An interactive model of antisocial behaviour in young offenders:

The role of callous-unemotional traits, materialism and risk-taking behaviour

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Overview

Volume one of this D.Clin.Psy. Thesis is a research project investigating an interactive model of antisocial behaviour in a sample of young offenders and examines the role of callous-unemotional traits, materialism and risk-taking behaviour. Volume one is divided into three parts.

Part one is a systematic literature review examining 16 studies that have suggested that young people with callous-unemotional traits have deficits in processing emotions such as fear and sadness.

Part two is an empirical paper testing an interactive model of antisocial behaviour in a severe sample of young offenders. This study specifically examines the independent and interactive roles of three variables, that is, callous-unemotional traits, materialism and risk-taking behaviour. This study was conducted as part of a joint project (Smith, 2011).

Part three is a critical appraisal of the whole research process. It considers how wider social and political contexts influenced different stages of the research with a young offender population. It also highlights some of the dilemmas that were encountered when choosing the measures of antisocial behaviour and reflections on the experience of using a behavioural task within this setting.

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Part One: Literature Review

Do antisocial young people with callous-unemotional traits have a specific deficit in emotional processing?

Abstract

This systematic literature review addressed the question of whether antisocial young people with callous-unemotional traits have a specific deficit in emotional processing. PubMed, PsycINFO, Embase and Web of Science were searched from their inception through to the end of December, 2010 to select studies to include in the review. Sixteen studies examining emotional processing in young people with callous-unemotional traits were included in the review (16 out of 163 papers). The findings from each of the studies were considered in turn and the methodological issues were discussed. Results indicated that young people with callous-unemotional traits may have a specific deficit in recognising fearful facial expressions. There are questions remaining about whether there are deficits to other emotions, such as sadness. The studies in the second section of the review indicated that these emotional processing deficits may be due to the young people paying less attention to people's eyes. There was also evidence that different physiological and neurological mechanisms may be underlying the proposed emotional processing deficits in this group of young people. In particular, the amygdala and other arousal based markers have been implicated, potentially supporting a biological or neurocognitive basis to the deficits. Overall, the behavioural, physiological and neurological evidence point to there being a deficit to the processing of fear in young people with callous-unemotional traits. However, the research in this area is not conclusive and methodological limitations have been highlighted throughout this review. Further research is required to understand more about the mechanisms involved in the processing of emotions in this severe population and how these might change with development.

Introduction

Conduct problems are the most common form of childhood psychiatric problem in the community and in referrals to child and adolescent mental health services (Frick & White, 2008). It is well known that young people who engage in severe forms of antisocial behaviour represent a relatively heterogeneous group, in relation to the developmental factors influencing their behaviour and the multiple outcomes (Frick, 2006).

Callous-unemotional traits

Researchers have attempted to extend the construct of psychopathy from adults to young people in order to understand the development of severe and persistent forms of antisocial behaviour (Farrington, 2005; Frick, 2009). There has been some controversy as to whether the concept can be usefully applied to young people. Concerns have been raised about the use of the term psychopathy as it connotes a stable, biologically-determined personality pattern that is considered untreatable (Seagrave & Grisso, 2002). One promising development in this area of research has been the conceptualisation of callous-unemotional traits in young people (Frick, O'Brien, Wooton & McBurnett, 1994). Frick and colleagues suggest that these callous-unemotional traits refer to a specific constellation of affective (e.g. lack of guilt) and interpersonal (e.g., failure to show empathy) personality features. There is now evidence suggesting that callous-unemotional traits are especially important for predicting severe levels of antisocial behaviour among young people (Kruh, Frick, & Clements, 2005). Callous-unemotional traits show a moderate to strong heritability among young people with conduct problems, suggesting that there may be a genetic vulnerability to callous-unemotional temperament (Viding, Frick & Plomin, 2007). In a review of the area, Frick and White (2008) stated that the available evidence suggests that callous-unemotional

traits may be particularly important for designating a unique developmental pathway to severe antisocial behaviour in young people.

Psychopathy in adults

The construct of callous-unemotional traits was drawn from the adult field of research regarding severe antisocial behaviour and psychopathy. Hare (1993) has described psychopathy as having affective (e.g. lack of empathy and callousness), interpersonal (e.g. grandiosity and manipulativeness) and behavioural (e.g. impulsivity and risk-taking) features. Adults with these psychopathic features have been found to exhibit a more severe, violent and chronic pattern of antisocial behaviour (Seagrave & Grisso, 2002). The construct of psychopathy in adults has also been useful for predicting behaviour such as future offending (Hare, Clark, Grann, & Thornton, 2000). Furthermore, antisocial adults with psychopathic features are believed to have a number of neurological, cognitive and emotional characteristics that suggest that there are distinct developmental origins to their antisocial behaviour (Cleckly, 1976; Hart & Hare, 1996). There is also evidence that adult psychopaths have specific deficits in emotional processing and amygdala dysfunction (Blair, 2005).

Emotional processing

In light of these advances, research in the child and adolescent literature has begun to focus on the emotional characteristics of callous-unemotional traits. There is now a body of literature suggesting that young people with callous-unemotional traits have a specific deficit in processing distress cues, such as fear and sadness (e.g. Marsh & Blair, 2008). Blair (1995, 2001) proposed the Violence Inhibition Mechanism (VIM) model as one potential explanation for these deficits in emotional processing. According to this theory, activation of the VIM increases autonomic activity and

activation of the threat response system, which results in the interruption of aggressive behaviour. This theory states that poor functioning of the VIM is attributed to abnormalities in the limbic system and more specifically the amygdala. Thus, it has been speculated that children with callous-unemotional traits may have amygdala dysfunction, which means they have a decreased sensitivity to distress cues and subsequent problems with antisocial behaviour (Blair, 1995, 2001).

There have been three reviews of the literature in this area of research. Marsh and Blair (2008) recently conducted a meta-analysis of 20 studies investigating deficits in facial expression recognition among antisocial populations (adults and young people). There were significant effect sizes associated with deficits in recognising fear, sadness and surprise. In addition, deficits for recognising fear were significantly greater than deficits for any other expressions. Frick and White (2008) conducted a review of the literature that included a section with studies (n=10) examining the emotional characteristics of antisocial youth with callous-unemotional traits. The authors concluded that young people with callous-unemotional traits showed deficits in emotional processing of negative emotional stimuli, and specific deficits to signs of fear and distress in others. Furthermore, De Wied, Gispen-deWied and Van Boxtel (2010) recently conducted a non-systematic review of the literature which included a section about studies examining psychopathic traits in children with disruptive behaviour disorders and briefly summarised the findings. It concluded that young people with psychopathic traits were not impaired for all emotional expressions but were particularly impaired in recognising distress cues (i.e. fearful and sad expressions).

Current review

The current systematic review will be different to those previously published in this area as it will specifically focus on studies with young people and those investigating callous-unemotional traits, rather than antisocial behaviour in general. It will also include studies that have recently been published, such as those investigating whether young people with callous-unemotional traits pay less attention to people's eyes and studies examining whether there is a neurocognitive basis to the proposed emotional processing deficits. Furthermore, it will systematically consider the specific methodological strengths and limitations of the individual studies, which had not been covered in any detail by the previous reviews.

Aim of review

This review will systematically consider the studies that have investigated emotional processing deficits in young people with callous-unemotional traits. It will attempt to answer the question: *Do antisocial young people with callous-unemotional traits have a specific deficit in emotional processing?*

The first section of the review will include studies on the emotional processing of facial expressions in young people with callous-unemotional traits. The second section will consider studies that have examined whether young people differentially attend to the eye area in fear recognition. The third and fourth sections will consider studies that have examined potential mechanisms involved in emotional processing in this group of young people such as the physiological and neurological markers. The review will conclude with a discussion of the key issues raised and future directions for research.

Method

Search strategy

Articles were retrieved through (a) searching PubMed, Embase, Web of Science and PsycINFO electronic databases from first publication to the end of December 2010 and (b) searching reference lists of all relevant articles. The search terms were based on the four identified areas chosen for review: facial expression recognition; attention to the eyes; physiological studies and neuroimaging studies with young people with callous-unemotional traits. The terms callous-unemotional traits and psychopathic traits are often used interchangeably in the literature and so both were entered as search terms. The search terms “callous-unemotional traits” or “psychopathic traits” were used in combination with the following terms: “facial expression”, “emotion*”, “affective”, “emotional processing”, “attention”, “arousal”, “physiological” and “neuroimaging”. Electronic database searches were limited to English-language papers, by sample (human participants, children 0-18 years) and published in peer-reviewed journals.

Selection strategy

The total number of articles identified was 163. The abstracts of all articles identified by electronic searches were carefully screened by the author to determine if the abstracts met the following inclusion criteria:

1) Full abstract available online;
2) The study was not a duplicate (i.e., if an article was cited in more than one database, it was only used once);
3) Involved children or adolescents under 18 years old;
4) Empirically measured callous-unemotional traits or psychopathic traits in some form (excludes qualitative studies, survey studies, feasibility studies, reviews, and meta-analyses);

5) Empirically measured emotional recognition performance with a behavioural task (e.g. recognition of facial expressions such as sadness or fear)

In terms of exclusion criteria, studies (n=4) examining links between callous-unemotional traits and other negative stimuli (e.g. sounds or pictures) were excluded due to the variability in the methodologies in this area. Using these criteria, a total of 16 studies were extracted for review. Studies in each of these areas will be reviewed in turn.

Results

1. Emotional facial expressions

In this area of literature six studies were found to have examined callous-unemotional traits and emotional facial expressions. Table 1 presents the six studies reviewed in this area, in the order they have been discussed and including details regarding the sample, study design, measures and key results. All studies were quantitative and cross-sectional designs. Two studies were from community samples of children and four studies employed comparison groups. Four of the studies included only boys and their ages ranged between 7 and 18 years old. Sample sizes also varied largely between 18 and 121 participants.

Community samples

Blair and Coles (2000) was the first study to investigate the relationship between facial expression recognition and behavioural problems in children. This community sample consisted of fifty-five children (aged 11-14 years) who were recruited from a mainstream secondary school. Each participant was presented with the Expression Recognition Hexagon Stimuli on a computer. The participants were asked to name one of the six emotions illustrated by the facial expressions (e.g. fear, sadness, happiness,

anger, disgust, fear and surprise). Two teachers were asked to rate each participant on the Psychopathy Screening Device (Frick et al. 1994). It was found that the ability to recognise sad and fearful expressions was inversely related to callous-unemotional traits. There was also a significant inverse correlation between impulsive/conduct problems and ability to recognise fearful, but not sad expressions.

In another community based study, Munoz (2009) examined the accuracy in recognising both faces and body postures conveying fear in boys (n=55). Callous-unemotional traits and violence were measured via self-report using the Inventory of Callous-Unemotional Traits (ICU; Frick, 2004). The recognition of emotional faces was measured by the Emotional Faces task which involved presenting the participants with a booklet of 24 faces showing six emotions: happy, sad, afraid, angry, surprised and disgusted. Consistent with Blair and Coles (2000), there was a significant inverse relationship between callous-unemotional traits and recognition of fearful facial expressions in young people. This relationship between callous-unemotional traits and fear remained even after the authors controlled for antisocial behaviour. It was also found that there was a significant relationship between callous-unemotional traits and errors for angry faces.

One of the most interesting points from the Munoz (2009) study was that it took into account the accuracy in which the participants labelled different emotions or 'response bias'. This 'response bias' was calculated by using corrected accuracy scores by squaring the 'hit rate' and dividing the result by biases in using labels and the number of stimuli in the emotion set. Once the 'response bias' had been taken into account, it was

found that callous-unemotional traits were significantly related to deficits in many facial expressions and there was no longer a unique deficit to fear. The young people who were high in callous-unemotional traits used afraid and angry labels infrequently. Thus, this so called 'response bias' was accounting for the original finding that participants were poor at recognising afraid and angry faces. This study has highlighted that accuracy and 'response biases' may be important factors that need to be considered in future studies.

In this area of research the measurement of callous-unemotional traits is an important and complicated issue. The gold standard method is often considered to be to use expert rated measures such as the Psychopathy Checklist-Youth Version (PCL-YV; Forth, Kosson & Hare, 2003) as it requires the collection of file information and has high inter-rater agreement. However, the use of experts is not always very practical due to time and financial constraints. A number of self-report measures have been designed to measure psychopathic/callous-unemotional traits in young people.

These two community studies used different measures and informants to rate callous-unemotional traits. Blair and Coles (2000) used the Psychopathy Screening Device (PSD) which has been validated in a small, primarily male and clinic-referred sample (Frick et al. 1994) and later studies have found that the PSD has been able to isolate callous-unemotional traits in a community sample of children (Frick, Bodin & Barry, 2000). However, it only includes a 6-item scale measuring callous-unemotional traits and does not have reversed scored items, which could mean that this scale is vulnerable to biased and unreliable ratings. Blair and Coles (2000) protected against

self-report biases to a certain extent by using two teacher ratings, rather than self-report.

In contrast the study by Munoz (2009) used the Inventory of Callous-Unemotional Traits (ICU; Frick, 2004) which is a self-report measure that has been designed specifically to overcome some of the limitations of the callous-unemotional scale on the PSD. The ICU has been shown to be a relatively reliable measure of callous-unemotional traits in both a community and clinical samples of young people (e.g. Essau, Sasagawa & Frick, 2006; Kimonis et al. 2008). There have been concerns in the literature whether young people are the most reliable or accurate informants about their own personality traits or antisocial behaviour (Rutter, 2005). Indeed, it has been suggested that there may be a tendency for young people to provide socially desirable answers, under-report or even over-report (i.e. bragging). Furthermore, young people who are high on callousness, unemotional and uncaring dimensions may not even be aware of these features themselves. Given these issues, it has been recognised that studies should not just rely on one informant source or may even need to assess for social desirability and malingering. The issue of relying on self-report measures applies to many studies in the area but may have more of an impact where studies have relied upon one informant source, such as the study carried out by Munoz (2009).

The findings from these two community studies (i.e. Blair & Coles, 2000; Munoz, 2009) have provided some evidence that there may be a deficit in recognising fear in this group of young people, although it is not conclusive. These findings may need to be interpreted with some caution due to the use of relatively small (n=55) community

samples. It has been argued that it is not particularly useful to measure callous-unemotional traits within community populations as these features are believed to characterise more severe antisocial populations (e.g. Rutter, 2005). For instance, Salekin, Nuemann, Leistico, DiCicco & Duros (2004) has found that the prevalence of callous-unemotional traits in a large (n=130) young offender population was 21.5%. The prevalence rates of callous-unemotional traits in the general population are currently unclear, although it might be expected that they are considerably lower than found in forensic samples (e.g. Frick & Ellis, 1999). Thus, due to low prevalence rates it might be questioned whether it is valid to draw conclusions about callous-unemotional traits in studies with community samples.

Clinical samples

Four studies have used clinical populations to investigate the relationship between callous-unemotional traits and the recognition of emotional facial expressions. Blair, Colledge, Murray and Mitchell (2001) investigated the sensitivity of children with psychopathic traits to facial expressions in a comparison group design. An all male sample of fifty-one participants were recruited from three schools for children with emotional and behavioural problems. Boys were placed in either a psychopathic traits group (n=21) or comparison group (n=30) according to PSD scores. Each participant was presented with the Facial Expression Multimorph task. The study found that boys with psychopathic traits made significantly more errors when processing fearful expressions and were more likely to misclassify fear as one of the other five basic emotions. The boys were also significantly less sensitive to sad expressions than the comparison group. The authors concluded that boys with psychopathic traits presented with selective impairments in processing sad and fearful expressions, relative to the

comparison group. This finding appears to be consistent with the community study conducted by Blair and Coles (2000).

The authors suggested that the findings provide support for the VIM model (Blair, 1995, 2001), which suggests that impairments to the amygdala lead to deficits in fear recognition. This link seems to have been somewhat premature given that the study did not actually measure any neurocognitive variables. In addition, it might be speculated that Blair and colleagues were making overly strong claims in order to provide support for their own theory. Thus, the findings from this study should be interpreted with some caution. Nevertheless, one of the clear strengths of this study (Blair et al. 2001) was that it employed a comparison group design, which meant that causal effects between the key variables could be considered. The experimental group was taken from a clinical population which may have been more likely to have a higher prevalence of callous-unemotional traits and so may be more ecologically valid than the community studies considered earlier. Also, the authors attempted to take into account task difficulty by controlling for factors such as IQ and once this was done the main findings remained significant.

It is important to highlight that this study (Blair et al. 2001) used overall psychopathic trait scores in their analyses, rather than specifically focusing on the callous-unemotional dimension of psychopathy. The total scores on the PSD are known to include two dimensions, callous-unemotional (Factor 1) and impulsivity/conduct problems (Factor 2). This approach of using an overall score of psychopathic traits could lead to ambiguity about the extent of the influence of callous-unemotional traits on

the findings. This makes it difficult to draw any direct conclusions about callous-unemotional traits and emotional deficits, or even to compare the results with other studies. This issue seems to characterise many of the studies in this area of research, given that terms such as 'psychopathic traits', 'psychopathic tendencies' and 'callous-unemotional traits' are often used interchangeably. In addition, the authors defined the experimental and comparison groups by using cut-off scores for psychopathic traits on the PSD. However, it was not clear why the authors chose these cut-off scores (i.e. PSD scores of above 28) to determine more problematic levels of psychopathic traits. There are not any established threshold scores on the PSD for classification of young people with callous-unemotional traits (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999). The issue of clinical cut-off scores for psychopathic traits seems to require further clarification in the literature as there is great variability between studies (i.e. raw scores, t-scores and percentiles).

Stevens, Charman and Blair (2001) also employed a comparison group design to investigate the ability of children (aged 9 to 15 years) with emotional and behavioural difficulties to recognise a range of emotional facial expressions and vocal tones. The sample was divided in two groups (i.e. psychopathic tendencies and a comparison group) according to PSD scores, rated by two teachers. The main finding from this study was that the children with psychopathic traits showed selective impairments in the recognition of both sad and fearful facial expressions. In contrast, the two groups did not differ in their recognition of happy or angry facial expressions. The findings from this study support the notion that children with psychopathic traits have a specific deficit in recognising sad and fearful expressions, and are consistent with those reviewed

above (Blair & Coles 2000; Blair et al. 2001). In addition, this study provided some early evidence that this deficit in emotional processing might extend to the recognition of sad vocal tones as well.

The authors stated that the findings are in line with predictions of Blair's (1995, 2001) VIM model. Although, the claims made by this study must be treated with caution as it only had a small sample (i.e. 18 boys) and may have obtained significant findings due to chance (i.e. type I error). Indeed, the authors stated that this was a preliminary study and group comparisons are needed in larger samples before conclusions can be drawn. This is an important point as sometimes the findings from this study are reported in the latest review papers without mentioning the small sample size.

Woodworth and Waschbusch (2008) in a further study examined the ability of children with conduct problems to label emotional faces using three comparison groups. The participants were divided into three groups; controls (n=17), conduct problems only (n=32) and conduct problems with callous-unemotional traits (n=24). Parent and teacher ratings on the Antisocial Process Screening Device (APSD; Frick & Hare, 2001) were used to measure callous-unemotional traits. Two tasks were administered to measure participants' abilities to recognise and label facial expressions of emotion. This study found that children with higher levels of callous-unemotional traits were less accurate in identifying sad facial expressions, consistent with previous studies (Blair & Coles, 2000; Blair et al. 2001; Stevens et al. 2001). It was also found that children with high callous-unemotional traits were more accurate at recognising fearful facial

expressions, which was a surprising result and appears to be inconsistent with previous research (Blair & Coles, 2000; Blair et al. 2001; Munoz, 2009; Stevens et al. 2001).

This study (Woodworth & Waschbusch, 2008) used two informants (parents and teachers) to provide ratings of psychopathic traits on the APSD and so this potentially reduced the effects of self-report bias and adds weight to the findings from this study. The psychometric properties of the APSD are considered to be good (Frick & Hare, 2001), although, the internal consistency of the callous-unemotional traits scale is often unacceptably low using parent reports (i.e. alpha coefficient=.47) (Poythress et al. 2006). The reliability of this scale seems to be particularly important as the study is examining the impact of callous-unemotional traits. It might be argued that it would have been more valid to have used a specific measure of callous-unemotional traits such as the ICU (Frick, 2004). Although, the self-report methodology employed by this study appears to be quite solid in comparison to other studies in the area.

This study (Woodworth & Waschbusch, 2008) used a younger sample (7 to 12 years) than many of the studies discussed in this review so far. There are questions about the effects of maturation and developmental factors in younger children and whether callous-unemotional traits should be used as a valid indicator until later adolescence and adulthood (e.g. Seagrave & Grisso, 2002). It is well known that the rates of children's emotional development can vary quite considerably and so it might be expected that the stability of callous-unemotional traits would follow this variable pattern. Indeed, it has even been argued the features of callous-unemotional traits, such as egocentricity and lack of care for others, are normative features that change

across the course of development (Seagrave & Grisso, 2002). However, the available longitudinal evidence regarding the stability of callous-unemotional traits in younger populations suggests that there is quite a high stability (.93) in parent ratings of callous-unemotional traits from mid-childhood (aged 8 to 12 years) (Frick, Kimonis, Dandreaux & Farrell, 2003). It is clear that further longitudinal studies are required to more fully understand the stability of callous-unemotional traits across childhood.

Overall, the Woodworth and Waschbusch (2008) study appears to be more methodologically rigorous in comparison to some of the studies discussed so far. It had a larger sample size and employed a mixed group design so that there could be a more specific comparison of emotional processing performance between groups. The authors also attempted to control for confounding variables (e.g. age, gender, IQ, ADHD, ODD and CD). It is also important to point out that the findings that young people with callous-unemotional traits were better at fear recognition were only trend effects (e.g. $p<0.10$) and not significant findings. The authors stated that trend effects were reported to avoid a type II error and to not discourage future research in a relatively new topic. However, this finding seemed to be reported in a relatively misleading manner and as a result may have been given greater weight in the literature than should be warranted.

More recently, Fairchild, Van Goozen, Calder, Stollery and Goodyer (2009) investigated whether facial expression recognition deficits vary according to different categories of conduct disorder. This study recruited a mixed community and clinical sample (n=121) of male adolescents. The participants were split into three groups; early onset conduct disorder (n=42), late onset conduct disorder (n =39) and controls (n=40). It was found

that early onset conduct disorder were impaired in the recognition of anger, disgust, and happiness facial expressions. Whereas participants with late onset conduct disorder were only impaired to fear recognition. The authors also examined the participants with high and low levels of psychopathic traits. These results indicated participants with conduct disorder who had high levels of psychopathic traits showed impaired fear, sadness and surprise recognition, relative to those who had conduct problems but low psychopathic traits.

Overall, the findings from this study (Fairchild et al. 2009) appear to be largely consistent with previous studies reporting impaired recognition of fearful and sad facial expressions in young people with psychopathic traits (Blair & Coles, 2000; Blair et al. 2001; Stevens et al. 2001). However, it was found that there were also impairments in the recognition of surprise in the group with high in psychopathic traits, which suggests that the deficits may not be as specific as are often claimed in review papers (e.g. De Wield et al. 2010; Frick & White, 2008; Marsh & Blair, 2008). This study also demonstrated that by using other criteria to define comparison groups, such as early and late onset conduct disorder, the deficits to facial expressions become more varied and may even complicate the picture.

Summary

Overall, the studies considered in this section of the review have consistently found that young people with callous-unemotional traits have deficits in the recognition of fearful facial expressions (Blair & Coles, 2000; Blair et al. 2001; Fairchild et al. 2009; Munoz, 2009; Stevens et al. 2001). However, there have been some inconsistent findings with one study reporting that children with callous-unemotional traits were more accurate

than controls in identifying fearful expressions (Woodworth & Waschbusch, 2008). There is evidence that children with callous-unemotional traits (or psychopathic traits) have deficits in recognising sad facial expressions (e.g. Blair & Coles, 2000; Blair et al. 2001; Fairchild et al. 2009; Stevens et al. 2001; Woodworth & Waschbusch, 2008). In addition, some studies have found that there is a more generalised deficit to emotional processing in young people with callous-unemotional traits and have difficulties with recognising a range of emotions such as anger and surprise (e.g. Fairchild et al. 2009; Munoz, 2009). This suggests that perhaps there may not be specific deficits to sadness and fear in young people with callous-unemotional traits as many of the latest reviews have stated (e.g. De Wield et al. 2010; Frick & White, 2008; Marsh & Blair, 2008). Furthermore, there are clear methodological limitations in many of the studies that need to be considered when interpreting the findings. Specifically, questions have been raised about the benefit of studying callous-unemotional traits in community samples. There also seems to be an over reliance on self-report measures of callous-unemotional traits, rather than expert rated measures (e.g. PCL-YV) and a wide range of self-report measures have been used (e.g. PSD, APSD, ICU and YPI). A greater understanding is also required about the impact of factors such as task difficulty, response bias and presence of psychological disorders on performance in the emotional paradigms.

Table 1

Summary of the emotional facial expression studies reviewed

Study	Population	Sample size	Age and Gender	Design	Measure	Informant ratings and cut off scores	Emotional processing task	Key Findings
Blair & Coles (2000)	Community sample	N=55	Age 11-14 years 56% male	Correlational	PSD	2 teacher ratings	Expression Recognition Hexagon Stimuli	The ability to recognise sad and fearful expressions was inversely related to psychopathic traits.
Munoz, (2009)	Community sample	N=55	Age 8-16 years 100% male	Correlational	ICU	Child ratings	Emotional faces task	Callous-unemotional traits were related to poorer accuracy when labelling afraid faces. However, when response bias was taken into account, callous-unemotional traits were related to deficits in many facial expressions.
Blair, Colledge, Murray & Mitchell, (2001)	Clinical sample	N=51	Age 9-17 years 100% male	2 groups: psychopathic (n=21) & comparison (n=30)	PSD	2 teacher ratings PSD score above 28	Facial Expression Multimorph task	Boys with psychopathic traits made more errors recognising fearful faces and were less responsive to sad expressions.

Study	Population	Sample size	Age and Gender	Design	Measure	Informant ratings and cut off scores	Emotional processing task	Key Findings
Stevens, Charman & Blair (2001)	Clinical sample	N=18	Age 9-15 years 100% male	2 groups: psychopathic (n=9) & comparison (n=9)	PSD	2 teacher ratings	Diagnostic Analysis of Nonverbal Accuracy	Boys with behaviour problems and high levels of psychopathic traits were less able to recognise sad and fearful faces.
Woodworth & Waschbusch (2008)	Clinical sample	N=73	Age 7-12 years 84% male	3 groups : controls (n=17), conduct only (n=32), conduct with CU traits (n=24)	APSD	Parent and teacher ratings APSD t score > 67	Facial affect Stimuli	Children with higher levels of CU traits were less accurate in identifying sad facial expressions, but were more accurate perceptions of fearful expressions.
Fairchild et al. (2009)	Mixed Community and clinical sample	N=121	Age 14-18 years 100% male	3 groups (age and IQ matched): Early onset (n=42), late onset (n =39) & controls (n=40)	YPI	Child rated YPI score above 2.5	Emotion Hexagon Task The Benton Test of Facial Recognition	Participants with CD who were high in psychopathic traits showed impaired fear, sadness and surprise recognition relative to those low in psychopathic traits.

Note: PSD = Psychopathy Screening Device (Frick et al. 1994); APSD = Antisocial Process Screening Device (Frick & Hare, 2001); ICU= Inventory of Callous Unemotional Traits (Frick, 2004); YPI = Youth Psychopathic Traits Inventory (Andershed et al. 2002)

2. Attention to the eye area

There has been increased interest in the factors underlying the deficits in the recognition of fearful (and sad) facial expressions. Recent studies with amygdala damaged adults have claimed that deficits in fear recognition are driven by a lack of attention to people's eyes and can be overcome by instructing participants to attend to the eye region (Adolphs, Gosselin, Buchanan, & Tranel, 2005). The second part of this literature review will focus upon three studies that have examined emotional recognition deficits in young people with callous-unemotional traits and attention to the eye area. Table 2 presents details regarding the three studies reviewed in this area, in the order they have been discussed. All of the studies in this section were with male participants and sample sizes ranged between 92 and 100.

Dadds et al. (2006) was the first study to examine in young people (aged 8-15 years) with callous-unemotional traits whether deficits in fear recognition can be temporarily corrected by attending to the eyes. The study recruited a community sample of children and adolescents (n=98 boys) from schools in Australia. This study was split into two separate experiments. The first experiment included 33 boys and the second experiment included 65 boys. Callous-unemotional traits and antisocial behaviour were measured using the APSD (Frick & Hare, 2001) by combining parent and child scores. In the first experiment, the accuracy of emotional recognition was measured using the University of New South Wales Facial Emotion Task in which happiness, sadness, anger, disgust, fear or a neutral expression were displayed by four adult faces. In the second experiment, the faces were repeated in two further blocks and participants were instructed to focus on the eyes and the mouth of the display faces. The authors

reported that the look-at-the-eyes condition was scheduled before the look-at-the-mouth condition, so that any practice effects producing improvement in accuracy over time would run counter to the experimental hypothesis that eye gaze would produce the highest accuracy. The main finding from this study was that antisocial behaviour and callous-unemotional traits were associated with different emotional recognition problems in young people. Specifically, antisocial behaviour was uniquely associated with a tendency to interpret hostility, whereas, callous-unemotional traits were uniquely related to poor recognition of fearful facial expressions. In the second experiment, high callous-unemotional traits were associated with poorer fear recognition, except when participants were instructed to look-at-the-eyes. The direction of gaze made no difference to accuracy rates in children with low callous-unemotional traits. The authors of this study concluded that this deficit in fear recognition in callous-unemotional traits was in part owing to visual neglect of the eye region of other people's faces, as has been seen with amygdala damaged adults (Adolphs et al. 2005) and can be temporarily reversed by directing attention to the eye region of other people.

The findings from this study (Dadds et al. 2006) are interesting as they have provided evidence about potential underlying mechanisms relating to the emotional processing deficits commonly found in young people with callous-unemotional traits. This suggests that the young people may not be focusing on the eye region when processing fear and so could explain their difficulties with emotional reactivity. It also suggests that these deficits might be overcome by learning to attend to the eye area and so there is scope for designing interventions around this idea. However, it is hard to know how to interpret these findings and it poses more questions than answers. One important point is that the study was a correlational design with a community sample and so only

tentative conclusions can be drawn about relationships between callous-unemotional traits and the impact of attending to the eyes. It is also difficult to know whether these so called eye contact difficulties are something that young people are born with and relate to an underlying biological deficit. It may be that these children have difficulties with eye contact due to poor attachment relationships with their caregivers, rather than having an actual biological deficit. Alternatively, poor attachment relationships could lead to neurocognitive changes early on in development. Given that this is the first study in this area and that it did not measure any neurocognitive markers, it is questionable whether any inferences can be made about a neurocognitive basis to these deficits.

In a similar community study, Dadds, El Masry, Wimalaweera and Guastella (2008) tested whether callous-unemotional traits were associated with reduced attention to the eye region of other people's faces. A sample of adolescent males (n=100) were recruited from a private school. Antisocial behaviour and callous-unemotional traits were rated by self and parent report using the APSD (Frick & Hare, 2001) and the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001). The participants were placed into two groups (high and low callous-unemotional traits). Participants were presented with emotional faces and fixations of eye and mouth regions were measured. The main finding from this study was that high callous-unemotional traits were associated with poorer fear recognition and specifically that these deficits were no longer evident under the eye gaze condition and returned under the mouth gaze condition. Callous-unemotional traits were not associated with deficits in the recognition of any other emotion. The authors reported that the relationship between

callous-unemotional traits and fear recognition was unique, as adjustments for variables such as severity of antisocial behaviour and anxiety/emotional problems did not affect the size or significance of the relationship.

This study (Dadds et al. 2008) has built on the findings from the previous study as it examined group differences (i.e. high and low levels of callous-unemotional traits) albeit still with an upper-middle class community sample. The authors also used different eye gaze tasks to assess whether the results could have been obtained due to more general difficulties with the participants focusing or maintaining attention. This factor was dismissed when it was found that the participants with both high and low callous-unemotional traits were able to maintain equal attention to the mouth region.

The findings from this study (Dadds et al. 2008) have provided further support for the notion that focusing on the eye region may be particularly important for this group of young people. Indeed, it was found that by simply instructing participants to pay more attention to the eye region it can temporarily reverse deficits with fear recognition. This is a potentially exciting development in this area of research and may provide some avenues for intervention. Based on these findings, it seems that quite strong inferences are being made that callous-unemotional traits are part of a neuropsychological disorder in the amygdala that lead to specific deficits in fear recognition (e.g. Blair, 2001). However, if the deficits are so easily reversed with a simple instruction it might be questioned as to whether there are any clear underlying neuropsychological deficits at all.

Another study in this area was carried out by Dadds, Jambrak, Pasalich, Hawes and Brennan (2010) who tested whether impaired eye contact is a characteristic of children with antisocial behaviour and callous-unemotional traits in real life settings. Children (n=92), who had been referred to child and adolescent mental health services for conduct problems, were assessed on levels of callous-unemotional traits and observed in free play and 'emotion talk' scenarios with their parents. The children were assigned to either a high callous-unemotional traits or low callous-unemotional traits group. Eye contact was measured for each dyad (child to mother, child to father, mother to child and father to child) as a proportion of intervals in which the child and parent interacted. It was found that boys with high callous-unemotional traits showed consistent impairments in eye contact towards their parents. Levels of eye contact were also associated with independent measures of fear recognition in the boys. The authors claimed the results provide the first evidence that impairments in eye contact characterises callous-unemotional traits in young males. Indeed, the study brings the look-at-the-eyes task into a real world context and might be able to provide potential areas for intervention, such as the parental modelling of eye contact.

The studies in this area have provided a potential explanation for the fear recognition deficits often found in young people with callous-unemotional traits. However, there are many questions remaining about how attending to the eye area can lead to a temporary reversal of deficits and how long the reversal lasts. All of the studies in this area have been conducted by the same research group (i.e. Dadds and colleagues) and so there needs to be some caution whilst interpreting the findings. Furthermore, before firm conclusions can be made these hypotheses need to be tested by actually measuring neuropsychological markers.

Table 2

Summary of attention to the eyes studies reviewed

Study	Population	Sample size	Age and Gender	Design	Measure	Informant Ratings	Emotional processing & attention to the eyes tasks	Key Findings
Dadds et al. (2006)	Community sample (middle to upper class)	N=98	Age 8-15 years 100% male	2 experiments: 1st n=33 2nd n=65	APSD SDQ	Child and parent ratings	UNSW Facial Emotion Task	Antisocial youth with CU traits showed poor recognition of facial expressions of fear unless instructed to attend to the eyes.
Dadds et al. (2008)	Community sample (private school)	N=100	Age 8-15 years 100% male	2 groups: High and low CU traits.	APSD SDQ	Child and parent ratings 25th and 75th percentiles of CU traits	UNSW Facial Emotion Task Assessed with eye tracker	Attention to people's eyes is reduced in young people with high psychopathic traits, thus accounting for their problems with fear recognition.
Dadds et al. (2010)	Clinical sample: Conduct problem males (CD and ODD)	N=92	Age 5-16 years 100% male & parents	2 groups: High and low CU traits.	APSD SDQ	Child, parent and teacher combined ratings	UNSW Facial Emotion Task Free play, 'emotion talk' & Eye contact with parents	Boys with CU traits showed consistent impairments in eye contact towards their parents.

Note**:** APSD = Antisocial Process Screening Device (Frick & Hare, 2001): SDQ= Strengths and Difficulties Questionnaire (Goodman, 2001)

3. Physiological responsiveness

Research has started to examine whether there are any physiological markers underlying these emotional processing deficits. Four studies were found to have examined the physiological responsiveness of children with callous-unemotional traits to distress cues such as fear and sadness. Table 3 presents the details from these studies in the order they have been discussed. All studies were quantitative and cross-sectional designs. The sample sizes varied between 42 and 659.

Blair (1999) was the first study to investigate the physiological responsiveness of children (aged 8 to 17 years) with psychopathic traits to distress cues. The participants were divided into three groups based on the teacher-rated scores; high psychopathic traits (n=16), low psychopathic traits (n=16) and typical (n=16). The children in each group were shown slides of three types of stimuli (distress cues, threatening and neutral stimuli) and their skin conductance responses were recorded. Children in the high psychopathic traits group showed, relative to controls, reduced skin conductance responses to the distress cues and threatening stimuli. The two groups did not differ in their skin conductance responses to the neutral stimuli. The authors interpreted the results in line with the VIM model (Blair, 1995, 2001). This study appears to provide early evidence of a physiological link between lower responsivity to distress in children with psychopathic traits. However, given the relatively small sample size, it is premature to interpret the results as providing strong support for the physiological mechanisms of emotional deficits. Further studies are required with larger samples before conclusions can be drawn about mechanisms.

The next study by Anastassiou-Hadjicharalambous and Warden (2008) examined callous-unemotional traits and heart rate responses to an empathy-inducing film clip involving fear. The young children (aged 7 to 11 years) were split into three comparison groups (n=95). It was found that the children with callous–unemotional traits showed less heart rate change than children with conduct disorder only or healthy controls. This suggests that young people with callous-unemotional traits are emotionally under-reactive to distress cues (sadness and fear). This finding could be taken as support for the notion that there is a deficit in the amygdala and a corresponding hypo-reactivity of the autonomic nervous system in this group of young people. The study had three comparison groups and so was able to demonstrate that these deficits were specific to young people with callous-unemotional traits. Indeed, the findings do suggest that there are physiological differences in how these young people respond to threat and that their physiological arousal system is less sensitive in some way. However, it is as yet unclear how many arousal areas are involved in this process and whether heart rate changes are just linked to deficits in the amygdala region, or whether other brain areas are involved as well. Further investigation is required to examine a number of potential physiological markers before clear pathways and mechanisms can be established.

In a large community sample (n=659), Sharp, Van Goozen and Goodyer (2006) examined children's self-reported arousal ratings to emotional pictures and relations to psychopathic traits. The middle school-aged children (7-11 years) were given 27 pictures to assess their emotional responses to a range of affective content (i.e. unpleasant, pleasant and neutral pictures). Parents and teachers were asked to report on the children's behaviour difficulties and psychopathic traits. It was found that children in the 'high group' for antisocial behaviour and psychopathic traits reported

lower arousal to unpleasant pictures, but higher arousal to pleasant pictures, compared to the 'low group' for antisocial behaviour and psychopathic traits.

One of the main strengths of this study (Sharp et al. 2006) was that it included a large sample and so the findings can be given more weight than some of the smaller studies included in this review. It also carefully defined the two comparison groups and controlled for gender differences. However, it is different to the previous studies in the area as it did not directly measure physiological markers but instead relied on the children's own arousal ratings. This may mean that the results are influenced by informant biases. More specifically, the children may be unreliable raters of their own levels of arousal and if they have callous-unemotional traits they may be less aware of their own feelings. The findings from this study will need to be replicated with other methods of emotional reactivity rather than relying on self-report.

Loney, Butler, Lima, Counts and Eckel (2006) examined salivary cortisol as a biological measure of emotional reactivity in young people with callous-unemotional traits. This study had a mixed gender and non-referred sample of adolescents (n=108) with varying levels of callous-unemotional traits on the APSD (Frick & Hare, 2001). There were four groups (control, conduct only, callous-unemotional traits only and callous unemotional traits and conduct). Resting saliva samples were assayed for cortisol and testosterone levels. It was found that the male participants with high levels of callous-unemotional traits had lower resting levels of cortisol than comparison groups. In contrast, there were no hormone effects for female participants in the study. The authors concluded that low cortisol levels may be a biological marker for males with callous-unemotional traits.

It is important to mention that this study (Loney et al. 2006) did not include a behavioural or performance measure of emotional processing, which makes it difficult to compare with the other studies in this review. Nevertheless, the study provides some interesting evidence relating to cortisol, a stress hormone and a potential physiological marker. Indeed, the authors speculated that it might be able to specifically explain the emotional under-reactivity to fear often found in young people with callous-unemotional traits. However, questions remain about whether females with callous-unemotional traits have the same underlying physiological markers. Future studies will need to examine cortisol levels in response to behavioural tasks involving emotional processing.

Summary

Overall, the physiological studies considered in this section have indicated that young people with callous-unemotional traits may indeed be under-reactive to distress cues such as sadness and fear. The findings generally lend support to the notion that the different biological markers linked to the stress and arousal systems may be involved in this process. However, the exact roles of the different physiological mechanisms remain unclear and whether there are links with specific brain areas require further investigation.

Table 3

Summary of the physiological studies reviewed

Study	Population	Sample size	Age and Gender	Design	Measure of Callous-Unemotional Traits	Measure of emotional performance and physiological marker	Key Findings
Blair (1999)	Mixed clinical sample	N=42	Age 8-17 years 100% male	3 groups: High PSD (n=16), Low PSD with EBD problems (n=16) and mainstream children (n=16) Matched on age & IQ	PSD 2 teacher ratings	International Affective Picture System Skin conductance activity	Boys with behaviour problems and high levels of psychopathic traits were less responsive to picture distress cues and threatening stimuli, relative to controls.
Sharp, Van Goozen & Goodyer, (2006)	Community sample	N=659	Age 7-11 years 48% male	2 groups: High and low antisocial behaviour	APSD SDQ Parent and teacher ratings	International Affective Picture System Arousal ratings to unpleasant stimuli	Psychopathic traits were associated with low arousal to unpleasant stimuli

Study	Population	Sample size	Age and Gender	Design	Measure of Callous-Unemotional Traits	Measure of emotional performance and physiological marker	Key Findings
Anastassiou-Hadjicharalambous & Warden, (2008)	Mixed clinical sample	N=95	Age 7.6-11 years	3 groups: Conduct disorder and High CU traits, Conduct Disorder and low CU traits and Controls. Matched groups on age, gender and SES	APSD Parent and teacher rated APSD 50th percentile	Emotional stimulus film Heart Rate Change: Electrocardiogram (ECG) data were collected every 10 milliseconds Self-reported emotional responses	Children with CD and high callous-unemotional traits displayed lower magnitude of HR change than both CD-only and controls.
Loney et al. (2006)	Community sample (age 12-18), 49% male	N=108	12-18 years 49% male	3 groups: Control (n=16), Conduct only (n=14), CU only (n=9)	APSD Parent ratings	No emotional task Resting saliva cortisol and testosterone levels	Boys high with high CU traits were uniquely characterised with lower resting cortisol levels relative to the comparison groups.

Note: PSD = Psychopathy Screening Device (Frick et al. 1994); APSD = Antisocial Process Screening Device (Frick & Hare, 2001): SDQ = Strengths and Difficulties Questionnaire (Goodman, 2001)

4. Neuroimaging studies

The adult literature has indicated that psychopathic traits are associated with amygdala dysfunction in adults (e.g. Adolphs et al. 2005). As such studies have begun to directly examine neurocognitive deficits in young people with callous-unemotional traits. Three recent neuroimaging studies have examined the neurocognitive areas (i.e. amygdala and pre-frontal cortex) involved in emotional responses to facial expressions in young people with callous-unemotional traits. Table 3 presents details from three studies reviewed in this area and in the order that they have been described. Two studies used functional neuroimaging and one study used a structural neuroimaging methodology. The sample sizes ranged between 30 and 48 participants.

Marsh et al. (2008) was the first neuroimaging study to examine the amygdala response to emotional facial expressions in young people with disruptive behaviour and callous-unemotional traits. This study had a sample of 36 children and adolescents (aged 10-17 years). The participants were split into three groups for comparison; callous-unemotional traits and either conduct disorder or oppositional defiant disorder (n=12), ADHD (n=12) or healthy controls (n=12). The groups were matched on age, gender and IQ. Participants in the callous-unemotional traits group had scores >20 on the APSD and the PCL-YV. Functional MRI scans were used to assess amygdala activation patterns during processing of fearful, neutral and angry facial expressions. The results of this study showed that young people with callous-unemotional traits had reduced amygdala activation relative to the two comparison groups (i.e. healthy and ADHD), while processing fearful, but not neutral or angry expressions. It was also found that the callous-unemotional group had smaller correlations between the amygdala and the

ventromedial prefrontal cortex than the healthy and ADHD groups. Functional connectivity between the amygdala and the ventromedial prefrontal cortex in the callous-unemotional adolescents was inversely correlated with symptom severity. The authors stated that the findings support the notion that there is reduced amygdala responsiveness in young people with callous-unemotional traits to fearful expressions.

One of the strengths of this study was that it used several measures and sources of callous-unemotional traits, which suggests that issues such as social desirability and self-report bias may have had less of an impact on the findings from this study. Importantly, this is one of the only studies to have used the PCL-YV, which is considered the gold standard measure of psychopathic traits due to the use of expert raters (Forth, Kosson & Hare, 2003). The sample size (n=36) was relatively small in this study and may have lacked power to detect results (i.e. a type II error) or been in danger of gaining a chance finding (i.e. a type I error). However, this factor might have been mitigated by the fact that the three groups were matched carefully on a number of variables (e.g. age and IQ) and a mixed clinical sample was used so that direct comparisons could be made with control participants. In addition, the authors used exclusion criteria whereby participants with co-morbidities, such as psychosis and mood or anxiety disorders were screened out of the study. Nonetheless, seven out of the twelve participants in the callous-unemotional traits groups also had ADHD diagnoses. Thus, it might be questioned as to whether comparisons could be made between the ADHD group and the callous-unemotional group due to overlaps. The authors argued that this is a common co-morbidity in this population and as such should be reasonably representative.

This study (Marsh et al. 2008) provided evidence to support the claim that there is reduced amygdala activation to fear expressions in young people with callous-unemotional traits. This provides support for the theoretical assertions that the amygdala is believed to play an important role in response to fear expressions (e.g. Blair, 2001). This study has provided preliminary neuroimaging evidence, however some caution should be taken before these findings become widely accepted. It needs to be replicated in larger samples and to examine a wider range of brain areas, as areas other than the amygdala may be involved, such as the prefrontal cortex. There is also a need to examine a range of facial expressions e.g. happy, sad, surprise and disgust.

In another recent neuroimaging study, Jones, Laurens, Herba, Barker & Viding (2009) evaluated differences in functional MRI responses to emotional facial expressions in boys with conduct problems. Two groups were used in this study (n=30); boys with conduct problems and elevated levels of callous-unemotional traits (n=17) and comparison boys (n=13). Combined parent and teacher ratings on the conduct problems subscale of the SDQ (Goodman, 2001) and the APSD (Frick & Hare, 2001) were used to assign children to the groups. The participants in each group were asked to view pictures of fearful or neutral faces in a functional MRI scanner. Relative to the comparison group, boys with conduct problems and elevated levels of callous-unemotional traits manifested lesser right amygdala activity to fearful faces. This finding is consistent with earlier studies (i.e. Marsh et al. 2008) and provides additional support for the notion that the involvement of the amygdala in emotional deficits associated with callous-unemotional traits.

This study employed a relatively small sample (n=30) and so caution needs to be taken when interpreting the findings. The measures of callous-unemotional traits were rated by parents and teachers (APSD, SDQ), which may have been less reliable than the previous study which also used the expert rated PCL-YV. However, one of the clear strengths of this study is that the groups were age and IQ matched, so that direct comparisons could be made between performances on an emotional task. It might have been interesting to have included a third group, that is, children with conduct problems without callous-unemotional traits to find out whether there were specific differences in amygdala activation in these two populations. Finally, it is important to highlight that this study has focused on a younger sample of children (10-12 years) which suggests that reduced amygdala reactivity associated with callous-unemotional traits is already present in some pre-adolescent children.

De Brito et al. (2009) conducted the first structural brain imaging study in children with callous-unemotional traits and conduct problems. A community sample of boys (n=48, 10-13 years) with elevated callous-unemotional traits and conduct problems (n=23) and typically developing boys (n=25). The study compared whole brain grey matter volumes in boys with elevated levels of callous-unemotional traits and typically developing boys. Both grey mater volume and concentration were examined using structural MRI data, whilst controlling for cognitive ability and hyperactivity-inattention symptoms. It was found that boys with callous-unemotional conduct problems, as compared to typically developing boys, presented increased grey matter concentration in the medial orbitofrontal and anterior cingulated cortices, as well as increased grey matter volume and concentration in the temporal lobes bilaterally. However, no

significant group differences were found for the amygdala region. The authors concluded that these findings may indicate a delay in cortical maturation in several brain areas implicated in decision making, morality and empathy in boys with callous-unemotional traits.

This was the first structural brain imaging study with young people with callous-unemotional traits. In contrast to the functional neuroimaging studies cited above, no structural changes were found in the amygdala region of the brain in boys with callous-unemotional traits. This finding could be taken as evidence that contradicts Blair's (2001) VIM theory. It might be that this study provided differing information about the neurocognitive substrates involved because it used a different method of brain imaging (e.g. structural versus functional). It could also indicate that the amygdala has been implicated a bit too strongly and that other brain areas are also involved. However, the authors did point out that the absence of structural differences in the amygdala does not preclude functional differences.

The authors stated that the finding that grey matter volume was increased in the orbitofrontal cortex was also surprising given that previous studies with adult psychopaths and children with conduct problems tend to exhibit decreases in the orbitofrontal cortex grey matter concentration and grey matter volume. Two previous structural neuroimaging studies of children with conduct problems, in which callous–unemotional traits were not measured, found decreased grey matter volume instead of increased grey matter volume in several brain areas implicated in the study (Huebner et al. 2008; Sterzer, Stadler, Poustka & Kleinschmidt, 2007). This different pattern of results highlights the importance of carefully sub-typing children with conduct problems

when studying the neurobiological correlates of conduct problems (e.g. Moffitt et al. 2008). The variability in the findings from neuroimaging studies also highlight the complexity of the brain and suggests that caution needs to be taken when inferring from behavioural studies that specific neurocognitive substrates are implicated (i.e. amygdala).

Summary

The functional neuroimaging studies have provided preliminary evidence that young people with callous-unemotional traits may have reduced activity in the amygdala region to fearful facial expressions (Jones et al. 2009; Marsh et al. 2008). This evidence is consistent with Blair's (2001) VIM model. In contrast, the structural neuroimaging study found evidence that there were no structural changes in the amygdala (De Brito et al. 2009). The findings suggest that young people with callous-unemotional traits have some neurocognitive differences, which could explain their differing emotional reactivity. However, the research in this area is in its infancy and suggests that the amygdala is not the only brain area involved. Further understanding is required of other brain areas that may be involved in the processing of fear, such as grey matter and the pre-frontal cortex. There are also still many questions about whether functional brain activity differs in response to other emotional cues, such as sadness. Research in this area needs to be interpreted cautiously due to the small sample sizes, brain maturational factors and issues with defining distinct groups.

Table 4

Summary of the neuroimaging studies reviewed

Study	Population	Sample size	Age and Gender	Design	Measure of Callous-Unemotional Traits	Neuroimaging method	Key Findings
Marsh et al. (2008)	Mixed clinical sample	N=36	10-17 years	3 groups: CU traits (n=12), ADHD (n=12), healthy comparison (n=12). Groups matched for age, gender & IQ.	APSD PCL-YV YPI	Functional MRI	In young people with callous-unemotional traits, amygdala activation was reduced relative to comparison groups (healthy and ADHD), while processing fearful, but not neutral or angry expressions.
Jones et al. (2009)	Community (recruited from twins study)	N=30	10-12 years 100% boys	2 groups: Conduct & CU traits (n=17), Controls (n=13)	APSD SDQ	Functional MRI Fearful Faces Task.	Boys with conduct problems and elevated levels of callous-unemotional traits manifested lesser right amygdala activity to fearful faces.
De Brito et al. 2009	Community (recruited from twin study)	N=48	10-13 years 100% boys	2 groups: CU traits and conduct problems (n=23) and typically developing boys (n=25).	APSD (CU scale) SDQ	Structural MRI	Boys with callous-unemotional conduct problems had increased grey matter concentration in the medial orbitofrontal and anterior cingulated cortices. However, no significant group differences were found for the amygdala region.

Note: APSD = Antisocial Process Screening Device (Frick & Hare, 2001); PCL-YV= Psychopathy Checklist, Youth Version (Forth, Kosson & Hare, 2003); YPI= Youth Psychopathic Traits Inventory (Andershed et al. 2002); SDQ = Strengths & Difficulties Questionnaire (Goodman, 2001).

Discussion

In this systematic literature review four main areas of research have been examined in order to answer the question: *Do young people with callous-unemotional traits have a specific deficit in emotional processing?*

The studies reviewed have predominately demonstrated that young people with callous-unemotional traits are poor at recognising fearful facial expressions. There is also evidence that young people find it difficult to recognise other facial expressions, such as sadness, anger and disgust, although the evidence is less strong for these expressions. Furthermore, several studies suggest that the deficit in recognising fearful facial expressions can be temporarily reversed by asking the young people to attend to the eye region. The implications of the findings from studies in this area are relatively unclear, but potentially provide an avenue for designing interventions.

Physiological markers have also been implicated in the emotional processing deficits in young people with callous-unemotional traits. There is evidence that this group of young people may have under-reactive arousal systems, illustrated by studies examining electrodermal, heart rate change and cortisol levels. This type of evidence provides some support for the deficits having a biological basis. However, the studies in this area are exploratory and further studies are required to assess the specific physiological mechanisms involved.

The final section of the review considered the latest neuroimaging research in this area. There is preliminary evidence that there is less amygdala activity in young people with callous-unemotional traits when responding to fearful facial expressions. This evidence

provides further support for the biological or neurocognitive nature of callous-unemotional traits. However, these findings do not conclusively indicate that the amygdala is involved and that there may be other brain areas involved as well.

This systematic literature review has considered some of the strengths and limitations of the studies in this area of research. As has been described throughout this review, there are a number of important issues relating to the measurement of callous-unemotional traits. The majority of studies relied upon self-report and informant measures of callous-unemotional traits. There are considerable questions about whether young people with these traits are reliable respondents, given they are known to lack awareness about themselves and other people. However, to protect against informant biases many of the studies made use of multiple measures and multiple informants, as well as behavioural based tasks. It was surprising to find that many of the studies did not make use of some of the available well validated and expert rated measures (PCL-YV). There is also little consensus in the research as to whether there are clinically significant cut-off scores for high levels of these traits. This point seems to be particularly important given the heterogeneous nature of this population. This has made it difficult to interpret the findings from studies about the specific effects of callous-unemotional traits on emotional processing deficits.

There are a number of clinical implications arising from this review. This issue is especially important given the poor outcomes associated with this group of young people and that there is evidence that this group respond poorly to currently available parental interventions (Hawes & Dadds, 2007). The findings from the studies in this

area of research may be able to help inform the design of early interventions for young people with callous-unemotional traits. In particular, some of these studies have indicated that these deficits may be overcome by learning to focus at the eyes. This contradicts the view that these traits are enduring and unchangeable. Future research could focus on understanding how these deficits might be amenable to change at different stages of development. This type of longitudinal research might be particularly useful in the area of brain imaging studies to examine the plasticity of brain areas in relation to the processing of particular emotions such as fear and sadness.

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Part 2: Empirical Paper

An interactive model of antisocial behaviour in young offenders:

The role of callous-unemotional traits, materialism and risk-taking behaviour

Abstract

This study aimed to assess a model of interactive risk in a young offender sample (n=60) aged 14 to 17 years old. It was hypothesised that interactive relationships between callous-unemotional traits, materialism and risk-taking behaviour would account for more variance in the severity of antisocial behaviour. The participants completed a set of self-report questionnaires measuring callous-unemotional traits, materialism, antisocial behaviour and also played a computer task, the Balloon Analogue Risk Task (BART) that assesses risk-taking behaviour. The regression analyses showed that both callous-unemotional traits and materialism were predictors of self-reported antisocial behaviour. Risk-taking behaviour was not found to be predictive of self-reported antisocial behaviour or risk for re-offending. However, it was found that age was predictive of risk for re-offending scores. The only significant interaction effect was between materialism and risk-taking in predicting risk for re-offending. An interactive model with these variables (callous-unemotional traits, materialism and risk-taking) has only been partially supported in this study. Callous-unemotional traits and materialism appear to be important risk factors but the role of risk-taking behaviour in young offenders requires further clarification.

Introduction

Over recent years a considerable amount of government attention has been focused on tackling the rise in young people engaging in antisocial behaviour in the UK (Department of Health, 2009). In childhood, antisocial behaviours are known to lead to poor outcomes in terms of educational or social achievement and can have a considerable negative impact for society (Frick et al. 1991). It is well known that young people who engage in antisocial behaviour represent a relatively heterogeneous group, in relation to the developmental factors influencing their behaviour and the multiple outcomes (Frick, 2006; Moffitt, 1993).

Interactive model of antisocial behaviour

Researchers have posited that the development of persistent and serious forms of antisocial behaviour in young people is associated with risk factors at individual, family and social-contextual levels (e.g. Tremblay, 2003). Risk factors that have been implicated in the development of antisocial behaviour include; neurocognitive deficits (Viding, 2004), callous-unemotional traits (Frick, 1998), impulsivity (Carroll et al. 2006), abuse history (Loeber & Farrington, 2000) and coercive parent-child interactions (Patterson, 1989). The implication of this research is that it is unlikely that the focus on any single risk factor will adequately account for the development of antisocial behaviour in young people. As a result, developmental theories have begun to study models of interactive risk to explain variance in the severity of antisocial behaviour (e.g. Butler, Fearon, Atkinson & Parker, 2007).

Callous-unemotional traits

In recent years, researchers have attempted to extend the construct of psychopathy from adults to young people in order to understand the development of severe and persistent forms of antisocial behaviour (Frick, 2006). One promising development in this area of research has been the conceptualisation of callous-unemotional traits in young people (Frick, O'Brien, Wooton & McBirnett, 1994). According to Frick and colleagues, callous-unemotional traits refer to a specific constellation of affective (e.g. lack of guilt) and interpersonal (e.g., failure to show empathy) features. In both clinic-referred and community samples of children, callous-unemotional traits consistently emerge as a distinct dimension from other aspects of psychopathy (i.e., impulsivity and conduct problems) (Frick, Bodin, & Barry, 2000; Frick et al. 1994).

There is now evidence suggesting that callous-unemotional traits are especially important for predicting severe levels of antisocial and aggressive behaviour among young people (Kruh, Frick, & Clements, 2005). Callous-unemotional traits show a moderate to strong heritability among young people with conduct problems, suggesting that there may be a genetic vulnerability (Viding, Frick & Plomin, 2007). Longitudinal evidence has found that callous-unemotional traits are relatively stable across periods of up to 4 years (Frick, Kimonis, Dandreaux & Farell, 2003). In antisocial youth showing high levels of callous-unemotional traits, there is evidence demonstrating reduced responsiveness to punishment and threat cues (e.g. Frick, Lilienfeld, Ellis, Loney & Silverthorn, 1999). Overall, there is substantial evidence that callous-unemotional traits may be an important risk factor for the development of severe forms of antisocial behaviour (Frick & White, 2008). Thus, it is important to try to understand the specific role of callous-unemotional traits in predicting severe forms of antisocial behaviour. It

may be that these traits exert their most powerful effects in combination with other potential risk factors.

Risk-taking behaviour

A body of evidence has started to accumulate regarding risk-taking behaviour and its relation to antisocial behaviour in young people. Risk-taking has been defined as the engagement in behaviours that simultaneously involve a high potential for punishment and opportunity for reward (Leigh, 1999). Despite the likelihood of adverse outcomes, many people choose to engage in ‘‘risky behaviours’’ that have unpredictable reinforcing or punishing consequences. The propensity to take risks and seek out novel activities is also considered to be a relatively typical characteristic of adolescence; although this behaviour can vary among individuals (e.g. Kelley, Schochet & Landry, 2004). Indeed, risk-taking behaviour is believed to increase across the adolescent years (e.g. Young et al. 2002) and is influenced by environmental (e.g. Crowley, Mikulich, Ehlers, Hall & Whitmore, 2003) and genetic factors (e.g. Caspi et al. 2002).

It is also widely recognised that children and adolescents with conduct disorders show a propensity toward risk-taking behaviours (American Psychiatric Association, 2000). The tendency to engage in high risk behaviours has often been linked to difficulties with impulsivity. Indeed there has been a considerable amount of research focused on how impulsivity places young people at increased risk for developing antisocial behaviour (Carroll et al. 2006). A number of studies have also started to examine whether a higher propensity to take risks is an important factor involved in the development of antisocial behaviour (e.g. Crowley et al. 2006; Ernst, Grant, London, Contoreggi & Kimes, 2003; Fairchild et al. 2009). In order to find out more about the role of risk-

taking behaviour and to overcome limitations posed by self-report measures, several behavioural risk tasks have been developed such as the Balloon Analogue Risk Task (BART; Lejuez et al. 2002), Risky Choice Task (Rogers et al. 2003) and Iowa Gambling Task (Bechara et al. 2001).

Crowley et al. (2006) investigated risk-taking behaviour in adolescents (n=20) with serious conduct and substance problems. It was found that adolescents with conduct disorder and substance use problems (compared with controls) took more risks on a computer task (Balloon Analogue Risk Task) indicating a risk-taking propensity. A study by Fairchild et al. (2009) investigated risky decision-making in early and late onset conduct disorder in adolescents and found that young people with conduct disorder selected the risky choice more often than controls. In addition, young people with early onset conduct disorder chose the risky choice more frequently after small gains, than their late onset participants. The authors suggested that the balance between sensitivity to reward and punishment is shifted in this disorder, particularly in young people with early onset conduct disorder.

Studies have also begun to examine the relationship between psychopathic traits and risk-taking behaviour in antisocial adults and adolescents. It is well known that psychopathic individuals frequently engage in higher risk activities that include violent crimes (e.g. Hare, 1999), drug and alcohol abuse and pathological gambling (e.g. Blair, Colledge, Murray & Mitchell, 2001). Psychopathy has also been found to be associated with impulsivity, sensation seeking and risk-taking behaviour (e.g. Mitchell, Colledge, Leonard & Blair, 2002). Hunt, Hopko, Bare, Lejuez and Robinson (2005) recently found

in a non-forensic sample of undergraduates that higher self-reported psychopathy was significantly predictive of increased risk-taking behaviour on a computer task (BART) , where increased risk-taking behaviour was specifically related to Factor 2 (impulsive and antisocial behaviour) aspect of psychopathy, rather than Factor 1 (callous, uncaring aspect). In addition, a study by Blair et al. (2001) found that performance on a risky decision-making task (Iowa Gambling Task) was significantly impaired in children with high levels of psychopathic traits, relative to control subjects. Mariani and Stickle (2010) investigated reward responsivity in a sample of young offenders and found that higher levels of callous-unemotional traits significantly predicted less reward responsivity on the BART risk-taking task, above and beyond gender, sensation seeking, and impulsivity.

The available evidence suggests that there may be altered sensitivity to reward and punishment in young people with callous-unemotional traits. It might be speculated that a high risk-taking propensity could be another important factor involved in the development of antisocial behaviour in adolescents. Finding out more about risk-taking behaviour may be useful in helping to detect which young people may be more likely to take risks in the future and how they may respond to interventions using rewards and punishment. To date, research has not examined the role of risk-taking behaviour in predicting the severity of antisocial behaviour in a sample of young offenders.

Materialism

Young people growing up in consumer driven societies are frequently exposed to advertising messages regarding the importance of material success (Goldberg, Gorn,

Peracchio & Barmassy, 2003). Richin's (2004) proposes highly materialistic people believe that gaining material goods is not only a central life goal but also a key to self-definition and happiness, and a key indicator of success and status. There has been growing research interest regarding the possible harmful effects of materialism on well-being (e.g. Kasser, 2002). Studies with adults have demonstrated that materialism is associated with lower well-being constructs such as low self-esteem, low subjective well-being, lower quality relationships and life dissatisfaction (e.g. Kasser, 2002; Kasser & Ryan, 1993). Research with children has found inverse correlations between materialism and psychological well-being, with evidence that materialism predicted greater anxiety, lower happiness, and poorer self-esteem (Kasser, 2005). The Self Determination Theory (SDT) has been used to explain possible links between materialism and well-being (Ryan & Deci, 2000). According to this theory, the pursuit of materialistic or extrinsic goals allows less direct satisfaction of basic psychological needs, such as relatedness with others and thus can harm people's well-being.

Theoretical accounts have also begun to consider whether young people who are highly materialistic engage in more antisocial behaviours. Messner and Rosenfeld (1994) have suggested that young people may become frustrated in their attempts to achieve material success and so resort to using antisocial behaviours (such as theft) to overcome barriers. Developmental models of antisocial behaviour propose that young people may strive to gain material possessions to help them integrate into peer groups and gain respect, as this is seen as particularly important to people during their adolescence (Moffitt, 1993). According to this theory, some young people may not be able to obtain these material possessions or status symbols legitimately and so may attempt to gain them through more antisocial means.

Several studies with adolescents have found negative associations between materialism and psychosocial adjustment (Kasser & Ryan, 1993), with evidence of positive associations between materialism and conduct problems (Cohen & Cohen, 1996; Flouri, 2004; Kasser & Ryan, 1993; Kasser, 2005). Flouri (2004) reported associations between materialism and emotional and behavioural problems among secondary school children in the UK and associations have also been demonstrated between adolescents' ratings of materialism and clinicians' ratings of conduct problems, including difficulties with fighting, vandalism and stealing (Kasser & Ryan, 1993). Cohen and Cohen (1996) have found that adolescents who report more antisocial activities also have high scores on materialism scales. In addition, Kasser (2005) found that materialistic adolescents were less happy and reported more frequent fighting, relative to controls. Williams, Cox, Hedberg and Deci (2000) have also provided evidence that materialism has been related to more risky behaviours such as smoking and drinking.

More recently, interactive relationships between materialistic values and two well-known risk factors for antisocial behaviour (i.e. callous-unemotional traits and impulsivity) were investigated in a community sample of young people (Tadrous, 2009). The main findings of this study were that materialistic values and impulsivity independently predicted variance in levels of delinquency. In addition, an interaction between materialism and impulsivity led to increased variance in proactive physical aggression. However, no associations or interactive relationships were detected between materialism and callous-unemotional traits. The results of this study suggest that materialism may be another risk factor that can predict variance in antisocial behaviour. However, the authors suggested that future research should examine the relations

between materialism and callous-unemotional traits in a population showing more severe levels of antisocial behaviour, and thus a greater preponderance of callous-unemotional traits.

Current study

The current study aimed to test an interactive risk model of antisocial behaviour. First, it attempted to extend the findings from the study conducted by Tadrous (2009) by exploring the role of materialism in predicting antisocial behaviour in a young offender population. It examined the individual roles of risk-taking behaviour and callous-unemotional traits in predicting severe forms of antisocial behaviour. It also explored whether interactive relationships exist between three risk factors for antisocial behaviour, namely callous-unemotional traits, materialism and risk-taking behaviour.

The following hypotheses were tested in a sample of young offenders:

1. Each of the individual risk factors (i.e. callous-unemotional traits, materialism and risk-taking behaviour) will be positively related to antisocial behaviour.
2. Each of the individual risk factors (i.e. Callous-unemotional traits, materialism and risk-taking behaviour) will be independent predictors of antisocial behaviour.
3. There will be interactive relationships between pairs of variables that will be able to account for more variance in the severity of antisocial behaviour, than if each of the factors were considered alone.

Method

Ethical Approval

The UCL Research Ethics Committee granted ethical approval before commencement of the study (See Appendix 2).

Power analyses were conducted to estimate sample size required for this study using the G* Power package. In order to examine interactive relationships between variables and perform multiple regression analyses for 3 predictor variables with a large effect size (0.35), a minimum sample size of 59 was required (specifying alpha= 0.05 and power = 0.80). For a medium effect size (0.15), a sample size of 76 was required (specifying alpha =0.05 and power =0.80). The target sample size was 80 participants.

Participants

The participants were recruited from a Secure Training Centre (STC) in the UK. This centre houses young offenders who are sentenced to custody in a secure environment where they can be educated and rehabilitated. The young people were all serving a custodial sentence following a criminal conviction. Males and females between the ages of 12 to 17 years old were eligible to take part in the study. Participants were excluded from participating in the study if they had committed sexual offences, showed active psychotic symptoms, or had a learning disability.

Overall, a total of 60 young offenders (30 males and 30 females) participated in the research and provided their informed consent. The participants were aged between 14 and 17 years old (mean = 15.72; SD = 0.83) and mainly from a White British ethnic background (56.7%). The ethnic composition of the sample is shown in Table 1.

Table 1

Ethnic composition of the sample

Ethnicity	Percentage (%)
White British	56.7
White European	25
Black Caribbean	5
Black African	1.7
Black Other	5
White/Black Caribbean	3.3
White/Black African	1.7
White/Black British	1.7

In terms of family constellation, the majority of the participants (91.7%) were from a non-intact family status (divorced, single or separated). A considerable proportion of the participants had been or were currently in care (46.7%) and had suffered maltreatment (physical abuse 25%; neglect 15%; sexual abuse 8.3%, emotional abuse 3.3% or witnessed domestic violence 35%). The majority of participants (56%) were considered to be from economically and socially disadvantaged backgrounds as indicated by the young people qualifying for free school meals or being dependent on benefits (typical indicators of low SES). The school reports indicated that the average reading age of the participants was 11.74 years (SD 1.94). In addition, 10% of the sample had a diagnosis of ADHD.

The details of the participants' offending history are shown in Table 2. The participants' index offences ranged from manslaughter, assault, robbery, possession of firearms, theft to breaches of probation orders. The sample contained a high proportion of

versatile and chronic offenders, as 45% of the participants had been charged with at least two violent and two non-violent offences. According to the Youth Justice Statistics for 2009/10 for all young offenders between the ages of 10 and 17 who were charged with a criminal offence in the UK (Ministry of Justice, 2011) the current sample included young people charged with a higher average number of offences (6.8 vs. 1.9 offences). The participants were also more chronic offenders (6.8 vs.5.6 offences) than a similar previous study testing an interactive model of antisocial behaviour (Butler et al. 2007). Based on a large UK validation study of a risk of re-offending measure (Baker, Jones, Roberts & Merrington, 2003) the current sample also had a younger mean age of first contact with the police (12.6 vs. 13.7 years). In summary, the sample was younger and more severely antisocial than the general young offender population in the UK.

Table 2

Participants' offending history taken from the files

Offending history	Mean, SD
Age of first contact with police	12.6, 1.57
Total number of offences	6.75, 4.15
Violent offences	2.73, 2.24
Non-violent offences	4.02, 3.99

Measures

Demographic information

The participants' files at the centre were reviewed to locate and record information necessary to code demographic and background information (e.g. ethnicity, offending severity and history, reading age, SES, family constellation, care history and co-morbidities).

Callous-Unemotional Traits

Callous-unemotional traits were measured with the Inventory of Callous and Unemotional Traits (ICU; Frick, 2004). The ICU is a 24-item self-report scale with three subscales measuring Callousness, Uncaring and Unemotional traits. On the ICU eleven items assess Callousness (e.g. 'I do not care who I hurt to get what I want'), eight items assess Uncaring traits (e.g. 'I feel bad or guilty when I do something wrong') and five items assess Unemotional traits (e.g. 'I hide my feelings from others'). Items are rated on a three-point Likert scale from 0 (not at all true) to 2 (Definitely true). Higher scores indicate higher levels of callous-unemotional traits. Youth and teacher versions of the ICU were used in this study (See Appendix 3). The teacher version of the ICU was completed by case workers at the centre. Kimonis et al. (2008) has demonstrated the ICU has good internal consistency in an adolescent offender population (Cronbach's α =.81). Results in the current sample indicated that the internal consistency for the youth ICU was good (Cronbach's α =.791; Callousness =.698; Uncaring =.735; Unemotional=.680). In addition, the internal consistency for the case worker rated ICU was also good (Cronbach's α =.872; Callousness= .784; Uncaring=.903; Unemotional= .672). The internal consistency values for the

Unemotional subscales were marginal and this could be due to the small number of items on this subscale (n=5).

Materialism

Materialism was measured by combining two materialism scales designed for use with children of different ages; namely the Youth Materialism Scale and the Materialism Scale (a total of 14 items). The Youth Materialism Scale (YMS; Goldberg et al. 2003) has been developed and validated for use with children/early adolescents (9 to 14 years old). The measure contains 10 items reflecting materialistic values relating to a range of issues such as the acquisition of materialistic goods as a life goal (e.g. 'When you grow up, the more money you have, the happier you are'). Young people are required to indicate their agreement with each statement using a 4-point scale (1 = disagree a lot, 4 = agree a lot). Reported internal reliability of this scale was acceptable (Cronbach's α = .79). The Materialism Scale (Kasser, 2005) was designed and validated for use with 10 to 18 year olds. On the scale young people are required to indicate their agreement with four statements reflecting materialistic attitudes (e.g. 'My life would be better if I owned things I don't have right now') using a 5-point scale (0 = strongly disagree, 5 = strongly agree). Reported internal reliability of this scale was acceptable (Cronbach's α = .68). For the current study, the two measures were put into one questionnaire and the total scores from each scale were combined to create an overall 'Materialism Score' for each young person (see Appendix 4). In the current study the internal reliability of the combined materialism scale was good (Cronbach's α= .83).

Risk-taking behaviour computer task

The Balloon Analog Risk Task (BART; Lejuez et al. 2002) is a computerised task which assesses risk-taking behaviour. The BART was designed to address limitations of self-report measures. The construct validity of the BART has been demonstrated via moderate associations with various real world risk-taking behaviours such as alcohol and drug use, gambling, theft and aggression in adolescents (Aklin, Lejuez, Zvolensky, Kahler & Gwadz, 2005; Lejuez, Aklin, Zvolensky & Pedualla, 2003). The adolescent version of the BART was used in this study (See Appendix 5). The task required participants to click a button to inflate 30 balloons, one after another on a computer screen. A researcher read out instructions to each participant "Click the balloon pump to inflate each balloon to a desired level. You save points from a balloon when you click the button 'Save points' and it will go into the prize meter on the left of the screen. If a balloon explodes before you have clicked 'Save points', the amount for that balloon will be lost. There are just 30 balloons". The participants were also informed that their objective was to "obtain the largest amount of points possible while avoiding balloon explosions with a £10 gift voucher for a high street shop being awarded (post experimentally) to the individual accumulating the greatest number of points for each weekend of testing". During the task, the 30 balloons popped at different sizes, unpredictable to the participants (variable between 1 and 128 pumps) (Lejuez et al. 2002). In this study, the BART adjusted average pumps on balloons that did not explode was used to indicate risk-taking propensity (as in Lejuez et al. 2002). Higher scores on this variable indicate higher risk-taking propensity.

Self-reported antisocial behaviour

Self-reported antisocial behaviour was measured in this study using an adapted version of a self-reported delinquency measure developed in the UK. The original measure, called the Study of Parents and Children's Experience (SPACE), was developed by Smith and McVie, (2003) through extensive piloting in a large UK cohort study (n=4469) of young people. This measure includes questions on a number of different antisocial behaviours, such as vandalising property, stealing, using weapons, fire setting and hitting people (e.g. "During the last year did you break into a house or building to steal something?"). It provides an overall delinquency score on the variety of offending (i.e. the number of different offending behaviours the respondent has engaged in). Many of the questions are linked to the DSM-IV criteria for a diagnosis of conduct disorder (American Psychiatric Association, 2000). For the purposes of the current study, 19 questions relating to antisocial behaviour were used from the SPACE (See Appendix 6) and the overall internal consistency of this shortened version of the SPACE was good (Cronbach's α= .84).

Social Desirability

In order to assess socially desirable response sets, nine items from the Jesness Inventory (JI: Jesness, 1996) were included as a subscale at the end of the SPACE (See Appendix 6). The whole JI has been validated on a young offender population aged between 14-18 years old. The JI contains a validity scale to assess potentially invalid response patterns, such as the Lie scale (Pinsoneault, 1996). Items from the Lie Scale were presented as statements and the participants were asked to indicate whether statements were 'True' or 'False' (e.g. 'I never lie' and 'I like everyone I know'). In previous research, scale scores of 6 or above appeared to indicate a socially desirable response set (Pinsoneault, 1996).

Risk of re-offending

In the current study, an objective measure of the risk of re-offending was taken from a core assessment measure called the ASSET (see Appendix 7). The ASSET measures a number of factors that contribute to a young person's risk of re-offending and was developed by the Youth Justice Board (YJB) for use in young offending services in the UK (Youth Justice Board, 2000). The information for the ASSET is obtained from structured assessments carried out by trained professionals for all young people involved in the criminal justice system. Each of the participants in the current study had their ASSET forms updated when they entered the centre. The ASSET produces a Total Risk Factor Score that is used as an indicator of risk-of re-offending. The total score is obtained from 12 main dynamic factors relating to offending risk such as; living arrangements, family and personal relationships, education, training and employment, neighbourhood, lifestyle, substance use, thinking and behaviour and attitudes to offending (Roberts, Baker, Merrington & Jones, 2001). The current rating system in ASSET includes dynamic factors i.e. those that can potentially be changed, rather than static factors related to offending history. An overall rating on a 0 to 4 scale (0 = not associated to 4 = very strongly associated) for each section is required e.g. "Rate the extent to which the young person's Living Arrangements are associated with the likelihood of further offending". Higher ASSET scores indicate higher risk for re-offending. The validity and reliability of the ASSET has been demonstrated in a large study with 39 youth offending services in the UK (Baker, Jones, Roberts & Merrington, 2003). This reliability and validation study included 3395 ASSET profiles completed by YOT staff. It tested the ASSET's predictive validity and showed that the ASSET rating score predicted reconviction with 67% accuracy. Baker, Jones, Roberts & Merrington (2003) stated that this predictive validity is comparable to the results for tools currently

used with adult offenders. The ASSET score was also found to be predictive of frequency of reconviction and sentence at reconviction. In terms of inter-rater reliability it was found that there was a good level of reliability between teams within YOTs and between staff from different professional backgrounds (Baker, Jones, Roberts & Merrington, 2003).

Procedure

Due to potential vulnerabilities of recruiting from a young offender population, the ethical procedures were carefully considered throughout this study. First, all of the young offenders who were eligible to take part were approached by two trained Assistant Psychologists from the centre and informed about the study using the Young Person's Information Sheet (See Appendix 8). Each young person was informed that participation was entirely voluntary and that their decision about whether or not to participate would not affect their care at the centre in any way.

Both the Assistant Psychologists and the researchers gained informed consent from the young people who volunteered to take part (See Appendix 8). Young people aged 16 years and over were asked to sign an informed consent form after they had volunteered to take part in the study. For young people under the age of 16 years who had volunteered to take part, the Head of Care at the centre acting in 'loco parentis', was also asked to consider whether the young person could participate in the research and was required to sign an informed consent form (see Appendix 8). All of the young people were considered to be in legal custody of the centre under section 20 of the Children's Act (1989), which states that the Head of Care can act in 'loco parentis' or as their legal guardian.

Before starting the data collection, the researchers explained the procedure in more detail to the participants by showing them the information sheet again and checking their understanding of their rights, such as their right to withdraw at any time. It was also highlighted by the researcher that all responses were confidential, unless specific details of an undisclosed offence or any other information which suggested risk of harm to self or others were disclosed. Each young person completed the interviews in a private room with one researcher present and security staff from the centre nearby. In order to eliminate the effects of reading abilities or understanding of items, all measures were administered in a face to face format, so that the researchers could help the young people to read the self-report questionnaires and explain tasks, as required. All of the young people who took part in the study were also thoroughly debriefed by the researchers following the interviews and given the opportunity to ask any questions about the research.

Questionnaires were administered in the same order for each participant and took between 30 and 60 minutes to complete. After each participant had completed the protocol, nominated case workers were given the teacher version of the ICU to complete for each of the young people. After each weekend of data collection, prizes were given post-experimentally to the participant gaining the highest score on the computer task (i.e. £10 high street voucher). In addition, each participant was informed at the beginning of the interview that they also had a chance to win a voucher for volunteering to take part in the research. The participants winning the 1st, 2nd and 3rd prizes were decided by pulling names out of a hat following completion of all of the interviews.

Joint project

This study was conducted alongside another research project being carried out by Lisa Smith, another Trainee Clinical Psychologist (Smith, 2011). The protocols from each study were joined together in order to share resources and access the same population of young offenders. This meant that the participants also completed questionnaires relating to parent attachment relationships and object relations (see Appendix 1 for more details).

Results

The study was designed to test an interactive model of risk in relation to antisocial behaviour in a young offender population. The results are presented in two sections. The first section of the analysis assessed the key variables for normality of distribution and outliers. The influence of potentially confounding variables on the dependent variables was also examined using correlations and independent samples t-tests. The second section of the analysis tested the main hypotheses of this study. To test the first hypothesis, correlation analyses were performed with each independent variable and the dependent variables (i.e. antisocial behaviour measures). To test the second hypothesis, regression analyses were used to examine whether the independent variables could be considered predictors of antisocial behaviour. To test the third hypothesis, separate hierarchical regression analyses were used to assess the interactions between each pair of variables and their associations with the severity of antisocial behaviour.

Preparation of Data

Normality of distribution was checked for each variable. The following variables were not normally distributed: Uncaring and unemotional subscales on the case worker rated ICU. The uncaring subscale on the case worker ICU was significantly negatively skewed. The remaining variables were normally distributed. The dataset was checked for outliers (Z>3) and decisions were made about how much they were influencing the variables. Two outliers were identified in the dataset that could have been significantly influencing the distribution (Z>3). However, removing these outliers did not improve the distributions of these variables (i.e. case worker uncaring and unemotional subscales on ICU). An inverse transformation was computed on the skewed variable to try to improve its distribution (Field, 2005). However, the transformation did not reduce the skew of this variable. Due to concerns about how well the case workers knew the young people and the subscales not being normally distributed, it was decided that the case worker rated callous-unemotional traits scores would be excluded from the subsequent analyses.

Descriptive Statistics

The main independent variables (predictors) were callous-unemotional traits, risk-taking behaviour and materialism. The dependent variables were severity of antisocial behaviour (i.e. self-reported and risk for re-offending). Descriptive statistics were calculated for each variable (see Table 3). Self-reported antisocial behaviour (SPACE) was significantly correlated with risk for re-offending (ASSET score) (r=.281, p=.015). The total youth rated ICU mean score was 27.88 with a range between 9 and 48 which might suggest that this sample was heterogeneous in terms of callous-unemotional trait scores. The mean callous-unemotional trait score was higher (27.88 vs. 23.96) than a

previous study with a mixed gender sample of detained adolescents (Kimonis et al. 2008), although it should be noted that the previous study did also include sex offenders. The mean score on the ASSET risk for re-offending measure fell within the 'medium to high range' according to the YJB banding system (Baker, Jones, Roberts & Merrington, 2003). These descriptive statistics provide an indication that the current sample was a severe group of young offenders in comparison to similar studies.

Table 3

Descriptive statistics of main variables (N=60)

Variable	Mean, SD	Range	Maximum possible score
ICU Youth Total	27.88, 9.31	9-48	72
Callous (Youth)	10.22, 4.79	3-22	33
Unemotional (Youth)	7.58, 3.26	1-15	15
Uncaring (Youth)	10.08, 4.40	2-19	24
Risk-Taking Behaviour (BART adjusted average pumps)	30.92, 11.30	9-55	-
Materialism Total	37.90, 7.43	15-51	56
Self-reported antisocial behaviour (SPACE Total)	8.42, 4.39	0-19	19
Risk for re-offending (ASSET Total)	24.33, 6.75	9-38	48

Demographic variables

As noted the second step in the analysis was to examine the effects of confounds (e.g. age, gender and SES) on the main dependent variables. These analyses were chosen as the empirical literature often demonstrates variance in antisocial behaviours

according to these demographic variables. Independent samples t-tests revealed significant gender differences for risk for re-offending scores (ASSET), with males showing higher mean scores than females ($t(58) = 2.127$, $p=.038$), while gender differences in self-reported antisocial behaviour scores (SPACE) ($t(58) = 1.893$, $p=.063$) approached significance. Independent samples t-test revealed no significant gender differences in risk-taking behaviour on the BART computer task ($t(58) = 1.653$, $p=.104$), materialism total scores ($t(58) = 1.402$, $p=.166$) or in youth rated total ICU scores ($t(58) =.234$, $p=.816$). Therefore, it was only deemed necessary to statistically control for the potential effects of gender in analyses for risk of re-offending scores (ASSET).

Age was not significantly related to self-reported antisocial behaviour scores (SPACE) ($r=-.15$ $p=.240$) but younger age was significantly related to risk for re-offending scores (ASSET) ($r=-.40$, $p=.002$). It was therefore deemed necessary to statistically control for the potential effects of age in the main analyses for risk for re-offending scores (ASSET). Independent samples t-tests revealed there were no significant differences for SES on self-reported antisocial behaviour scores ($t(58) = .699$, $p=.487$) or for risk for re-offending scores ($t(58) = 1.347$, $p=.183$) in this sample.

Results from the Social Desirability scale indicated that 57 participants in this sample appeared to be responding honestly on the self-report questionnaires. Only 3 participants had scores on the Lie scale of more than 6, which suggests that these participants could have been providing socially desirable answers or 'faking good'. Correlations were calculated to assess the impact of socially desirable responses on the results. It was found that the social desirability total scores were not significantly correlated with self-reported antisocial behaviour ($r=.134$, $p=.154$) or risk of re-offending

(*r*=.174, *p*=.091). Thus, it was not deemed necessary to statistically control for any potential effects of social desirability in the regression analyses.

Correlations between independent variables and self-reported antisocial behaviour

Correlations between the major variables were examined in line with the study's hypotheses. Results of Pearson's correlations between materialism, callous-unemotional traits, risk-taking and measures of antisocial behaviour are reported in Table 4.

The total score of the Youth rated callous-unemotional traits scale (Youth ICU total score) was significantly correlated with the total self-reported antisocial behaviour score (SPACE) (*r*=.337, *p*=.004). Regarding the component subscales on the ICU, youth rated callousness was also significantly correlated with the total self-reported antisocial behaviour score (SPACE) (*r*=.437, *p*=.000), but not the youth rated uncaring (*r*=.103, *p*=.218) or unemotional (*r*=.182, *p*=.082) subscales on the ICU.

Risk-taking behaviour on the computer task (BART average adjusted pumps only on balloons that were not exploded) was not significantly correlated to self-reported antisocial behaviour (SPACE) (*r*=.155, *p*=.119), youth rated callous-unemotional traits (*r*=.108, *p*=.207) or materialism (*r*=-.148, *p*=.129). On the other hand, youth rated materialism did show significant relationships with self-reported antisocial behaviour (SPACE) (*r*=.286, *p*=.013). Materialism was also related to youth rated callous-unemotional traits (*r*=.251, *p*=.027) and two of its three subscales: callousness (*r*=.262,

p=.022) and uncaring (*r*=.232, *p*=0.37) subscales, but not the unemotional subscale (*r*=.019, *p*=.444).

Correlations between independent variables and risk for re-offending

Total youth-rated callous-unemotional traits was not related to risk for re-offending (ASSET) (*r*=.093, *p*=.240). The youth callousness subscale on the ICU was significantly related to risk for re-offending (ASSET) (*r*=.326, *p*=.005). A partial correlation (controlling for age and gender) revealed that the significant correlation between the youth callousness subscale and risk for re-offending remained (*r*=.261, *p*=.024). In contrast, the youth uncaring (*r*=-.069, *p*=.301) and youth unemotional (r=-.121, *p*=.179) subscales on the ICU were not related to risk for re-offending. Regarding the remaining independent variables, neither risk-taking behaviour on the BART task (*r*=.1188, *p*=.184) nor materialism (*r*=.125, *p*=.171) were significantly related to risk for re-offending (ASSET).

Table 4

Correlations between callous-unemotional traits, risk-taking, materialism and antisocial behaviour (self-reported and risk for re-offending) (N=60)

	1.	2.	3.	4.	5.	6.	7.	8.
1. Self-reported antisocial behaviour (SPACE)	-	.281*	.155	.286*	.337**	.437***	.103	.182
2. Risk for re-offending (ASSET)		-	.118	.125	.093	.326**	-.069	-.121
3. Risk-taking Behaviour			-	.148	.108	.129	.006	.109
4. Materialism				-	.251*	.262*	.232*	.019
5. Total Callous-unemotional traits (Youth)					-	.722***	.780***	.740***
6. Callousness (Youth)						-	.237*	.272*
7. Uncaring (Youth)							-	.529***
8. Unemotional (Youth)								-

Note. Statistics reported Pearson's correlation coefficients. * p <.05 ** p<.01 *** p<.001

Regression Analyses

In order to examine whether callous-unemotional traits, materialism and risk-taking behaviour were independent predictors of self-reported antisocial behaviour and risk for re-offending, multiple regressions were conducted for each dependent variable. The assumptions of regression relating to normality, linearity, homoscedasticity and colinearity were checked and no violations were found (Field, 2005). The predictors entered into the regression models were based on the original hypotheses and results of the correlations between variables. Results of the regression coefficients can be seen in Table 5 and Table 6.

Independent and interactive associations with the severity of self-reported antisocial behaviour (SPACE)

To test for independent predictors and interactive associations between youth-rated callous-unemotional traits, risk-taking and materialism, separated hierarchical regressions were run for each pair of hypothesised interactions. In these analyses, a significant change in the variance in antisocial behaviour accounted for by the interaction terms (after controlling for the main effects) was tested by the change in the *F* statistic following entry of the interaction terms into the analysis. All predictors were centred as recommended when testing interaction models.

Interaction 1: Callous-Unemotional Traits (Youth-rated) and Materialism:

Youth ratings of callous-unemotional traits and materialism were entered as independent predictors of self-reported antisocial behaviour (SPACE). The results of the regressions are shown in Table 5. Overall, the regression model was significant

($F(2, 57) = 5.309$, $p=.008$). Youth rated callous-unemotional traits and materialism accounted for 15.7% of the variance in self-reported antisocial behaviour. As can be seen in Table 5, the independent effect of youth rated callous-unemotional traits was significant ($\beta=.28$, $t(1)=2.254$, $p=.028$).

The Callous-Unemotional Traits X Materialism interaction term was then entered into block two of the self-reported antisocial behaviour regression model. As can be seen in Table 5, the addition of this interaction term did not lead to a significant increase in accounted for variance in antisocial behaviour ($\Delta F_{3, 56} = .629$, $p = .431$, $\Delta R^2 = .009$).

Interaction 2: C*allous-Unemotional Traits and Risk-Taking Behaviour*

Youth ratings of callous-unemotional traits and risk-taking behaviour were entered as independent predictors of self-reported antisocial behaviour (SPACE). Overall, the regression model was significant ($F(2, 57) = 4.180$, $p=.020$). Youth rated callous-unemotional traits and risk-taking accounted for 12.8% of the variance in self-reported antisocial behaviour. As can be seen in Table 5, the independent effect of youth rated callous-unemotional traits was significant ($\beta=.32$, $t(1)=2.606$, $p=.012$).

The Callous-Unemotional Traits X Risk-Taking interaction term was then entered into block two of the self-reported antisocial behaviour regression model. As can be seen in Table 5, the addition of this interaction term did not lead to a significant increase in accounted for variance in antisocial behaviour ($\Delta F_{3, 56} = .084$, $p = .773$, $\Delta R^2 = .001$).

Interaction 3: *Risk-Taking Behaviour and Materialism*

Risk-taking behaviour and materialism scores were entered as independent predictors of self-reported antisocial behaviour (SPACE). Overall, the regression model was significant ($F(2, 57) = 3.948$, $p=.025$). Risk-taking behaviour and materialism accounted for 12.2% of the variance in self-reported antisocial behaviour. As can be seen in Table 5, the independent effect of materialism was significant ($\beta=.32$, $t(1)=2.518$, $p=.015$).

The Risk-taking X Materialism interaction term was then entered into block two of the self-reported antisocial behaviour regression model. As can be seen in Table 5, the addition of this interaction term did not lead to a significant increase in accounted for variance in antisocial behaviour ($\Delta F_{3, 56} = -.015$, $p = .903$, $\Delta R^2 = .000$).

Table 5

Regressions predicting self-reported antisocial behaviour using callous-unemotional traits, risk-taking behaviour and materialism (N=60)

	B	*SE B*	β
Self-reported antisocial behaviour (SPACE)			
Callous-Unemotional Traits			
X Materialism			
Constant	8.42	.53	
Callous-unemotional traits (Y)	.13	.06	.28*(*p*=.028)
Materialism	.13	.07	.22 (*p*=.092)
CUT*MAT+	.01	.01	.10 (*p*=.431)
Callous-Unemotional Traits			
X Risk-taking		.	
Constant	8.42	54	
Callous-unemotional traits (Y)	.15	.06	.32*(*p*=.012)
Risk-taking	.08	.05	.12 (*p*=.339)
CUT*RISK+	.00	.01	.04 (*p*=.773)
Risk-taking X Materialism			
Constant	8.42	.54	
Risk-taking	.08	.05	.20 (*p*=.114)
Materialism	.19	.07	.32*(*p*=.015)
RISK*MAT+	.00	.01	-.02 (*p*=.903)

Note: Y = Youth-rated; Risk-taking = BART Adjusted Average Score; RISK =Risk-taking.; CUT=Callous-unemotional traits total score; MAT= materialism. *p<.05. + coefficients for interaction terms between centred predictors. For interaction 1, ΔR^2 =.009. For interaction 2, ΔR^2 =.001. For interaction 3, ΔR^2 =.000.

Independent and interactive associations with the risk for re-offending (ASSET)

Interaction 1: Callous-unemotional traits (Youth-rated) and Materialism:

Youth ratings of callous-unemotional traits, materialism, age and gender were entered as independent predictors of risk for re-offending (ASSET). The results of the regressions are shown in Table 6. Overall, the regression model was significant ($F(4, 55) = 3.103$, $p=.023$). Youth rated callous-unemotional traits, materialism, age and gender accounted for 18.4% of the variance in risk for re-offending. The independent effect of age was the only significant predictor, with younger age predicting risk for re-offending ($\beta=-.34$, $t(1)=-2.612$, $p=.012$).

The Callous-Unemotional Traits X Materialism interaction term was then entered into block two of the risk for re-offending regression model. As can be seen in Table 6, the addition of this interaction term did not lead to a significant increase in accounted for variance in antisocial behaviour ($\Delta F_{5, 54} = .303$, $p = .585$, $\Delta R^2 = .005$).

Interaction 2: Callous-unemotional traits (Youth-rated) and Risk-taking behaviour:

Youth ratings of callous-unemotional traits, risk-taking, age and gender were entered as independent predictors of risk for re-offending (ASSET). The results of the regressions are shown in Table 6. Overall, the regression model was significant ($F(4, 55) = 3.201$, $p=.020$). Youth rated callous-unemotional traits, risk-taking, age and gender accounted for 18.9% of the variance in risk for re-offending. The independent effect of age was the only significant predictor of risk for re-offending ($\beta=-.35$, $t(1)=-2.685$, $p=.010$).

The Callous-Unemotional Traits X Risk-Taking interaction term was then entered into block two of the risk for re-offending regression model. As can be seen in Table 6, the addition of this interaction term did not lead to a significant increase in accounted for variance in antisocial behaviour ($\Delta F_{5, 54} = .730$, $p = .397$, $\Delta R^2 = .011$).

Interaction 3: Risk-Taking and Materialism:

Risk-taking, materialism, age and gender were entered as independent predictors of risk for re-offending (ASSET). The results of the regressions are shown in Table 6. Overall, the regression model was significant ($F(4, 55) = 3.222$, $p=.019$). Risk-taking, materialism, age and gender accounted for 19% of the variance in antisocial behaviour. The independent effect of age was the only significant predictor of risk for re-offending ($\beta=-.35$, $t(1)=-2.673$, $p=.010$).

The Risk-Taking X Materialism interaction term was then entered into block two of the risk for re-offending regression model. As can be seen in Table 6, the addition of this interaction term did lead to a significant increase in accounted for variance in antisocial behaviour ($\Delta F_{5, 54} = 6.666$, $p = .013$, $\Delta R^2 = .089$).

Table 6

Regressions predicting risk of re-offending using callous-unemotional traits, risk-taking behaviour and materialism (N=60)

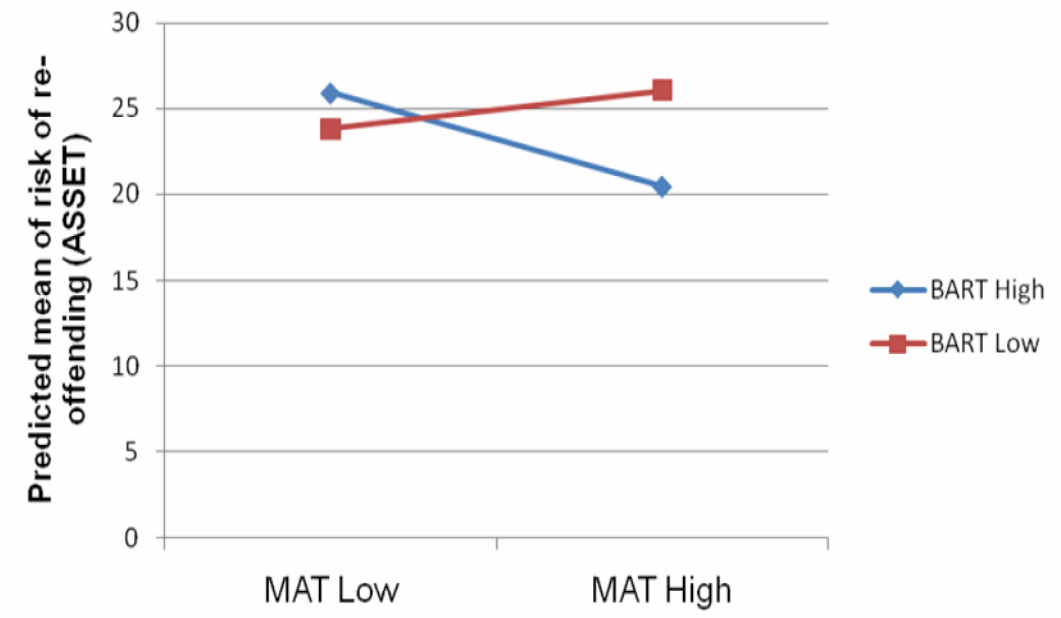
	B	*SE B*	β
Risk for re-offending (ASSET)			
Callous-Unemotional Traits			
X Materialism			
Constant	24.3	.82	
Age	-2.8	1.1	-.34*(*p*=.012)
Gender	-2.2	1.7	-.16 (*p*=.219)
Callous-unemotional traits (Y)	.01	.09	.02 (*p*=.896)
Materialism	.01	.12	.02 (*p*=.904)
CUT*MAT+	-.01	.01	-.07 (*p*=.585)
Callous-Unemotional Traits			
X Risk-Taking			
Constant	24.3	.82	
Age	-2.9	1.1	-.35*(*p*=.010)
Gender	-2.0	1.8	-.15 (*p*=.267)
Callous-unemotional traits (Y)	.01	.09	.01 (*p*=.922)
Risk-taking	.04	.08	.07 (*p*=.565)
CUT*RISK +	-.01	.01	-.11 (p=.397)
Risk-Taking X Materialism			
Constant	24.3	.82	
Age	-2.8	1.1	-.35*(*p*=.010)
Gender	-1.9	1.8	-.14 (*p*=.295)
Risk-Taking	.05	.08	.08 (*p*=.528)
Materialism	.03	.12	.04 (*p*=.784)
RISK*MAT +	.02	.01	.30*(*p*=.013)

Note: Risk-Taking = BART Adjusted Average Score; Y = Youth-rated; CUT=Callous-unemotional traits total score; MAT = materialism; RISK = Risk-taking. *p<.05. + coefficients for interaction terms between centred predictors. For interaction 1, ΔR^2 =.005. For interaction 2, ΔR^2 =.011. For interaction 3, ΔR^2 =.089 (p=.013).

To characterise the nature of the significant interaction between risk-taking behaviour and materialism, a plot of the predicted means was created using the regression equation, with each predictor in the interaction set at ±1 standard deviation from the mean. This plot is shown in Figure 1 and illustrates that high levels of risk-taking behaviour and low materialism were associated with more risk of re-offending. But when materialism scores became high and risk-taking was also high, there was a drop in risk of re-offending. Low levels of risk-taking behaviour and high materialism scores were associated with more risk for re-offending.

Figure 1

Interaction effect of risk-taking behaviour X materialism for risk of re-offending (ASSET)



Discussion

The aim of this study was to investigate an interactive risk model of antisocial behaviour in a detained young offender population. The focus was upon exploring relationships between three individual risk factors (callous-unemotional traits, risk-taking behaviour and materialism) and their ability to predict the severity of antisocial behaviour.

Correlations with self-reported antisocial behaviour and risk for re-offending

The three independent variables were found to be differentially associated with antisocial behaviour. Youth reported callous-unemotional traits were significantly and positively associated with self-reported antisocial behaviour. In addition, the youth reported callousness subscale of the ICU was significantly associated with both self-reported antisocial behaviour and risk for re-offending. These findings are consistent with the primary hypothesis and provide additional evidence that high levels of callous-unemotional traits are linked to severe forms of antisocial behaviour (e.g. Frick et al. 1994; Frick & White, 2008). It also provides support for the notion that the callousness subscale has a particular association with the more violent or severe forms of antisocial behaviour (e.g. Pardini, 2006). The results suggest that the unemotional and uncaring subscales on the ICU are perhaps less important for severe populations (e.g. Poythress et al. 2006). However, there needs to be some caution when interpreting these findings as the strength of the association with callous-unemotional traits is still quite modest (r=.337) and causality has not been determined.

This study used a mixed gender sample, with an equal number of male and female participants (i.e. 30 male and 30 female). It is relatively rare for studies in this area to recruit a mixed gender sample, with studies generally recruiting male and female

samples separately as boys are often found to display significantly more antisocial behaviours. It is widely known that a higher percentage of boys become involved in severe forms of antisocial behaviour in the UK, however, in recent years there has been an increase in the numbers of girls involved in criminal activity (Ministry of Justice, 2011). Given that no significant gender differences emerged between males and females for self-reported antisocial behaviour it is possible that fewer gender differences exist in more severe groups. The current findings also extend a previous study with detained young offenders by highlighting the potential importance of callous-unemotional traits in both male and female young offenders (e.g. Kimonis et al. 2008). These assertions could be given greater weight given the equal number of males and females recruited in the current sample. The influence of gender on the development of severe forms of antisocial behaviour has largely been a neglected area of research (e.g. McCabe, Rogers, Yeh & Hough, 2004). As such, this type of mixed gender sampling might be helpful for highlighting key similarities and differences between the risk factors for boys and girls engaging in severe antisocial behaviours.

Youth-rated materialism scores were also significantly and positively related to self-reported antisocial behaviour. This result also supports the first hypothesis. It is also consistent with previous research (e.g. Cohen & Cohen, 1996; Kasser & Ryan, 1993; Kasser, 2005), and extends the literature with community samples of adolescents by demonstrating the link in a particularly severe and detained young offender population (e.g. Tadrous, 2009). This finding suggests that young people who are highly materialistic and desire the latest expensive goods may be more likely to become involved in serious crimes. Thus, as a cultural factor, materialism may have a potentially important role in the development of antisocial behaviour in young people

and may need to be considered more closely in the research. Again, there needs to be some caution when interpreting the meaning of this finding because the size of the correlation was still relatively modest (*r*=.286).

In contrast, it was found that risk-taking behaviour on the BART computer task was not significantly associated with self-reported antisocial behaviour or risk of re-offending. This result contradicts original predictions and was a somewhat unexpected finding. It is also at odds with previous research that has found that young people with conduct problems tend to take more risks on behavioural risk-taking tasks (Crowley et al. 2006; Fairchild et al. 2009). It is not initially clear how to interpret the meaning of this non-significant finding. One explanation might be that there was a lack of power (or a type II error) and so further studies might need to have a larger sample to detect an effect with these variables. Alternatively, it might simply be the case that risk-taking behaviour is not actually an important risk factor involved in the development of severe forms of antisocial behaviour in young people and is simply part of typical development in adolescents (e.g. Young et al. 2002). It is important to highlight that these two previous studies (e.g. Crowley et al. 2006; Fairchild et al. 2009) differed to the current one as they employed a comparison group design (e.g. conduct problems versus controls) and so were able to compare risk-taking behaviour between the two groups. Thus, it could be that the BART task is a more useful tool to detect differences between normative and forensic patterns of risk-taking behaviour, but is less helpful for differentiating between behaviour within severe samples. It would be useful for future studies to carry out a group comparison design within a similar population to the current one (i.e. detained young offenders) to see whether a different pattern of results emerges.

It may also be that the BART task was not capturing the type of risk-taking behaviour displayed by this severe population or even that the participants were not motivated enough by the rewards to perform well. This interpretation could be supported by the observation that the mean adjusted pumps on the BART for this study (i.e. 31) was somewhat lower than in a previous study by Hunt et al. (2005) (i.e. 35). Although it is important to point out that the reward schemes used to motivate the participants were not that different between the two studies. It might also be the case that for these young people deciding whether to pump up a balloon and gain points within a computer game in a safe environment is conceptually very different to deciding whether to engage in a fight or steal something in a real world context. Thus, the influence of contextual factors may need to be more closely considered when measuring risk-taking behaviour (e.g. influence of substances or peer group).

Contrary to predictions, the present study did not find any associations between the independent variables (i.e. callous-unemotional traits, materialism and risk-taking behaviour) and risk for re-offending. These findings largely contradict previous research in the area that has found associations between callous-unemotional traits (e.g. Frick et al. 1994), materialism (e.g. Kasser & Ryan, 1993), risk-taking behaviour (e.g. Crowley et al. 2006; Fairchild et al. 2009) and antisocial behaviour.

It is important to highlight that the current study used risk for re-offending from the ASSET scores, rather than the typical objective measure of antisocial behaviour such as criminal charges or convictions obtained from police youth offending databases. The ASSET is a widely used assessment in the young offending teams in the UK but is less frequently found in the research literature (Roberts et al. 2001). One might argue that

the ASSET is more relevant and clinically useful measure than some of the typical measures of offending as it takes into account a number of factors that are known to predict risk of recidivism. However, the use of this risk of re-offending measure may have led to a different pattern of results than typically found in the research literature.

Factors predicting the severity of antisocial behaviour

Results from the regression analyses differentially supported hypotheses regarding each of the three variables being predictors of the severity of antisocial behaviour. However, the results only partially support an interactive model of antisocial behaviour.

The first analysis examined relationships between callous-unemotional traits, materialism and self-reported antisocial behaviour. The regression model found that youth rated callous-unemotional traits independently predicted self-reported antisocial behaviour. These two variables (callous-unemotional traits and materialism) were able to account for a significant amount of variance in self-reported antisocial behaviour (15.6%). This finding is in line with previous research which suggests that callous-unemotional traits are especially important for predicting severe levels of antisocial behaviour in young people (Kruh, Frick, & Clements, 2005). However, there was not an interactive relationship between callous-unemotional traits and materialism, which was contrary to predictions. This suggests that, in this study, young people who are both high on callous-unemotional traits and highly materialistic were not at any more risk from engaging in severe antisocial behaviours, than young people who are just callous and unemotional. This result is consistent with a previous study that did not find interaction effects between callous-unemotional traits and materialism in a community sample (Tadrous, 2009).

The second analysis examined relationships between callous-unemotional traits, risk-taking behaviour and self-reported antisocial behaviour. These two variables were able to account for a significant amount of variance in self-reported antisocial behaviour (12.8%). It was also found that youth rated callous-unemotional traits independently predicted self-reported antisocial behaviour. Again this finding supports previous research that callous-unemotional traits predict severe levels of antisocial behaviour in young people (Kruh, Frick, & Clements, 2005). However, there was not a significant interaction between callous-unemotional traits and risk-taking behaviour. This was an unexpected finding given that previous studies that have found that higher self-reported psychopathy was significantly predictive of increased risk-taking behaviour on the BART (e.g. Hunt et al. 2005). However, closer examination of the findings from the study by Hunt et al. (2005) indicated that it was factor II psychopathy (conduct and impulsivity) and not factor I (callous, uncaring) that was predictive of risk-taking. This is an important point given that the current study specifically examined callous-unemotional traits, which is believed to be similar to the factor I dimension of psychopathy, rather than factor II. However, it might still have been expected that the risk-taking behaviour would have been predictive of antisocial behaviour (i.e. factor II) and this was not found to be the case.

The third analysis examined relationships between materialism, risk-taking and self-reported antisocial behaviour. The regression model demonstrated that youth rated materialism and risk-taking behaviour were able to account for 12.2% variance in self-reported antisocial behaviour. In this model, materialism was found to be an independent predictor of self-reported antisocial behaviour. This finding has extended the findings from a previous study regarding the role of materialism for predicting

antisocial behaviour, but within a young offender population (e.g. Tadrous, 2009). It is also in line with previous studies that have demonstrated associations between materialism and antisocial behaviour in children with conduct problems (e.g. Cohen & Cohen, 1996; Kasser & Ryan, 1993). This finding suggests the need to further understand the role of materialism as a cultural construct as it may be influencing the development of antisocial behaviour in young people. In contrast, the interaction between these two variables (materialism and risk-taking) did not account for a significant increase in variance in self-reported antisocial behaviour. This finding does not support original predictions and is difficult to interpret in relation to some of the other results in this study. It could be that there is important link between materialism and risk-taking behaviour but that this is not being properly detected by the measures used in the current study. That is, the non significant results may have occurred due to there not being enough power to detect a small effect (i.e. Type II error) if it exists.

In terms of predicting risk for re-offending (ASSET), it was found that age was the only significant independent predictor. The finding that lower age was a significant predictor of risk for re-offending was not particularly surprising as empirical literature has demonstrated a negative association between age and antisocial behaviour (e.g. Moffitt, 1993). That is, developmental models suggest that the age of onset of antisocial behaviour is important for predicting more severe forms of antisocial behaviour. Thus, the findings from the current study are consistent with previous research and provide additional evidence that starting offending at an earlier age has a higher re-offending risk.

Interestingly, callous-unemotional traits, risk-taking behaviour and materialism were not found to be independent predictors of risk of re-offending. These findings were contrary to the original predictions and generally do not support the notion of an interactive model of antisocial behaviour involving this combination of variables in predicting risk for re-offending. However, one significant interaction effect was found to predict risk for re-offending, that is, the interaction between risk-taking behaviour and materialism. The interaction between these two predictors was able to account for a significant increase in variance of risk for re-offending (19% to 27.9%).

The interaction effect between risk-taking behaviour and materialism was somewhat surprising given that neither of these variables were found to be independent predictors within the same regression model. The nature of the interaction was plotted on a graph (figure 1) and was found to be contrary to original predictions. It showed that the combination of high risk-taking and low materialism predicted high levels of risk of re-offending. In addition, low risk-taking and high materialism also predicted high levels of risk of re-offending. This interaction does not fit with previous research that has found that people who are highly materialistic engage in more high risk behaviours such as smoking and drinking (e.g. Williams et al. 2000). As such it is quite difficult to interpret the meaning of this interaction effect. It is particularly surprising given that risk-taking behaviour was not related to any variables in this study. This might suggest that it has occurred by chance due to a type I error and inflation of alpha and so may need to be interpreted with caution.

Nonetheless, one interpretation of this interaction might be that different factors were underlying the participants' risk of re-offending scores. In this way, some of the young

people in this sample were highly materialistic but low risk takers and their offending behaviour was more motivated by gaining material goods and gaining respect from their peers (e.g. theft). This interpretation might fit with previous research that has found that materialism is related to antisocial behaviour (e.g. Cohen & Cohen, 1996; Kasser & Ryan, 1993; Messner & Rosenfeld, 1994). In contrast, some of the young people could be high risk takers but not very materialistic and so their risk for re-offending score is more related to having a risk-taking propensity (e.g. carrying out assaults whilst under the influence of alcohol). Thus, considering that young people who engage is serious antisocial behaviour are a heterogeneous group (Frick, 2006), it may be that for some young people being materialistic is a more important factor underlying their antisocial behaviour, while for others it is having a propensity to take risks that is more important.

This unexpected finding might have occurred because a total risk for re-offending score was used as the outcome measure (i.e. ASSET) and this score is made up of a range of different factors known to be related to recidivism (e.g. social economic status, lifestyle, education & attitude to offending). One way to find out how materialism and risk-taking behaviour are exerting their effects would be to examine the factors that make up the overall ASSET scores. Therefore, it might be helpful for further studies to use a more fine grained analysis of the types of antisocial behaviour being predicted, rather than using an overall measure of offending risk.

Limitations

It is important to place these interpretations in the context of a number of limitations in the study. First, this study was cross-sectional in design; therefore, the direction and causality of the effects cannot be determined based on these findings alone. For

instance, it cannot be assumed that high levels of callous-unemotional traits or materialism causes young people to develop more severe forms of antisocial behaviour. Second, this study was conducted on a sample of young offenders; therefore, the applicability of these results to individuals outside the criminal justice system may be decreased. Nevertheless, the recruitment of a severe population is a considerable strength of this study because it focused on participants with potentially high levels of callous-unemotional traits and severe forms of antisocial behaviour to fully test the original hypotheses. This type of population is under-represented in the literature to date, especially studies involving young offenders from the UK.

Third, the sample size (n=60) was lower than estimated from power calculations (n=80), which could mean that there was not enough power to detect significant findings if they existed. Thus, some of the non-significant findings in this study may have occurred due to a type II error. Another important point was that this study used mixed methods and perhaps more power was needed to detect relationships between the behavioural risk-taking task and youth reported measures of antisocial behaviour. Despite these limitations callous-unemotional traits and materialism were related to self-reported antisocial behaviour, and one interaction effect was found between materialism and risk-taking for predicting risk for re-offending, which suggests that these variables could still be considered important risk factors for the severity of antisocial behaviour in young people. However, before these findings can be considered robust they will need to be replicated in larger studies to make sure that the findings did not occur by chance due to the inflation of alpha (type I error). This may be particularly relevant as the data analysis involved several statistical tests which examined the interactive relationships between pairs of variables.

The current study assessed several of the key variables with youth self-report measures (e.g. materialism, callous-unemotional traits and antisocial behaviour). The validity of using self-report methods to measure personality traits and behaviour has been widely debated in the literature. It has been argued that young people who are high on callousness, unemotional and uncaring traits may not be particularly aware of their own feeling states (e.g. Rutter, 2005). However, the ICU has been widely used with adolescents and its validity has been well supported in young offender populations (e.g. Kimonis et al. 2008). There is also evidence to suggest that young people may be able to more validly report than parents or teachers (e.g. Kamphaus & Frick, 1996). At the outset this study the aim was to collect ratings of callous-unemotional traits from several informants, rather than relying on self-report ratings. Case workers at the centre also completed ratings of callous-unemotional traits for the young people taking part in the study. However, these case worker reports were not included in the final analysis for a number of reasons. First, it became apparent from members of staff at the centre that the case workers did not necessarily know the young people very well and in some instances had only known them for a couple of weeks. This issue may have made it difficult for the case workers to provide ratings on their personality traits, which is important for accurately completing the ICU measure. This led us to have concerns about the accuracy and validity of the ratings provided by the case workers. Second, whilst carrying out the normality checks it was clear that the case worker ratings on the ICU were not normally distributed, which could not be resolved by transforming the variable or removing outliers. As a consequence it was decided that the case worker ratings were not accurate enough to include in the final analyses. This was an unfortunate situation but it does highlight that informants completing the ICU

may need to know the young people quite well (i.e. their personality traits) to be able to provide accurate or meaningful ratings on the scale.

It is possible that the young people may have given socially desirable responses on some of the self-report questionnaires in order to be seen more favourably by the researchers. However, the impact of social desirability on outcomes was evaluated in this study and was not significantly associated with self-reported antisocial behaviour or risk of re-offending. This means that we can have more confidence that the majority of the young people in this study were responding in an honest manner and counters claims that they are unable to report accurately on their own personality traits and antisocial behaviour.

It might be argued that the associations found in this study between youth-reports of callous-unemotional traits, materialism and antisocial behaviour may have been partly inflated by shared method variance. However, attempts were made to overcome some of the limitations of self-report measures by using a mixed methods approach with behavioural measures, self-report and a more objective indicator of antisocial behaviour severity, namely, the risk for re-offending. Further research is required to find out more about the usefulness of the ASSET as an indicator of the severity of antisocial behaviour. However, the ASSET is widely used in youth offending services in the UK and so could be important for clinically identifying the young people that may require the most support to prevent re-offending (Roberts et al. 2001). Future studies may wish to assess the same hypotheses using more common measures of objective offending from police databases. This might help to differentiate between specific forms of

antisocial behaviours (i.e. violent versus non violent crimes) and check whether a similar pattern of results emerges.

Clinical Implications

Within the context of these limitations, these results add to a growing body of research focused on developing a better understanding of the potential risk factors involved in the development of severe antisocial behaviours in young people. This type of research has the potential of informing interventions targeted at this vulnerable group of young people. The findings of the present study indicate that both callous-unemotional traits and materialism should be considered potentially significant risk factors for severe forms of antisocial behaviour in young people. As such, it might be clinically useful for these traits and materialism to be measured more regularly in youth offending services. In the future it might be clinically helpful to screen for several risk factors and work out which risk factors might be more important for each individual. Thus, specific intervention packages could be designed to target the factors or interactions of factors that are most likely to create risk for that individual in the future. For example, if a young person is found to be highly materialistic an intervention might be put in place to teach them about the impact of consumerism, marketing and to understand what motivates their antisocial behaviour. Although, further research is required to examine the specific role of these risk factors more closely before any further clinical implications are drawn.

Conclusions

To conclude, the results of this study add to a growing body of research focused on understanding the potential risk factors involved in the development of severe antisocial

behaviours in young people. Overall, the findings from this study suggest that an interactive model of risk has only been partially supported for this particular combination of variables (i.e. callous-unemotional traits, risk-taking and materialism). The results also indicate that callous-unemotional traits and materialism could both be considered important predictors for antisocial behaviour in young offenders. However, the role of risk-taking behaviour in young offenders requires further clarification. Furthermore, the interaction between materialism and risk-taking behaviour in predicting risk for re-offending suggests that there may be an important link between these two factors. The robustness of these findings should be tested in larger samples of young offenders and with objective indicators of antisocial behaviour. It may be that different combinations of factors are able to explain more of the variance in antisocial behaviour than those considered in the current study. Thus, the use of interactive models of antisocial behaviour in future research is likely to be helpful for understanding the combinations of factors that are able to explain more of the variance in antisocial behaviour. This type of research has the potential of informing interventions targeted at this vulnerable group of young people.

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Part 3: Critical Appraisal

Introduction

In this critical appraisal I will reflect on the process of conducting research within a youth offending context. I will discuss some of the measurement dilemmas that arose when deciding how to assess the severity of antisocial behaviour and will reflect on my experiences of using a behavioural task within this setting. It is my intention that this section will contain information that will be useful for researchers wishing to carry out studies with young offenders.

Conducting research in a youth offending context

During this research study I have become more aware of a number of wider and political contexts and how they might have impacted on the process of conducting research with a detained youth offender population. In 2009-2010, the cost of managing young offenders, not including police and court costs, was £800 million through the Youth Justice Board (YJB) (National Audit Office, 2009). The National Audit Office estimated that, in 2009, offending by all young people cost the economy £8.5-£11 billion. A recently published White Paper 'Healthy Children, Safer Communities' proposed a cross government strategy to tackle youth crime and antisocial behaviour (Department of Health, 2009). One of its aims was to improve the health and well-being of children and young people at risk of offending or re-offending. This strategy recognised that a high proportion of young offenders have mental health problems that need to be addressed (Hagell, 2002). As a result, the youth offending services in the UK are now being required to provide mental health provision for this vulnerable group in line with the 'Every Child Matters' agenda (Department for Children, Schools and Families & Home Office, 2004). The White Paper also highlighted that there is very little evidence regarding the interventions that are effective for young

offenders and reducing re-offending rates and so has called for more research to be carried out within these services (Department of Health, 2009). The YJB had been given the overarching role to monitor the performance of the young offending services in the UK and develop the evidence base (National Audit Office, 2009).

Recruiting a youth offending service

Relatively early on in the research design stage I decided to carry out a joint project with another clinical trainee who was also keen to carry out a study with severe youth offender population. This meant that we could pool our resources and contacts to recruit a young offender service. Lisa had previously worked with young offenders in a Secure Training Centre and so we decided to approach the service to see whether they would be interested in becoming involved in our research projects. The Lead Psychologist from the one of the centres we approached was keen to find out more about the research. During the initial meeting at the centre it became clear that the service was not involved in any current research projects and only carried out internal audit projects. However, they informed us that the Secure Training Centre had recently been through an Ofsted inspection, which meant they had been given a target to become involved in 'innovations schemes'. We then emphasised that the two research projects could satisfy the innovations target as they were novel and would help to contribute to the evidence base. In hindsight, it was really helpful that the centre had a specific target as it meant that we both had a mutual interest in the research going ahead.

Ethical issues when recruiting from a Secure Training Centre

In order to describe the ethical issues it is important to explain in more detail the specific setting in which the research took place. The study recruited participants from Secure Training Centres which are privately run organisations that have been contracted out by the government to detain young offenders under the age of 17 years. They are different to Youth Offenders' Institutions as they have a higher staff to young offender ratio in order to meet their needs. The centres provide social, educational, mental health and social care all in one setting. They are contracted to provide 25 hours per week of education to each young person.

During this research study we encountered several ethical issues that might help other researchers to be aware of some of the challenges of conducting research with a detained young offender population in the UK. Originally we were told that we would need to apply to Integrated Research Application System (IRAS) to gain ethical approval because young offenders fall under the Home Office jurisdiction. We were also aware that previous trainees using young offender populations had gained their ethical approval from IRAS and local NHS trusts. We found out that the status of young offenders is relatively confusing and that there are only certain Research Ethics Committees who can review research involving prisoners. The guidance below was sent to us by a researcher in the field:

"NRES Standard Operating Procedures for Research Ethics Committees indicate that it may depend on the nature of the secure care – whether this is provided by the Local Authority (in which case review by a prison research flagged REC is not required) or by the prison service. Applications involving prisoners: Except in Scotland, any application

in which the research participants include prisoners should be allocated to the RECs flagged by NRES Head Office to review such research. A prisoner is defined for this purpose as any inmate of the prison services of England and Wales, Scotland or Northern Ireland. This does not include patients detained under the Mental Health Act at special hospitals or other psychiatric secure units, or juvenile offenders detained in local authority secure accommodation or secure training centres".

This information indicated that the young offenders being detained in the Secure Training Centre were not officially considered to be prisoners and so we might not need to apply to IRAS for ethical approval. This led to discussions with the UCL Research Ethics Committee to check whether our research projects would be covered for insurance purposes. Once this was clarified we submitted and gained ethical approval from the University Research Ethics Committee. It was apparent to us that it was relatively unusual for research to be carried out within Secure Training Centre populations. As a result Research Ethics Committees may need to clarify the status of this group of young offenders so that further studies can be carried out with similar young offending populations in the UK.

We also contacted the YJB early on in this process in order to let them know the research was going ahead. However, we were informed by the YJB that there was currently a 'moratorium on research' being conducted within Youth Offending Services in the UK for a year. This was surprising given the overarching government target to develop the evidence base and was concerning news as we were not sure whether the research would be able to go ahead at all. However, after some investigating we found out that Secure Training Centres were not managed in the same way as Youth

Offending Services, as they are privately run organisations. This meant the research could go ahead as a piece of independent research but the YJB would not be directly involved in the research process.

Reflections on carrying out research with a detained young offender population

Relatively early on in the research process it became apparent that the staff at the centre were extremely busy and were under pressure to meet performance targets. As a consequence, it became quite difficult to manage our own expectations regarding the progress of the research, whilst balancing this with the pressures that the staff members were under. We spent time discussing and managing these issues over the months of data collection. At the beginning of this process we had a number of discussions about the target sample size and both parties agreed that it would be realistic to aim for approximately 80 participants. This was taking into account factors such as the population at the centre being transient and rotating every couple of months, as well as there being two named members of staff available to help with the data collection. In hindsight, I do not believe that this sample size was unachievable within the setting and allotted time frame. However, it did become more of a challenge to meet this target as the centre was going through a period of economic instability and uncertainty. This research study would not have succeeded if we had not had the support and inside knowledge from the Assistant Psychologists who were working at the centre. Thus, staff availability and resourcing need to be considered when conducting research within youth offending contexts.

Prior to carrying out this research thesis I had not previously worked with young offenders. Therefore, it was initially quite daunting going into the Secure Training

Centre and in particular finding out about the range of crimes committed by the young people being detained. It was shocking to find out that many of these young people were multiple offenders with both violent and non violent offences, especially as some of the detainees were only 14 years old. The young people were separated into units of 6 to 8 and had their own rooms. As a clinical trainee expecting to focus on the mental health and psychological well-being of clients, it was surprising that most of the emphasis was on education, safety issues and physical well-being. This was illustrated by the management at the centre deciding that the young people would not be allowed to miss any lessons to take part in the research. The centre did have a psychology team and provided some interventions for mental health difficulties of the young people. However, it was noticeable that it was a relatively small team and that they would only have been able to provide 'ad hoc' support for the young people. There was also a detailed timetable for each unit to ensure that certain young people did not mix with each other, which added additional restrictions on the times that the research could take place. All of these factors meant that we spent quite a long time planning with the Assistant Psychologists at the centre to work out the logistics of interviewing each young person. In order to ensure safety, each young person needed to be escorted by a custody officer to the interview rooms. This meant that at times we were asking for considerable amount of time from the Assistant Psychologists at the centre, which sometimes conflicted with them meeting their performance targets.

In terms of actually conducting the research protocol with the young offenders there were several issues that arose. We decided to pilot the protocol to make sure that it was best suited to working with this vulnerable and challenging population. During the pilot, two of the young people became confused as to why we were asking so many

questions, started to lose concentration and struggled to complete the full protocol in one sitting. Following these pilot interviews we decided to make a few amendments to the protocol. We decided to shorten some of the measures and changed their order, so that we didn't focus on very personal topics straight away. We also moved the behavioural task to the middle of the protocol to give the young people a break from filling in the questionnaires. We also decided that we would need to spend a longer amount of time explaining that it was their decision whether to take part in the research and what type of questions to expect. These changes to the protocol had a considerable impact on their attitude to taking part in the research and improved their concentration levels. I also found that when I spent more time building up a rapport with the young people, they responded much more positively to the whole process. Many of the young people appeared to be pleased to be asked for their opinions and wanted to talk in more detail about the experiences triggered by the questionnaires. A large proportion of the young people asked to be informed about what the research finds out and said that they had enjoyed taking part in the research.

Our experiences highlight the very real impact of organisational and wider political contexts on conducting research with this population. The government appears to be keen to develop the evidence base as there is limited knowledge about effective treatments with this population. However, there are still a number of barriers to carrying out research in these settings. Nonetheless, the factors that influence youth offending have been increasingly studied in these settings, which have led to the development of new treatment approaches. For example, there has been a recent pilot in the UK of an evidenced based treatment programme called Multisystemic Therapy (MST) which has been developed for young people with conduct problems (e.g. Henggeler, 2011).

Measurement dilemmas

Measuring antisocial behaviour

Whilst designing this study I realised that there were a number of different methods available for measuring the severity of antisocial behaviour. There have been debates in the literature about whether it is more valid and reliable to rely on self-report or objective measures of antisocial behaviour. This posed a dilemma as it was difficult to know which measures would best capture the severity of antisocial behaviour in this population. I decided that the best approach would be to use two different informants to provide an indication of the severity of antisocial behaviour, which meant using both a self-report measure and a measure completed by professionals. I decided to choose a self-report measure of antisocial behaviour (i.e. SPACE) as the questions had been developed and validated with a large UK population (Smith & McVie, 2003) and they also closely matched the DSM-IV criteria for conduct disorder. It was chosen over other self-report measures, such as the Youth Self Report (YSR; Achenbach, 1991) as I thought that it was better able to capture the more severe criminal behaviours, rather than general externalising behaviours. As there are often concerns about how valid the responses on self-report measures are with this population (e.g. Rutter, 2005), I decided to use a social desirability measure to assess for response sets. It was interesting that this measure indicated that the participants were generally responding in an honest manner and as such the results from the self-report measures may be considered with more confidence. During this interview process I also checked some of the responses on the SPACE with the participants' file information to see whether they matched up. In general, the participants appeared to be responding honestly and their answers made sense according to their recent criminal histories (e.g. assaults versus thefts).

Nevertheless, I did also decide to collect information from a more 'objective' measure of antisocial behaviour. It was quite difficult to decide which measure to use as the 'objective' indicator of antisocial behaviour. I did not have access to police databases and so it was not possible to use a more typical measure of objective offending in this study (e.g. numbers of violent and non-violent offences). Although, it might be argued that the real extent of a young person's antisocial behaviour may not be accurately represented by the number of offences for which they have been convicted. For example, the young people may have committed offences in addition to those that they have been caught and convicted. I decided to use the ASSET as a measure of risk for re-offending as it is widely used and has been validated in youth offending services in the UK (Roberts, Baker, Merrington & Jones, 2001). Given the political agenda to reduce re-offending rates of young offenders (DoH, 2009) it seemed relevant to use a measure that could identify factors related to the risk for re-offending. I also think that there is scope for using the risk for re-offending measure in a more detailed way than was possible in this study, such as by examining the individual risk factors that contribute the ASSET total scores. However, further research is required to find out more about the validity and utility of the ASSET as an indicator of the severity of antisocial behaviour.

Experiences of using a behavioural measure of risk-taking (BART)

There has recently been an emergence of studies using mixed methodologies which use both questionnaires and behavioural tasks in order to move away from the reliance on self-report measures. I would like explain my rationale for choosing the BART behavioural task and discuss my experiences of using this task with a young offender population.

I wanted to choose a task that would be accessible to a young offender population who often have difficulties with concentration and low frustration tolerance levels. Therefore, one of the main reasons for choosing the adolescent version of the BART task (Lejuez et al. 2002) was that it appeared to be fun and inherently simple to complete. Once I piloted the BART task, I realised that it was different to other risk-taking tasks (e.g. Risky Choice Task) as it did not require participants to learn about probabilities of loss and reward and as such was less cognitively challenging. In addition, the BART task did not have a gambling element as some of the other tasks did (e.g. Iowa Gambling Task), which I thought was more applicable for use with this population. Another reason for choosing the youth version of the BART task was that it had been validated for use with an adolescent population and been associated with real world risk-taking behaviours (Lejuez et al. 2002). There were also a number of studies examining risk-taking behaviour with young people with conduct problems (e.g. Crowley et al. 2006; Marini & Stickle, 2010).

In general, many of the participants reported that they enjoyed playing the BART task and appeared to be sufficiently motivated to gain as many points as possible. This was highlighted by several of the participants asking how they were doing in relation to their peers and asking whether they had gained the top score. I also observed that the young people used different approaches when completing the task, with some being more conservative (i.e. inflating each balloon less, getting fewer explosions and gaining fewer points overall) and others taking a more risky approach (i.e. inflating the balloons more, getting more explosions and gaining more points overall).

On reflection, I am still unsure why the current study did not find any significant independent effects with the BART task. The BART is believed to measure risk-taking behaviour as a moment by moment process of weighing up reward and losses (Lejuez, Aklin, Zvolensky & Pedulla, 2003). Thus, for each balloon the participant must decide whether to keep on pumping (and risk an explosion) or save the points. With each pump the probability of loss on that balloon rises, but the potential reward also increases. In the BART task taking more risks (or pumping larger balloons) often leads to higher rewards (i.e. points and prizes) but also higher numbers of explosions. However, I am not convinced that the BART task was sensitive or representative enough to test the type of risk-taking behaviour typically displayed by this group of young people. For example, many of the crimes these young people had committed appeared to have happened in response to contextual triggers, such as being under the influence of substances or peer group pressure. Decisions such as these about gains and losses has been conceptualised within Prospect Theory (Kahneman & Tversky, 1979). This theory states that under different conditions of risk people may be more motivated to achieve gains or to avoid losses. Thus, further research may need to be carried out to closely examine the influence of context and how they influence risk-taking decisions, such as weighing up short term gains (i.e. theft and peer group status) versus long term losses (i.e. capture and imprisonment).

I have some doubts that playing a computer game about blowing up balloons in a safe environment with a researcher present and with limited contextual triggers was able to adequately test the participants' risk-taking behaviour. Nonetheless, it would be quite difficult to design a task that is able to have suitably high levels of risk, whilst also being able to gain ethical approval. However, some recent studies have attempted to

increase the inherent riskiness of behavioural tasks by introducing a higher reward to loss ratio (Bornovalova et al. 2009) or increased competitive element (Fairchild et al. 2009). For example, Fairchild et al. (2009) included a stressful procedure where participants with early and late onset conduct disorder were told that they would be taking part in a competition with an opponent of a similar age, with a cash prize for the winner. The procedure essentially tried to induce frustration and antagonism between the participant and videotaped opponent, whilst undertaking a behavioural risk task. Interestingly, the increase of stress by Fairchild et al. (2009), led to more cautious risk-taking, although this was less marked in the early-onset group. This type of higher stakes protocol might be better able to assess the risk-taking behaviours typically found in more severe populations. However, the question remains about whether the BART task adequately assesses risk-taking behaviour in this population and needs to be investigated further in the literature.

Overall, my experiences with using the BART task with a young offender population suggest to me that behavioural tasks have some advantages over self-report measures. One particularly important factor is that these young people were able to engage well with the task and reported to enjoy it. In contrast, some of the young offenders did find it hard to concentrate whilst completing the self-report measures and needed support to read the questions. This research experience suggests that it is possible to use a behavioural task with a group of young offenders and it may be a helpful approach for future studies to adopt. However, there needs to be some caution with how far we rely on the BART task and similar behavioural tasks until we know more about what they are exactly measuring and the factors that influence performance (see Frick & Loney, 2000).

Conclusion

Whilst conducting this research study, I have become more aware of the social and political contexts that impact on the process of conducting research with this population. There is a political drive towards reducing the re-offending rates of young offenders and to enhance their well-being by providing more psychological interventions. Thus, there is a potential role for psychologists to help advance the evidence base by conducting research within these settings. However, it is important for researchers to consider some of the ethical and organisational barriers to conducting research with young offenders. This experience has shown me that it is possible to carry out research studies with detained samples of young offenders. There is a need for further research to be carried out with more severe populations, so as to develop the available measures and understand the multiple factors that have an impact. Hopefully these studies will contribute to the design of early intervention or even prevention strategies for young offenders.

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Appendices

Appendix 1: Joint Project Contributions

Joint Project Contributions

This thesis was carried out as a joint project with another Trainee Clinical Psychologist, Lisa Smith, who was also being supervised by Dr Stephen Butler. The title of Lisa's thesis is: 'An exploration of the relationship between poor parent child attachment and callous-unemotional traits in a sample of high risk young offenders' (Smith, 2011). The two thesis projects had different working titles and as such had different designs, as well as a number of different independent variables. Nonetheless we shared our resources in terms of planning the projects, recruiting the youth offending service and carrying out the interviews. We designed the protocol together so that it could be the best fit for all of our measures. We shared the task of entering the data into SPSS. However, we analysed our data separately and wrote up our empirical papers independently.

Appendix 2: Ethical approval letter

UCL RESEARCH ETHICS COMMITTEE
GRADUATE SCHOOL OFFICE

Dr Stephen Butler
Sub-Department of Clinical Health Psychology
University College London
Gower Street
London
WC1E 6BT

25 June 2010

Dear Dr Butler

Notification of Ethical Approval:
Ethics Application: 2404/001: Exploring risk factors for antisocial behaviour in young offenders

I am pleased to confirm that, further to your satisfactory responses to the Committee's comments, your study has been approved by the UCL Research Ethics Committee for the duration of the study (i.e. until October 2011).

Approval is subject to the following conditions:

1. You must seek Chair's approval for proposed amendments to the research for which this approval has been given. Ethical approval is specific to this project and must not be treated as applicable to research of a similar nature. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing the 'Amendment Approval Request Form'.

The form identified above can be accessed by logging on to the ethics website homepage: http://www.grad.ucl.ac.uk/ethics/ and clicking on the button marked 'Key Responsibilities of the Researcher Following Approval'.

2. It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. Both non-serious and serious adverse events must be reported.

   Reporting Non-Serious Adverse Events.
   For non-serious adverse events you will need to inform Dr Angela Poulter, Ethics Committee Administrator (ethics@ucl.ac.uk), within ten days of an adverse incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Chair or Vice-Chair of the Ethics Committee will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

   Reporting Serious Adverse Events
   The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator immediately the incident occurs. Where the adverse incident is unexpected and serious, the Chair or Vice-Chair will decide whether the study should be terminated pending the opinion of an independent expert. The adverse event will be considered at the next Committee meeting and a decision will be made on the need to change the information leaflet and/or study protocol.

On completion of the research you must submit a brief report (a maximum of two sides of A4) of your findings/concluding comments to the Committee, which includes in particular issues relating to the ethical implications of the research.

Yours sincerely

p.p. Angela Pullen

Sir John Birch
Chair of the UCL Research Ethics Committee

Cc: Miss Lisa Smith; Ms Ruth Dawson, UCL Division of Psychology and Language Sciences
Mr David Wilson, Joint UCLH/UCL Biomedical Research Unit

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Appendix 3: Youth-rated Inventory of Callous Unemotional Traits

ICU
(Youth Version)

Name: _____

Date Completed: _____

Instructions: Please read each statement and decide how well it describes you. Mark your answer by circling the appropriate number (0-3) for each statement. Do not leave any statement unrated.

	Not at all true	Somewhat true	Very true	Definitely True
1. I express my feelings openly.	0	1	2	3
2. What I think is "right" and "wrong" is different from what other people think.	0	1	2	3
3. I care about how well I do at school or work.	0	1	2	3
4. I do not care who I hurt to get what I want.	0	1	2	3
5. I feel bad or guilty when I do something wrong.	0	1	2	3
6. I do not show my emotions to others.	0	1	2	3
7. I do not care about being on time.	0	1	2	3
8. I am concerned about the feelings of others.	0	1	2	3
9. I do not care if I get into trouble.	0	1	2	3
10. I do not let my feelings control me.	0	1	2	3
11. I do not care about doing things well.	0	1	2	3
12. I seem very cold and uncaring to others.	0	1	2	3
13. I easily admit to being wrong.	0	1	2	3
14. It is easy for others to tell how I am feeling.	0	1	2	3
15. I always try my best.	0	1	2	3
16. I apologize ("say I am sorry") to persons I hurt.	0	1	2	3
17. I try not to hurt others' feelings.	0	1	2	3
18. I do not feel remorseful when I do something wrong.	0	1	2	3
19. I am very expressive and emotional.	0	1	2	3
20. I do not like to put the time into doing things well.	0	1	2	3

21. The feelings of others are unimportant to me.	0	1	2	3
22. I hide my feelings from others.	0	1	2	3
23. I work hard on everything I do.	0	1	2	3
24. I do things to make others feel good.	0	1	2	3

Unpublished rating scale by Paul J. Frick, Department of Psychology, University of New Orleans (pfrick@uno.edu) .

Appendix 4: Materialism Scale

ID……

Materialism Scale

Please read the statements below and tick the box which best describes how much you agree/disagree with each statement.

	Disagree a lot (1)	**Disagree a little (2)**	**Agree a little (3)**	**Agree a lot (4)**
1. I'd rather spend time buying things, than doing almost anything else.				
2. I would be happier if I had more money to buy more things for myself.				
3. I have fun just thinking of all the things I own.				
4. I really enjoy going shopping.				
5. I like to buy things my friends have.				
6. When you grow up, the more money you have, the happier you are.				
7. I'd rather not share my snacks with others if it means I'll have less for myself.				
8. I would love to be able to buy things that cost lots of money.				

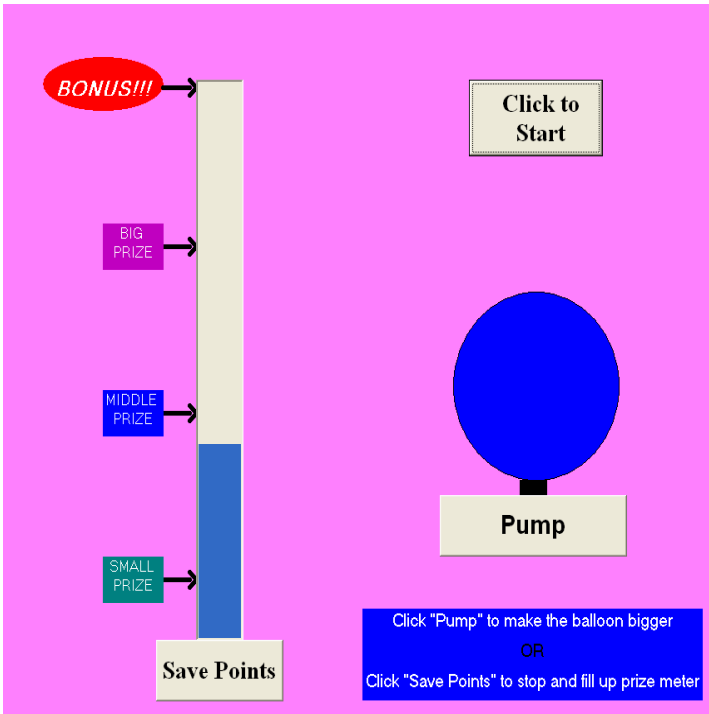
9. I really like the kids that have very special games or clothes.				
10. The only kind of job I want when I grow up is one that gets me lots of money				
11. I like to own things that impress people				
12. My life would be better if I owned things I don't have right now				
13. It is important to make a lot of money when I grow up				
14. When I grow up, I want to have a really nice house filled with all kinds of cool stuff				

Appendix 5: The BART Computer Risk-taking Task

Summary

* *There are just 30 balloons*
* *You pump up the balloon to build up points*
* *If the balloon pops, you lose built up points*
* *Click "Save points" to fill prize meter*
* *More points in prize meter = bigger prize*

After a signal from the experimenter
Click this button to begin



Appendix 6: SPACE (Self-reported antisocial behaviour)

Your Last Year

These questions are about things that have happened and things that you may have done in the last year. You are reminded that your responses are strictly confidential.

1. During the last year, did you travel on a bus or train without paying enough money or using some else's pass?

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

2. During the last year, did you write or spray paint on property that did not belong to you (e.g. a phone box, car, building or bus shelter)?

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

3. During the last year, did you steal money or something else from home?

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

4. During the last year, did you sign someone else's name to get money or other things you wanted?

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

5. **<u>During the last year</u>, did you use force, threats or a weapon to steal money or something else from somebody?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

6. **<u>During the last year</u>, did you steal something from a shop or store?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

7. **<u>During the last year</u>, did you break into a car or van to try and steal something out of it?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

8. **<u>During the last year</u>, were you noisy or cheeky in a public place so that people complained or you got into trouble?** (DON'T include things you did at school)

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

9. **<u>During the last year</u>, did you ride in a stolen car or van or on a stolen motorbike?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

10. During the last year, did you steal money or something else from school?

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

11. During the last year, did you break into a house or building to steal something?

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

12. During the last year, did you damage or destroy property that did not belong to you on purpose (e.g. windows, cars or street lights)?

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

13. During the last year, did you set fire or try to set fire to something on purpose (e.g. a school, bus shelter, house etc)?

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

14. During the last year, did you carry a knife or other weapon with you for protection or in case it was needed in a fight?

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

15. **<u>During the last year</u>, did you hurt or injure any animals or birds on purpose?** (DON'T include insects)

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

16. **<u>During the last year</u>, did you hit or pick on someone because of their race or skin colour?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

17. **<u>During the last year</u>, did you hit, kick or punch a brother or sister on purpose?** (DON'T include play fighting)

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

18. **<u>During the last year</u>, did you hit, kick or punch someone else on purpose (fight with them)?** (DON'T include brothers, sisters or play fighting)

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

19. <u>During the last year</u>, did you sell an illegal drug to someone?

☐ Yes – **answer questions in box below** ☐ No – **go to next question**

↓

a. **How many times did you do this in the last year?** (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

b. **What kind of drugs did you sell in the last year?** (please write in)

_____

<u>Some questions about you:</u>

1. I never lie

☐ True ☐ False

2. Once in a while I get angry

☐ True ☐ False

3. I like everyone I know

☐ True ☐ False

4. I never get angry at anybody

☐ True ☐ False

5. I am liked by everybody who knows me

☐ True ☐ False

6. I am always nice to everyone

☐ True ☐ False

7. My life at home is always happy

☐ True ☐ False

8. I am always kind

☐ True ☐ False

9. Sometimes I don't like school or work

☐ True ☐ False

Appendix 7: ASSET Form (Risk of re-offending)

Asset Core Profile

YOUTH JUSTICE BOARD

Additional information on answering the questions marked by asterisks on this form is given in the guidance notes.

Personal details

Surname _____ First name(s) _____

Other names _____ Gender: Male / Female Date of birth _____

*Unique ID _____ *Police National Computer number _____

*Address _____

_____ *Postcode _____

Phone numbers (home, mobile, work) _____

*Ethnic classification (2001 census) Information not obtainable ☐

White	British ☐	Irish ☐	Other White ☐				
Black/Black British	Caribbean ☐	African ☐	Other Black ☐				
Asian/Asian British	Indian ☐	Pakistani ☐	Bangladeshi ☐	Other Asian ☐			
Mixed	White/Black Caribbean ☐	White/Black African ☐	White/Asian ☐	Other Mixed ☐			
Chinese/Other ethnic group	Chinese ☐	Any other ☐					

Preferred language (other than English) _____

Information used for assessment (Please tick all that apply.)

Interview	☐	Crown Prosecution Service	☐	General practitioner	☐
Case record	☐	Solicitor	☐	Mental health service	☐
Family/carer	☐	Previous convictions	☐	Other health service	☐
School	☐	Residential home/hostel	☐	Drug/alcohol service	☐
Social Services Department	☐	Housing association	☐	Young Offender Institution	☐
Victim	☐	Local education authority	☐	Secure unit	☐
Police	☐	Careers guidance service	☐	Voluntary organisation	☐
		*Common Assessment Framework	☐	Lead Professional	☐

Other (e.g. club, religious organisation, local youth projects) _____

Give details of any particular difficulties in obtaining information.

Specify any significant pieces of information still to be obtained.

Assessment completed by _____ Date completed _____

Offence details

		*Seriousness score (1-8)
*Primary index offence		
Additional offences		

Outline of current offence(s)

*Case stage

Referral Order	☐	Pre-sentence report	☐	Post-sentence	☐		
Mid-Detention and Training Order	☐	*Review	☐	End order	☐	*Other	☐

*Victim/s (Please tick all that apply.)

*Specific, targeted victim	☐	*Vulnerable victim	☐	*Repeat victim	☐
Victim not known to him/her	☐	Racially motivated offence	☐		

Details

Offence analysis

Please use the framework below to describe and analyse the young person's offending behaviour regarding current offences.

*Actions and intentions
- What was the offence?
- Where, when, and with whom was it committed?
- What methods were used?
- What degree of planning was involved?
- Were any weapons used?
- What was the value of money or property stolen?
- Were alcohol and/or drugs used at the time of the offence?
- Was it a group offence? If so, was the young person a leader or follower?
- What were the intentions of the young person?
- What were the differences between their intentions and their actions?
- Was the victim targeted/random/groomed/particularly vulnerable?
- Were there any other aggravating or mitigating factors?

*Outcomes and consequences
- What is the impact on the victim – in the immediate and the longer term?
- What are the consequences for the young person (e.g. reaction to arrest and detention, response from family)?

*Reasons and motives
- What were the young person's personal and social circumstances at the time?
- What were the young person's motives?
- What were the young person's attitudes?
- Does the young person have any particular attitudes/beliefs which might have influenced the offence (e.g. a belief that certain types of behaviour are justified, racial motivation, triggers, disinhibitors)?

*Patterns of offending behaviour
- Are there any similarities or differences with previous behaviour?
- Has there been an increase/decrease in seriousness and/or frequency?
- Does the young person show a specialisation/diversity of offences?
- Are there any gaps in offending patterns?
- Has the young person made previous attempts to desist?

Analysis and evidence

Criminal history

Age at first Reprimand/Caution	10 ☐	11 ☐	12 ☐	13 ☐	14 ☐	15 ☐	16 ☐	17 ☐	N/A ☐	Don't know ☐
Age at first conviction	10 ☐	11 ☐	12 ☐	13 ☐	14 ☐	15 ☐	16 ☐	17 ☐	N/A ☐	Don't know ☐
Number of previous convictions	10+ ☐	8-9 ☐	6-7 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☐	0 ☐	Don't know ☐
Previous custodial sentences							2+ ☐	1 ☐	0 ☐	Don't know ☐

*Time since last conviction or pre-court disposal	Up to… 3 months ☐	6 months ☐	12 months ☐	1 year + ☐	N/A ☐	Don't know ☐

Previous disposals

Please indicate whether the young person has ever received any of the following disposals.

	Date/s		Date/s
Final Warning		Supervision Order	
Referral Order		Community Punishment Order	
Reparation Order		Community Rehabilitation Order	
Action Plan Order		*Other disposals, e.g. fine	
ASBO			

	Yes	No	Don't know	N/A
Have there been any instances of failing to complete or comply with previous disposals?	☐	☐	☐	☐

Details (Please explain reasons for any 'Don't know' responses.)

	Yes	No	Don't know
Is the young person's name on the sex offenders' register?	☐	☐	☐
*Any other previous contact with Yot? (e.g. YISP, YIP, Splash, ABC, referral for Child Safety Order)	☐	☐	☐

Details (This does not include the information recorded above about previous disposals.)

Care history and 'looked after' status

Please indicate whether any of the following apply to the young person.	Current	Previous	Never	Don't know
Accommodated by voluntary agreement with parents (s20 Children Act 1989)	☐	☐	☐	☐
Subject to a care order (s31 Children Act 1989)	☐	☐	☐	☐
Remand to local authority accommodation (s23(1) Children and Young Person's Act 1969)	☐	☐	☐	☐

If the young person is 16 or 17 and you have ticked a 'current' or 'previous' box above:

	Yes	No	Don't know
*Is s/he an 'eligible child' (still in care and looked after for at least 13 weeks since the age of 14)?	☐	☐	☐
*(If 'No') Is s/he a 'relevant child' (has left care but was looked after for at least 13 weeks from the age of 14, and for some time while 16 or 17)?	☐	☐	☐

Other social services contact	Current	Previous	Never	Don't know
His/her name has been placed on the child protection register	☐	☐	☐	☐
*Any other referrals to or contact with social services	☐	☐	☐	☐
Any social services involvement with siblings	☐	☐	☐	☐

Details (Please explain reasons for any 'Don't know' responses and outline any aspects of the young person's care history which you consider relevant.)

1. Living arrangements

*Who has the young person been mostly living with over the last six months?

Mother	☐	Grandparent/s	☐	Friend/s	☐
Father	☐	Other family	☐	Residents of home or institution	☐
Step-parent	☐	By self	☐		
Foster carer/s	☐	Partner	☐	Other/s	☐
Sibling/s	☐	Own child(ren)	☐		

If his/her *current* living arrangements are different, please specify below.

Please indicate whether any of the following apply to the young person.	Yes	No	Don't know
*No fixed abode	☐	☐	☐
*Unsuitable, does not meet his/her needs (e.g. overcrowded, lacks basic amenities)	☐	☐	☐
Deprived household (e.g. dependent on benefits, entitlement to free school meals)	☐	☐	☐
*Living with known offender/s	☐	☐	☐
Absconding or staying away (e.g. ever reported as missing person)	☐	☐	☐
*Disorganised/chaotic (e.g. different people coming and going)	☐	☐	☐
*Other problems (e.g. uncertainty over length of stay)	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's living arrangements are associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

2. Family and personal relationships

Which family members or carers has the young person been in contact with over the last six months?

Birth mother	☐	Grandparent/s	☐	Other significant adults (e.g. neighbour, family friend)	☐
Birth father	☐	Sibling/s	☐		
Adoptive parent/s	☐	Partner	☐		
Step-parent	☐	Own child(ren)	☐	Other/s	☐
Foster carer/s	☐	Other family	☐		

Please indicate whether any of the following apply to the young person.

		Yes	No	Don't know
*Evidence of family members or carers with whom the young person has been in contact over the last six months being involved in criminal activity		☐	☐	☐
*Evidence of family members or carers with whom the young person has been in contact over the last six months being involved in heavy alcohol misuse		☐	☐	☐
*Evidence of family members or carers with whom the young person has been in contact over the last six months being involved in drug or solvent misuse		☐	☐	☐
*Significant adults fail to communicate with or show care/interest in the young person		☐	☐	☐
Inconsistent supervision and boundary setting		☐	☐	☐
*Experience of abuse (i.e. physical, sexual, emotional, neglect)		☐	☐	☐
*Witnessing other violence in family context		☐	☐	☐
*Significant bereavement or loss		☐	☐	☐
*Difficulties with care of his/her own children	N/A	☐	☐	☐
Other problems (e.g. parent with physical/mental health problem, loss of contact, acrimonious divorce of parents, other stress/tension)		☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's family and personal relationships are associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

3. Education, training and employment

Engagement in education, training or employment (ETE)

*Is the young person of compulsory school age? Yes ☐ No ☐

Which of the following best describe his/her current ETE situation? (Tick as many as apply.)

Mainstream school	☐	Work experience	☐	College/further education	☐
Special school	☐	Full time work	☐	Other training course	☐
Pupil referral unit	☐	Part time work	☐	Unable to work (e.g. incapacity)	☐
Other specialist unit	☐	Casual/temporary work	☐	Looking after family	☐
Community home with education	☐	Unemployed	☐	Nothing currently arranged	☐
		New Deal	☐	Other	☐
Home tuition	☐	Pre-employment/lifeskills training	☐		

*How many hours of ETE are arranged each week? _____ hours

*How many hours of ETE is she/he currently engaged in/receiving per week? ___ hours

*Is there evidence of non-attendance? (Please tick relevant reasons and give details below.) Yes ☐ No ☐

Permanent exclusion ☐ Fixed-term exclusion ☐ Family issues ☐ Illness ☐

Other non-attendance (specify) _____

Evidence (Please explain reasons for any 'Don't know' responses.)

Educational attainment

		Yes	No	Don't know
Does s/he have any educational qualifications?		☐	☐	☐
Does s/he have vocational/practical qualifications?		☐	☐	☐
*Have special needs (SEN) been identified?		☐	☐	☐
If 'yes', does s/he have a statement of SEN?	N/A	☐	☐	☐
Does s/he have difficulties with literacy?		☐	☐	☐
Does s/he have difficulties with numeracy?		☐	☐	☐
Does s/he have difficulties caused by a severe lack of English (or Welsh, if applicable) language skills?		☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

Other factors relating to engagement in ETE	Yes	No	Don't know
Negative attitudes towards ETE	☐	☐	☐
Lack of attachment to current ETE provision (e.g. wants to leave, cannot see benefits of learning)	☐	☐	☐
*Bullied	☐	☐	☐
*Bullies others	☐	☐	☐
Poor relationships with most teachers/tutors/employers/colleagues	☐	☐	☐
Negative parental/carer attitudes towards education/training or employment	☐	☐	☐
Other problems (e.g. frequent changes of school/educational placement, school is unchallenging/boring, disability, lack of stable address meaning difficulties securing work, no money to buy books/tools/equipment).	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's education, training and employment is associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

4. Neighbourhood

*Please give a brief description of the neighbourhood in which the young person spends most of their time.

Please indicate whether any of the following are a problem in the neighbourhood.

	Yes	No	Don't know
*Obvious signs of drug dealing and/or usage	☐	☐	☐
Isolated location/lack of accessible transport	☐	☐	☐
*Lack of age-appropriate facilities (e.g. youth clubs, sports facilities)	☐	☐	☐
Racial or ethnic tensions	☐	☐	☐
Other problems (e.g. lack of amenities such as shops or post office, opportunities to sell stolen goods, red-light district, tension between police and local community)	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's neighbourhood is associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

5. Lifestyle

Please indicate whether the following are characteristic of the young person's lifestyle.	Yes	No	Don't know
*Lack of age-appropriate friendships	☐	☐	☐
*Associating with predominantly pro-criminal peers	☐	☐	☐
*Lack of non-criminal friends	☐	☐	☐
Has nothing much to do in spare time	☐	☐	☐
*Participation in reckless activity	☐	☐	☐
*Inadequate legitimate personal income	☐	☐	☐
Other problems (e.g. gambling, staying out late at night, loneliness)	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's lifestyle is associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

6. Substance use

Please answer the questions below to give details of substance use (based on the information currently available).

	*Ever used	*Recent use	Age at first use	Not known to have used
Tobacco	☐	☐	☐	☐
Alcohol (Please specify types of alcohol in evidence box.)	☐	☐	☐	☐
Solvents (glue, gas and volatile substances e.g. petrol, lighter fuel)	☐	☐	☐	☐
Cannabis	☐	☐	☐	☐
Ecstasy	☐	☐	☐	☐
Amphetamines	☐	☐	☐	☐
LSD	☐	☐	☐	☐
Poppers	☐	☐	☐	☐
Cocaine	☐	☐	☐	☐
Crack	☐	☐	☐	☐
Heroin	☐	☐	☐	☐
Methadone (obtained legally or illegally – specify in evidence box)	☐	☐	☐	☐
Tranquilisers	☐	☐	☐	☐
Steroids	☐	☐	☐	☐
Other (Please specify in evidence box.)	☐	☐	☐	☐

Please indicate whether any of the following apply to the young person.	Yes	No	Don't know
*Practices which put him/her at particular risk (e.g. injecting, sharing equipment, poly-drug use)	☐	☐	☐
*Sees substance use as positive and/or essential to life	☐	☐	☐
*Noticeably detrimental effect on education, relationships, daily functioning	☐	☐	☐
Offending to obtain money for substances	☐	☐	☐
Other links to offending (e.g. offending while under influence, possessing/supplying illegal drugs, obtaining substances by deception)	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's substance use is associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

7. Physical health

Please indicate whether any of the following apply to the young person.	Yes	No	Don't know
*Health condition which significantly affects everyday life functioning	☐	☐	☐
*Physical immaturity/delayed development	☐	☐	☐
*Problems caused by not being registered with GP	☐	☐	☐
*Lack of access to other appropriate health care services (e.g. dentist)	☐	☐	☐
*Health put at risk through his/her own behaviour (e.g. hard drug use, unsafe sex, prostitution)	☐	☐	☐
Other problems (prescribed medication, binge drinking, obesity, poor diet, smoking, hyperactivity, early or late physical maturation)	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's physical health is associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

8. Emotional and mental health

Is the young person's daily functioning significantly affected by emotions or thoughts resulting from the following?	Yes	No	Don't know
*Coming to terms with significant past event/s (e.g. feelings of anger, sadness, grief, bitterness)	☐	☐	☐
*Current circumstances (e.g. feelings of frustration, stress, sadness, worry/anxiety)	☐	☐	☐
*Concerns about the future (e.g. feelings of worry/anxiety, fear, uncertainty)	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

	Yes	No	Don't know
*Has there been any formal diagnosis of mental illness?	☐	☐	☐
*Any other contact with, or referrals to, mental health services?	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Are there indications that any of the following apply to the young person?	Yes	No	Don't know
*S/he is affected by other emotional or psychological difficulties (e.g. phobias, eating or sleep disorders, suicidal feelings not yet acted out, obsessive compulsive disorder, hypochondria).	☐	☐	☐
*S/he has deliberately harmed her/himself.	☐	☐	☐
*S/he has previously attempted suicide.	☐	☐	☐

Details (Specify type of illness, medication, whether she/he co-operates with treatment etc. Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's emotional and mental health is associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

9. Perception of self and others

Please indicate whether any of the following apply to the young person.	Yes	No	Don't know
*S/he has difficulties with self-identity.	☐	☐	☐
*S/he has inappropriate self-esteem (e.g. too high or too low).	☐	☐	☐
*S/he has a general mistrust of others.	☐	☐	☐
Sees him/herself as a victim of discrimination or unfair treatment (e.g. in the home, school, community, prison).	☐	☐	☐
*S/he displays discriminatory attitudes towards others (e.g. race, ethnicity, religion, gender, age, class, disability, sexuality).	☐	☐	☐
*S/he perceives him/herself as having a criminal identity.	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's perception of self and others is associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

10. Thinking and behaviour

*Are the young person's actions characterised by any of the following?	Yes	No	Don't know
*Lack of understanding of consequences (e.g. immediate and longer term outcomes, direct and indirect consequences, proximal and distal consequences)	☐	☐	☐
*Impulsiveness	☐	☐	☐
*Need for excitement (easily bored)	☐	☐	☐
*Giving in easily to pressure from others (lack of assertiveness)	☐	☐	☐
Poor control of temper	☐	☐	☐
*Inappropriate social and communication skills	☐	☐	☐

*Does the young person display any of the following types of behaviour?	Yes	No	Don't know
*Destruction of property	☐	☐	☐
*Aggression towards others (e.g. verbal, physical)	☐	☐	☐
*Sexually inappropriate behaviour	☐	☐	☐
*Attempts to manipulate/control others	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's thinking and behaviour is associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

11. Attitudes to offending

*Please indicate whether the young person displays any of the following attitudes.	Yes	No	Don't know
*Denial of the seriousness of his/her behaviour	☐	☐	☐
*Reluctance to accept any responsibility for involvement in most recent offence/s	☐	☐	☐
*Lack of understanding of the effect of his/her behaviour on victims (if victimless, on society)	☐	☐	☐
*Lack of remorse	☐	☐	☐
*Lack of understanding about the effects of his/her behaviour on family/carers	☐	☐	☐
*A belief that certain types of offences are acceptable	☐	☐	☐
*A belief that certain people/groups are acceptable 'targets' of offending behaviour	☐	☐	☐
*S/he thinks that further offending is inevitable	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's attitudes to offending is associated with the likelihood of further offending.

0	1	2	3	4

(0 = not associated, 4 = very strongly associated)

12. Motivation to change

Please indicate whether the young person displays any of the following attitudes.	Yes	No	Don't know
*Has an appropriate understanding of the problematic aspects of his/her own behaviour	☐	☐	☐
Shows real evidence of wanting to deal with problems in his/her life	☐	☐	☐
*Understands the consequences for him/herself of further offending	☐	☐	☐
*Has identified clear reasons or incentives for him/her to avoid further offending	☐	☐	☐
*Shows real evidence of wanting to stop offending	☐	☐	☐
Will receive positive support from family, friends or others during any intervention	☐	☐	☐
Is willing to co-operate with others (family, Yot, other agencies) to achieve change	☐	☐	☐

Evidence (Please explain reasons for any 'Don't know' responses.)

*Rate the extent to which the young person's motivation to change is associated with the likelihood of further offending.

(0 = not associated, 4 = very strongly associated)

0	1	2	3	4

Summary of dynamic risk factors

	Rating
1. Living arrangements	
2. Family and personal relationships	
3. Education, training and employment	
4. Neighbourhood	
5. Lifestyle	
6. Substance use	

	Rating
7. Physical health	
8. Emotional and mental health	
9. Perception of self and others	
10. Thinking and behaviour	
11. Attitudes to offending	
12. Motivation to change	
Total score from sections 1-12 (max. 48)	

Any other relevant information

Appendix 8: Information sheets & Informed consent forms

Information Sheet
for young people under 16 years old

Title: Finding out some of the reasons young people get involved in crime

Name, Work Address and Contact Details of the Researchers	Lisa Smith and Ruth Dawson, Sub-Department of Clinical Health Psychology, University College London, Gower Street, London, WC1E 6BT. ruthandlisastudy@yahoo.co.uk

You are being invited to take part in a research study. You should only take part if you want to, it is up to you. You will not lose out if you choose not to take part. Before you decide whether you want to take part, it is important for you to read the following information carefully so that you understand why the research is being done and what it will involve. Ask us if there is anything that is not clear or if you would like more information.

What are the researchers trying to find out?

We are asking if you want to join in a research project to find the answer to the question 'What are some of the reasons that young people get involved in crime?'

It has been suggested that a number of things may play a vital role in influencing whether young people get involved in crime. We want to look more closely at what some of these things are. The findings may be able to help young people who get involved in crime.

What will I be asked to do if I take part?

You will be interviewed by one of the researchers who will complete five questionnaires with you. After this you will be asked to do a task on a computer. One of the questionnaires will ask about your beliefs about the importance of material things. One of the questionnaires will ask you about your involvement in different types of criminal activity. Another questionnaire will ask you about your character and two questionnaires will ask about the type of relationships you have with people. The

computer task is a simple task where you will be asked to do things like pressing a button to inflate a balloon on the screen. In total you will be spending about 1 hour with the researchers.

Another important part of the study involves the researchers getting information about your criminal history and history in general from your files at the centre.

Why have I been asked to take part?

You have been invited to join our study because you are a young person currently living in this secure training centre. We hope that around 80 young people will choose to participate in the project. Other young people in the centre has been asked too.

Do I have to take part?

No. It is up to you. We will ask you for your consent and then ask if you will sign a form. If you are under 16 years old we will also ask a senior member of staff from Rainsbrook to sign a consent form to say that you can participate in the project. We will give you a copy of this information sheet and your signed consent form to keep. You are free to stop taking part at any time in the research without giving a reason. If you decide to stop, this will not affect the care you receive at Rainsbrook.

Will my answers be shared with anyone else?

No, all your answers will be made anonymous and kept confidential. This means that it will only be used for the project and will not be seen by other people in the centre. The only time we would tell a member of staff at Rainsbrook about what you tell us in the interviews is if it is about you being at risk of being hurt, others are at risk of being hurt or you tell us about a serious, violent or sexual crime that you have done, for example, an armed robbery or a stabbing that has not been recorded before.

The written information will be locked away and access will be restricted to the project researchers. Information kept on the computer will be coded by a number a system so that you can not be identified. All data will be collected and stored in accordance with the Data Protection Act 1998. The information will not be used for any other purpose.

What are possible good and bad things about taking part?

Everyone will be entered in a raffle as a thank you for taking part. This will give you a chance of winning a voucher for a high street shop (either: £25, £20 or £15). Everyone who takes part will also have the chance to win a gift voucher worth £10 if they gain the highest score on the computer task.

It is very unlikely but sometimes people get upset in interviews. If any of the

questions make you feel upset, you can refuse to answer. You can also talk to Lisa or Ruth (the researchers) or your key worker so that they can help you if you are upset.

Who can I talk to if I have more questions?

If you have any other questions, you can contact Lisa and Ruth by e-mail (ruthandlisastudy@yahoo.co.uk) or you can ask your key worker to pass on a question.

Will I hear about what the research finds out?

Yes, can ask to be told about what the research finds out and you will be able to ask questions if you want to.

Who has said that this project can go ahead?

Before any research goes ahead it has to be checked by a research ethics committee. They make sure that the research is fair. This study has been checked and given the go ahead by the University College London Research Ethics Committee.

Who are we?

Our names are Lisa Smith and Ruth Dawson. We are both Doctoral research students at University College London.

Thank you for reading this information sheet

Informed Consent Form

for young people under 16 years old

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Project: **Finding out some of the reasons young people get involved in crime**

Thank you for your interest in taking part in this research. If you have any questions about the consent form or explanation already given to you, please ask the researchers before you to decide whether you would like to participate.

Researchers: Ruth Dawson and Lisa Smith

Supervised by: Dr Stephen Butler (University College London) and Kerry Heathcote (Chartered Psychologist at Rainsbrook STC)

Participant's statement I..... (print your full name in capital letters)

Have read the information sheet	YES	NO
Understand what the research is about	YES	NO
Have been able to ask questions about the research and am pleased with how my questions have been answered	YES	NO
Agree that my file can be read by the researchers in order to get any background information necessary for the research and give permission for the researchers to have access to my notes	YES	NO
Understand that I can change my mind about taking part and can withdraw from the study at any time without giving a reason	YES	NO

Understand that whether or not I take part will not make any difference to my treatment in the centre YES NO

Agree to take part in the study YES NO

Signed……

Signature of witnessing staff/researcher

……Date……

CONFIDENTIALITY AND DATA PROTECTION

- Information from the study will be kept in a locked filing cabinet
- Information kept on computer will be coded so that individual names cannot be identified
- This study complies with the Data Protection Act (1998).

You will be given a copy of this Consent Form to keep and refer to at any time.

Information Sheet for Secure Training Centre

Title: Finding out some of the reasons young people get involved in crime

Name, Work Address and Contact Details of the Researchers	Lisa Smith and Ruth Dawson, Sub-Department of Clinical Health Psychology, University College London, Gower Street, London, WC1E 6BT. ruthandlisastudy@yahoo.co.uk

Young people are being invited to take part in a research project at Rainsbrook Secure Training Centre. Given that Rainsbrook acts as 'Loco Parentis' for the young people it is essential that we gain informed consent from a named person in the centre in order for young people under 16 years of age to take part. It is only when consent has been gained from the centre and the young person themselves that the young person will be able to participate in the research project. It is important for you to read the following information carefully. They should only participate if they want to; choosing not to take part will not disadvantage them in any way. Ask us if there is anything that is not clear or you would like more information.

What are the researchers trying to find out?

We are asking young people who have committed crimes and are being detained at Rainsbrook to join in a research project to find the answer to the question 'What are some of the reasons that young people get involved in crime?'

It has been suggested that a number of things may play a vital role in influencing whether young people get involved in crime. We want to look more closely at what some of these things are. The findings may be able to help young people who get involved in crime.

What will the young people be asked to do?

They will be asked to attend an interview with the researchers and will complete five questionnaires. They will also be asked to do a task on a computer. One of the questionnaires will ask about their beliefs about the importance of material things. The other questionnaires will ask about their participation in criminal activity, their personality characteristics and the types of relationships they have with people. The computer task is a simple task where they will be asked to do things like pressing a button to inflate a balloon on the screen. This will take about an hour of their time. The young person's teacher or key worker will also be asked to fill in a questionnaire about them. The researchers will also be collecting information such

as background information and offence history, from the young person's file at the centre.

Do the young people have to take part?

No. A named person in Rainsbrook who are acting as their 'Loco Parentis' and the young person can decide whether they take part. If a named person in Rainsbrook decides that a young person can take part they will need to sign a consent form acting as their 'Loco Parentis'. The young person also needs to sign a consent form in order to take part. The young person will be free to withdraw from the study at any time if they wish to do so.

Will information collected for the study be shared with anyone else?

No, all the information gathered for the study will be kept safely and confidential. The data will be anonymised and no data on individual young people will be shared in any way with people in the centre. The only time we would tell a member of staff at Rainsbrook about what the young people tell us in the interviews is if it is about them being at risk of being hurt, others are at risk of being hurt or if they tell us about a serious, violent or sexual crime that they have done, for example, an armed robbery or a stabbing that has not been recorded before. All data will be collected and stored in accordance with the Data Protection Act 1998.

What are possible risks and benefits of taking part?

All of the young people who take part in the research will be entered in a raffle as a thank you for taking part. This will mean they have the chance to win a voucher for a high street shop (either: £25, £20 or £15). They will also have the chance to win a gift voucher worth £10 if they gain the highest score on the computer task.

Although it is unlikely, if any of the questions make the young people feel upset, they will be encouraged to come and talk to Lisa or Ruth (the researchers) or their key worker at the centre so that they can provide help.

Will I be informed about what the research finds out?

Yes, Rainsbrook will be provided with a summary of what the research finds out.

Who can I contact for more information?

If you have more questions, you can contact Lisa and Ruth by e-mail (ruthandlisastudy@yahoo.co.uk) or by post (see address at head of this sheet).

Who has said that this project can go ahead?

Before any research goes ahead it has to be checked by a research ethics committee. They make sure that the research is fair. This study has been checked and given approval to go

ahead by the University College London Research Ethics Committee.

Who are we?

Our names are Lisa Smith and Ruth Dawson. We are both Doctoral research students at University College London.

Thank you for reading this information sheet

Informed Consent Form for

Rainsbrook Secure Training Centre acting as 'Loco Parentis' of young people under 16

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Project: **Finding out some of the reasons young people get involved in crime**

Researchers: Ruth Dawson and Lisa Smith

Supervised by: Dr Stephen Butler (University College London) and Kerry Heathcote (Chartered Psychologist at Rainsbrook STC)

I..... (print your full name)

Have read the information sheet	**YES**	**NO**
Understand that whether or not the young person takes part it will not make any difference to their treatment	**YES**	**NO**
Understand what the research is about	**YES**	**NO**
Have been able to ask questions about the research and I am satisfied with how my questions have been answered	**YES**	**NO**
Agree that the young persons file can be read by the researchers in order to get any background information	**YES**	**NO**
Agree that the young person can take part in the study necessary for the research and give permission for the researchers to have access to the young persons notes in the centre	**YES**	**NO**
Understand that the young person can withdraw from the study at any time without giving a reason	**YES**	**NO**
That the young person can take part in the study	**YES**	**NO**

Signed……Date……

Job Title……

CONFIDENTIALITY AND DATA PROTECTION

- Information from the study will be kept in a locked filing cabinet
- Information kept on computer will be coded so that individual names cannot be identified
- This study complies with the Data Protection Act (1998).

You will be given a copy of this Consent Form to keep and refer to at any time.

Information Sheet
for young people over 16 years old

Title: Finding out some of the reasons young people get involved in crime

Name, Work Address and Contact Details of the Researchers	Lisa Smith and Ruth Dawson, Sub-Department of Clinical Health Psychology, University College London, Gower Street, London, WC1E 6BT. ruthandlisastudy@yahoo.co.uk

You are being invited to take part in a research study. You should only take part if you want to, it is your decision. You will not lose out if you choose not to take part. Before you decide whether you want to take part, it is important for you to read the following information carefully so that you understand why the research is being carried out and what it will involve. Ask us if there is anything that you do not understand or if you would like more information.

What are the researchers trying to find out?

We are asking if you want to join in a research project to find the answer to the question 'What are some of the reasons that young people get involved in crime?'

It has been suggested that a number of things may play a vital role in influencing whether young people get involved in crime. We want to look more closely at what some of these things are. The findings may be able to help young people who get involved in crime.

What will I be asked to do if I take part?

You will be interviewed by one of the researchers who will complete five questionnaires with you. After this you will be asked to complete a task on a computer. One of the questionnaires will ask about your beliefs about the importance of material things. One of the questionnaires will ask you about your involvement in different types of criminal activity. Another questionnaire will ask you about your character and two questionnaires will ask about the type of relationships you have with people. The computer task is a simple task where you will be asked to do things like pressing a button to inflate a balloon on the screen.

In total you will be spending about 1 hour with the researchers.

Another important part of the study involves the researchers getting information about your criminal history and history in general from your files at the centre.

Why have I been asked to take part?

You have been invited to join our study because you are a young person currently living in this secure training centre. We hope that around 80 young people will choose to participate in the project. Other young people in the centre has been asked too.

Do I have to take part?

No. It is your decision. We will ask you for your consent and then ask if you will sign a form. We will give you a copy of this information sheet and your signed consent form to keep. You are free to stop taking part at any time in the research without giving a reason. If you decide to stop, this will not affect the care you receive at Rainsbrook.

Will my answers be shared with anyone else?

No, all your answers will be made anonymous and kept confidential. This means that it will only be used for the project and will not be seen by other people in the centre. The only time we would tell a member of staff at Rainsbrook about what you tell us in the interviews is if it is about you being at risk of being hurt, others are at risk of being hurt or you tell us about a serious, violent or sexual crime that you have done, for example, an armed robbery or a stabbing that has not been recorded before.

The written information will be locked away and access will be restricted to the project researchers. Information kept on the computer will be coded by a number a system so that you can not be identified. All data will be collected and stored in accordance with the Data Protection Act 1998. The information will not be used for any other purpose.

What are possible good and bad things about taking part?

Everyone will be entered in a raffle as a thank you for taking part. This will give you a chance of winning a voucher for a high street shop (either: £25, £20 or £15). Everyone who takes part will also have the chance to win a gift voucher worth £10 if they gain the highest score on the computer task.

It is very unlikely but sometimes people get upset in interviews. If any of the

questions make you feel upset, you can refuse to answer. You can also talk to Lisa or Ruth (the researchers) or your key worker so that they can help you if you are upset.

Who can I talk to if I have more questions?

If you have any other questions, you can contact Lisa and Ruth by e-mail

(ruthandlisastudy@yahoo.co.uk) or you can ask your key worker to pass on a question.

Will I hear about what the research finds out?

Yes, can ask to be told about what the research finds out and you will be able to ask questions if you want to.

Who has said that this project can go ahead?

Before any research goes ahead it has to be checked by a research ethics committee. They make sure that the research is fair. This study has been checked by the University College London research ethics committee.

Who are we?

Our names are Lisa Smith and Ruth Dawson. We are both Doctoral research students at University College London.

Thank you for reading this information sheet

Informed Consent Form

for young people over 16 years old

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Project: **Finding out some of the reasons young people get involved in crime**

Thank you for your interest in taking part in this research. If you have any questions about the consent form or explanation already given to you, please ask the researchers before you to decide whether you would like to participate.

Researchers: Ruth Dawson and Lisa Smith

Supervised by: Dr Stephen Butler (University College London) and Kerry Heathcote (Chartered Psychologist at Rainsbrook STC)

Participant's statement I..... (print your full name in capital letters)

Have read the information sheet	YES	NO
Understand what the research is about	YES	NO
Have been able to ask questions about the research and I am pleased with how my questions have been answered	YES	NO
Agree that my file can be read by the researchers in order to get any background information necessary for the research and give permission for the researchers to have access to my notes.	YES	NO
Understand that I can change my mind about taking part and can withdraw from the study at any time without giving a reason.	YES	NO

Understand that whether or not I take part will not make any difference to my treatment in the centre YES NO

Agree to take part in the study YES NO

Signed……..

Signature of witnessing staff/researcher

……Date……

CONFIDENTIALITY AND DATA PROTECTION

- Information from the study will be kept in a locked filing cabinet
- Information kept on computer will be coded so that individual names cannot be identified
- This study complies with the Data Protection Act (1998).

You will be given a copy of this Consent Form to keep and refer to at any time.