serious offending behaviour. Affective deficiency (Factor 2) was independently associated with violent and acquisitive offending in men. The contribution of the antisocial factor to associations with total PCL-R scores, together with its strong intercorrelations with Factor 3 (lifestyle), suggest that it is an integral component of the psychopathy construct. The findings also demonstrate the dilemma of colinearity between the third and fourth factors of psychopathy and their relationship with criminal behaviour, especially in men.

Keywords: *Psychopathy, offending behaviour, prisoners, criminality, factor-structure, gender*

Introduction

Psychopathy is defined by a cluster of inferred personality traits and socially deviant behaviours (Cleckley, 1941; Hare, 1991; Hare & Neumann, 2005). On an interpersonal level, the psychopath is depicted as ego-centric, manipulative, grandiose, lacking in empathy, anxiety, and remorse, unable to maintain close relationships, and exhibiting shallow emotions.

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Behaviourally, the psychopath is impulsive, irresponsible, and has poor behavioural control. It is therefore unsurprising that psychopaths are more likely to break the laws of society and can be found most readily within the criminal justice system. However, the associations between these personality traits and criminal behaviour remain unclear. There is continuing debate as to whether the psychopath's criminal behaviour is the consequence of abnormal personality traits or a symptom of psychopathy (Cooke, Michie, Hart, & Clark, 2004).

Criminal careers and psychopathy

A minority of offenders are psychopaths, but they are responsible for a disproportionate amount of crime. Psychopathic offenders start their criminal careers at a relatively young age (Brown & Forth, 1995; Forth, Hart, & Hare, 1990; Haapasalo, 1994; Hare, 1981; Smith & Newman, 1990; Wong, 1985), are 'high density' offenders, and commit a variety of offences (Cooke, 1995; Haapasalo, 1994; Hare, 1981; Kosson, Smith, & Newman, 1990). Within offender groups, psychopaths are more criminally active than non-psychopaths when not incarcerated. By middle age, however, psychopaths and non-psychopaths appear similar in terms of rate of non-violent offending, although their rate of violent offending continues to be higher (Hare & Hart, 1992; Hare & McPherson, 1984). Offenders with high scores on psychopathy measures have significantly higher rates of conviction for armed robbery, robbery, and assault, and are more likely to have engaged in fights and aggressive homosexuality in prison (Hart & Hare, 1997). They also engage in different types of violence and are more likely to assault male strangers than non-psychopaths, the latter being more likely to assault female family members or acquaintances (Williamson, Hare, & Wong, 1987). Their violence is more likely to be motivated by revenge or retribution compared to non-psychopaths, who are more likely to commit acts of violence in a state of extreme emotional arousal (Cornell et al., 1996; Dempster, Lyon, Sullivan, & Hart, 1996; Hemphill, Hare, & Wong, 1998; Woodworth & Porter, 2002). Psychopathic offenders are thus more likely to commit predatory violent crimes, motivated by readily identifiable goals that are callous and calculating without the emotional context that characterizes the violence of other offenders (Cornell et al., 1996; Hare, 2003; Hemphill et al., 1998; Woodworth & Porter, 2002).

Psychopathy also appears related to certain aspects of sexual offending. For example, rapists are more likely to be psychopaths than offenders against children or adolescents (Forth & Kroner, 1994; Miller, Geddings, Levenston, & Patrick, 1994; Prentky & Knight, 1991; Quinsey, Rice, & Harris, 1995; Serin, Malcolm, Khanna, & Barbaree, 1994) and there is evidence that more violent behaviour during sexual offending is associated with psychopathy (Gretton, McBride, Lewis, O'Shaughnessy, & Hare,

1994; Miller et al., 1994) together with offences involving sexual sadism (Dempster & Hart, 1996; Quinsey et al., 1995).

Women offenders

Research into psychopathy and offending behaviour has been conducted almost exclusively with males. Studies that include women tend to have small numbers (Douglas, Ogloff, Nicholls, & Grant, 1999), do not specifically examine gender differences (Monahan et al., 2001), or have compared the PCL-R to other risk measures (Warren et al., 2005). This may be due to the low prevalence of psychopathy among women (Salekin, Rogers, & Sewell, 1997). However, two studies specifically examined associations with criminal offending in women. Vitale, Smith, Brinkley, and Newman (2002) confirmed that scores on the PCL-R were associated with criminal versatility and number of violent and non-violent convictions. More recently, Warren et al. (2005) found that those with lower scorers on the PCL-R were more likely to have convictions for first-degree murder. The only features of criminal history distinguishing psychopathic women were convictions for robbery, shoplifting, and a miscellaneous group of 'minor crimes'.

Factor structure of psychopathy

The accepted 'gold standard' for reliable and valid assessment of psychopathy is the Psychopathy Checklist Revised (PCL-R; Hare, 2003). Recent developments in factor structure have indicated the importance of different components of psychopathy. Although previously considered a higher-order construct underpinned by two correlated factors (Harpur, Hakstian, & Hare, 1988; Harpur, Hare, & Hakstian, 1989), subsequent factor analysis has described a hierarchical three-factor model (Cooke & Michie, 2001). This has recently been incorporated into a four-'factor' model in the second edition of the PCL-R (Hare, 2003; see Figure 1). This model allows a finer descriptive analysis of individuals encountered in clinical practice, and the examination of specific correlates with subcomponents of psychopathy. However, a fundamental problem when examining associations between criminal careers and this model of psychopathy is that the fourth factor consists of two items (juvenile delinquency and criminal versatility) which are components of a criminal career. Attempts to examine correlates of crime with the fourth factor are potentially confounded, a tautological relationship clearly existing between the antisocial lifestyle factor (Factor 4) and criminal behaviour. Cooke and Michie (2001) proposed that the construct of psychopathy comprises three factors, recommending the exclusion of the antisocial behaviour items, and later arguing that the fourth factor (antisocial behaviour) is a consequence of the other three factors of psychopathy (Cooke et al., 2004).

<p>Factor 1: Interpersonal</p> <ol style="list-style-type: none"> 1. Glibness/superficial charm 2. Grandiose sense of self-worth 4. Pathological lying 5. Conning/manipulative 	<p>Factor 3: Lifestyle</p> <ol style="list-style-type: none"> 3. Need for stimulation/proneness to boredom 9. Parasitic lifestyle 13. Lack of realistic long-term goals 14. Impulsivity 15. Irresponsibility
<p>Factor 2: Affective</p> <ol style="list-style-type: none"> 6. Lack of remorse or guilt 7. Shallow affect 8. Callous/lack of empathy 16. Failure to accept responsibility for own actions 	<p>Factor 4: Antisocial</p> <ol style="list-style-type: none"> 10. Poor behavioural controls 12. Early behavioural problems 18. Juvenile delinquency 19. Revocation of conditional release 20. Criminal versatility

Figure 1. Items in the four-factor model of psychopathy (Hare, 2003).

Debates over the inclusion of a fourth (antisocial) factor remain unresolved. Hare and Neumann (2005) argue that factor analysis, item response theory, and multidimensional scaling all point to the PCL-R and its derivatives being underpinned by four correlated factors—interpersonal, affective, lifestyle, and antisocial—and that the fourth factor, criticized by Cooke and Michie (2001), is not simply a manifestation of the other traits. Furthermore, analysis of large data sets suggested that the four-factor model is viable (Hare, 2003) and it was therefore incorporated in the second edition of the PCL-R (see Figure 1).

The aim of this paper is to examine independent associations between patterns of offending behaviour over the lifetime and psychopathy in a representative sample of male and female offenders from an entire correctional jurisdiction. Due to the tautological nature of the association between Factor 4 (antisocial behaviour) and offending behaviour, we anticipated a strong association between the two. In view of this, we tested independent associations between Factors 1–3 and lifetime offending behaviour, adjusting for Factors 1–3 but not Factor 4, in multiple regression analysis. We then tested the robustness of our findings in a second model, introducing Factor 4 as an additional adjustment. Despite the problem of multi-colinearity, we hypothesized that, if the observed associations between Factors 1–3 were truly independent, they would remain so following adjustment for Factor 4, thereby confirming the hypothesis of Cooke and Michie (2001) that offending behaviour (as incorporated in Factor 4) is an outcome of Factors 1–3.

Methodology

Survey of psychiatric morbidity in prisoners

The national survey of psychiatric morbidity in prisoners in England and Wales was carried out by the Office for National Statistics in 1997 (Singleton, Meltzer, Gatward, Coid, & Deasy, 1998). The survey was commissioned by the UK Department of Health for England and Wales to give a national estimate of the prevalence, severity, and duration of mental health problems in different types of prisoner (remand and sentenced, men and women). The survey involved two stages: an initial screen in the first stage by lay interviewers who entered responses on a laptop computer, and a clinical interview with every fifth person in the second. All prisons in England and Wales were included in the sample.

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 one in 34 male sentenced prisoners, one in eight male remand prisoners, and one in three women prisoners (either remand or sentenced). In the last four weeks of the survey the sampling fraction was changed to one 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%) prisoners completed the 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 PCL-R interview ($n = 496$; males = 391, females = 105). The interval between the first and second phase interviews was approximately two weeks. The sociodemographic and socioeconomic characteristics of the total sample are shown in Table I.

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 previous history of convictions. Information on criminal convictions was also obtained from prison records. Index offence and previous convictions were combined to create a list of lifetime offences for each prisoner (i.e., whether or not an offence had occurred at any time during a prisoner's lifetime). These lists were used as the outcome measures of offending behaviour. Each outcome measure of offending behaviour was dichotomous and hence did not include the number of convictions for each prisoner within each offence category.

Assessment instruments (Stage 2)

The one in five subsample was interviewed by clinicians (five psychiatrists and three psychologists) using the PCR (Hare, 1991). They had been trained in how to use and score the PCL-R in a large group format by viewing videotapes of assessment interviews to enable the establishment

Table I. Sociodemographic and socioeconomic characteristics of the total sample ($n = 496$).

Respondents	Category group	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)
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)

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

of norms for scoring individual items. Alpha coefficients for total, male, and female PCL-R scores were within the acceptable range (total .89; male = .88, female = .90) suggesting good internal consistency. Inter-item correlations (mean = .29, $SD = .13$, median = .29, range = .02 – .63) also indicated satisfactory homogeneity. The PCL-R consists of 20 items that are scored 0, 1, or 2 based upon a clinical interview and review of file information. Item scores are summed to create a total score, and scores for Hare’s four-factor model (Hare, 2003). Criminal versatility scores were obtained from prison records of criminal convictions.

Statistical analysis

Data were analysed using the Statistical Package for the Social Sciences (SPSS) 11.0. Spearman’s correlation and then partial correlation was

performed for the four factors of psychopathy, controlling for other factors, gender and age. Spearman's correlation coefficients were calculated for the four factor correlations and overall psychopathy scores in relation to the 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 psychopathy and criminal behaviour, controlling for the other factors (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 psychopathy. Adjustments were made for age, ethnicity, alcohol disorder, drug disorder, and the other psychopathy factors. In a prison sample, serious offenders (e.g., those who have committed murder and manslaughter) will have spent longer in prison so the associations may have been confounded by age. Similarly, sex offenders have been shown to be older (e.g., Fazel & Jacoby, 2002). In addition, different patterns of offending behaviour have been shown to occur in different ethnic groups. For example, black male prisoners commit more robbery and firearm offences (see Coid et al., 2002). Drug misuse is obviously related to drug offences, but also acquisitive offences, and substance misuse may have obscured this association. Similarly, alcohol disorder is strongly associated with violence. When looking at the independent effects of psychopathy, violent offences may have been obscured by alcohol and drug misuse. Hence, to find the truly independent effect of psychopathy, we controlled for age, ethnicity, and substance misuse.

Model 1 excluded Factor 4 variable adjustment in the analysis, and Model 2 included Factor 4 variables in the analysis. Psychopathy scores were assessed in relation to lifetime 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

Table II demonstrates correlations between the four factors of psychopathy. Factors 3 and 4 were the most strongly correlated factors. Partial correlation co-efficients between the four factors, controlling for the other factors, age, and sex, demonstrated that all were intercorrelated except Factors 2 and 4.

Age at first court appearance demonstrated strong negative correlations with total PCL-R scores in men (-0.51 , $p < .001$) and women (-0.59 ,

Table II. Inter-factor correlations.

	Spearman's simple correlation			Partial correlation (adjusted for other factors, gender, and age)		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Factor 2	0.44***			0.16***		
Factor 3	0.55**	0.54**		0.23***	0.29***	
Factor 4	0.47**	0.48**	0.74**	0.15***	0.08	0.53***

*** $p < .001$ (two tailed); ** $p < .01$ (two tailed).

$p < .001$). Following adjustments for the other factors, associations in terms of z scores remained significant between age and Factors 1 (-2.87 , $p < .01$), 2 (-4.17 , $p < .001$), 3 (-8.24 , $p < .001$), and 4 (-10.1 , $p < .001$) in men, and women (-2.47 , $p < .05$; -2.89 , $p < .01$; -5.67 , $p < .001$; and -6.76 , $p < .001$, respectively). There were significant correlations between total PCL-R scores and number of previous periods of imprisonment among men ($.45$, $p < .001$) and among women ($.38$, $p < .001$). Previous imprisonment was independently associated with Factors 1 (4.37 , $p < .001$), 2 (6.10 , $p < .001$), 3 (8.16 , $p < .001$), and 4 (10.13 , $p < .001$) in men, and in women (2.54 , $p < .05$; 2.56 , $p < .05$; 3.29 , $p < .01$; and 4.52 , $p < .001$, respectively).

Table III presents the mean psychopathy scores for each category of offending. Similar patterns can be observed in both men and women. Among men, the highest overall mean PCL-R scores were observed for criminal damage and obstruction of justice. Acquisitive offences also scored highly. Likewise, in women, the highest mean total score was for obstruction of justice. The lowest total mean PCL-R scores among men were for sex offences and murder/manslaughter, and among women for murder/manslaughter and drugs. Similar patterns were observed for each of the four factors.

Table IV demonstrates two models of the association between psychopathy scores and lifetime offending among men, adjusting for age, ethnicity, alcohol disorder, drug disorder, and the three factors for Model 1, then adding the fourth factor as an adjustment in Model 2. Total PCL-R scores were significantly related to all offence categories except murder/manslaughter, sex, and drugs. Escape and breach, robbery/blackmail, firearm, burglary and theft, fraud, violence, and obstruction of justice demonstrated high levels of association. The table shows that these associations were largely explained by the associations observed between each category of offending and the fourth factor (antisocial), except in the case of arson, kidnap, and criminal damage.

No associations were found between the interpersonal factor (Factor 1) and any category of offending in either model. In both models, Factor 2

Table III. Mean (SD) psychopathy scores for each category of offending in men and women.

Lifetime offence	Male				Female					
	PCL-R	Factor 1	Factor 2	Factor 3	Factor 4	PCL-R	Factor 1	Factor 2	Factor 3	Factor 4
Criminal damage (M = 13; F = 0)	23.08 (8.54)	2.85 (2.91)	5.23 (2.80)	7.00 (2.38)	8.00 (3.00)	—	—	—	—	—
Obstruction of justice (M = 108; F = 8)	21.28 (7.45)	2.33 (2.08)	3.75 (2.46)	6.44 (2.42)	8.76 (3.28)	24.88 (5.11)	3.13 (1.89)	5.50 (2.45)	7.50 (2.00)	8.75 (2.43)
Firearm (M = 139; F = 3)	20.45 (8.19)	2.35 (2.23)	3.58 (2.52)	6.24 (2.66)	8.28 (3.54)	17.67 (9.71)	1.33 (1.15)	1.00 (1.73)	7.00 (2.65)	8.33 (5.03)
Robbery and blackmail (M = 107; F = 11)	19.74 (8.49)	2.51 (2.13)	3.32 (2.55)	5.98 (2.63)	7.93 (3.86)	18.64 (9.12)	1.82 (2.04)	3.27 (3.32)	6.09 (3.30)	7.45 (2.81)
Escape and breach (M = 210; F = 22)	19.23 (7.85)	2.20 (2.06)	3.26 (2.52)	5.89 (2.56)	7.89 (3.48)	18.95 (7.03)	2.36 (1.79)	3.18 (2.75)	6.68 (1.81)	6.73 (3.31)
Arson (M = 24; F = 1)	18.83 (9.44)	1.75 (1.80)	3.54 (2.47)	6.04 (3.18)	7.50 (4.29)	20.00 (—)	7.00 (—)	2.00 (—)	5.00 (—)	6.00 (—)
Kidnap (M = 23; F = 2)	18.52 (9.68)	2.52 (2.41)	3.17 (2.55)	5.57 (3.06)	7.26 (4.11)	13.00 (18.38)	1.00 (1.41)	1.50 (2.12)	4.00 (5.66)	6.50 (9.19)
Fraud (M = 95; F = 32)	18.51 (8.00)	2.26 (2.14)	3.33 (2.47)	5.60 (2.81)	7.32 (3.68)	11.22 (9.12)	1.66 (2.03)	1.72 (2.50)	4.00 (3.13)	3.84 (3.14)
Burglary and theft (M = 297; F = 46)	17.28 (8.40)	2.02 (2.11)	3.02 (2.46)	5.33 (2.81)	6.90 (3.75)	13.00 (8.93)	2.04 (2.02)	1.87 (2.52)	4.59 (3.04)	4.50 (3.46)
Violence (inc GBH) (M = 212; F = 28)	17.21 (9.31)	1.94 (2.12)	3.09 (2.57)	5.18 (2.92)	7.00 (3.94)	16.89 (8.74)	2.43 (1.97)	2.89 (2.67)	5.50 (2.90)	6.07 (3.59)
Driving (M = 193; F = 15)	16.93 (8.57)	2.01 (2.05)	2.98 (2.41)	5.15 (2.80)	6.80 (3.84)	14.33 (7.55)	1.67 (1.80)	1.47 (2.17)	6.00 (2.78)	5.20 (2.83)
Drug (M = 181; F = 53)	16.87 (9.37)	2.04 (2.26)	2.85 (2.51)	5.28 (2.99)	6.71 (4.00)	6.41 (7.75)	0.79 (1.51)	0.83 (2.08)	2.51 (3.00)	2.28 (3.44)
Murder and manslaughter (M = 31; F = 4)	13.81 (9.57)	1.55 (2.01)	2.38 (2.64)	4.26 (3.12)	5.61 (3.83)	10.00 (7.48)	1.75 (1.71)	0.50 (1.00)	3.25 (2.50)	4.50 (3.87)
Sex (M = 45; F = 9)	11.82 (8.15)	1.42 (2.02)	2.56 (2.06)	3.38 (3.02)	4.47 (3.53)	16.89 (9.24)	2.00 (1.80)	2.33 (3.08)	6.22 (3.60)	6.33 (3.46)

Table IV. Associations between psychopathy scores and lifetime offending in men.

Lifetime offences	Total PCL-R		Model 1 (Factors 1–3)						Model 2 (Factors 1–4)					
			Factor 4		Factor 2		Factor 3		Factor 1		Factor 2		Factor 3	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
Male														
Burglary and theft (<i>n</i> = 297)	0.30	0.000	0.24	0.000	0.10	0.04	0.13	0.001					0.10	0.05
Robbery and blackmail (<i>n</i> = 107)	0.25	0.000	0.15	0.000			0.11	0.004						
Murder and manslaughter (<i>n</i> = 31)	0.09	0.05												
Arson (<i>n</i> = 24)	0.15	0.001	0.11	0.004			0.07	0.05						
Driving (<i>n</i> = 193)														
Sex (<i>n</i> = 45)	0.34	0.000	0.23	0.000	0.11	0.02	0.17	0.000					0.12	0.02
Firearm (<i>n</i> = 139)	0.17	0.000	0.18	0.000	0.11	0.01							0.11	0.02
Drug (<i>n</i> = 181)														
Violence (inc GBH) (<i>n</i> = 212)	0.36	0.000	0.32	0.000			0.17	0.000						
Escape and breach (<i>n</i> = 210)	0.18	0.000	0.09	0.01										
Fraud (<i>n</i> = 95)	0.10	0.03												
Kidnap (<i>n</i> = 23)	0.10	0.02			0.12	0.005							0.12	0.005
Criminal damage (<i>n</i> = 13)														
Obstruction of justice (<i>n</i> = 108)	0.31	0.000	0.25	0.000	0.12	0.01	0.14	0.000					0.12	0.02

Adjustments: age, social class, marital status, ethnicity, alcohol disorder, drug disorder, being a remand prisoner and factors 1–3 for model 1 and factors 1–4 for model 2.

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

scores were significantly associated with burglary and theft, firearms, violence, criminal damage, and obstruction of justice. In Model 1, Factor 3 scores were significantly associated with burglary and theft, robbery and blackmail, arson, firearms, escape and breach, and obstruction of justice. However, adjusting for Factor 4 cancelled these associations with Factor 3 scores.

Table V demonstrates independent associations between psychopathy scores and lifetime offending among women prisoners, employing the same models used to examine associations among men. We omitted categories of offending that had low prevalence in women (i.e., $n < 5$), as findings may be superficial when based on inadequate numbers. This included murder and manslaughter, arson, kidnap, criminal damage, and firearm offences. Total PCL-R scores were significantly related to burglary and theft, robbery and blackmail, sex offences, violence, escape and breach, and obstruction of justice, with a negative association with drug offences. In most cases, Factor 4 made the largest contribution to these associations, but this was less marked than among men (see Table IV). Among women, Factor 1 scores had a negative relationship with drug offences. These associations remained robust in Model 2.

Factor 2 scores among women differed markedly between Models 1 and 2. Scores in Model 1 were significantly associated with robbery and blackmail and obstruction of justice, and negatively associated with driving-related offences. In Model 2, Factor 2 scores were significantly associated only with obstruction of justice. Factor 3 scores also differed between the two models, associations with violence disappearing in Model 2. Associations with driving offences, sex offences, and escape and breach remained. In contrast to men, Factor 4 scores demonstrated a negative association with drug offences.

Discussion

Psychopathy and offending behaviour

The study confirmed associations between early onset of a criminal career and psychopathic traits in male and female prisoners. Men and women with psychopathic traits appear to have had more previous periods of imprisonment. However, these traits appear 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 psychopathy 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 psychopathic

Table V. Associations between psychopathy scores and lifetime offending in women.

Lifetime offences	Total		Model 1 (Factors 1–3)						Model 2 (Factors 1–4)							
	PCL-R		(Model 2)		Factor 1		Factor 2		Factor 3		Factor 1		Factor 2		Factor 3	
	β	p	β	p	β	p	β	p	β	p	β	p	β	p	β	p
Burglary and theft ($n=46$)	0.30	0.002	0.14	0.05												
Robbery and blackmail ($n=11$)	0.27	0.001	0.21	0.001	0.17	0.04										
Driving ($n=15$)																
Sex ($n=9$)	0.29	0.000			-0.17	0.05	0.22	0.001							0.17	0.003
Drug ($n=53$)	-0.30	0.000	-0.13	0.05	-0.20	0.02	0.25	0.000							0.19	0.001
Violence (inc GBH) ($n=28$)	0.48	0.000	0.23	0.001			0.17	0.01								
Escape and breach ($n=22$)	0.47	0.000	0.24	0.002			0.26	0.000							0.15	0.04
Fraud ($n=32$)																
Obstruction of justice ($n=8$)	0.47	0.000	0.27	0.000	0.34	0.000								0.25	0.005	

Adjustments: age, ethnicity, alcohol disorder, drug disorder, and Factors 1–3 for Model 1 and Factors 1–4 for Model 2. The association is presented by β as the partial regression coefficient.

traits 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. Overall female prisoners received fewer criminal convictions than men, suggesting the latter explanation.

It can be argued that demonstrating an association between psychopathy and multiple categories of offending merely confirms criminal versatility, an item within the antisocial factor. This demonstrates the tautological nature of testing associations between criminal behaviour and a construct which includes criminal behaviour. Previous studies of offending behaviour among psychopaths have consistently shown associations with robbery, including armed robbery, and violent convictions (Forth & Burke, 1998; Hare & McPherson, 1984), as found in this study. However, convictions for breach of parole conditions reflect revocation of conditional release, an additional item in Factor 4. Findings of greater interest were, therefore, those categories of offending behaviour that were not associated with either total or Factor 4 PCL-R scores.

Murder/manslaughter was not associated with the total or Factor 4 psychopathy scores in men in this population, probably reflecting the relatively low homicide rate in England and Wales (Barclay, Tavares, Kenny, Siddique, & Wilby, 2003), where a significant proportion of homicides are committed in domestic settings. Sex offending was not specifically associated with psychopathy among male prisoners. This is consistent with several previous studies in which psychopathy was not associated with sex offending (Gretton, McBride, Hare, O'Shaughnessy, & Kumka, 2001; Långström & Grann, 2000) and is only a moderate predictor of sexual recidivism (Hare, 2003; Harris, Rice, Quinsey, Lalumière, & Boer, 2003; Hildebrand, De Ruiter, & De Vogel; Porter, Woodworth, Earle, Drugge, & Boer, 2003). In representative samples of sex offenders, paraphilias are likely to be of greater importance than the abnormal personality features and antisocial lifestyle measured by the psychopathy construct. This was partly supported by observations that sex offenders in this population tended to be older than other prisoners, of higher social class, with more educational qualifications, and fewer instances of antisocial personality disorder. The small group of women sex offenders differed from men. They were not serving sentences for prostitution. Sex offences are rare among women in England and Wales and fewer than 1% of all incarcerated rape and sexual assault offenders are female (Greenfeld, 1997). Convictions for sexual offending may therefore have reflected more severe psychopathology among women, resulting in sexual assaults on other females and the aiding and abetting of male sexual offenders.

The lack of association between psychopathic traits and drug offences in male prisoners was of considerable interest, reflecting the low prevalence of psychiatric morbidity observed in this subgroup. Among women there was a

negative association with psychopathy. A subgroup were serving sentences for drug importation and included non-UK residents, motivated by financial reward in impoverished circumstances rather than antisocial lifestyles. Few of the men serving sentences for drug offences had antisocial personality disorder 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.

Factor 1

There were no associations found between categories of criminal offending over the lifetime and Factor 1 (interpersonal) scores among male prisoners. Factor 1 has been observed to correlate with narcissistic personality disorder traits, both in this prisoner sample and in a national household sample. Furthermore, there was no evidence that the interpersonal factor was correlated with low verbal IQ, in contrast to Factors 3 and 4 (Coid et al., submitted; Coid, Yang, Roberts, & Hare, submitted): in addition low intelligence is an important predictor of offending in the general population (Farrington, 1997).

No associations were observed with convictions for fraud and forgery. It has been argued that these offences require specific skills which may be associated with higher intelligence (Salekin, Neumann, Leistico, & Zalot, 2004; Vitacco, Neumann, & Jackson, 2005), and with the PCL-R item 'conning/manipulative'. This lack of association remained robust in the second model, suggesting that if there are associations between the interpersonal factor and a criminal career involving fraud and forgery, these must operate at a qualitative level, possibly influencing *modus operandi*, but not measured in this study.

The negative association in women between the interpersonal factor and drug offences corresponds to specific characteristics of the female population of prisoners serving sentences for these offences, as described above.

Factor 2

It has been suggested that affective deficits, such as lack of remorse and empathy, may result in a failure to inhibit violent thoughts and urges (Cooke et al., 2004). The association with violent crimes (other than homicide) remained robust among male prisoners in both models, corresponding to previous studies which suggest that psychopaths are more likely to be predatory in nature, more callous and calculating, and without the emotional context that is usually seen in other violent offenders (Hare, 1998). An alternative explanation, however, is that the affective deficit is more strongly associated with lack of anxiety when engaging in violence,

and is associated with fearlessness (Patrick, Cuthbert, & Lang, 1994; Raine, 1996; Rosen & Schalling, 1971).

In men, although criminal damage only demonstrated an independent association with affective deficiency, burglary and theft, firearm offences, violence, and obstruction of justice were all additionally associated with the antisocial factor (Factor 4), indicating that both factors had coexisting and independent effects on these features of offending. These associations could be explained by heterogeneity of motivation and *modus operandi* within these offence categories, where affective deficiency is related to violence towards persons, property, and use of firearms, either as a personality characteristic leading to specific interpersonal events of violence, or as an accompanying factor in a professional criminal career. For example, the latter might include criminal damage in the course of thefts and burglaries and use of firearms during the course of robberies.

Factor 3

Analysis of Factor 3 revealed the most important findings of the study. Among men, all independent associations between several categories of offending behaviour and Factor 3 disappeared after adjusting for Factor 4. This phenomenon was observed to a lesser extent among women. A possible explanation can be observed in the correlation matrix in Table II, which demonstrates that Factors 3 and 4 are highly intercorrelated. This suggests that the two factors cannot be easily separated and that, among prisoners, features of an impulsive and irresponsible lifestyle are inextricably linked with features of an antisocial lifestyle. Certain offences during a criminal career may be carried out impulsively and irresponsibly, while others might be carried out following careful planning. On the other hand, this finding would also suggest that such an explanation may be simplistic and that individual criminal acts are not easily categorized according to one factor or another among persons with psychopathic traits. The categories of offending behaviour used in the study are likely to have been highly heterogeneous and make further interpretation difficult.

Among women, associations with the lifestyle factor (Factor 3) remained in the second model for offences related to driving and sex, and offences which involved breach and escape from custody. This would suggest that women who commit these crimes are more impulsive and have a need for stimulation; their impulsivity increased their likelihood of engaging in criminal acts without consideration of the consequences (Kernberg, 1998; Serin, 1991). However, these patterns of offending behaviour could be related to additional psychopathology which was not measured in this study, including borderline personality disorder. This personality disorder was more prevalent among women in this population than men (Singleton et al., 1998), and is also associated with impulsivity.

Methodological limitations

The sampling frame for this survey resulted in the participants included being highly representative of the prison population, and the attrition rate at both stages was low. Attrition was largely accounted for by the movement of prisoners between institutions or unexpected release; few refused to participate. However, the study did not examine psychopathy as categorically defined and examined correlates with psychopathic traits instead using continuous PCL-R scores. 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. PCL-R scores did not follow the approved manual exactly and may therefore have been biased; the true mean scores for participants may have been higher than recorded.

Another serious limitation of the study was the use of categories of offending behaviour derived from the criminal versatility item of the PCL-R, which were sometimes heterogeneous, including more than one offence category. These measures were clearly not independent of Factor 4 in our analyses but were nevertheless used as an outcome measure in the study. Correlations with lifetime conduct may have been overestimated as the same actions were used to measure offences committed and score criminal versatility simultaneously. However, without information on *modus operandi* and the motivation for previous patterns of criminal behaviour, there was no alternative measure of criminal career. This would be alleviated by using the PCL-R (scored on past behaviour) to predict future criminal behaviour in a future study.

Conclusion

Findings from this survey provide only limited support for the ‘consequence’ hypothesis of criminal behaviour and psychopathy. The factor structure of the PCL-R has been the focus of considerable debate and Cooke and Michie (2001) have proposed that psychopathy should be understood via the three dimensions of interpersonal style, affective experience, and impulsive/irresponsible lifestyle—eliminating items which measure antisocial tendencies. Cooke et al. (2004) also argued that antisocial behaviour is best viewed as a secondary symptom or the consequence of psychopathy. Our findings are limited by the cross-sectional method here, but are supportive of McDermott et al.’s (2000) argument that affective deficits, such as lack of empathy and anxiety, may result in a failure to inhibit antisocial and especially violent thoughts and urges, as demonstrated by independent associations between the affective factor and certain categories of criminal offending in both men and women prisoners. Although impulsivity would be expected to increase the likelihood of engaging in criminal acts without considering the consequences, associations among men with Factor 3 were

no longer robust after adjusting for an antisocial lifestyle. This did not support the notion of the antisocial factor being a consequence of Factor 3.

In our study, the contribution of the antisocial factor to associations observed with total PCL-R scores, together with its strong intercorrelations with Factor 3, suggest that it is an integral component of the psychopathy construct and, in particular, that Factor 3 and 4 components are not easily separated. This would further suggest that arguments for dispensing with antisocial behaviour items are premature.

Although there appears to be consensus that the interpersonal factor (Factor 1) is an independent subcomponent of the psychopathy construct, there was nothing to suggest in this study that it was independently associated with any categories of previous criminal offending, except among women prisoners in the case of burglary/theft. This is consistent with previous studies in which Factor 2 (containing criminal and impulsivity variables) has been found to be superior to Factor 1 (consisting primarily of personality variables) in predicting future criminal behaviour (Belfrage, Fransson, & Strand, 2000; Gray et al., 2003; de Vogel, de Ruiter, Hildebrand, Brechje, & van de Ven, 2004). The investigation of psychopathy in men and women in our study revealed important commonalities and differences. Certain findings suggest that psychopathy presents differently in men and women, specifically the differential associations between Models 1 and 2 in women and in particular the suggestion that impulsivity may be a more important and independent component of criminal behaviour in women offenders than in men offenders. Further studies examining *modus operandi* and motivation, and including a larger group of women, may unravel the complicated associations we have observed between Factors 3 and 4.

Finally, it must be pointed out that Cooke and Michie's (2001) hypothesis cannot be entirely refuted by this study. The problem of the tautological association between criminal behaviour and Factor 4 may indicate that the problem of colinearity may ultimately be insuperable in a study of this nature.

Acknowledgment

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

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