The Influence of Attachment, Parental Control and Psychopathic Traits on Delinquent Behaviour

Megan Forrest[1]

University of Huddersfield, UK

Abstract

Developmental processes such as attachment and parental control have been suggested to play a key role in the development of antisocial behaviours such as delinquency. Previous studies have also demonstrated the positive relationship between psychopathic traits and delinquency but findings remain questionable particularly in non-forensic populations. The present study aimed to investigate to what extent self-reported attachment, parental control and psychopathic traits influenced delinquency, whilst controlling for age and gender. 162 participants completed the study by and multiple regression analyses indicated that attachment and control did not have a significant influence on delinquency scores. Psychopathic traits were also not found to influence delinquency. Age and gender however, were found to predict delinquency and significant gender differences were established. Implications of these findings for future research and practical applications are discussed.

Key Words: *Attachment; Deviance; Parental control; Psychopathy; Forensic*

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The influence of attachment, parental control and psychopathic traits on delinquent behaviour: gender differences.

Megan Forrest

Student ID: U1555509

University of Huddersfield

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Introduction

1. Delinquency

Delinquency is an increasingly complex social behaviour and continues to be associated with several social variables such as family, social class, sex and race (Hirschi, 2002). Due to this, delinquency has previously been difficult to operationally define and cannot currently be explained by a single theory. The absence of a single agreed definition has led to the research surrounding delinquency to be compromised. A simplified and legal definition would say that:

"Delinquency is behaviour against the criminal code committed by an individual who has not reached adulthood, as defined by state or federal law" (Bartol & Bartol, 2013, p178).

It appears that the ability to comprehend criminal behaviours such as delinquency continues to be an issue due to their complexity, despite the fact there has been many years of research attempting to grasp a clearer understanding of why and how it happens. It is thought that this is the case as criminal behaviour is such a complex concept therefore requires a complex solution (Bartol & Bartol, 2013). Antisocial behaviours such as delinquency, appear to persistently account for substantial amounts of crime statistics. For example, in the year ending March 2017, it was reported by the Youth Justice System that 28,400 children aged between 10-17 were either convicted or cautioned. Interestingly, 16,500 of those were first time entrants to the Youth Justice System and 42.2% later reoffended indicating that recidivism is common amongst antisocial behaviour (Ministry of Justice, 2018). Previous literature has found that delinquency tends to be at its highest level during years of late adolescence (Moffitt, 1993). Despite this, it has also been suggested

that antisocial behaviour is not always limited to adolescence, rather it can be life-course persistent continuing into adulthood (Mofftt, 1993; Piquero, Brame, Mazerolle and Haapanen, 2002). With this in mind, it is important for research to include adults as well as children, so it is not specifically restricted to juvenile delinquency. Doing so would enable researchers to look at if early parental control and attachment have formed a template for the rest of their life.

A recent study by Mulvey (2011) supports this idea, as it was found in this study that over half of the sample that were convicted of a crime during adolescence continued criminal activity into adulthood. Studies such as this, highlight that delinquency is problematic for adolescents and can cause criminal behaviour to continue into adulthood creating an even bigger issue. For that reason, it is important to understand what the causes and influences of delinquency are in order to prevent it. Therefore, based on previous literature and theory, the present study aims to establish what is the greatest predictor of delinquency.

As mentioned previously, delinquency is consistently associated with several social and developmental influences such as family and social class (Hirschi, 2002). According to Wasserman and Seracini (2001) the more risk factors a child is exposed to the greater the probability of antisocial behaviour. Large amounts of literature have indicated a strong link between child development and delinquency suggesting that delinquency can be a product of family implications such as weak attachment bonds and a lack of parental control (Hirschi, 1969; Rankin & Wells 1994, Kierkus & Hewitt, 2009). However, other research has suggested that personality factors such as psychopathic tendencies can be significant

predictors of various forms of antisocial behaviours such as delinquency (Salihovic & Stattin, 2016). As it stands, there is a select number of perspectives of delinquency which tend to currently dominate the area such as social control theories, strain (motivational) theories and cultural deviancy theories (Hirschi, 1969). However, most of the theories take different psychological standpoints disputing each other but elements of each view are generally included within theories of delinquency.

1.1 Attachment and delinquency

Attachment to caregivers is a bond established in the early years of childhood and has been found to significantly impact subsequent emotional development and behaviour during childhood and adulthood (Christian, Meltzer, Thede, Kosson, 2017). Two of the leading theories that address the link between attachment and delinquency are the social control theory and attachment theory (Hirschi, 2002; Sampson & Laub, 1993; Bowlby, 1997). Academic research within the area has continued to increase since Hirschi (2002) emphasised the importance of attachment in the development of delinquency. Social control theories of delinquency contend that delinquent acts are the consequences of an individual's weak or broken bonds to society (Hirschi, 2002). This theory was a criminological theory first established by Hirschi (2002), who theorised that attachment is a bond through which children will internalise and gain a conventional bond to society. Amongst the various social control theories, Hirschi's (2002) is one which focuses most upon family research within delinquency and at the centre of his theory is the inverse connection between parent-child attachment and delinquency (Rankin & Kern, 1994).

According to the General Crime Theory introduced by Gottfredson and Hirschi (1990), all criminal and deviant acts are a result of variations within self-control and that a deficit in self-control is what causes delinquency (see also Piquero, Brame, Mazzerole & Haapenen, 2002). In the original perspective of social control by Hirschi (2002), self-control was seen as the tendency to refrain from antisocial behaviours due to the recognition of the long-term costs that it could have. Several social control theories describe the bond to society using several elements, the majority of theories focus on family as the primary element for an individual's conventional ties and bonds to society. It is understood that family attachments, commitments and disciplinary controls are the fundamentals for delinquency prevention (Rankin & Kern, 1994). According to Hirschi (2002), families with strong affective bonds will in turn, have lower levels of delinquency present as those who are more strongly attached to parents will be more aware and conscientious of the normative expectations from their parents (Hoeve et al., 2012). Put another way, it is the process of passing on conventional morals and norms from parent to offspring, and where strongly attached juveniles are more likely to care about conforming to these norms. This means that attachment can be seen to act as a buffer against delinquent impulses by providing ties and commitments to societal norms indicating that attachment is essential to prevent delinquency (Hoeve et al., 2012; Rankin & Kern, 1994).

In light of the developments of this theory, there has been a significant amount of research that has studied how the strength of attachment bonds can impact delinquency. Rankin and Kern (1994) assessed attachment bonds and their impact on delinquency by looking at several dimensions of attachment. As well as looking at attachment to parents as a whole, they analysed individual attachments to the mother and to the father as separate

matters, including looking at single parent homes and sex differences. Overall it was found, that generally strong attachment to parents result in lower levels of delinquency. However, strong attachment to both the mother and father does not mean a child is less at risk of delinquent behaviour than a child who is only strongly attached to one parent (Rankin & Kern, 1994). Although this supports the idea of the social control theory, there is more recent research which would argue the father's influence via attachment is greater when predicting delinquency than the mother's is (Johnson, 1987). Further research however, would dispute this and argue that affective ties measured towards the mother were a greater predictor of delinquency than to the father (Krohn & Massey, 1980). However, in contrast to this Hirschi argued in his original theory that those with affective ties to *peers* will be constrained in committing delinquent acts (Krohn & Massey, 1980). Although there was not much evidence to support this, Hirschi later modified his model to contend that those who are friends with delinquent peers are more likely to produce delinquent behaviour (Hirschi, 2002).

A further widely accepted theory that associates delinquency with attachment is the attachment theory (Bowlby, 1997). Bowlby (1997) theorised that children are innately programmed to form attachments as this is adaptive for their survival and generally believed children should have a primary attachment with a key caregiver e.g. the mother. It was suggested by Bowlby (1997) that if a child experiences separation from their key caregiver, they will experience intense distress and maternal deprivation, which in turn could lead to long-term negative behavioural consequences such as Reactive Attachment Disorder (RAD). Those who suffer from RAD are often unable to form emotional bonds with others (Mitchell & Ziegler, 2013). According to Bowlby (1969), children who experience

maternal deprivation are labelled 'affectionless psychopaths' and this in later years can manifest itself in ***delinquency***. However, a recent re-examination of this theory by Follan and Minnis (2010) debates this and suggests that delinquency may be due to maltreatment from parents rather than separation from them. The fact that this remains unclear, provides support for the reasoning and purpose of the present study.

In contrast to the revaluation by Follan and Minnis (2010), a more recent study has been found to support the theory of attachment. A meta-analysis conducted by Hoeve et al. (2012) which looked at previous attachment and delinquency research. Overall it was found after analysing 74 studies, a small to moderate effect size were found as well as a significant link between attachment and delinquency. Additionally, it was also found that there were stronger effect sizes for attachment to mothers than to fathers, which can be linked to the idea of monotropy (a singular important bond, usually to the mother) from Bowlby (1969). This final finding can also be seen to support findings discussed above from Krohn and Massey (1980), which support the idea that attachment to mothers are greater predictors of delinquency than other attachment bonds.

In sum, both theories explain delinquency differently as the social control theory focuses on explaining criminal behaviours through an affective parent bond which indirectly regulates self-control and behaviour limiting delinquent impulses through conventional bonds to society. Whereas the attachment theory appears to explain delinquency with attachment by focusing on how disrupted attachment can impact emotional development later leading to delinquency. Although there are differences within the theories it would be

fair to conclude that both are similar in that they both suggest that disturbed attachment in various forms can result in delinquency.

1.2 Parental Control and delinquency

As evident with the relationship between attachment and delinquency, family factors are seen to play a significant role in the prediction of delinquency. Adding to this, previous literature has indicated that a lack of parental supervision/control is one of the greatest predictors of delinquency (Loeber & Stouthamer-Loeber, 1986). The absence of parental control has been positively associated with delinquency and is an influential factor of development during young adulthood (Harris-McKoy & Cui, 2013; Steinberg & Silk, 2002). Despite this, it was earlier argued by Loeber and Stouthamer-Loeber (1986), that there is often a lack of empirical evidence to support ideas that the child or parent is the sole cause of delinquency. However, in Baumrind's (1967, as cited in Harris-McKoy & Cui, 2013) original research into parenting and delinquency, permissive parents who failed to implement any control over their children were found to have more aggressive and immature children. In addition to this, poor supervision and control over children has been found to have a stronger link to later childhood than earlier childhood (Steinberg & Silk, 2002). This could indicate that early family factors that influence development are life-course persistent, which in turn accords with the idea from Moffit (1993) of antisocial behaviour not being limited to adolescence rather it continues into adulthood. Further research to support the positive relationship between parental control and delinquent behaviour comes from Loeber and Schmaling (1985, as cited in Loeber & Stouthamer-Loeber, 1986), who found that children who both stole and fought were significantly less supervised than children who

either stole or fought.

Although there appears to be a direct link between parental control and delinquency, some research has highlighted how there can be other contributing factors which can alter the level of control exercised by parents. For example, Wilson (1974) found that, for children living in very disadvantaged neighbourhoods, strict supervision was more important in preventing delinquency than for children in a more and stable home. This could suggest that parental control over children is influenced by external factors such as environmental influences and may only be required in particular circumstances such as environments where there are delinquent influences. Further to this, parental control has been seen to be associated with the need for autonomy during adolescence and young adulthood (Harris-McKoy & Cui, 2013). As children develop into adolescents, they begin to desire more freedom and time with their friends meaning that time spent under the supervision of their parents lessens increasing the risk of antisocial behaviour.

Following this, the demand for autonomy from parents may lead to the need for parents to find a well balanced approach to supervision and control over their children. This is because, as suggested by Steinberg and Silk (2002), an increase in parental control during this time may result in conflict and a power struggle between parent and child as the child may feel they need more control over their own behaviour. Contrary to this, if parental control is completely absent adolescents will be more prone to risky behaviour, such as involvement in drugs and alcohol, due to not being fully matured at that point in development (Steinberg & Silk, 2002; Harris-McKoy & Cui, 2013). Additional support for this comes from Barowski, Ievars-Landis, Lovegreen and Trapl (2003) who found that higher

levels of unsupervised time were positively correlated with high levels of sexual activity and drug and alcohol abuse amongst adolescents with an average age of 16. From this, it can be concluded that parental control is needed in order to secure healthy adolescent development and to serve as a deterrent to delinquent and antisocial behaviour.

1.3 Psychopathy

One of the most commonly used and widely accepted conceptualisations of psychopathy is one proposed by Cleckley (1941, as cited in Boduszek & Debowska, 2016). Cleckley proposed that psychopathy is characterised by 16 personality traits that included traits such as superficial charm, lack of remorse and antisocial behaviour. This description of psychopathy was the basis of the design for some of the most widely used psychopathy assessment tools such as the Psychopathy Checklist (PCL; Hare, 1980 as cited in Boduszek & Debowska, 2016) and its revised edition - the Psychopathy Checklist Revised (PCLR; Hare, 2003). Although research demonstrating the use of psychopathic traits in predicting antisocial behaviours has been extensive there remains a debate regarding what constitutes psychopathy (Salihovic & Stattin, 2017). In a review by Boduszek and Debowska (2016) it was noted that some researchers would argue that criminal/antisocial behaviour makes up a critical part of the disorder, whereas others would argue it is a product of the disorder. Therefore, with this disagreement in mind, a recent review by Debowska et al. (2016) showed that Hare's model of psychopathy cannot be used within forensic and non-forensic populations due to the inclusion of antisocial factors within the scale. From this, it was suggested that there was the need for a new measure of psychopathy that did not constitute antisocial tendencies as a part of the disorder, instead they were to be

considered as a consequence of psychopathy (Boduszek, Debowska & Willmott, 2017). Following this a new model was created – the Psychopathic Personality Traits Scale (PPTS; Boduszek, Debowska, Dhingra & DeLisi, 2016). This model was created for use within forensic and non-forensic populations and therefore aimed to clear up the difficulty that withstands amongst researchers regarding what it is that constitutes the disorder.

A further area of psychopathy research that remains weak, is looking at the differences in psychopathy between males and females. In a review by Cale and Lillienfield (2002) it was suggested that previous research investigating psychopathy has focused on males and as a consequence of this, little is known about psychopathy in females. This means that the knowledge and understanding of the prevalence and assessment of psychopathy in females is also weak. In an earlier study, Salekin et al. (1997, as cited in Cale & Lillienfield, 2002) examined base rates of psychopathy using the PCL-R (Hare, 2003) which found that out of 103 female inmates, only 15% were psychopaths in comparison to 15% - 30% of males. However, a more recent study also using the PCL-R (Hare, 2003) concluded that the low base rates of psychopathy in the study, are either due to psychopathy being less common in females than males or that the scale is inaccurately measuring females (Vitale, Smith, Brinkley & Newman, 2002). This indicates that there is need for further research investigating sex differences within psychopathy.

2. Present Study

As the aforementioned literature suggests, delinquency has previously been linked to child development (Kierkus & Hewitt, 2009; Rankin & Wells, 1990; Bowlby, 1969). More specifically, research has demonstrated relationships between attachment and delinquency,

parental control and delinquency as well as psychopathic traits and delinquency. Despite the growing body of literature surrounding this area, most research has only investigated a relationship between single influential childhood factors (e.g. attachment) and delinquency, meaning that research looking at multiple factors at once and the degree to which each factor influences delinquency is limited. In addition to this, it remains unclear whether the attachment to mothers can have a different effect on delinquency than attachment to fathers can as the majority of research surrounding this is conflicting (Krohn and Massey, 1980; Johnson, 1987). Further to this, a key development that the present research will provide within the area is the incorporation of a new psychopathic personality traits measure – Psychopathic Personality Traits Scale (PPTS; Boduszek, Debowska, Dhingra & DeLisi, 2016). The use of this scale provides such a significant development within the field as not only is it a contemporary measure, its design was based around the original conceptualisation of psychopathy from Cleckley (1941, as cited in Boduszek, Debowska, Dhingra & DeLisi, 2016). This particular model of psychopathy is more beneficial here as it differs from more commonly used models such as the Psychopathy Checklist - Revised (Hare, 2003) by looking at four dimensions of psychopathy (affective responsiveness, cognitive responsiveness, interpersonal manipulation and egocentricity) that are particularly associated with a number of criminal/antisocial tendencies. This is more appropriate for the present study, as there has now been much evidence to support the idea that criminal/antisocial tendencies are a consequence of psychopathic traits rather than being a cause of psychopathy.

For such reasons, the present study should be undertaken in order to understand and distinguish what is the greatest predictor of delinquency – attachment, parental control

or psychopathic traits. By doing so the study will be addressing a gap amongst established literature, as well as providing some practical contributions to interventions surrounding delinquency such as providing opportunities to initiate interventions that will protect children at risk of delinquency. The purpose of the research is to identify risk factors for later engagement in delinquent behaviour and protective factors for vulnerable populations.

In order to provide an enhanced understanding and improve knowledge of why delinquency arises the study will develop on theories and perspectives such as social control theories and attachment theories discussed previously (Hirschi, 1969; Bowlby, 1968). The study will assess attachment to each parent as separate matters rather than as a whole. With further regards to attachment, peer attachment will also be considered in order to understand every aspect of attachment and also gain a clearer understanding of the social control theory's perspective of attachment. As for parental supervision and control, the extent to which participants feel parents exert and have exerted control over them will be examined. Furthermore, an assessment for any present psychopathic traits will be assessed. To further improve upon previous literature, the study will also control for selected demographic variables (age and gender).

The aims of the present study are as follows:

1) To investigate the extent to which attachment, parental control and psychopathic personality traits can influence delinquent behaviour whilst controlling for age and gender
2) To investigate differences between males and females on psychopathic traits

Method

Participants

The current study employed *166* participants (*n* = 30 males, *n* = 136 females) via a convenience sampling method. Participants were aged between 18 and 63 (*M* = 32.23; *SD* = 13.98). The sample was predominately made up of first and second year students who were studying for their undergraduate degree at the University of Huddersfield. The recruitment of university students was achieved using an online experiment participation software – SONA, provided by the University of Huddersfield. In addition to this, the remainder of participants were recruited via social media platforms and shared web links.

Materials

The survey results were obtained using an online survey software named Qualtrics. *Attachment.* Attachment was measured using the Inventory of Parent and Peer Attachment (Armsden and Greenberg, 1987) (see appendix A) - a measure of attachment developed to measure perceptions of positive and negative affective/cognitive dimensions of relationships with parents and peers. The measure used in the study was the revised edition – Inventory of Parent and Peer Attachment Revised (IPPA-R; Greenberg and Armsden, 1987). The scale was modified in order to assess quality of attachment to mothers and fathers separately rather than attachment to both parents as a whole. The measure is a five-point Likert scale containing 25 items assessing attachment to the mother, 25 items assessing attachment to the father and 24 items assessing attachment to peers giving three overall attachment scores. The response categories range from 'Almost always or always

true' to 'Almost never or never true'. The theoretical framework that it was attachment theory that was originally developed by Bowlby (Armsden and Greenberg, 1987). Cronbach's alpha for mother was .96, .96 for father and .95 for peers.

Parental Psychological Control. In order to measure perceived parental psychological control the participants were given the Psychological Control Scale – Youth Self Report (PCS – YSR; Barber, 1996) (see appendix B). The PCS – YSR is a 16 item self-report measure designed to assess psychological control implemented by parents in an adolescent sample, however in the present study it was presented to a sample of ages 18 and over. The scale is in two parts and designed to be administered twice in order to assess control from both parents. The 16 items are first answered with regards to the mother and then the same 16 items are administered again but with regards to the father, each scale begins with the statement: 'My mother (father) is a person who…'. Each item is scored on a three-point Likert scale (1 = Not like her (him), 2 = Somewhat like her (him), 3 = A lot like her (him)). The scale included measuring elements of control such as invalidating feelings (e.g. "blames me for other family members' problems"), personal attack (e.g. "tells me all of the things she (he) had done for me) and love withdrawal (e.g. "will avoid looking at me when I have disappointed her (him)). The scale was designed to distinguish psychological control from behaviour oriented control. In the original study that developed and tested the scale, it was found that psychological control was predictive of externalised problems such as delinquency (Barber, 1996). Some of the items within the scale were taken from the Children's Report of Parental Behaviour Inventory (CRPBI) which has also been used to find associations between parental behavioural control and delinquency (Bean, Barber & Russel Crane, 2006). Cronbach's alpha for parental control from the mother was .93 and for parental control for father it was .94.

Psychopathy. A newly established measure of psychopathy was used to measure psychopathic personality traits – the Psychopathic Personality Traits Scale (PPTS; Boduszek, Debowska, Dhingra & DeLisi, 2016) (see appendix C). The scale was designed to assess psychopathic personality traits in both forensic and non-forensic populations and to measure four dimensions of psychopathy according to Cleckley's (1941, as cited in Boduszek, Debowska, Dhingra & DeLisi, 2016) definition of psychopathy – cognitive and affective responsiveness (CA and AR), interpersonal manipulation (IM) and egocentricity (Ego). The scale is a self-report, 20-item measure with a four-point Likert response format ranging from 'Strongly Disagree' to 'Strongly Agree' (indicating whether the trait is present or not). Scores range from 0-20 with higher scores indicating higher levels of psychopathy present. In each of the four subscales, different characteristics of psychopathy are measured. Cognitive responsiveness assesses the ability to understand others' emotional state, whereas affective responsiveness measures characteristics that would represent low empathy. Interpersonal manipulation is concerned with characteristics such as superficial charm and grandiosity. Finally, the egocentricity subscale measures the individual's ability to focus on their own interests and beliefs. Cronbach's alpha for the four psychopathic dimensions were as follows: AR = .71, CR = .67, IM = .76 and Ego = .66. These values were lower than other scales due to it being a smaller scale and less items.

Age and Gender. Two demographic variables were obtained from each participant in order to control for age and gender. These were collected via a simple questionnaire formulated on the survey software Qualtrics. Age was measured as a continuous variable so each participant entered their specific age and gender was measured as a dichotomous variable with the option of 'male' or 'female'. These demographic variables were measured in order to allow for comparison later in the analysis.

Delinquency. Delinquency was the dependant variable within the present study and was measured using the International Self-Report Delinquency Questionnaire 3 (ISRD-3; Marshall et al., 2013) (see appendix D). The scale is the third edition of the self-report delinquency questionnaire and has recently been modified from the ISRD2 to include more aspects of self-reported offending and victimisation. The scale consists of 19 items, with a 9 item Likert scale response format ranging from 'Never' to '2-3 times a day' indicating how often they carry out that specific act. Cronbach's alpha for the whole scale was .92.

Design

The study employed a cross-sectional survey design with five independent predictor variables (IV; attachment (mothers, fathers and peers), parental control (mothers and fathers),, psychopathic personality traits (AR, CR, IM, ego), age and gender) and one dependent variable (DV; delinquency). The self-report measures will be administered at one-time point in the same order for all participants via an online survey. Conducting a quantitative analysis provides the opportunity for a multivariate-analysis to take place enabling the researcher to gain a sufficient understanding of the five predictor variables and their relationship with the dependent variable. A cross-sectional design was chosen for time and cost effectiveness.

Procedure

Each participant was required to independently select the study online in order to participate. The study was advertised on social media platforms and university experiment

participation systems. Participants were initially presented with a brief overview of the study and were required to declare their consent to participate (see appendix E), providing the opportunity for the participants to raise any concerns around the study and be made aware of their right to withdraw. The participants were then asked to provide demographic information of age and gender. Participants the completed an anonymous, self-report survey with a short debrief (see appendix F) at the end of the survey assuring participants of their ethical rights in line with the British Psychological Society guidelines. The participation of the survey was completely voluntary.

Analysis

Descriptive statistics were reported for all continuous variables (M, SD). Independent samples t-test was used to investigate gender differences on age, attachment, parental control, psychopathic traits and delinquency. Standard multiple regression analyses were used to investigate the relationship between predictor variables (attachment, parental control, psychopathic traits age and gender) and delinquency. All analyses were conducted using SPSS version 24.

Results

When analysing the results, the decision was made to split the results into two groups due to the small number of participants (*n* = 166). Doing so gave two models for statistical analysis - model one contained the family variables: *attachment* to mother, father and peers and *parental control* from mother and from father whilst controlling for age and gender. Model two contained psychopathic trait variables: affective and cognitive responsiveness (AR and CR), interpersonal manipulation (IM) and egocentricity (Ego) whilst controlling for age and gender.

Descriptive Statistics

Descriptive statistics including means (M), standard deviations (SD) and Cronbach's Alpha are presented in Table 1 for all predictor variables: attachment to mother (ATT_Mother), father (ATT_Father) and peers (ATT_Peers), parental control from the mother (Con_Mother) and from the father (Con_Father) and psychopathic traits (AR, CR, IM, Ego) and for delinquency.

T-test

Independent samples t-tests were conducted to compare the difference between males and females for the predictor variables in order to control for gender.

Delinquency. An independent samples t-test was conducted to compare the ***delinquency*** scores between males and females. There was no significant difference between the two groups, $t(147) = 4.41$, $p < .05$, with males ($M = 26.92$, $SD = 15.59$) scoring higher than females ($M = 20.38$, $SD = 2.69$).

Table 1

Descriptive statistics for attachment, parental control, PPTS factors and delinquency

Scale	M	SD	Min	Max	Cronbach's Alpha (α)
Age	32.23	14	18	63	N/A
ATT_Mother	97.62	21.26	33	125	0.96
ATT_Father	91.59	22.86	30	125	0.96
ATT_Peers	97.39	16.24	40	118	0.95
Con_Mother	22.34	7.61	15	45	0.93
Con_Father	19.86	6.88	15	45	0.94
AR	8.35	2.62	5	20	0.71
CR	8.60	2.26	5	15	0.67
IPM	10.44	3.02	5	18	0.76
Ego	10.34	2.65	5	17	0.66
Delinquency	21.46	7.15	19	96	0.92

Attachment. When comparing scores between males and females for ***attachment to the mother,*** the independent samples t-test indicated that there was a significant difference between the groups, t(156) = -.81, p > .05, with females (*M* = 98.14, *SD* = 21.31) scoring higher than males (*M* = 94.54, *SD* = 21.28). The magnitude of the differences in the means (mean difference = -3.6, 95% CI: -.12 to 5.16) was small (Cohen's *d* = .17). When comparing scores between males and females for ***attachment to the father,*** the independent samples t-test indicated that there was again a significant difference between the groups, t(150) = -

2.33, p < .05, with females (*M* = 93.44, *SD* = 21.87) scoring higher than males (*M* = 82.46, *SD* = 25.21). Indicating that females tend to have a greater attachment with their father. The magnitude of the differences in the means (mean difference = -11, 95% CI: -20 to -1.7) was small (Cohen's *d* = -.51). For levels of ***attachment to peers***, the t-test indicated that the difference was also a significant here between the two groups, t(152) = -1.96, p = 0.05, with females (*M* = 98.65, *SD* = 15.85) again scoring higher than males (*M* = 92.20, *SD* = 17.34). The magnitude of the differences in the means (mean difference = -11, 95% CI: -20 to -1.7) was small (Cohen's *d* = -.39).

Psychological Control. T-tests conducted to compare the self-reported levels of ***control from the mother*** indicated that there was no significant difference reported between males and females, t(155) = .05, p > .05, with males (*M* = 22.45, *SD* = 6.54) scoring only slightly higher than females (*M* = 22.38, *SD* = 7.86). However, with regards to psychological control implemented by the ***father***, the t-tests indicated that there was a significant difference between the groups, t(146), = -1.96, p < .05, with males (*M* = 22.67, *SD* = 8.57) again scoring higher than females (*M* = 19.27, *SD* = 6.33). The magnitude of the differences in the means (mean difference = 3.39, 95% CI: .54 to 6.25) was medium (Cohen's *d* = 0.45).

Psychopathic Personality Traits. Independent t-tests were also conducted to compare scores between males and females for each of the four psychopathic personality traits. For ***affective responsiveness (AR)***, there was a significant difference between the two groups, t(152) = 3.35, p < .05, with males (*M* = 9.79, *SD* = 3.20) scoring higher than females (*M* = 8.04, *SD* = 2.40). The magnitude of the differences in the means (mean difference = 1.75, 95% CI: .72 to 2.79) was medium (Cohen's *d* = .45). There was also a significant

difference for ***cognitive responsiveness (CR)***, t(153) = 2.96, p < .05, with males (*M* = 9.69, *SD* = 2.06) scoring higher than females (*M* = 8.34, *SD* = 2.24). The magnitude of the differences in the means (mean difference = 1.35, 95% CI: .45 to 2.25) here was large (Cohen's *d* = .63). As for ***interpersonal manipulation (IM)*** there was also a significant difference between the groups, t(153) = 3.65, p < .05, with males (*M* = 12.21, *SD* = 2.32) scoring higher than females (*M* = 10.02, *SD* = 3.03). The magnitude of the differences in the means (mean difference = 2.19, 95% CI: 1.01 to 3.38) was large (Cohen's *d* = .81). For the last psychopathic personality trait, ***egocentricity (ego),*** there was also a significant difference between the groups, t(152) = 2.54, p < .05, with males (*M* = 11.45, *SD* = 2.60) scoring higher than females (*M* = 10.08, *SD* = 2.61). The magnitude of the differences in the means (mean difference = 1.37, 95% CI: .31 to 2.43) was small (Cohen's *d* = -.53). Overall it appears males score higher, indicating they are more likely to have psychopathic personality traits than females.

Age. Finally, for the independent t-tests conducted to compare the difference in ***age*** between males and females there was no significant difference, t(160) = 1.38, p > .05, with males having an older average age (*M* = 35.40, *SD* = 15.42) in comparison to females (*M* = 31.51, *SD* = 13.59).

Regression

Model 1: Family Variables. Multiple regression analyses were conducted to investigate the ability of *attachment* (to mother father and peers) and *psychological control* (from mothers and from fathers) in predicting delinquency, whilst *controlling for age and gender*. Preliminary analyses were conducted to ensure there was no violation of normality, linearity and homoscedasticity. Since no *a priori* hypotheses had been made to determine

the order of entry of the predictor variables, a direct method was used for the multiple linear regression analysis. The seven independent variables in this model (all of the family variables) explained approximately 21% variance in the level of delinquency (F (7, 130) = 4.79, $p < .005$). The amount of variance for each of the predictor variables is presented in Table 2.

Table 2

Regression model 1 predicting delinquency

Variable	B	CI (95%) lower - upper	S.E.	β	t	p
ATT_Mother	-.07	-.15 - .02	.04	-1.93	-1.50	.14
ATT_Father	.04	-.02 - .11	.03	.14	1.27	.21
ATT_Peers	-.07	-.15 - .00	.04	-.17	-1.90	.06
Con_Mother	-.08	-.34 - .17	.13	-.09	-.65	.52
Con_Father	.16	-.07 - .39	.12	.15	1.34	.18
Age	-.08	-.16 - .01	.04	-.15	-1.84	.07
Gender	-5.87	-8.90 - -2.84	1.53	.32	-3.83	.00

Amount of variance shared between all predictor variables and delinquency was 21% (R^2 .45). The model is significant F(7, 130) = 4.79, p < .005.

In the final model, it was only gender that was statistically significant and attachment to peers was approaching significance, the rest were not. The Beta values in table 1 reveal that control by father recorded the highest Beta value (β = .15, p > .05), followed by attachment to father (β = .14, p >.05), attachment to mother (β = -.19, p > .05), attachment to peers (β = -.17, p = .06) and lastly control by the mother (β = -.09, p > .05). However, both of the controlled variables were statistically significant, with gender having the highest Beta value (β = -.32, p < .05) followed by age (β = -.15, p = < .05).

Model 2: Psychopathic Traits. Multiple regression analyses were also conducted for the second group of variables (psychopathic traits: AR, CR, IM and ego) in order to investigate their ability in predicting delinquency, whilst controlling for age and gender. Preliminary analyses were conducted to ensure there was no violation of normality, linearity and homoscedasticity.

Since no *a priori* hypotheses had been made to determine the order of entry of the predictor variables, a direct method was used for the multiple linear regression analysis. The four independent variables (AR, CR, IM, ego, age and gender) explained 18% of the variance within delinquency (F (6, 139) = 5.00, p < .05). The amount of variance for each of the predictor variables is presented in Table 3.

In the final model, none of the psychopathic trait predictor variables (AR, CR, IM, ego) were statistically significant. The Beta values in table 2 reveal that cognitive responsiveness recorded the highest Beta value (β = .13, p > .05), followed by affective responsiveness (β = .04, p >.05), interpersonal manipulation (β = .02, p > .05), and lastly egocentricity (β = .00, p > .05). However, both of the controlled variables were again

statistically significant, with gender having the highest Beta value (β = -.31, p < .05) followed by age (β = -.18, p = < .05).

Table 3

Regression model predicting delinquency

Variable	B	CI (95%) lower - upper	S.E.	β	t	p
AR	.12	-.40 - .65	.27	.04	.46	.65
CR	.41	-.17 - .99	.29	.13	1.41	.16
IPM	.05	-.44 - .54	.25	.02	.20	.84
Ego	.01	-.52 - .55	.27	.00	.05	.96
Age	-.09	-.17 - -.02	.04	-.18	-2.3	.02
Gender	-5.8	-8.80 - -2.80	1.52	-.31	-3.8	.00

Amount of variance shared between all predictor variables and delinquency was 18% (R^2 .42). The model is significant F(6, 139) = 5.00, p < .005.

Discussion

Prior research has indicated that antisocial behaviour's such as delinquency can be influenced by various social factors (Hirschi, 2009). As mentioned previously, delinquency has been positively associated with family variables such as attachment and parental control (Rankin & Kern, 1994; Harris-McKoy & Cui, 2013). Furthermore, a finding from past literature that is key to the present study is that delinquency is not always restricted to adolescence, rather it can be life-course persistent (Moffit, 1993). For such reasons, the present study did not restrict the age of participants to adolescents in order to assess delinquency and its influential factors in various circumstances. More specifically, according to theories of attachment and social control, strong attachment bonds are thought to be fundamental in preventing delinquency (Hirschi, 2009; Bowlby, 1979). Generally, research has indicated that strong attachment is negatively associated with delinquency (Rankin & Kern, 1994). Further research and understanding surrounding this area is vital for preventing behaviours such as delinquency, as attachment has been shown to effect emotional and behavioural development later in life when disrupted at an early age (Christian, Meltzer, Thede & Kosson, 2017). Further to this, as the aforementioned literature suggests theories such as Baumrind's (1973) theory of parenting suggest that a lack of parental control leads to more aggressive children and research has suggested that a lack of parental supervision is associated with delinquency (Loeber & Stouthamer-Loeber, 1986). It has also been suggested that psychopathic personality traits are associated with antisocial behaviours such as delinquency (Asccher et al., 2011). Research that has focused upon this has has extensively demonstrated that criminal tendencies are often a product of psychopathic personality traits (Salihovic & Stattin, 2017).

In the present study we examined the relationship between attachment, parental psychological control, psychopathic traits and delinquency whilst controlling for age and gender. In relation to the literature reviewed and aims of the study, it may have been expected that within the present study those who demonstrate strong attachments, feel a stronger sense of control from their parents and score lower on the psychopathic personality traits scale will in turn demonstrate low levels of delinquency by scoring lower on the delinquency scale.

For the first group of independent variables (attachment, parental control, age and gender) as an overall regression model it was significant. However, inconsistent with the expectations of the study and previous theory, attachment to mothers and attachment to fathers were not found to have a significant influence upon delinquency. Interestingly though, it was found that females reported stronger levels of attachment to mothers than males did whilst also reporting lower levels of delinquency. This particular finding is in line with the idea that weak attachment to mothers should have a greater impact on female delinquency according social learning theorists (Rankin & Kern, 194). Therefore, the finding that females appear to be more strongly attached to mothers whilst also reporting low delinquency is in line with previous research and theory. Furthermore, the fact males have reported lower levels of attachment to mothers whilst reporting higher delinquency supports the idea that attachment to mothers is a better prevention for delinquency than attachment to fathers is (Krohn & Massey, 1980). Despite this, females report a stronger attachment to fathers as well as to mothers therefore the idea of being stronger attached to the same sex parent will better prevent delinquency may not apply to the present findings. However, it seems that interventions to prevent delinquency may

Despite that attachment to both parents was not a significant predictor of delinquency, attachment to peers was closely approaching significance indicating that peer relationships play a key role within delinquency. This finding supports large amounts of research that suggest peer rejection is a key risk factor in the onset of delinquency (Laird, Jordan, Dodge, Petit, & Bates, 2001). The findings from the present research indicate that there is a negative relationship between reported attachment to peers and delinquency suggesting that the stronger the attachment to peers the less likely delinquent behaviour is. This indicates an important protective factor for delinquency, as it highlights that children with weak peer relationships are likely to engage in criminal behaviour/delinquency due to rejection. Therefore, this can be used as a signpost for children who will be vulnerable to delinquency and an indication for teachers, parents and social work staff to assist in developing a child's peer relationships where they appear weak in order to prevent future delinquency. Further to this, in terms of gender differences for peer attachment, females again scored higher than males. This supports research from Anderson, Holmes and Ostresh (1999) which found that where attachment to peers reduced delinquency levels for females more than for males. Gender was also found to be a significant predictor of delinquency within this regression model with males on average scoring higher on than females.

In addition to the results discussed, parental control from either parent was not found to be significant in predicting delinquency. As this does not support previous literature and theory such as Baumrind's parenting styles which indicates parental control exerted on children is likely to prevent delinquency, it could suggest that delinquency levels reported were due to alternative social influences such as social class which were not accounted for in this particular study. Overall it seems males felt more control from both

parents, which could imply a useful finding for research concerning autonomy. Harris-McKoy and Cui (2013) suggest that adolescents require the need for autonomy yet too much can result in behaviours such as delinquency. However, as males have scored higher on delinquency as well as parental control in the present study, this could add to the findings of previous research as it may suggest that males are more susceptible to control and therefore rebel against the rules implemented by their parents.

For the second group of variables (AR, CR, IM, Ego, age and gender) the regression model was also significant as an overall model. A key finding of this was that none of the four psychopathic traits were significant predictors of delinquency. This is a crucial finding for research within the area of psychopathy and criminal behaviour because as mentioned previously, much of the recent research has indicated that criminal behaviour is a product of psychopathy rather than a distinct part of the disorder as first thought (Boduszek & Debwoska, 2016). Unusually, the fact that **none** of the four psychopathic traits assessed predicted delinquency is extremely useful for recent research surrounding psychopathy as the finding provides significant support for the new model of psychopathy (PPTS; Boduszek, Debowska, Dhingra & DeLisi, 2016). This is because one of the main motives for creating a new model of psychopathy was to address the issues lying within the already established measures of psychopathy such as the inclusion of antisocial factors such as erratic lifestyle and criminal tendencies. In a review by Boduszek and Debowska (2016) it was demonstrated that when psychopathy was assessed using the PCL-R and other measures, psychopathy was shown to predict recidivism and aggression which are two behaviours associated with antisocial tendencies such as delinquency. However, it was pointed out by Boduszek, Debowska and Willmott (2017) that such findings would be

expected, given that several items within the measure relate directly to criminal and antisocial behaviour and the idea that future behaviour is forecast by past behaviour. Therefore, the present study provides significant support for the criticisms of previous psychopathic measures and provides new insight into what constitutes the disorder of psychopathy.

Despite the psychopathic traits not having a significant influence on delinquency, the study did find that males scored higher on all psychopathic traits assessed than females did. This provides further support for a large amount of existing research research into sex differences of psychopathy which indicates that the disorder is less prevalent in females than males (Vitale, Smith, Brinkley & Newman, 2002).

The fact that the study provided significant amounts of support to research such as gender differences within attachment, the constitution of psychopathy and overall gender differences within delinquency demonstrates the strengths of the study. However, although there are significant strengths, there are several limitations within the study that should be noted. An important point to highlight where the study is weak within its findings is that neither attachment or parental control were shown to influence delinquency. A substantial amount of previous research suggested that both variables should have a significant impact which suggests that the reason they did not predict, was due to a weakness in the study such as a methodical issue. Methodologically the sample flawed in various areas, for example the sample size was considerably small (n = 166) particularly considering the number of independent variables used in the regression analyses. In addition to this, the study also used self-report measures and using this type of measure could incur problems such as dishonesty from participants. As this particular study is

measuring an immoral act such as delinquency, it is likely that participants will be dishonest about their behaviour in order to positively represent themselves. In addition to this, there is no control of the sample as because it was online there is no researcher present therefore no control of elements such as the same participant repeating the study more than once.

Overall, the study made some significant contributions to the understanding of delinquency and was successful in highlighting areas that would signpost people who could be potentially vulnerable to delinquency such as those who have weak peer attachments. This can guide the development of new interventions and assist the work of law enforcement bodies and social workers but also families. It is significant for families as it can inform parents of the importance of attachment and supervision of their children during the transition to adolescence. In addition to this, the study improved upon previous studies surrounding psychopathy by utilizing a new, validated model of psychopathy and built upon the evidence to it. From these findings further research should explore the association between psychopathic traits and delinquency in order to further understand whether or not antisocial factors are a part of psychopathy or a product of the disorder as well as to further test competing models. Further to this, future research should also focus on how antisocial behaviours such as delinquency can be life-course persistent by comparing levels of delinquency in adolescence to adulthood in order to understand the lasting effects of attachment and psychological control.

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Appendices

Appendix A

Inventory of Parent and Peer Attachment (IPPA)

This questionnaire asks about your relationships with your mother. Each of the following statements asks about your feelings about your mother or the woman who has acted as your mother (e.g., a natural mother and a step-mother). Answer the questions for the one you feel has most influenced you.

	Almost Never Or Never True	**Not Very Often True**	**Sometimes True**	**Often True**	**Almost Always or Always True**
	1	**2**	**3**	**4**	**5**

1.	My mother respects my feelings.	1	2	3	4	5
2.	I feel my mother does a good job as my mother.	1	2	3	4	5
3.	I wish I had a different mother.	1	2	3	4	5
4.	My mother accepts me as I am.	1	2	3	4	5
5.	I like to get my mother's point of view on things I'm concerned about.	1	2	3	4	5
6.	I feel it's no use letting my feelings show around my mother.	1	2	3	4	5
7.	My mother can tell when I'm upset about something.	1	2	3	4	5
8.	Talking over my problems with my mother makes me feel ashamed or foolish.	1	2	3	4	5
9.	My mother expects too much from me.	1	2	3	4	5
10.	I get upset easily around my mother.	1	2	3	4	5
11.	I get upset a lot more than my mother knows about.	1	2	3	4	5
12.	When we discuss things, my mother cares about my point of view.	1	2	3	4	5
13.	My mother trusts my judgment.	1	2	3	4	5
14.	My mother has her own problems, so I don't bother her with mine.	1	2	3	4	5
15.	My mother helps me understand myself better.	1	2	3	4	5
16.	I tell my mother about my problems and troubles.	1	2	3	4	5
17.	I feel angry with my mother.	1	2	3	4	5
18.	I don't get much attention from my mother.	1	2	3	4	5
19.	My mother helps me talk about my difficulties.	1	2	3	4	5

20.	My mother understands me.	1	2	3	4	5
21.	When I am angry about something, my mother tries to be understanding.	1	2	3	4	5
22.	I trust my mother.	1	2	3	4	5
23.	My mother doesn't understand what I'm going through these days.	1	2	3	4	5
24.	I can count on my mother when I need to get something off my chest.	1	2	3	4	5
25.	If my mother knows something is bothering me, she asks me about it.	1	2	3	4	5

The next set of questions asks you about your relationship with your male Parent (i.e. father or whomever takes care of you).

1.	My father respects my feelings.	1	2	3	4	5
2.	I feel my father does a good job as my father.	1	2	3	4	5
3.	I wish I had a different father.	1	2	3	4	5
4.	My father accepts me as I am.	1	2	3	4	5
5.	I like to get my father's point of view on things I'm concerned about.	1	2	3	4	5
6.	I feel it's no use letting my feelings show around my father.	1	2	3	4	5
7.	My father can tell when I'm upset about something.	1	2	3	4	5
8.	Talking over my problems with my father makes me feel ashamed or foolish.	1	2	3	4	5
9.	My father expects too much from me.	1	2	3	4	5
10.	I get upset easily around my father.	1	2	3	4	5
11.	I get upset a lot more than my father knows about.	1	2	3	4	5
12.	When we discuss things, my father cares about my point of view.	1	2	3	4	5
13.	My father trusts my judgment.	1	2	3	4	5
14.	My father has her own problems, so I don't bother her with mine.	1	2	3	4	5
15.	My father helps me understand myself better.	1	2	3	4	5
16.	I tell my father about my problems and troubles.	1	2	3	4	5

17.	I feel angry with my father.	1	2	3	4	5
18.	I don't get much attention from my father.	1	2	3	4	5
19.	My father helps me talk about my difficulties.	1	2	3	4	5
20.	My father understands me.	1	2	3	4	5
21.	When I am angry about something, my father tries to be understanding.	1	2	3	4	5
22.	I trust my father.	1	2	3	4	5
23.	My father doesn't understand what I'm going through these days.	1	2	3	4	5
24.	I can count on my father when I need to get something off my chest.	1	2	3	4	5
25.	If my father knows something is bothering me, he asks me about it.	1	2	3	4	5

The next set of questions asks you about your relationship with your close friends.

1.	My friends can tell when I'm upset about something.	1	2	3	4	5
2.	When we discuss things, my friends care about my point of view.	1	2	3	4	5
3.	When I discuss things, my friends care about my point of view.	1	2	3	4	5
4.	I wish I had different friends.	1	2	3	4	5
5.	My friends understand me.	1	2	3	4	5
6.	My friends help me to talk about my difficulties.	1	2	3	4	5
7.	My friends accept me as I am.	1	2	3	4	5
8.	I feel the need to be in touch with my friends more often.	1	2	3	4	5
9.	My friends don't understand what I'm going through these days.	1	2	3	4	5
10.	I feel alone or apart when I'm with my friends.	1	2	3	4	5
11.	My friends listen to what I have to say.	1	2	3	4	5
12.	I feel my friends are good friends.	1	2	3	4	5
13.	My friends are fairly easy to talk to.	1	2	3	4	5
14.	When I am angry about something, my friends try to be understanding.	1	2	3	4	5
15.	My friends help me to understand myself better.	1	2	3	4	5
16.	My friends care about how I am.	1	2	3	4	5
17.	I feel angry with my friends.	1	2	3	4	5
18.	I can count on my friends when I need to get something off my chest.	1	2	3	4	5
19.	I trust my friends.	1	2	3	4	5
20.	My friends respect my feelings.	1	2	3	4	5
21.	I get upset a lot more than my friends know about.	1	2	3	4	5

22. It seems as if my friends are irritated with me for no reason.	1	2	3	4	5
23. I can tell my friends about my problems and troubles.	1	2	3	4	5
24. If my friends know something is bothering me, they ask me about it.	1	2	3	4	5

Response categories:

1= Almost never or never true
2= Not very true
3=Sometimes true
4=Often true
5=Almost always or always true

Appendix B

Psychological Control Scale—Youth Self-Report (PCS-YSR)

1 = Not like her (him); 2 = Somewhat like her (him); 3 = A lot like her (him)

My Mother (Father) is a person who . . .

*1. changes the subject, whenever I have something to say.
*2. finishes my sentences whenever I talk.
*3. often interrupts me.
*4. acts like she (he) knows what I'm thinking or feeling.
*5. would like to be able to tell me how to feel or think about things all the time.
*6. is always trying to change how I feel or think about things.
*7. blames me for other family members' problems.
*8. brings up my past mistakes when she (he) criticizes me.
9. tells me that I am not a loyal or good member of the family.
10. tells me of all the things she (he) had done for me.
11. says, if I really cared for her (him), I would not do things that cause her (him) to worry.
12. is less friendly with me, if I do not see things her (his) way.
13. will avoid looking at me when I have disappointed her (him).
14. if I have hurt her (his) feelings, stops talking to me until I please her (him) again.
15. often changes his (her) moods when with me.
16. goes back and forth between being warm and critical toward me.

Appendix C

Psychopathic Personality Traits Scale (PPTS; Boduszek et al., 2016)

Please indicate to what extent you agree or disagree with the following statements:

		Strongly disagree	**Disagree**	**Agree**	**Strongly agree**
1	I don't care if I upset someone to get what I want.				
2	Before criticizing somebody, I try to imagine and understand how it would make them feel.				
3	I know how to make another person feel guilty.				
4	I tend to focus on my own thoughts and ideas rather than on what others might be thinking.				
5	What other people feel doesn't concern me.				
6	I always try to consider the other person's feelings before I do something.				
7	I know how to pay someone compliments to get something out of them.				
8	I don't usually appreciate the other person's viewpoint if I don't agree with it.				
9	Seeing people cry doesn't really upset me.				
10	I am good at predicting how someone will feel.				
11	I know how to simulate emotions like pain and hurt to make others feel sorry for me.				
12	In general, I'm only willing to help other people if doing so will benefit me as well.				
13	I tend to get emotionally involved with a friend's problems.				
14	I'm quick to spot when someone is feeling awkward or uncomfortable.				
15	I sometimes provoke people on purpose to see their reaction.				
16	I believe in the motto: "I'll scratch your back, if you scratch mine".				
17	I get filled with sorrow when people talk about the death of their loved ones.				
18	I find it difficult to understand what other people feel.				
19	I sometimes tell people what they want to hear to get what I want from them.				
20	It's natural for human behaviour to be motivated by self-interest.				

Reverse-scored items: 2, 6, 10, 13, 14, 17

Subscales:

1. Affective Responsiveness (AR): 1, 5, 9, 13, 17
2. Cognitive Responsiveness (CR): 2, 6, 10, 14, 18
3. Interpersonal Manipulation (IPM): 3, 7, 11, 15, 19
4. Egocentricity (EC): 4, 8, 12, 16, 20

Appendix D - Self-Reported Delinquency.

Please circle how often you have engaged in these activities in the past 12 months.
On average, how often do you damaged property which belongs to; **Your Family?** **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day** **Your School?** **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day** **The Public?** **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day**
How many times have you avoided paying for items? **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day**
In the past 12 months, how often have you stolen anything worth; **Under £5?** **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day**

Over £50?

Never Once a year 2-3 times a year Once a month 2-3 times a month

Once a week 2-3 times a week Once a day 2-3 times a day

Between £5 and £50?

Never Once a year 2-3 times a year Once a month 2-3 times a month

Once a week 2-3 times a week Once a day 2-3 times a day

How often have you stolen objects from;

Your School/College/University?

Never Once a year 2-3 times a year Once a month 2-3 times a month

Once a week 2-3 times a week Once a day 2-3 times a day

A Family Member?

Never Once a year 2-3 times a year Once a month 2-3 times a month

Once a week 2-3 times a week Once a day 2-3 times a day

How many times, in the past 12 months, have you ran away from home?

Never Once a year 2-3 times a year Once a month 2-3 times a month

Once a week 2-3 times a week Once a day 2-3 times a day

How often do you assault;

A Parent/Guardian?

Never Once a year 2-3 times a year Once a month 2-3 times a month

Once a week 2-3 times a week Once a day 2-3 times a day

A Teacher?

Never Once a year 2-3 times a year Once a month 2-3 times a month

Once a week 2-3 times a week Once a day 2-3 times a day

A Peer?

Never Once a year 2-3 times a year Once a month 2-3 times a month **Once a week 2-3 times a week Once a day 2-3 times a day**
<u>In the past 12 months, how many times have you been involved in a fight with the intent to harm?</u> **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day**
<u>How often do you thrown objects at people or cars?</u> **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day**
<u>How many times have you been involved in a gang fight?</u> **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day**
<u>In the past 12 months I have cheated on tests/exams approximately</u> **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day**
<u>In the past 12 months I have made obscene phone calls…</u> **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day**
<u>How many times in the past 12 months have you bought/sold/held stolen goods.</u> **Never Once a year 2-3 times a year Once a month 2-3 times a month** **Once a week 2-3 times a week Once a day 2-3 times a day**

Appendix E - Participant Consent Form

Title: The influence of attachment, parental control and psychopathic traits on delinquent behaviour: gender differences.

Please complete the following table to give written consent for your answers to be used in the research. All data gathered during this research will be treated as confidential and securely stored.

	YES	NO
I have read and understood the information sheet.		
I have cleared up any uncertainty regarding the study prior to completion.		
I understand that my identity will be protected and that all data will be anonymous and confidential.		
I understand that I can withdraw from the study at any time (before 15th January 2018) by contacting the researcher. (u1555509@unimail.hud.ac.uk)		
I give my full consent for the information provided to be used anonymously in the research.		

Appendix F – Participant Debrief Sheet

Title: The influence of attachment, parental control and psychopathic traits on delinquent behaviour: gender differences.

Dear Participant,
Thank you for giving up your time to complete the questionnaires. The data you have provided will be of great benefit and used during my final year research project.

You have completed five questionnaires during this study; 5 self-report measures to complete: Inventory of Parent and Peer Attachment revised edition (IPPA) (Armsden and Greenberg, 1987), Psychological Control Scale (Barber, 1996) (administered twice), Self-Reported Delinquency Scale (Boduszek et al., 2012) and the Psychopathic Personality Traits Scale (Boduszek et al., 2016). Your results will remain completely anonymous and no answers you have given will be linked directly to you in any way. The publication of these results will not include names or participant numbers. However, if you feel that you would like to withdraw your results, please don't hesitate to let me know via my email: u1555509@unimail.hud.ac.uk. Your data will be open for withdrawal until 15th January 2015, after this analysis will begin.

If you have any concerns or questions, please address them immediately. I will be happy to provide you with any information you may need. You may also contact my supervisor, Professor Daniel Boduszek via his email: d.boduszek@hud.ac.uk, or via telephone: 01484 471887.

If this study has provoked any additional concerns which I or my supervisor would not be able to deal with, please feel free to contact any of the following support services:

Huddersfield University Mental Health and Wellbeing Service- This service is free and open to students of the University. It is based in the Wellbeing and Disability Services floor of the Student Services Building. They hold a drop-in Monday to Friday at 11am.

Tel: 01484 472675

Huddersfield University Counselling Service- Another Service for students based in the University which provides counselling for those who experience mental issues or have any problems during their time as a student. It is also based in the Wellbeing and Disability services floor of the Student Services Building.

Tel: 01484 472227

Thank you again for your participation.
Megan Forrest

Appendix G – SPSS Output

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age	162	18	63	32.23	13.979
ATT_Mother	159	33.0	125.00	97.6164	21.26202
ATT_farther	153	30.0	125.00	91.5948	22.85896
ATT_peers	155	40.0	118.00	97.3935	16.24148
Con_Mother	158	15.0	45.00	22.3418	7.61056
Con_father	149	15.0	45.00	19.8591	6.87634
AR	155	5.00	20.00	8.3548	2.62293
CR	156	5.00	15.00	8.5962	2.25697
IPM	156	5.00	18.00	10.4423	3.02301
Ego	155	5.00	17.00	10.3419	2.64928
Delinq	150	19.0	96.00	21.4600	7.15094
Valid N (listwise)	115				

T-Test

Group Statistics

	Please provide the following demographic information for analyses purposes only.	N	Mean	Std. Deviation	Std. Error Mean
Age	Male	30	35.40	15.422	2.816
	Female	132	31.51	13.590	1.183
ATT_Mother	Male	28	94.536	21.28	4.02094
	Female	130	98.138	21.31	1.86876
ATT_farther	Male	28	82.464	25.21	4.76497
	Female	124	93.444	21.87	1.96355
ATT_peers	Male	30	92.200	17.34	3.16569
	Female	124	98.645	15.85	1.42337
Con_Mother	Male	29	22.448	6.544	1.21524
	Female	128	22.375	7.857	.69447
Con_father	Male	27	22.667	8.566	1.64862
	Female	121	19.273	6.332	.57568
AR	Male	29	9.7931	3.098	.57531
	Female	125	8.0400	2.398	.21445
CR	Male	29	9.6897	2.055	.38154
	Female	126	8.3413	2.242	.19973
IPM	Male	29	12.207	2.320	.43089
	Female	126	10.016	3.028	.26974
Ego	Male	29	11.448	2.599	.48267
	Female	125	10.080	2.614	.23379
Delinq	Male	25	26.920	15.59	3.11872
	Female	124	20.379	2.686	.24118

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Age	Equal variances assumed	2.55	.112	1.381	160	.169	3.89	2.82	-1.7	9.46
	Equal variances not assumed			1.275	39.9	.210	3.89	3.05	-2.3	10.1
ATT_Mother	Equal variances assumed	.012	.914	-.812	156	.418	-3.6	4.44	-12	5.16
	Equal variances not assumed			-.813	39.5	.421	-3.6	4.43	-13	5.36
ATT_farther	Equal variances assumed	1.55	.216	-2.332	150	.021	-11	4.71	-20	-1.7
	Equal variances not assumed			-2.130	36.7	.040	-11	5.15	-21	-.53
ATT_peers	Equal variances assumed	.045	.832	-1.962	152	.052	-6.4	3.28	-13	.045
	Equal variances not assumed			-1.857	41.5	.070	-6.4	3.47	-13	.562
Con_Mother	Equal variances assumed	2.34	.128	.047	155	.963	.073	1.57	-3.0	3.18
	Equal variances not assumed			.052	48.1	.958	.073	1.40	-2.7	2.89
Con_father	Equal variances assumed	6.80	.010	2.350	146	.020	3.39	1.44	.540	6.25
	Equal variances not assumed			1.944	32.6	.061	3.39	1.75	-.16	6.95
AR	Equal variances assumed	1.31	.253	3.347	152	.001	1.75	.524	.718	2.79
	Equal variances not assumed			2.855	36.2	.007	1.75	.614	.508	3.00
CR	Equal variances assumed	.276	.600	2.964	153	.004	1.35	.455	.450	2.25
	Equal variances not assumed			3.131	44.7	.003	1.35	.431	.481	2.22
IPM	Equal variances assumed	2.56	.112	3.654	153	.000	2.19	.600	1.01	3.38
	Equal variances not assumed			4.310	52.4	.000	2.19	.508	1.17	3.21
Ego	Equal variances assumed	.010	.922	2.542	152	.012	1.37	.538	.305	2.43
	Equal variances not assumed			2.551	42.2	.014	1.37	.536	.286	2.45
Delinq	Equal variances assumed	28.2	.000	4.412	147	.000	6.54	1.48	3.61	9.47
	Equal variances not assumed			2.091	24.3	.047	6.54	3.13	.089	13.0

Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.45[a]	.205	.162	6.54

a. Predictors: (Constant), Please provide the following demographic information for analyses purposes only., Con_Mother, Age, ATT_farther, ATT_peers, Con_father, ATT_Mother

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1....	7	205	4.79	.00[b]
	Residual	6....	130	42.8		
	Total	7....	137			

a. Dependent Variable: Delinq

b. Predictors: (Constant), Please provide the following demographic information for analyses purposes only., Con_Mother, Age, ATT_farther, ATT_peers, Con_father, ATT_Mother

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	42.9	7.360		5.831	.000	28.35	57.475
	ATT_Mother	-.065	.043	-.193	-1.50	.137	-.151	.021
	ATT_farther	.043	.034	.137	1.268	.207	-.024	.110
	ATT_peers	-.073	.039	-.167	-1.90	.060	-.150	.003
	Con_Mother	-.083	.128	-.088	-.650	.517	-.336	.170
	Con_father	.157	.117	.151	1.344	.181	-.074	.389
	Age	-.077	.042	-.151	-1.84	.068	-.160	.006
	Please provide the following demographic information for analyses purposes only.	-5.87	1.533	-.317	-3.83	.000	-8.90	-2.836

a. Dependent Variable: Delinq

Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.42[a]	.177	.142	6.62

a. Predictors: (Constant), Ego, Age, Please provide the following demographic information for analyses purposes only., CR, AR, IPM

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1....	6	219	5.00	.00[b]
	Residual	6....	139	43.9		
	Total	7....	145			

a. Dependent Variable: Delinq

b. Predictors: (Constant), Ego, Age, Please provide the following demographic information for analyses purposes only., CR, AR, IPM

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	29.84	4.78		6.24	.000	20.377	39.297
	Age	-.094	.040	-.18	-2.3	.021	-.173	-.014
	Please provide the following demographic information for analyses purposes only.	-5.80	1.52	-.31	-3.8	.000	-8.799	-2.801
	AR	.121	.266	.044	.455	.650	-.404	.646
	CR	.413	.292	.130	1.41	.160	-.165	.990
	IPM	.050	.246	.021	.202	.840	-.437	.536
	Ego	.012	.270	.004	.045	.964	-.521	.546

a. Dependent Variable: Delinq