

**Empathy and rejection sensitivity in relation to reactive, proactive
and relational aggression in 10- to 12-year-old children**

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Overview

Volume one of this D.Clin.Psy. thesis is a research project investigating the extent to which different cognitive and emotional processes characterise different forms of aggression. The study was designed to be clinically relevant and to advance the current findings in the research area.

The volume is divided into three parts. Part one is a literature review pertaining to the role of empathy in inhibiting aggression.

Part two is an empirical paper which outlines current research in the field of aggression and presents a model to be tested based on the literature, asserting that different emotional and cognitive factors (including empathy, rejection sensitivity and callous/ unemotional traits) would predict different forms of aggression (reactive versus proactive). The methodology for investigating this model and an analysis of the results are presented. Finally, the paper discusses the findings of the study and their implications.

Part three is a critical appraisal of the research process. It considers how an interest in the research area developed, and describes the process of developing and implementing a new measure as part of the study. Furthermore, a personal reflection on the impact of the research on the author's clinical work is included, and finally the limitations and wider clinical implications of the study are discussed.

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Part 1: Literature Review

Does Empathy Inhibit Aggression in Children and Adolescents?

Abstract

The hypothesis that empathy inhibits aggression and therefore that a deficit in empathy may underlie aggressive behaviour (Feshbach, 1978) was investigated in this review. Twenty empirical papers examining the association between empathy and aggression in children and adolescents were reviewed. The studies revealed inconsistent results, particularly in relation to children. Amongst the studies of adolescent samples, there tended to emerge a significant negative association between empathy and aggression. More recent studies, and studies employing measures of situational empathy, yielded the most consistent evidence for a negative association between empathy and aggression. Gender differences were rarely reported, but one recent study offered some tentative support for the notion of a differential association between empathy and certain forms of aggression in girls compared with boys. Clinical implications and directions for future research are discussed in light of the results of this review.

Does Empathy Inhibit Aggression in Children and Adolescents?

1.1 Introduction

"I tell [Malachy] to stop telling that story, it's my story. He won't stop. I push him and he cries, "Waah, waah, I'll tell Mam." Freddie pushes me and everything turns dark in my head and I run at him with fists and knees and feet till he yells, "Hey, stop, stop", and I won't because I can't, I don't know how, and if I stop Malachy will go on taking my story from me...

...and now Malachy, on the swing, cries, "Don't kill me, Frankie" and he looks so helpless I put my arm around him and help him off the swing."

Extract from "Angela's Ashes" by Frank McCourt, Flamingo Press (1997)

The capacity to recognise and vicariously experience the distress of others in response to one's own aggressive behaviour has long been proposed as a deterrent to engaging in further aggressive behaviour (e.g. Feshbach, 1970). The psychological processes underlying Frankie's behaviour in the extract above are not made explicit, but we see that witnessing distress in one of the victims of his aggression lead to the rapid cessation of his aggressive behaviour, and engagement in prosocial, helping behaviour. One explanation for Frankie's behaviour is that he was able to empathise with Malachy's emotional state. That is, he recognised his fear and sadness and experienced the feelings himself. These negative feelings may then have prompted him to curb his aggression, in order to alleviate his own and Malachy's distress.

Following on from the above hypothesis, theorists have suggested that a deficit in the capacity to empathise could be associated with higher levels of aggression (Feshbach, 1978). The causal mechanisms of this association are unclear: do poor empathic skills lead to uninhibited aggression, or does engaging in aggressive behaviour decrease empathy? Alternatively, is there a mediating

process, such as emotional dysregulation, that could lead to both low empathy and high levels of aggression? These are the questions to be investigated in this review paper, with the aim of gaining a greater understanding of the processes underlying aggressive behaviour, thereby identifying potential areas for interventions that aim to reduce aggression.

1.2 Definitional Issues

Aggression and impulsivity are amongst the most common reasons for referral to child mental health services (Institute of Medicine, 1994). There is much evidence in the literature in support of the notion that early emerging aggression shows considerable continuity across the life span (e.g. Farrington & West, 1993), and moreover children presenting with aggression prior to adolescence have been shown to be more likely to become "life-course persistent offenders" in adulthood than those whose aggression first emerges during adolescence (Moffitt, 1993). The implications of long-term aggression and antisocial behaviour can be of great financial and emotional cost to the individuals affected and their families, as well as society at large, not least due to the likelihood of long-term involvement of mental health services and criminal justice systems (Loeber, 1982). Determining the psychological processes that are associated with childhood aggression has therefore become a key area of interest in the literature, with the aim of increasing our understanding of the development of aggression and thus offering some insight into potentially effective interventions.

Many emotional and cognitive processes have been hypothesised to be associated with and possibly play a causal role in the development of aggression. The concept of impaired empathy in relation to aggression is amongst the most plausible and compelling theories, and was first

introduced by Feshbach (1978). Before discussing the theoretical mechanisms proposed to underlie the association, a definition of the key concepts is warranted.

Hoffman (2000) defined empathy as: "feelings that are more congruent with another's situation than with (one's) own situation" (p.30). According to Hoffman, the emotion experienced need not be exactly the same emotion as that experienced by the other person, but should be more appropriate to the other's perspective than to one's own. Hoffman's definition refers to a purely affective process, and some theorists have argued that focussing on affective rather than cognitive processes reduces the likelihood that general cognitive ability could confound the interpretation of an association between aggression and empathy (Lovett & Sheffield, 2007). Nevertheless, others have suggested that empathy comprises of both cognitive and affective elements. For example, the capacity to identify emotional states and to differentiate between one's own and others' emotional states, as well as the ability to take on another's cognitive or emotional perspective, is arguably a necessary prerequisite for empathising with someone (Feshbach, 1978). Less advanced cognitive processes such as classical conditioning could be sufficient for more rudimentary forms of empathy (Hoffman, 1984). The present review includes articles pertaining to both cognitive and affective elements of empathy, as well as those investigating only affective empathy.

Other definitional categories include the distinction between dispositional and situational empathy. Dispositional empathy refers to a general tendency towards feeling empathy with others, usually measured with questionnaire-based methods. Situational empathy is a more transient empathic response to a given situation, measured via emotionally evocative stimuli such as stories, videotaped vignettes, or experimental manipulations, designed to induce feelings of empathy.

Participants' facial, gestural or articulated responses to the situation are then recorded to provide a measure of situational empathy. Studies using measures of both dispositional and situational empathy are included in this review paper.

In addition to empathy, worthy of note are two related concepts: sympathy and personal distress. All three are often part of the same affective experience (de Wied, Goudena & Matthys, 2005), but are discernable from one another (Eisenberg, 2000). Empathy is concerned with feeling *with* another person, whereas sympathy involves feeling *for* another person, usually in the form of sorrow or concern. Personal distress is a self-oriented reaction such as fear or anxiety for oneself, brought about by the other's situation. Empathy may lead to either sympathy or personal distress, or some combination of the two (Eisenberg, 2000). The present review is concerned with studies measuring empathy.

The working definition of aggression used in most research is: "a behaviour deliberately aimed at harming people and/or objects" (Dodge, 1991). "Harm" can refer to physical harm such as kicking or punching, but also to psychological or relational harm such as public humiliation, social exclusion or malicious gossiping (Crick & Grotpeter, 1995). Some researchers have argued that girls are more likely than boys to engage in this "relational" type of aggression, and moreover that girls could be conceptualised as equally aggressive as boys if relational aggression is taken into account (Crick *et al*; 1999). Aggression has also been further sub-divided into "reactive" and "proactive" aggression (Dodge & Coie, 1987). Reactive aggression refers to an angry response to provocation. In contrast, proactive aggression is a goal-oriented behaviour aiming to gain a desired object or status, which does not result from an emotional reaction but is rather more deliberate and calculated.

Studies measuring all forms of aggression in relation to empathy are reviewed in the present paper, including bullying which is defined as a repetitive form of aggression (Joliffe & Farrington, 2006), and aggressive behaviour in the context of disruptive behaviour disorders such as conduct disorder and oppositional defiant disorder.

1.3 Theoretical Issues

Intuitively, one can anticipate the potential for children who behave aggressively to have less concern for the feelings of others than non-aggressive children, in order to be able to carry out the behaviour (Feshbach, 1978). Indirect evidence from studies of abused children also paved the way for further research into the role of empathy in the development of aggression. Main and George (1985), for example, reported that physically abused preschoolers react to others' distress unempathically, by threatening or attacking them. The implied mechanism was that these children had not received empathic care giving and therefore failed to develop empathic skills themselves.

However, a more specific theoretical rationale for the mechanism by which empathy and aggression might be inversely related is necessary in order to begin to understand the association and its developmental origins. Two such theoretical accounts are empathic mimicry and empathic concern (Davis, 1994). Empathic mimicry is described as a process whereby the prospective aggressor witnesses distress in the other person, most likely in the form of fear or sadness. This automatically leads the would-be aggressor to mirror the emotion of the other person, thereby decreasing their incentive to be aggressive. Thus, the vicarious experience of a negative emotion is an unpleasant experience, and the potential aggressor seeks to avoid this feeling by disengaging from the behaviour (Feshbach, 1978). Relatedly, empathic concern is the deliberate and conscious adoption of the other's perspective, in which the goals and wishes of the other

person are sympathised and identified with, thus inhibiting the aggressive behaviour. This could occur due to the desire to improve the other's situation and ameliorate any suffering (Miller & Eisenberg, 1988). In support of these accounts, some researchers have demonstrated that greater immediacy and intensity of pain cues are associated with lower levels of aggression (Baron, 1971; Mehrabian & Epstein, 1972).

There are, nevertheless, some problems with these theoretical accounts. Firstly, given that the goal of aggressive behaviour is to induce distress in the other person, it would follow that observing distress in the other person could in fact serve as a cue that the aggressor's goal has been fulfilled (Lovett & Sheffield, 2007), thus fuelling rather than inhibiting the motivation to aggress. Furthermore, since negative affect has been shown to be positively associated with aggression (Anderson & Bushman, 2002), one might assume that the experience of distress in the aggressor would increase the likelihood of aggressive behaviour rather than decrease it (Lovett & Sheffield, 2007). Indeed, particularly under extreme provocation and in people with an established history of aggression and delinquency, some studies have demonstrated an increase in aggression in response to pain cues (Feshbach, Stiles & Bitter, 1967; Hartmann, 1969; Perry & Perry, 1974). It seems therefore that the association between empathy and aggression, if indeed it exists, is likely to be a complex one.

A further theory to account for an association between empathy and aggression was put forward by Raine, Venables and Mednick (1997). The physiological underarousal hypothesis asserts that the same mechanism underlying aggression also leads to inhibited empathy. Physiological indices such as low resting heart rate have shown aggressive individuals to be under aroused in comparison with controls. The same underarousal could also lead to a failure to be aroused in

response to another's distress. Thus, underarousal could play a mediating role between aggression and empathy. In support of this hypothesis, Young, Fox and Zahn-Waxler (1999) found that infants with low affective and motor arousal to novel stimuli at four months old were less empathic at two-years-old. However, there were no measures of aggression in this study to completely corroborate the hypothesis. Contrary to the hypothesis, Van Hulle, Corley, Zahn-Waxler, Kagan and Hewitt (2000) found no association between resting heart-rate and aggression from infancy to early childhood. Similarly, Calkins and Dedmon (2000) reported that two-year-old aggressive children did not present with an overall lower resting heart-rate than controls. They did, however, display a lack of behavioural and physiological regulation, evidenced by poor task-focus and a lower variability in heart rate in the face of challenging situations compared with other situations.

An alternative explanation to the underarousal hypothesis asserts that aggressive children's characteristic lack of emotional and behavioural regulation (Campbell, 1990) also leads to low empathy (Young *et al*, 1999). This dysregulation hypothesis suggests that rather than having low arousal, aggressive children lack the capacity to appropriately regulate arousal. Low empathy also arises from dysregulation because these children cannot attend to and react appropriately to others' emotional states. Failure to regulate the negative emotions generated by witnessing distress in another person leads the individual to turn to self-comfort rather than focus on the other person's distress. Consequently, these children lack the perspective-taking necessary for empathic responding.

Related to the dysregulation hypothesis is the notion that, rather than a main effects model such as the empathic mimicry and empathic concern hypotheses (Davis, 1994), the association

between empathy and aggression is mediated by anger (Eisenberg, Fabes, Carlo & Karbon, 1992). According to this theory, anger is activated in response to provocation or perceived threat, and once activated it prevents an empathic response. Incorporating the dysregulation hypothesis into this model, it is plausible that children poor at regulating anger could be those whose empathic responses are most likely to be disrupted by anger. Roberts and Strayer (1987) proposed that this theory also accounts for the role of experience in strengthening the association between empathy and aggression. Empathic children have fewer anger-laden memories and are therefore less likely to respond to provocation with anger. Anger is thus less likely to interfere with empathic responding. Studies discussed above reporting increased aggression in response to pain cues amongst certain individuals with long histories of aggressive behaviour or under extreme provocation, also support the anger mediation model (Feshbach, Stiles & Bitter, 1967; Hartmann, 1969; Perry & Perry, 1974).

The notion of a hostile attributional bias amongst aggressive children (Coie & Dodge, 1998) could also mediate or maintain the association between aggression and empathy. According to the theory, aggressive children are likely to perceive the intentions and behaviour of others as hostile and threatening. This makes them more likely to select an aggressive reaction than children without a tendency to perceive hostility in others. It is plausible that empathic responding is also precluded by this attributional bias, by selecting attention towards one's own feelings of anger or threat, rather than the sadness, fear or distress of the other person (de Wied, Goudena & Matthys, 2005). This theory and the anger-interference model (Eisenberg *et al*; 1992) suggest that, rather than lacking the capacity to experience empathy, aggressive children might present with cognitive or regulatory deficits that interfere with empathic responding in certain situations. Research to be reviewed later in this paper addresses this issue in more detail.

One final account of the association between empathy and aggression is linked to the concept of mentalisation (Fonagy *et al*; 2002). Patterson (1982) proposed that many aggressive children have experienced coercive parenting, in which parental responses to difficult child behaviour are punitive and hostile, leading to a vicious cycle of negative interactions between parent and child, each leading to more hostility from the other. This pattern of interaction is in direct contrast to the style of care giving associated with the fostering of empathy, i.e. frequent communication of concern and altruism (Zahn-Waxler, Radke-Yarrow & King, 1979). Coercive parents are likely to be less responsive, empathic and sympathetic in response to children's pain or negative affect (Miller & Eisenberg, 1988). As mentalisation theories propose, children may not learn to respond to or recognise emotions in themselves or others, having experienced parents who have not adequately recognised, interpreted or responded to their distress (Fonagy *et al*; 2002).

Given the vast number of hypotheses pertaining to the mechanisms that could account for an association between empathy and aggression, it seems plausible that such an association may exist. However, without studies directly testing the association between empathy and aggression in children and adolescents, theorising about the mechanisms remains speculative. The following section reviews studies that investigate, in both clinical and normative samples, the association between empathy and aggression amongst children and adolescents. In so doing, some of the studies provide evidence for or against the competing theoretical accounts of an association. A further section at the end of this paper explores gaps in the literature that could be addressed in future research, in order to address unanswered questions in the field so far.

1.4 Literature Search Strategy

In order to identify empirical papers investigating the association between empathy and aggression, "Empathy AND Aggression" was entered as a search term in the following databases: Psycinfo, Medline and Web of Science. Two main review papers were identified alongside the empirical papers (Miller & Eisenberg, 1988; Lovett & Sheffield, 2007). All empirical papers cited in these reviews were also obtained. Only papers investigating empathy and aggression in children and adolescent populations were included, with studies on adult populations excluded. The term "aggression" was loosely defined, including studies using checklist measures of aggressive behaviour within normative school samples, through to samples of children and adolescents with clinical diagnoses of disruptive behaviour disorders or a history of violent offending. Studies employing both dimensional and categorical measures of aggression were included. "Empathy" encompassed studies pertaining to dispositional, situational, cognitive and affective aspects of empathy.

1.5 Empathy and Aggression: A Systematic Review

Consistent with Miller and Eisenberg's (1988) meta-analysis, the studies described in this paper were categorised into those which measured dispositional empathy (usually via questionnaires asking the child or someone close to the child to rate their empathy in hypothetical everyday situations), and those which measured situational empathy via "live" experimental manipulations, such as video or story tasks. Within each category, in line with Lovett and Sheffield's (2007) review, the studies were further sub-divided into "child" studies (participants 12 years of age or younger) and "adolescent" studies (participants 13 years of age or older). Studies which employed both dispositional and situational measures of empathy were included in both empathy sections. Studies which included participants across the two age categories were discussed in the child

section, unless it was clear that most of the sample was comprised of children in the adolescent age range, in which case they were reviewed under the adolescent section. Studies in each section are discussed in chronological order, starting from the earliest conducted study through to the most recent. Tables 1.1 to 1.4 (see appendix A) summarise the findings of each of the studies reviewed within each section.

1.5.1 Dispositional Measures of Empathy – Child Studies

Most of the studies discussed below used Bryant's (1982) Empathic Tendency Index (ETI) to assess dispositional empathy. The measure is a 22-item questionnaire based on Mehrabian and Epstein's (1972) Affective Empathy Scale for adults, adjusted for use with children. Items tap emotional matching (e.g. "Seeing a child crying makes me feel like crying"), sympathy (e.g. "It makes me sad to see a child who can't find anyone to play with"), and more general empathic attitudes (e.g. "It's silly to treat dogs and cats as though they have feelings like people"). Each statement requires a dichotomous "yes/no" response from the child.

In Bryant's (1982) initial publication regarding the construct validity of the ETI, the scale was used in conjunction with a measure of teacher-rated aggression in first grade (six- to seven- years old), fourth grade (nine to 10 years old) and seventh grade (12-13 years old) school children in the USA. Aggression was measured using a nine-item checklist completed by teachers (Feshbach, 1956). A significant negative correlation was reported between dispositional empathy and aggression amongst the first and fourth grade boys, but not amongst first and fourth grade girls, or amongst seventh graders regardless of gender.

A similar study also used the ETI to assess dispositional empathy, this time amongst five- to seven-year-old boys (MacQuiddy, Maise & Hamilton, 1987). Instead of treating aggression as a continuous variable as in the study above, the researchers categorised the boys into one of two groups: a problem behaviour group (N=11) and a control group with no behaviour problems (N=12). Group membership was based on maternal responses to the Intensity and Problem Frequency scales of the Eyberg Child Behaviour Inventory, with the problem behaviour group scoring above 10 and 126 respectively, and the control group scoring below these cut-offs. No significant difference emerged between the two groups on the ETI measure of dispositional empathy.

Gonzalez, Field, Lasko, LaGreca and Lahey (1996) also measured dispositional empathy using the ETI, with a sample of 39 seven- to 12-year-old boys in classrooms for "emotionally handicapped" children. Aggression was measured as a continuous variable using the Teacher Report Form (TRF, Achenbach & Edelbrock, 1988). No significant association was found between aggression and empathy.

In a study of 526 Finnish schoolchildren divided into three different age groups (10, 12 and 14-years-old), Kaukiainen *et al.* (1999) looked at the association between peer-estimated dispositional empathy and different forms of aggression (direct physical, direct verbal and indirect). Using the peer estimation of empathy measure (Kaukiainen *et al.*; 1995), children rated their same-sex classmates on eight items relating to empathy (e.g. "Helps classmates when in trouble", "Avoids hurting others' feelings") on a five-point scale ranging from "not at all" to "very often". Aggression was also assessed via peer nomination, using the "Direct and Indirect Aggression Scales" (Björkqvist, Lagerspetz & Österman, 1992). Peers were asked to rate on a five-point scale

how often their classmates behaved in the ways described. Aggressive behaviours on this scale pertain to direct physical aggression (e.g. hitting, punching), direct verbal aggression (e.g. name-calling) and indirect aggressive acts (e.g. spreading rumours). Results of the study yielded moderately significant correlations between the different measures of aggression and empathy when the results for all age groups were analysed together (correlations of $-.34$ for physical aggression, $-.38$ for verbal aggression and $-.23$ for indirect aggression). Correlations between empathy and aggression were significant for all age groups except for indirect aggression in the 12-year-old age group. Furthermore, associations between empathy and all forms of aggression were weaker in the 12-year-old age group than in the 10 and 14-year-old age groups. No significant gender differences were reported.

More recently, Warden and Mackinnon (2003) examined the association between bullying and dispositional empathy in a group of UK school children. Using a measure of social behaviour, the investigators identified 21 prosocial children, 23 bullies and 14 victims from a sample of 131 children. The children then completed the ETI (Bryant, 1982) as a measure of dispositional empathy. Results revealed that prosocial children achieved significantly higher scores on dispositional empathy than bullies. However, further analysis of the data showed that girls tended to bully less than boys and to be more empathic on the whole than boys, and it was this pattern that accounted for the significant group differences.

Finally, de Wied *et al.* (2005) compared a group of 25 eight- to 12-year-old clinically referred boys diagnosed with a Disruptive Behaviour Disorder (DBD) with a group of 24 age-matched control children, on the ETI measure of dispositional empathy. It emerged that the DBD group presented with significantly lower dispositional empathy scores than the control group.

Mixed findings emerged from the studies reviewed in this section. Four out of the six studies demonstrated that high aggression was associated with low dispositional empathy (Bryant, 1982; de Wied *et al*; 2005; Kaukiainen *et al*; 1999; Warden & Mackinnon, 2003). However, for two of the studies (Bryant, 1982; Kaukiainen *et al*; 1999) significant associations were found amongst certain age groups but not at all or not as strongly amongst others. Bryant's (1982) study also reported a significant negative association between aggression and empathy amongst boys but not girls, whilst in contrast, Warden and Mackinnon (2003) showed that low aggression and high empathy most strongly characterised girls, and in fact accounted for the overall significant association in their study. Contrary to both studies, Kaukiainen *et al*. (1999) did not report any gender differences. No significant association was found between empathy and aggression in two of the studies (Gonzalez *et al*; 1996; MacQuiddy *et al*; 1987). There do not appear to be any systematic differences between the studies in terms of sampling or measures employed, that could easily account for the variety of reported findings.

1.5.2 Dispositional Measures of Empathy – Adolescent Studies

Kaplan and Arbuthnot (1985) compared a group of 20 "delinquents" recruited from a juvenile correctional facility with a group of 20 age-matched rural Ohio eighth graders from a junior high school (13-14 years old), on the ETI measure of dispositional empathy. Each group consisted of 10 boys and 10 girls. No significant differences were reported between the two groups on the empathy measure, and there also emerged no significant interaction between gender and delinquency. Thus, regardless of gender, adolescents who engaged in delinquent behaviour did not emerge as less empathic than a group of age-matched high-school children.

Another investigation of dispositional empathy amongst adolescents in a juvenile correctional facility was described by Lee and Prentice (1988). Thirty-six adolescent delinquent males (average age 16 years old) were compared with 18 "non-delinquent" males from a nearby rural area. "Non-delinquency" was assessed via school records and personal interviews. Two separate personality rating scales were employed to classify the delinquent adolescents into three groups, the descriptions of which would rarely be used today: "Psychopathic", "Neurotic", and "Subcultural". The non-delinquent boys made up the fourth group ("Control"). Two self-report measures of dispositional empathy were also completed by the adolescents (The Interpersonal Reactivity Index: IRI; Davis, 1994; and the Questionnaire Measure of Emotional Empathy: QMEE; Mehrabian & Epstein, 1972). A between-groups ANOVA yielded no significant differences between the four groups on the empathy measures. Worthy of note, however, was the finding that contrary to the hypothesis, the non-delinquent group presented with the lowest scores on the IRI and the second-lowest QMEE scores.

Cohen and Strayer (1996) studied a group of 30 clinically referred adolescents (aged between 14 and 18 years old) diagnosed with conduct disorder. They compared the group's scores on two self-report measures of dispositional empathy (the Empathic Concern sub-scale of Davis's (1994) IRI and Bryant's (1982) ETI) with 32 age-matched controls. The conduct disordered group presented with significantly lower mean scores on both measures of dispositional empathy than the control group, and this group difference was found amongst both boys and girls. In addition to these dispositional measures of empathy, a situational measure of empathy was also included, and shall be discussed in a later section.

Consistent with Cohen and Strayer's (1996) findings, other more recent studies using diverse definitions and measures of aggression have also demonstrated a significant association between dispositional empathy and aggression. In the first, LeSure-Lester (2000) recruited a sample of 40 adolescents (aged 12-16-years-old) from a group home for abused children. Amongst this group, aggression was conceptualised as a continuous variable, using staff ratings of aggression towards peers and staff on a five-point likert scale. Dispositional empathy (measured via a 30-item self-report scale) was significantly negatively associated with aggression.

Further extending these findings to other forms of aggression, Burke (2001) compared the dispositional empathy scores of a group of adolescent sex offenders attending an outpatient treatment programme with matched control participants from a nearby public high-school. Forty-six participants took part overall, and were aged between 13 and 18 years of age. Dispositional empathy (measured via the IRI) was significantly lower amongst the sex offender group compared with the control group, both overall and specifically on the Empathic Concern sub-scale.

Endresen and Olweus (2002) conducted a study focusing on aggression in the form of bullying and its association with dispositional empathy. The sample consisted of 2268 Norwegian sixth to ninth graders (modal ages 13-16 years old), who completed a self-report empathy questionnaire designed by the researchers and two measures of aggression. The empathy questionnaire was similar to Bryant's (1982) ETI measure, including scales tapping empathic distress and empathic concern. The aggression measures were also self-report questionnaires, measuring the extent to which the respondent engaged in bullying and the extent to which their attitudes endorsed bullying. There emerged a significant negative correlation between attitudes towards bullying and

dispositional empathy for boys and girls. A significant but weaker association was also found between dispositional empathy and self reported bullying.

Also concerned with aggression in the form of bullying, Jolliffe and Farrington (2006) conducted a study of 720 15-year-old school children from Hertfordshire. Empathy was measured via the Basic Empathy Scale (BES; Jolliffe & Farrington, 2005), a 20-item self-report questionnaire assessing cognitive (e.g. "It is hard for me to understand when my friends are sad") and affective (e.g. "I usually feel calm when other people are scared") components of empathy. The young people also completed a bullying scale adapted from Whitney and Smith (1993). The scale measures direct physical and verbal aggression and also indirect aggression, using a five-point likert scale according to how often they have engaged in the behaviours listed, ranging from "never" (in the current school year) to "often" (in the current school year). Males who engaged in bullying did not present with significantly lower empathy scores than males who did not bully. The results were nevertheless in the predicted direction. Males who perpetrated violent forms of bullying, however, did present with significantly lower total empathy scores than males who did not bully. For females, there was a significant group difference in empathy between bullies and non-bullies, in that female bullies showed significantly poorer affective (but not cognitive) empathy than female non-bullies. Females who engaged in indirect bullying (but not direct verbal or violent bullying) had significantly lower total empathy and affective empathy scores than female non-bullies. These results suggest that deficits in (primarily affective) empathy may be associated with aggression in both males and females, but that the type of aggression engaged in differs by gender.

In sum, seven studies pertaining to the association between dispositional empathy and aggression amongst adolescents were reviewed in this section. The two earliest conducted

studies reported no significant association between dispositional empathy and aggression (Kaplan & Arbuthnot, 1985; Lee & Prentice, 1988). However, the five most recent studies found dispositional empathy to be significantly negatively associated with aggression (Burke, 2001; Cohen & Strayer, 1996; Endresen & Olweus, 2002; Jolliffe & Farrington, 2006; LeSure-Lester, 2000). Measurement of aggression varied considerably amongst these studies, and was not always well-controlled. Indeed, Lovett and Sheffield (2007) criticised Burke's (2001) study of sex offenders for its failure to formally assess whether the control group was less aggressive than the sex offenders group, or to screen for aggressive offences other than sex offences that may have been committed by the control group.

Reports of gender differences amongst these studies varied, perhaps due to the substantial variation in the measures of aggression used. Cohen and Strayer (1996) reported no gender differences in the extent to which adolescents with conduct disorder presented with lower dispositional aggression than controls. Similarly, Endresen and Olweus (2002) found that positive attitudes towards bullying as well as self-reported bullying was significantly negatively correlated with dispositional empathy, and that this association did not differ by gender. Jolliffe and Farrington (2006), on the other hand, reported that for males, those engaging in *violent* bullying showed lower dispositional empathy than non-bullies, whereas for females, engagement in *indirect* bullying was associated with lower dispositional empathy than non-bullies.

1.5.3 Situational Measures of Empathy – Child Studies

In the first of the studies employing measures of situational empathy, Feshbach and Feshbach (1969) presented 88 four- to seven-year-old school children with slide show vignettes about children in emotionally evocative situations. After asking the children how they felt, the interviews

were coded for empathy, producing a group of children classified as high in empathy and a low empathy group. Teachers also completed a nine-item scale of aggression about each of the children. No significant difference was found between the aggression scores of the low versus high empathy groups. However, there was a significant interaction between age (four-to-five-versus six-to-seven- years-old) and empathy (low versus high) amongst boys. In younger boys, low empathy was associated with low levels of aggression. In older boys, the opposite pattern was found: low empathy was associated with high levels of aggression.

Marcus, Roke and Bruner (1985) used the same situational empathy measure as that described in the above study, but included a measure of facial and vocal empathy to supplement the interview question. The aggression measure was also adapted from Feshbach and Feshbach's (1969) teacher-rated questionnaire, but reduced to one item. Thirty-two children aged between 41 months and 81 months took part in the study. No significant association emerged between aggression and empathy, and no differences in this association were found by age or gender.

An experimental manipulation was implemented to measure situational empathy in a more recent study (Gill & Calkins, 2003). Forty-nine aggressive and 50 non-aggressive two-year-olds were identified as either "aggressive" or "non-aggressive" using the Child Behaviour Checklist (CBCL; Achenbach, 1992). This is a parent-completed checklist of various child behaviours, some of which are externalising and aggressive behaviours. "Aggressive" children scored 60 or more on the CBCL Total Problems scale (above the 84th percentile) whilst children were placed in the "non-aggressive" group if they scored less than 50. The experimental task involved measuring the children's responses to two events which were engineered in the lab: a toddler crying and the experimenter hurting her finger. Children's affective, behavioural and physiological responses to

the other person's distress were coded. Results revealed that, in direct contrast to the hypothesis, global empathy was higher within the aggressive group. These children responded quicker to the distress of the other person, displayed more facial concern, and asked more questions about the person's distress than the non-aggressive children. No significant gender differences were reported.

Strayer and Roberts (2004) assessed the aggression and situational empathy of 24 five-year-olds. Aggression scores and emotion scores (with a focus on anger) were derived from experimenter coding of the children's behaviour during several sessions of play. Empathy was assessed using videotaped vignettes of emotionally evocative situations, after which the children were questioned about their feelings watching the video. Parent and teacher ratings of empathy were also added to the interview score to produce an overall measure of total empathy. A significant negative correlation was reported between the total empathy score and physical aggression, verbal aggression and struggles over objects during play. The researchers also demonstrated that whilst anger declined across play sessions, aggression appeared to increase. This indicated that anger may not play a mediating role in the association between empathy and aggression.

As described in a previous section of this review, de Wied *et al.* (2005) compared a group of 25 eight- to 12-year-old boys with DBD with 24 controls. Alongside the ETI measure of dispositional empathy discussed earlier, the investigators also used a modified version of the videotaped vignette task administered in the Strayer and Roberts' (2004) study, with clips of children in situations designed to evoke predominantly sad, angry or happy emotions. In addition, a sadness vignette was included that depicted a baby bear whose mother dies. This was to address the issue regarding the situation-specific nature of empathy amongst the DBD boys. It has been

demonstrated that animals provoke particularly strong positive feelings in children (Endenburg, 1995), and it was therefore hypothesised that if DBD children do not completely lack the capacity to show empathy, they should demonstrate greater empathy in response to the bear vignette than the vignettes depicting children. The DBD group presented with significantly lower situational empathy scores across the vignettes than the control group, with regard to sadness and anger (but not happiness). Children in both groups displayed greater empathy in response to the bear vignette than to the other sadness vignettes, indicating that rather than lacking the capacity for empathy, empathic responding amongst DBD children may be inhibited in certain situations.

In summary, studies within this section also present variable findings. Reported associations between situational empathy and aggression amongst children include: no association (Marcus, Roke & Bruner, 1985); a positive association in direct contrast to the hypothesis (Gill & Calkins, 2003); a negative association but only amongst older boys, with younger boys showing the opposite association (Feshbach & Feshbach, 1969); and the predicted negative association (de Wied *et al.*; 2005; Strayer & Roberts, 2004). The de Wied *et al.* (2005) study also indicated that the negative association between empathy and aggression may be situation-specific. Aside from Feshbach and Feshbach's (1969) study, no gender differences were reported in any of the studies reviewed in this section. As Lovett and Sheffield (2007) noted, unreliable measures of aggression were employed in the two earliest studies: a test-retest reliability of only .63 was reported for the nine-item rating scale of aggression used by Feshbach and Feshbach (1969). Marcus *et al.* (1985) reduced the same scale to one item, thus further reducing its reliability.

1.5.4 Situational Measures of Empathy – Adolescent Studies

Two studies investigating the association between situational empathy and aggression in adolescents were found. The first is a study described in a previous section (Kaplan & Arbuthnot, 1985). In this study, 20 delinquent 14- to 15-year-olds were compared with 20 high school children with regard to both dispositional (as discussed above) and situational empathy. The situational empathy measure was adapted from Duggan (1978), and was comprised of a series of short stories pertaining to adolescent conflicts. Open-ended questions were then asked about how the person in the story felt, how the young person felt hearing the story, and how they would respond in the situation. Delinquent adolescents obtained significantly lower scores on the dispositional empathy measure than non-delinquent adolescents. However, this finding only applied to boys.

Finally, in another study mentioned in a previous section, Cohen and Strayer (1996) compared 30 adolescents with a formal diagnosis of conduct disorder with 32 controls. As well as the dispositional empathy measure already described, a situational measure of empathy was also administered. The Empathy Continuum (EC; Strayer, 1993) involves watching a series of videotaped vignettes of an emotional nature, and then completing an interview about the affective state of the characters in the vignettes, the affective state of the participant after watching the vignette, and the reasons for these affective states. The extent to which there is concordance between the emotions attributed to the characters and the emotions experienced by the participant is also measured. Adolescents with conduct disorder displayed fewer concordant emotions than controls. This finding did not differ by gender.

Results of these two studies concur that amongst adolescents, situational empathy is significantly negatively associated with aggression. Nevertheless, both studies were concerned with

categorical analyses comparing adolescents with clinically significant levels of aggression with controls. The studies do not address the issue of the association between situational empathy and aggression in the general population of adolescents. The two studies do differ, however, in terms of reported gender differences in the extent to which high levels of aggression are associated with low empathy. Kaplan and Arbuthnot (1985) demonstrated that delinquent boys, but not delinquent girls, showed lower situational empathy than controls who had not engaged in delinquent behaviour. In contrast, Cohen and Strayer (1996) reported no gender differences in the magnitude of difference in empathy scores between adolescents with and without a diagnosis of conduct disorder. The sample size was larger in the Cohen and Strayer (1996) study, and the validity of group classifications and empathy tasks was also greater (Lovett and Sheffield, 2007). These differences could have contributed to the conflicting findings between the two studies with regard to gender differences.

1.6 Discussion

This literature review has highlighted an overall lack of correspondence between the findings of the studies in this area. Nevertheless, particularly within the more recent literature, there have emerged some consistent patterns, as well as evidence for and against certain theoretical models that have attempted to explain the mechanisms underlying the association between empathy and aggression. Some important clinical implications and directions for future research have also arisen from the literature to date.

In general, the literature points towards a more consistent negative association between empathy and aggression amongst the adolescent population than amongst children. This could reflect a difficulty with measuring empathy in younger children, for example a greater inconsistency of

responding on picture or story-based tasks which tend to be used more often with younger children (Miller & Eisenberg, 1988). Alternatively, the findings could reflect that a negative association between empathy and aggression develops over time. The latter explanation would have implications for the developmental sequence and therefore causal mechanism underlying the association between empathy and aggression (e.g. socialisation: perhaps aggressive behaviour in the long-term leads to experiences that limit the potential for empathic development or expression, rather than empathic deficits enabling aggression).

The above developmental theory notwithstanding, how might one explain the findings reported in some studies (Feshbach & Feshbach, 1969; Gill & Calkins, 2003) that younger aggressive children might present with *greater* empathy than non-aggressive children? Gill and Calkins (2003), for example, reported that aggressive two-year-olds displayed greater situational empathy than non-aggressive two-year-olds. Their responses to the other person's distress were faster, and characterised by more facial concern and more questions about the person's emotional state than the non-aggressive children. If opportunities for the development of empathy are gradually limited over time by aggressive behaviour, for example by increasing hostile rather than empathic responses from others, one would nevertheless not expect aggressive children to demonstrate initially higher levels of empathy than their peers. Gill and Calkins (2003) hypothesised that the aggressive children may appear more empathic than the non-aggressive children because their own emotional regulation is less well-developed. They are therefore more impulsive, and thus react faster and less reservedly than their peers. This explanation is not counter to the socialisation hypothesis, which can easily be incorporated: emotional dysregulation leads to impulsive and aggressive behaviour, which in turn leads to peer rejection, which limits opportunities for the development of empathy and eventually leads to a deficit in empathy. The

hypothesis is also consistent with the dysregulation hypothesis outlined in section 1.4 of this review (Young *et al*, 1999), which asserts that children who have difficulty dealing with their own emotional reaction to others' distress may lack the capacity for other-focussed thinking, as well as the skills to de-escalate their own anger or aggressive responses.

Studies which have employed situational rather than dispositional measures of empathy within the adolescent population, have also more consistently demonstrated a negative association between empathy and aggression. A possible explanation for this finding is that the picture and story-based tasks that constitute the measures of situational empathy are perhaps more similar to one another than the questionnaire based measures, which can vary in content and informant (Lovett & Sheffield, 2007). Moreover, it could be that the general nature of dispositional empathy measures does not adequately capture the situation-specific empathic deficits that may be characteristic of aggressive young people. As de Wied *et al.* (2005) observed, DBD boys presented with lower dispositional and situational empathy than non-aggressive children. Nevertheless, they were able to demonstrate higher levels of empathy in response to a particularly emotionally-provocative animal vignette, indicating that their capacity for empathy was inhibited in certain situations, but not entirely deficient in others. Consistent with this notion is the finding that the degree to which the observed person is liked by the participant can influence the level of empathic responding (Zillmann & Cantor, 1977). Furthermore, co-operation between the observer and observed has been shown to promote empathy, whereas competition inhibits empathy (Lanzetta & Englis, 1989).

The finding that situational empathy shows a more robust association with aggression than dispositional empathy runs directly counter to the results of an earlier meta-analysis conducted by Miller and Eisenberg (1988). In this examination of the literature up to the late 1980s, studies

employing (questionnaire-based) measures of dispositional empathy tended to report a negative association between empathy and aggression more consistently than studies using story and picture-based measures of situational empathy. At the time, the authors concluded that picture and story-based tasks may be more susceptible to demand characteristics due to the need to respond face-to-face to an adult experimenter. Their hypothetical nature was also considered problematic, in that they may fail to convey a convincing enough story or character for the child to relate to.

The discrepancy in findings is difficult to explain, but could reflect the increased standardisation of measures of aggression (e.g. continuous measures of aggression as opposed to aggressive/ non-aggressive categorisations) and empathy in more recent studies. Indeed, this could also account for the overall pattern of results in the present literature review, which shows that more recent studies are more likely than older studies to report a significant negative association between empathy and aggression (Lovett & Sheffield, 2007). Many of the older studies reviewed by Miller and Eisenberg (1988) included both positive and negative emotions, yet deficits in empathic responding to positive emotions are not implicit in any of the models of aggression. Studies have more consistently identified aggressive individuals as displaying deficits in recognising and empathising with sadness and fear (e.g. Blair & Coles, 2000). Perhaps the greater focus on negative emotions in recent studies has contributed to the increasing consensus that there may be a negative association between empathy and aggression. It is also plausible that children and adolescents classified as "aggressive" today display more severe levels of aggression than in the earlier studies, and are therefore more likely to present with corresponding psychological differences (Lovett & Sheffield, 2007).

Only one study addressed the role of anger in the association between empathy and aggression (Strayer & Roberts, 2004). Eisenberg et al.'s (1992) anger mediation model (see section 4.1) posited that empathy does not act as a direct inhibitor of aggression, but rather inhibits anger, which in turn inhibits aggression. However, Strayer and Roberts (2004) demonstrated that, over the course of several play sessions, anger tended to decrease whilst aggressive behaviours increased. These findings support the notion of a direct effects model, in which anger does not seem to mediate the association between empathy and aggression.

Many forms of aggression have been studied in the literature reviewed, ranging from direct physical, verbal and indirect aggression in the general population, through to bullying, delinquency, violent offending and aggression which constitutes a psychiatric diagnosis such as conduct disorder. Few studies have compared different forms of aggression, but some consistent and interesting findings have been reported within the three available studies that have measured more than one form of aggression. Kaukiainen *et al.* (1999) found correlations of -.34 between empathy and physical aggression, -.38 between empathy and verbal aggression, and -.23 between empathy and indirect aggression. Thus, all associations were in the hypothesised negative direction, and moderate in magnitude, with indirect aggression the least strongly correlated with empathy. Similarly, Strayer and Roberts (2004) reported the following correlations with empathy: -.48 with physical aggression, -.37 with verbal aggression and -.43 with "object struggles". No measure of indirect aggression was available in this study, but the associations between physical aggression and empathy and verbal aggression and empathy were consistent with Kaukiainen *et al.*'s (1999) findings. Finally, Jolliffe and Farrington (2006) found that associations between different forms of bullying and empathy differed by gender, with violent or physical bullying being associated with low empathy in boys, and indirect forms of bullying being

associated with low empathy in girls. Thus it seems that aggression and empathy generally show a moderate negative association across forms of aggression, and that there may be some interesting differences by gender according to some initial findings, which will require replication in future research.

Based on research that has demonstrated that psychopaths possess sufficient cognitive empathic skills but lack affective empathy (Tangay & Stuewig, 2004), many of the reported studies focussed on affective empathy only. Jolliffe and Farrington (2006) included measures of both components of empathy in their study of adolescent bullies and non-bullies. They noted that affective rather than cognitive empathy was associated with bullying, thus supporting the conjecture that aggressive individuals lack skills in feeling with another person, rather than perspective-taking *per se*. This is another important contribution to our understanding of the nature of the association between empathy and aggression.

Finally, with regard to gender differences in the association between empathy and aggression, mixed results were reported in the literature. The majority of studies reported no gender differences, with the earlier studies concurring that no significant association was evident between empathy and aggression amongst boys or girls (Kaplan & Arbuthnot, 1985; Marcus *et al*; 1985) and the more recent studies demonstrating a significant negative association for both girls and boys (Cohen & Strayer, 1996; Endresen & Olweus, 2002; Kaukiainen *et al*; 1999; Strayer & Roberts, 2004). However, the lack of reported gender differences in the literature could be due to the dearth of studies comparing different forms of aggression. The one study that analysed the association between different forms of aggression and empathy separately by gender, reported a significant negative association between indirect aggression and empathy for girls and a

significant negative association between direct physical aggression and empathy for boys (Jolliffe & Farrington, 2006). The very earliest reported studies demonstrated stronger associations between empathy and aggression for boys compared with girls (Bryant, 1982; Feshbach & Feshbach, 1969). However, as discussed above, many of the earlier studies employed unreliable and unstandardised measures of aggression and empathy, and small samples (particularly of girls). The fact that no study since 1982 has replicated these findings suggests that they may not be valid.

1.6.1 Limitations

The cross-sectional design of all of the studies reviewed limits the potential to address issues regarding the developmental origins of the association between empathy and aggression. One can speculate that if one study of younger children asserts that no association exists (e.g. Gonzales *et al*; 1996), whilst another study of older children demonstrates a significant negative association between empathy and aggression (e.g. Cohen & Strayer, 1996), perhaps it is an association that develops over time, possibly via socialisation processes. Nevertheless, until longitudinal studies are conducted to track the association over time within the same sample of children, the theory remains speculative.

Miller and Eisenberg (1988) noted that the potentially confounding effects of processes other than empathy, such as cognitive biases or comorbid disorders, which could mediate the association between empathy and aggression, have not been adequately controlled for in the majority of studies. Empathy may not directly inhibit aggression, but moreover another process, related to both empathy and aggression, could be responsible. Theories pertaining to possible mediating processes in the association between empathy and aggression need to be systematically tested

out in order to formulate a more comprehensive understanding of the mechanisms underlying the association.

Measurement issues, particularly amongst the older studies, are also of concern in the literature reviewed. The majority of the early studies used Bryant's (1982) scale to measure empathy, yet the psychometric characteristics lack validity, and as regards most self-report scales social desirability is an issue (Lovett & Sheffield, 2007). Many of the behavioural experiments used to measure situational empathy were also not standardised.

Many of the studies have dichotomised aggression and conducted categorical analyses comparing "aggressive" children with "non-aggressive" children. This is of value if the question of interest is the extent to which a clinical group (e.g. children with conduct disorder) present with a deficit in empathy, given that there may be qualitative differences between this group of children at the extreme end of the behavioural spectrum and the normal population. However, within the general population, "aggression" is generally conceptualised as a continuous personality dimension (Buss & Perry, 1992), and thus dimensional analyses may be of greater value (Lovett & Sheffield, 2007). Moreover, studies that have looked at groups such as "delinquents" or "offenders" have not adequately operationalised their criteria for group inclusion (e.g. Burke, 2001).

Relatedly, the majority of studies have not distinguished between different forms of aggression, and none have distinguished between reactive aggression (an angry and hot-tempered response to provocation) and proactive aggression (cold, calculated and unemotional) as described by Dodge and Coie (1987). This is surprising given that a deficit in empathy would intuitively seem to relate to unemotional forms of aggression. Studies including measures of different forms of

aggression could further our understanding of the developmental processes that might contribute to the association between empathy and aggression.

1.6.2 Clinical Implications and directions for further research

Given the inconsistent results in the literature concerning the association between empathy and aggression in young children, any intervention aiming to reduce aggression in children by increasing empathy should be undertaken with caution. Even amongst adolescents, for whom the results of the review are more robust, it seems that empathy-enhancing strategies may only be applicable to certain forms of aggression, and possibly the appropriate form of aggression could be gender-specific (Jolliffe & Farrington, 2006). Without longitudinal studies to help determine the developmental sequence underlying the association, one cannot suggest areas for intervention. For example, if aggression leads to empathic deficits rather than vice-versa, increasing empathy is unlikely to reduce aggression. The stability and clinical sensitivity of the measures of empathy also have yet to be demonstrated via longitudinal research (Lovett & Sheffield, 2007).

Directions for future research already outlined above include the need for studies employing longitudinal designs, investigating the role of mediating processes such as cognitive biases in the association between empathy and aggression, and distinguishing between different forms of aggression, such as reactive and proactive.

In addition to the above, future studies should further address the issue of gender differences in the association between empathy and aggression. Jolliffe and Farrington's (2006) study has offered some tentative support for the hypothesis that empathy may be differentially associated with different forms of aggression for boys and girls. This needs to be replicated and extended to

other forms of aggression, for example reactive versus proactive indirect or relational aggression. Gender-specific interventions for aggression cannot be implemented without first understanding the different pathways to aggressive behaviour that might characterise boys and girls.

We have only just begun to address and understand the implications of the question, "does empathy inhibit aggression?" That there is a negative association between empathy and aggression, there is tentative evidence at least with regard to adolescents. However, whether empathy directly inhibits aggression, and indeed how, is a much harder question to answer. Longitudinal research delineating the different aspects of empathy and different forms of aggression, in different contexts, amongst boys and girls, and considering the variety of potentially mediating processes, is necessary before the developmental origins and mechanisms of the association can be fully understood. It is, nevertheless, a question worth endeavouring to answer, and one that could potentially illuminate ways of intervening to reduce and even prevent aggression and its negative consequences.

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Part 2: Empirical Paper

**Empathy and rejection sensitivity in relation to reactive, proactive
and relational aggression in 10- to 12-year-old children**

Abstract

This study aimed to examine the association between four domains of aggression (reactive relational aggression, reactive physical aggression, proactive relational aggression and proactive physical aggression) and empathy, rejection sensitivity and callous/ unemotional (C/U) traits. Previous research asserted that distinct cognitive and emotional processes are associated with reactive and proactive aggression. It was hypothesised that empathy and callous/unemotional traits would independently predict proactive (relational and physical) aggression, whilst rejection sensitivity would independently predict reactive (relational and physical) aggression. This model was tested on a sample of 63 schoolchildren (mean age = 11.34 years, SD = 6.23 months) from mainstream schools in London and Sussex.

Due to substantial inter-correlation between the four aggression measures, only the two most statistically and theoretically distinct domains of aggression were included in the analyses (reactive relational aggression and proactive physical aggression). The most robust independent predictor of aggression was the presence of C/U traits, which did not distinguish between the different forms of aggression. However, consistent with the hypothesis, rejection sensitivity emerged as a significant predictor of reactive relational aggression but not proactive physical aggression. This association approached significance after controlling for demographic variables and the presence of C/U traits. Also in line with predictions, the association between dispositional empathy and proactive physical aggression approached significance (although not independently of C/U traits and demographic variables), whilst no significant association emerged between dispositional empathy and reactive relational aggression. Preliminary data validating a new measure of situational empathy was also reported.

Empathy and rejection sensitivity in relation to reactive, proactive and relational aggression in 10- to 12-year-old children

2.1 Introduction

Developing a greater understanding of the precursors, correlates and developmental course of aggressive behaviour in children has become an increasingly important focus for research in recent years. This is largely due to the consistent evidence in the literature in support of the continuity of aggressive behaviour across the life span (e.g. Farrington & West, 1993; Robins, 1978), and to the host of negative outcomes that have been associated with long-term aggressive behaviour, such as academic failure, peer rejection, family conflict and adult criminality (Kazdin, 1995). Understanding the factors associated with early-emerging aggression may help to determine some of the developmental pathways which lead children to behave aggressively, and to establish which children are most likely to continue to engage in antisocial behaviour in the future. Moreover, such research could have important implications for clinical interventions, in highlighting areas of children's functioning that could benefit from some early remedial work in an attempt to divert them from a developmental trajectory towards adult antisocial behaviour.

A distinction has emerged between two different forms of aggression, described by Dodge & Coie (1987) as "reactive aggression" (RA) and "proactive aggression" (PA). Drawing on a model of frustration-motivated aggression (Dollard, Doob, Miller, Mowrer & Sears, 1939), RA is characterised as an angry, "hot-tempered" reaction to provocation. In contrast, PA is derived from social learning theory hypotheses of aggression (Bandura, 1973), and conveys a more deliberate, pre-meditated form of aggression, driven by external reinforcements such as perceived positive

outcomes to the behaviour (e.g. obtaining a desired goal or gaining social status). Thus, PA is goal-oriented and requires neither anger nor provocation.

Studies pertaining to the different cognitive processing biases of children with RA compared with PA, offer some support for the distinction between these two forms of aggression. For example, Dodge and Coie (1987) found that five- to eight-year-old children rated as reactively aggressive tended to display hostile attributional biases in response to ambiguous social situations. Thus, they were more inclined than non-aggressive children to interpret an ambiguous action on the part of another person as threatening or hostile, and were therefore primed to react in an aggressive way towards them. Crick and Dodge (1996) replicated this finding in older children (up to 12 years old), and in a sample including girls. Furthermore, Crick and Dodge (1996) reported that PA children did not show this hostile attributional bias, but moreover demonstrated a different sort of cognitive bias. These children tended to evaluate both verbally and physically aggressive behaviours as significantly more positive than both non-aggressive children and RA children. They were also more likely than both other groups to endorse instrumental goals such as having access to a toy or object, as the most desirable outcome of the situation, as opposed to relational goals such as being friends with the other person. RA children on the other hand tended to endorse relational goals more often than instrumental ones.

Several other factors have also been found to distinguish between RA and PA children. RA children have been demonstrated to show poorer problem-solving skills in social situations than PA children (Kolko & Brown, 1997; Price & Dodge, 1989). They have also been reported to be more likely to be rejected by their peers (Dodge, Coie, Pettit & Price, 1990), to show more internalising/ emotional problems (Day, Bream & Paul, 1992), and higher levels of impulsivity and

attention problems than PA children (Dodge, Lochman, Hamish, Bates & Pettit, 1997). Further, they were more likely to have histories of physical abuse than PA children (Dodge *et al*; 1997). Dodge (1991) hypothesised that the two forms of aggression may even have distinct developmental origins, with RA resulting from early experiences of aversive parenting strategies and relationships with caregivers that lacked intimacy. PA children on the other hand were proposed to have learned aggression by modelling aggressive behaviour by their caregivers, and being positively reinforced for engaging in the same behaviours.

In a study investigating the antecedent (age six) and subsequent (age 13) characteristics of RA and PA children at age 10-12, Vitaro, Brendgen and Tremblay (2002) reported a number of additional distinguishing features of RA and PA, extending the findings beyond differences in aspects of concurrent functioning at one time point. At age six, the RA children were rated by their mothers as significantly more emotionally reactive and prone to express anger than the PA children, even in response to non-social stimuli such as noise or light. RA children were also more likely to self-report depressive feelings than PA children at age 13. PA children were rated as more physically aggressive than RA children at all ages.

Vitaro *et al* (2002) proposed on the basis of their findings, that there may be two distinct developmental pathways leading to and resulting from RA and PA. In short, RA children's behaviour results from underlying temperamental characteristics which predisposes them to a low threshold for tolerating aversive stimuli and frustration, and a tendency to react emotionally. This type of aggression, according to the hypothesis, is more likely to foster internalising problems than delinquency, since repeated instances of reactive aggression are likely to lead eventually to poor relationships with parents and peers, possibly resulting in social exclusion and isolation. PA on the

other hand results from early physical aggression characterised by a lack of anxiety and emotional arousal, suggested to be indicative of a psychopathic or antisocial personality profile. This latter group were hypothesised to be more likely to engage in delinquent behaviour due to a lack of inhibition and an association with deviant peers.

Drawing on the research findings indicating that RA and PA are qualitatively different to one another, the current study seeks to investigate the role of other cognitive and emotional processes in relation to reactive and proactive aggression. One way in which an aggressive response may be attenuated or prevented is by the ability to empathise, or to understand and share another's emotional state (Eisenberg & Strayer, 1987). An inability to empathise in such a way has long been proposed as characteristic of people with psychopathic traits (Hare, 1978), and more recently of children with conduct disorder (Cohen & Strayer, 1996) and children presenting with aggressive behaviour (Kaukiainen *et al*; 1999). The suggestion is either that the lack of empathy precedes and enables the aggression, or that moreover, behaving aggressively limits the opportunities for empathising due to the increased need for self-focus and self-justification.

Of interest in the present study is the extent to which RA and PA will be differentially associated with deficits in empathy. Hoffman (1977) and Strayer (1987) proposed that empathy has both a cognitive and an emotional component. In other words, the person must be able to recognise and understand the emotion (cognitive) and share the emotion (emotional). In order to understand the other's emotion, the child must also engage in other related cognitive processes, such as perspective-taking which requires a capacity for "theory of mind", the ability to attribute mental states to others in order to predict and explain their thoughts, feelings or actions (Wimmer & Perner, 1983). In Strayer's (1993) study of children's performance on a measure of empathy that

included both affective and cognitive components, she demonstrated developmental improvements with age in children's capacity to match a person's affect. This improvement occurred in conjunction with increasingly other-person-centred cognitive attributions. Thus, children's cognitive and emotional skills are both implicated in understanding other people's experiences, and appear to develop alongside one another. The findings are consistent with an emotional-cognitive model of empathy (Hoffman, 1977; Strayer, 1987).

Vitaro *et al.*'s (2002) hypothesis would predict that, since PA children engage in aggressive behaviour that is not driven by anger or retaliation, they have a propensity towards a deficit in the ability to share emotions, or the emotional aspect of empathy. They would therefore be unlikely to demonstrate deficits in the cognitive component of empathy, or in other related cognitive processes such as theory of mind. This would be commensurate with the proposal that PA children possess a psychopathic or antisocial personality trait (Vitaro *et al.*; 2002).

Further support for the hypothesis that psychopathic tendencies could be associated with PA can be gleaned from research into the callous and unemotional traits (CU traits) characteristic of psychopathic individuals. In line with reported findings that PA children tend to evaluate aggressive behaviour and its likely outcome more positively than RA children (Crick & Dodge, 1996), Pardini, Lochman and Frick (2003) demonstrated that amongst a sample of incarcerated young people, those with higher CU traits were more likely to report high expectations of aggressive behaviour and low regard for negative consequences. This is consistent with the notion of a reward-dominant response style amongst psychopaths (O'Brien & Frick, 1996), which limits the extent to which they can attend to and process information relating to the negative consequences of their actions on themselves and others. One can appreciate the potential for

such individuals to develop a rather callous, unemotional and manipulative interpersonal style given their focus on rewarding consequences and lack of attention to negative cues, such as a potential threat to themselves or evidence of pain or distress in another person. These negative cues would serve to induce fear or empathy in most people, which would be likely to inhibit aggression (e.g. Newman & Wallace, 1993).

Research to date has not focussed on the possibility that variations in CU traits could be associated with corresponding variation in pro-active aggression in the general population, amongst a normative sample of children. The present study shall test this hypothesis, with the rationale that the emotional and cognitive processes underlying early-emerging, perhaps even low levels, of pro-active aggression, could be the same as those that are associated with more severe and established forms of pro-active aggression. Moreover, such deficits in emotional and cognitive processing (low empathy, high regard for rewarding consequences of aggression, low regard for punishment) could conceivably lead to some callous and unemotional thinking and behaviour even amongst children engaging in low levels or less severe forms of proactive aggression.

Our theoretical account of the differences between PA and RA asserts that empathic deficits and callous or unemotional traits might explain the aggressive behaviour of PA children. RA children's aggression, on the other hand, is proposed to stem from anger (Dodge & Coie, 1987). One plausible explanation for RA children's tendency to experience anger and have difficulty controlling anger is that they have developed a hostile attributional bias (Dodge and Coie, 1987). Similar to the notion of a hostile attributional bias, but applying attachment theory to help explain the reason for the development of such biases, is "rejection sensitivity". Rejection sensitivity refers to the disposition to defensively (i.e. angrily or anxiously) expect, readily perceive or over-react to

social rejection in social situations (Downey *et al*; 1998). It draws upon the hypothesis from attachment theory, that children hold internal working models of their interpersonal relationships which then impact upon their expectations of social interactions with others (Bowlby, 1973). Rejection sensitive children have been shown to be more aggressive than non-rejection sensitive children (Downey *et al*; 1998). Thus, early experiences of rejection could lead a child to develop an insecure or disorganised attachment style, which may predispose them towards being sensitive to rejection in their future interactions.

The rejection sensitivity hypothesis differs from hostile attributional theory in that it conceptualises the cognitive processes underlying aggressive behaviour somewhat differently. Rather than stemming from a propensity to expect others to behave aggressively towards them, the theory suggests that aggressive children expect others to dislike, exclude or reject them, and are more likely than non-aggressive children to perceive others' behaviour as rejecting. The rejection sensitivity theory is consistent with Dodge's (1991) hypothesis that experiences of lack of intimacy in early parent-child relationships may be specifically characteristic of the RA profile. Indeed, whilst a lack of intimacy with caregivers could lead a child to experience caregivers as hostile, it could just as conceivably lead a child to experience caregivers as rejecting. Drawing on this assumption, and the finding that RA is more likely to stem from angry feelings, we predicted that RA children would be more likely than PA children to demonstrate rejection sensitivity.

In sum, we propose from the literature that RA is mediated by early adverse experiences such as social disadvantage and poor relationships with caregivers, leading children to develop poor attachment relationships and attributional biases. The social context of PA is less clear, but

deficits in the capacity to share the emotions of others are thought to be specifically characteristic of the PA profile.

One further aim of the present research is to extend the current research findings relating to RA and PA to relational aggression. Relational aggression was described by Crick & Grotpeter (1995) as "harming others through purposeful manipulation and damage of their peer relationships". For example, relational aggression might take the form of spreading rumours, gossiping, or excluding someone from a social event. Similar constructs have also been described as "social aggression" (Underwood, 2003) and "indirect aggression" (Buss, 1961). Relational aggression has been suggested to be a form of aggression more characteristic of girls than boys, with some researchers arguing that girls could be conceptualised as equally aggressive as boys if relational aggression is taken into account (Crick *et al*, 1999). Underwood (2003) suggested that the concept of RA and PA could also be applied to social/ relational aggression, in that one can conceive of relationally aggressive acts as both "hot" such as sending a malicious email about someone as an angry retaliation for a hurtful comment, and "cold" such as joining in with a campaign to exclude someone.

Consistent with Dodge & Coie's (1987) conceptualisation of RA as retaliative and anger-driven, and PA as goal-driven, relational aggression could also serve both functions (e.g. to provide an immediate outlet for anger versus to obtain social ranking). Contrary to the predominant concept of RA and PA, proactive relational aggression would not be concerned with the attainment of instrumental goals, which has been reported to be the primary underlying function of PA (Crick & Dodge, 1996). It may be that proactive relational aggression could be more characteristic of girls,

for whom it is suggested that relational goals may be of more importance than instrumental goals as a result of socialisation (Block, 1983).

The present study will therefore set out to test the following predictions:

- There will be a stronger negative association between PA and empathy than between RA and empathy. This finding will not extend to theory of mind.
- There will be a stronger positive association between PA and callous/ unemotional/ psychopathic traits than between RA and callous/ unemotional/ psychopathic traits.
- There will be a stronger positive association between RA and rejection sensitivity than between PA and rejection sensitivity.
- The above associations will also apply to reactive and proactive relational aggression.

2.2 Method

2.2.1. Setting

Data collection took place in two Local Education Authority (LEA) schools. One was a primary school (children from five- to 11-years-old) in Stoke Newington, London, and another was a middle school (children from ages eight- to 12-years-old) in West Sussex.

2.2.2. Participants

Children in the 10- to 12-year-old age range were the focus for this study. This age group was considered the most appropriate for several reasons. Firstly, by this age children are at an advanced enough developmental stage to understand written questionnaires and verbally presented or written instructions. They will also have the capacity to verbalise their feelings and to provide written responses. Further, they will be at an appropriate age to assess empathy given

that their perspective-taking abilities (Flavell, 1977) and understanding of internal states (Selman, 1980) should be at an appropriate developmental level. Secondly, many previous studies (e.g. Crick & Dodge, 1996) have focussed on this age group, thus making comparisons between studies meaningful. Thirdly, Moffitt (1993) proposed that during adolescence, antisocial behaviour is normative and is engaged in by the majority of adolescents in order to cope with a temporary maturity gap. Children who are likely to persist in their antisocial behaviour into adulthood are, according to the theory, likely to present with aggressive and antisocial behaviour prior to adolescence. It was therefore considered important for this study to focus on a pre-adolescent population for whom aggression might be more likely to signify potentially persistent behaviour problems.

Sixty-three children were recruited to the study. Nine were from the London school, and 54 from the Sussex school. The mean age of the sample was 11.34 years (SD = 6.23 months). Parents of 53 of the children agreed to supply further demographic information. Demographic characteristics of the sample are summarised in table 2.1 (see below).

2.2.3. Power Analysis

Kaukiainen *et al.*'s (1999) study of the associations between various types of aggressive behaviour and empathy yielded correlations of between -.45 and -.46 in their 10-year-old cohort of children. A similar study investigating the associations between empathy and aggression in a younger cohort of five-year-old children (Strayer & Roberts, 2004) found correlations of -.48 between empathy and physical aggression and -.37 between empathy and verbal aggression. Drawing on these correlations, and Cohen's (1992b) criteria which state that 0.3 is accepted as a medium effect size in correlational studies, the power analysis for this study was calculated using

Table 2.1: Summary of demographic data of participants

Demographic variable	Percentage (N) of sample (N=53/63)
Family	
Single parent	30% (16)
Mother & Father	64% (34)
Reconstituted	2% (1)
Other	4% (2)
Only child at home	13% (7)
Lives with siblings	87% (46)
Ethnicity	
White UK	94% (50)
White Other	2% (1)
Asian	4% (2)
Black Caribbean	0% (0)
Black African	0% (0)
Other/ Mixed	2% (1)
Employment (highest earner in household)	
Professional	23% (12)
White collar	42% (22)
Skilled manual	9% (5)
Semi-skilled manual	15% (8)
Homemaker	8% (4)
Unemployed	4% (2)
Parental Education (highest in household)	
Degree	25% (13)
Up to 18 years	19% (10)
Up to 16 years	42% (22)
Other	8% (4)
None	8% (4)

this value. For a correlation with a medium effect size, with an alpha of 0.05 and 0.8 power, the sample size required is 85 participants. Our sample of 63 therefore indicates that the study may not have sufficient power to detect significant associations.

2.2.4. Measures

Reactive, proactive and relational aggression:

An unpublished teacher-rated measure of child behaviour developed by the Social Development Lab at the University of Minnesota (headed by Professor Nicki Crick) was used to measure reactive, proactive and relational aggression (Children's Social Behavior Scale; see Appendix B). It includes items tapping both physical reactive and proactive aggression and relational reactive and proactive aggression. In total there are four items tapping proactive relational aggression (e.g. "This child tries to get what s/he wants by telling friends s/he will not like them anymore unless the friends do what the child says"); five items tapping reactive relational aggression (e.g. "When angered or provoked by another child, this child reacts by ignoring the kid or by giving the kid the 'silent treatment'"); four items tapping proactive physical aggression (e.g. "This child tries to get his or her own way through physical domination"); and four items relating to reactive physical aggression (e.g. "When mad at another child, this child attempts to get even by hitting, pushing or shoving the child"). There are also items regarding pro-social behaviour, such as "When this child notices that another child has been left out of an activity or game, s/he invites the child to join the game", and submission (e.g. "This child gives in to other kids or does what other kids want").

The measure is unpublished but is derived from two separate published measures: Dodge and Coie's (1987) teacher-rated instrument of reactive and proactive aggression, and Crick's (1996) measure of relational aggression. Dodge and Coie's (1987) measure consists of a reactive-

aggressive scale with three items (e.g. "When this child has been teased or threatened, he or she gets angry easily and strikes back"), and a proactive-aggressive scale also with three items (e.g. "This child uses physical force in order to dominate other kids"). The internal consistency of this measure has been found to be high, with alphas of .90 for both RA and PA (Crick and Dodge, 1996). Crick's (1996) measure of relational aggression is known as the Children's Social Behaviour Scale – Teacher Form (CSBS-T), and includes items such as, "When this child is mad at a peer, s/he gets even by excluding the peer from his or her clique or play group" to measure social aggression, as well as pro-social items such as, "The child is helpful to peers".

Situational Empathy, Callous-Unemotional Traits and Theory of Mind:

In order to maximise the ecological validity of the study, we decided to use a videotaped vignette measure of situational empathy, based on Strayer's "empathy continuum" measure (Strayer, 1993). This measure was chosen by virtue of its close proximity to a naturalistic observation of empathy in real-life situations, and the fact that it uses a different informant to the aggression measure (i.e. self-report as opposed to teacher-report).

The "empathy continuum" refers to a scoring system designed to assess children's emotional-cognitive (EC) responses to emotionally evocative stimuli. The stimuli are videotaped vignettes depicting scenes in which one or two predominant emotions are portrayed (Strayer, 1993). The vignettes were selected by a panel of researchers and drawn largely from documentary films (National Film Board of Canada) and commercial films that had not been aired recently. Two separate sets of six vignettes were used in different studies reported in Strayer (1993), with each set of vignettes lasting approximately 35 minutes. Short extracts from three of the vignettes were

used in the present study, of which the total running time was ten minutes (see Appendix C for an outline of the content of the vignettes).

During the development of the original EC measure, the vignettes were pre-tested on 30 children (aged between five and 14) and 30 adults, who were asked to identify the predominant emotion portrayed by the vignette, and to rate on a scale of one to three the strength of the emotion evoked by the vignette. The one or two emotions identified by the majority of children and adults were established as the predominant emotions for the vignette.

Scoring the EC involves interviewing the children after the video, asking them to rate the main emotion they felt during each vignette (coded as: happy, sad, angry, afraid, surprised good, surprised bad and neutral), and an attribution question ("Why did you feel happy/sad/.etc?"). They are then asked the same questions of the main character in the vignette, i.e. "What emotion(s) did the person in the story feel and why?" Empathy continuum scores are then yielded, ranging from zero to 19 for each vignette, depending upon the appropriateness of the affect attributions, and the degree of affect match between the child's self-reported emotion and that attributed to the character in the vignette (see Strayer, 1993).

Validation studies for the EC have reported that EC scores are positively correlated with Bryant's (1982) questionnaire measure of empathy (Cohen, 1992a), and with pro-social behaviour (Poole, 1992). EC scores have also been demonstrated as significantly lower for conduct-disordered than non-conduct disordered youth (Cohen & Strayer, 1996).

For the present study, the interview and scoring system was adapted into a longer semi-structured interview format, in order to more fully explore the complexities of the cognitive and emotional elements of empathy. This was considered appropriate, since simply asking children how they felt whilst watching the videos would not necessarily elicit the emotions they would experience if they were in the situation themselves. For example, from our discussions in planning this measure, the researcher and supervisors agreed that we did not necessarily feel sad whilst watching the vignette, but could imagine that we would feel sad if we were one of the characters. Alongside the emotional and cognitive aspects of empathy, we also considered empathic actions as an important component of empathy. Thus, a child demonstrating a tendency to engage in prosocial actions in response to another's distress, even in the absence of concordance with the other person's emotional or cognitive state, should still be given some credit for empathic responding.

Since the capacity to demonstrate theory of mind is also an important cognitive process in enabling empathic responding (Strayer, 1987), we also included questions relating to theory of mind, in order to gain a clearer picture of the children's emotional and cognitive competency in relation to empathy. Finally, given the association between callous/unemotional (CU) traits and cognitive processes associated with PA (Pardini *et al*; 2003), we also set out to measure any callous or unemotional elements to the children's accounts of the thoughts and feelings of themselves and the characters in the vignettes.

Appendix D includes a sample of interview questions and coding criteria. The full 49-page coding manual is available from the author on request. The interview yields scores on four elements of emotional and cognitive functioning. First, a "theory of mind" score is derived, which relates to the child's ability to identify the thoughts and feelings of the characters in the vignette. Some

questions relate to the main character in the vignette and the child responds in third-person narrative. Other questions ask the child to imagine themselves in the position of a different character in the vignette, describing how they would think and feel if they were in the character's shoes (i.e. in first-person narrative). Secondly, the interview produces an "empathy" score. This is concerned with the extent to which the child's thoughts, feelings and actions represent a positive empathic response to the other person's mental or emotional state. This score is derived from the first-person narrative questions, in which the child is asked to place themselves in the position of one of the characters in the story. The character chosen is always a different character from the main protagonist. In this way, it is possible to elicit the child's thoughts, feelings and actions in relation to the emotional distress in the other person. Thirdly, the interview yields a "callousness" score, which consists of a tally throughout the entire interview of instances in which the child expresses violent, cruel, hateful or aggressive thoughts, feelings or actions (e.g. "I would punch him/her", "I would feel like killing him/her") or identifications of emotions directly opposing the person's distressed emotional state (e.g. "I would be happy if s/he was upset/ scared/ hurt/ angry"). Finally, a tally counting instances of "unemotional responses" is also derived from the interview. This includes no mention of or identification with the other person's emotional state, or open disregard for the other's emotional state (e.g. "I would feel nothing", "I wouldn't care"), or no consideration or complete rejection of prosocial action (e.g. "I wouldn't let the girls in my car" even after prompting, "what about if the girls' feelings were hurt by that. Is that still ok?").

The interview was piloted on six children (four girls and two boys) aged between nine and 12 years of age. The interview was then edited to address issues raised during the pilot phase, such as clarity and wording of questions, and the number of questions included.

After data collection for the study was completed, five of the interviews were selected at random to be rated by a second coder in order to determine inter-rater reliability. Pearson's r correlations between the two coders were as follows: Theory of mind: .90, Empathy: .99, Callousness: .99, Unemotional responses: .98, demonstrating high inter-rater reliability.

Dispositional Empathy:

Dispositional empathy was measured using the Children's Empathic Attitudes Questionnaire (CEAQ; Funk, Fox, Chan & Brouwer, 2006). The CEAQ is a 15-item self-report measure of empathic attitudes (see Appendix E). It was developed to improve upon the item heterogeneity, dated wording and limited response options of the Bryant Empathy Questionnaire (Bryant, 1982) and the poor reliability and validity of updated versions of the Interpersonal Reactivity Index (IRI; Davis, 1994), whilst incorporating ideas from both scales. The questionnaire is currently under review for publication.

The questionnaire taps cognitive, affective and behavioural components to the child's empathic attitudes. Examples of items include: "I would get upset if I saw someone hurt an animal", "Other people's problems really bother me" and "When I'm mean to someone, I usually feel bad about it later". Item responses are scored on a three-point scale (1 – No, 2 – Maybe, 3 – Yes) depending on the extent to which the child believes the statement applies to them.

During the development of the questionnaire, the CEAQ was administered to 213 school children from fifth to seventh grade. Support for the measure's reliability (Chronbach's $\alpha = .78$), validity and functionality was demonstrated (Funk *et al*; 2006).

Psychopathic traits:

The Antisocial Process Screening Device (APSD; Frick & Hare, 2001) was employed as a measure of psychopathic traits, to be used as an adjunct to the callous and unemotional scales in the interview and the two measures of empathy (see Appendix F). The APSD is a 20-item behaviour rating scale, designed as a measure of psychopathy in young people. It is a modified version of the adult PCL-R scale (see Frick & Hare, 2001; Frick, Bodin & Barry, 2000), adapted for use with children and adolescents. Items tap three dimensions: callous-unemotional traits (e.g. "His/her emotions seem shallow and not genuine"), narcissism (e.g. "Seems to think that he/she is better than other people") and impulsivity (e.g. "Acts without thinking of the consequences"). Each item of the APSD is scored either zero (Not at all true), one (Sometimes true), or two (Definitely true). Teacher-, parent-, and youth self-report versions of the APSD are available. Only the teacher-report was used in the present study. Numerous studies have attested to the reliability and validity of the APSD (see Frick & Hare, 2001). Only the callous/unemotional scale of the questionnaire was used in this study, since the scale taps the component of psychopathy that we hypothesised would relate to PA.

Rejection sensitivity:

The "Children's Rejection Sensitivity Questionnaire" (CRSQ; Downey, Lebolt, Rincon & Freitas, 1998) was developed for fifth to seventh graders (children aged between nine and 12 years of age, and therefore appropriate for the sample in the present proposed study). The CRSQ takes the format of a questionnaire, and describes 12 scenarios in which the potential outcome could be a rejection (e.g. "Pretend you have moved and you are going to a new school. In this school, the teacher lets the kids in the class take home a video game to play with on the weekend. Every

week so far you have watched someone else take it home. You decide to ask the teacher if *you* can take home the video game this time. You wonder if she will let you have it.”).

In part A of the CRSQ, angry and anxious expectations of rejection are calculated. The child is asked to rate how nervous they would feel in this situation, on a six-point scale, and also how angry on a six-point scale. Finally, they are asked on a six-point scale how likely the outcome is to be positive. Angry expectations of rejection are calculated by multiplying the expected likelihood of rejection by the degree of anger, over the possibility of its occurrence. The same scoring system applies to calculating anxious expectations of rejection.

In part B, angry and depressed reactions to ambiguously intended rejections are measured. Outcomes depicting a rejection that could be interpreted as malicious or otherwise are presented for two of the twelve scenarios. For example, for the teacher example given above, the outcome is presented as the teacher saying, “No, you can’t take it home this weekend. I’m giving it to someone else”. The child is then presented with a series of possible emotional, cognitive and planned behavioural reactions (e.g. “I would feel mad at the teacher”; “I would feel like hitting someone or something”), and asked on a three-point scale for each reaction how true it would be for them in that situation. A total angry reaction score is then calculated across the angry response scores for each scenario. Possible depressive reactions include “I would feel like I’ll never get what I want” and “I would feel sad because she picked someone else instead of me”. A total depressive reaction score is yielded in the same way as the angry reaction score.

Finally, in part C, the extent to which the child feels rejected following the ambiguously intended rejection is measured. Three possible responses are presented, representing feelings of rejection

or of being disliked, (e.g. "I would feel like the teacher doesn't like me"), and the child is asked to rate, on a scale of one to three, how true that response would be of them in that situation. Again, scores are summed between the two scenarios to yield a total "feeling rejected" score.

High levels of internal reliability and stability of this measure have been reported (Downey *et al*; 1998). For example, alphas of .79 for angry expectations, .84 for angry reaction, and .72 for feeling rejected were reported. Data derived from 76 children over a four-week period yielded test-retest reliabilities of .85, .90 and .85 for angry expectations, angry reaction and feeling rejected respectively. The measure has also been demonstrated to show convergent and discriminant validity (Downey *et al*; 1998). For example, the CRSQ was positively correlated with hostile attributional biases (Dodge, 1980) and negatively correlated with perceived social competence (Harter, 1982). Further, children who scored high on the CRSQ were more likely to behave aggressively and to experience interpersonal difficulties than children with low scores on the CRSQ (Downey *et al*; 1998). Based on this latter finding, the CRSQ was considered appropriate for use in the present study (see Appendix G for a sample of questions).

For the purposes of this study, the "feeling rejected" score was considered the most appropriate for use in the analyses. This scale taps most strongly the tendency to feel rejected (as opposed to angry, anxious or depressed), and therefore fits with our theory that a sense of rejection underlies the aggressive behaviour of RA children. The "feeling rejected" scale can be more clearly differentiated from the notion of a hostile attributional bias (Dodge & Coie, 1987) than the "angry expectations" scale. It is not clear from the latter scale whether the angry feelings are related to expectations of rejection or hostility. Analyses referring to "rejection sensitivity" in the results section therefore refer to the "feeling rejected" scale of the questionnaire.

2.2.5. Design/ Procedure

Schools known to the researcher were approached by letter and then by follow-up telephone call to take part in the study. Two of the six schools approached (one in London, one in Sussex) agreed to take part. Parents of all children in year six of the London primary school and parents of all children in years six and seven of the Sussex middle school were invited by post to join the study. They were sent a covering letter (see Appendix H), an information sheet describing the study (see Appendix I), an information sheet for the child (see Appendix J), and a consent form to be returned to the school or to the researcher by post (see Appendix K). Of the 30 children in year six at the London school, nine parents returned the consent form giving their permission for their child to participate. Of the 151 children in the Sussex school (77 in year six, 74 in year seven), 54 parents returned consent forms (22 in year six, 32 in year seven), a take-up rate of 39% overall (63/160). Parents who agreed to provide further information (53/63) were then contacted by telephone to provide demographic information about family composition, education level, occupational status and ethnicity. Children's dates of birth were obtained from the school registers.

Data collection in the London school took place over two days, and in the Sussex school the researcher spent two weeks collecting data. The teachers of all the children recruited to the study were given the Children's Social Behaviour Scale (CSBS) and the Antisocial Process Screening Device (APSD) to complete, in order to provide measures of reactive and proactive physical and relational aggression, and psychopathic traits. These questionnaires were collected at the end of the testing period at the school.

The Children's Rejection Sensitivity Questionnaire (CRSQ) and the Children's Empathic Attitudes Questionnaire (CEAQ) were administered to a group of children at a time. At the London school

all nine children completed the questionnaires at the same time. At the Sussex school, groups of 10-20 children at a time completed the questionnaires together. The researcher read out the items to the group and the children were instructed to write their answers privately, without discussion and without skipping ahead to the next items. Each questionnaire session took around 20-30 minutes per group. Some children required individual help with the questionnaires and needed to work at a pace slower than the rest of the group, and these children were seen individually to complete the questionnaires. For some children this need was identified by class teachers, whereas for others it came to the attention of the researcher during group administration. The latter children were then allotted extra individual time to finish completing the questionnaires with extra help from the researcher.

The situational empathy task was administered separately for each child, in a separate room or quiet corner of a corridor in the school. The vignettes were shown on a laptop computer screen, which was paused at appropriate points in the vignette to ask the interview questions. The interview was recorded via a digital voice recorder. This task took between 25 minutes and one hour per child, depending on the amount of material the child provided in the interview.

There were no missing data in the dataset: all children completed the interview and questionnaires, and teachers also filled in all questionnaires. Only the demographic information for the 10 children whose parents did not provide telephone numbers is absent.

2.2.6. Ethical consent

Ethical consent was obtained from the UCL ethics committee (see Appendix L).

2.2.7. Statistical analyses

The variables were to be treated as continuous variables, using regression equations to analyse the proportion of variance in the dependent variables (reactive physical aggression, reactive relational aggression, proactive physical aggression and proactive relational aggression) that is predicted by the independent variables (empathy, CU/ psychopathic traits, and rejection sensitivity).

We predicted that rejection sensitivity would account for a significant proportion of the variance in reactive physical aggression and reactive relational aggression, but that it would not account for a significant proportion of the variance in proactive physical aggression and proactive relational aggression. Empathy on the other hand was hypothesised to significantly predict proactive physical aggression and proactive relational aggression, but not reactive physical aggression and reactive relational aggression. We anticipated that this effect would be limited to empathy and would not extend to theory of mind. Further, we hypothesised that callous, unemotional and psychopathic traits would account for a significant proportion of the variance in proactive physical aggression and proactive relational aggression, whereas they would not account for a significant proportion of the variance in reactive physical aggression and reactive relational aggression.

The regression equations were also to be controlled for any demographic variables that were found to correlate with the variables in the equation. In this way, for empathy, CU traits or rejection sensitivity to significantly predict aggression, these independent variables would need to account for a significant proportion of the variance in aggression *over and above* that explained by the relevant demographic variables.

2.3 Results

2.3.1. Descriptive Statistics

Callousness and Unemotional Responses on the interview task correlated $r=.86$, and very few children scored above one or two on either item ($N=2$ for callousness, $N=1$ for unemotional responses). We therefore combined the two variables, and recoded the new variable such that a child could score zero (no callous or unemotional responses), one (at least one callous OR unemotional response) or two (at least one callous AND one unemotional response).

Table 2.2 details the distributions of the main variables in the study (Mean, SD and range). Each variable was checked for normality of distribution, with only dispositional empathy falling within acceptable limits ($z=-1.19$). All other variables showed significantly skewed distributions: situational empathy ($z=-2.35$), rejection sensitivity ($z=-2.23$), teacher-rated callous/unemotional traits ($z=4.00$), interview callous/unemotional responses ($z=5.35$), reactive physical aggression ($z=6.93$), proactive physical aggression ($z=9.28$), reactive relational aggression ($z=1.99$), proactive relational aggression ($z=4.99$). Thus, children in this normative sample had a tendency towards high situational empathy scores, high levels of rejection sensitivity, low teacher-rated and interview-generated CU scores, and low levels of all forms of aggression. This pattern of scoring significantly skewed the data, such that normality of distribution could no longer be assumed. Transformations were therefore computed on each of the skewed variables. Table 2.3 indicates the status of the variables with regard to normality of distribution prior to and following transformation. Five of the variables remained significantly skewed following transformation (teacher-rated CU traits, interview-generated CU responses, reactive physical aggression, proactive physical aggression and proactive relational aggression). Although reactive relational

aggression was no longer significantly skewed according to the skewness z-score, it was clear from looking at a histogram that this variable was still not normally distributed. As such, this variable was treated as a skewed variable. In subsequent analyses, non-parametric tests are conducted where possible if skewed variables are included. Where parametric tests are necessary, transformed variables are used.

Table 2.2: Distribution of variables

Variable	Mean	SD	Range
Dispositional Empathy	33.65	4.27	22-42
Situational Empathy	19.79	5.80	5-30
Rejection Sensitivity	13.78	2.79	6-18
Callous/Unemotional Traits (Teacher rated)	44.76	7.68	37-67
Callous/Unemotional Responses (Interview)	0.35	0.63	0-2
Aggression: Reactive Physical	6.38	3.83	4-22
Aggression: Proactive Physical	5.25	2.82	4-16
Aggression: Reactive Relational	9.08	3.97	5-20
Aggression: Proactive Relational	5.97	2.87	4-14

Table 2.3: z-scores of variables before and after transformation

Variable	Original z-score for skewness	Significantly skewed (z>1.96)?	Transformation method applied	z-score following transformation	Significantly skewed (z>1.96)?
Dispositional					
Empathy	-1.19	No	N/A	N/A	N/A
Situational					
Empathy	-2.35	Yes	Square root	1.05	No
Rejection					
Sensitivity	-2.23	Yes	Square root	1.10	No
Teacher-rated CU					
	4.00	Yes	Inverse	2.33	Yes
Interview CU responses					
	5.35	Yes	Square root	3.98	Yes
Reactive Physical Aggression					
	6.93	Yes	Inverse	2.37	Yes
Proactive Physical Aggression					
	9.28	Yes	Inverse	5.29	Yes
Reactive Relational Aggression					
	1.99	Yes	Inverse	-.05	No
Proactive Relational Aggression					
	4.99	Yes	Inverse	2.26	Yes

2.3.2. Demographic Factors

A series of analyses was conducted to examine whether any of the demographic variables might have a significant influence on empathy, rejection sensitivity, callous/unemotional traits or aggression scores (see tables 2.4 – 2.7). For categorical demographic variables, a one-way ANOVA was used. Transformed dependent variables were used in these analyses. For continuous demographic variables (age), a correlation was carried out (Spearman's RHO for skewed dependent variables, Pearson's r for variables meeting assumptions of normality of distribution). It is recognised that conducting several analyses sequentially can raise the type I error rate. However, it was considered important, in this instance, to determine whether any of the demographic variables could represent potentially confounding variables that may need to be controlled for in later analyses. We minimised the number of demographic variables in the analyses by excluding ethnicity, since only two participants in the sample were non-white. For family status, since only three children came from reconstituted or other family compositions, this variable was recoded into two categories: "both parents" or "other".

As can be seen in table 2.4, dispositional empathy was significantly associated with parental education, parental occupation and gender. Children whose parents achieved a level of education up to the age of sixteen presented with the highest mean scores on the self-report empathy questionnaire ($M = 36.41$, $SD = 3.33$), compared with children whose parents achieved any other level of education (no education: $M = 30$, $SD = 5.66$; up to eighteen years: $M = 30$, $SD = 5.66$; degree: $M = 33$, $SD = 2.08$; other: $M = 32$, $SD = 4.08$). This finding is difficult to explain, but could reflect the relatively higher N size of the group of children whose parents went to school up to age sixteen. Similarly, with regard to the association between dispositional empathy and parental occupation, children of semi-skilled manual workers and unemployed parents achieved higher

Table 2.4: Association between demographic variables and empathy

Variable	In relation to Dispositional Empathy	In relation to Situational Empathy
Family status	F (1, 51) = .23	F (1, 51) = 1.10
Parental Education	F (4, 48) = 4.31**	F (4, 48) = .92
Parental Occupation	F (5, 47) = 2.77*	F (5, 47) = 1.04
Participant Gender	F (1, 61) = 7.53**	F (1, 61) = .19
Participant Age	r = -.20	r = -.03

* p<0.05; **p<0.01

mean scores (M = 36.88, SD = 3.87; M = 36.50, SD = 2.12) than children of parents in other occupational categories (homemaker: M = 31.75, SD = 6.55; skilled manual: M = 32.40, SD = 2.30; white collar: M = 35.09; SD = 3.88; professional: M = 31.83; SD = 2.69). This is also a difficult finding to interpret and it is likely that the small N sizes in some of the occupational categories (e.g. homemaker: N = 2, unemployed: N = 4) influenced these results.

With regard to gender, girls presented with significantly higher scores than boys on the dispositional empathy measure (girls: M = 35.17, SD = 3.65; boys: M = 32.35, SD = 4.39). This finding is consistent with previous research indicating that psychometric measures of empathy consistently report a higher mean for female samples (e.g. Baron-Cohen & Wheelwright, 2004; Eysenck & Eysenck, 1978).

Table 2.6 indicates that teacher-rated CU traits differed significantly according to parental education. Children whose parents received no formal qualifications were rated by teachers as having higher levels of CU traits (M = 99.9794, SD = .0036) than children whose parents achieved

at least GCSE or equivalent qualifications (up to age 16: $M = 99.9777$, $SD = .0034$; up to age 18: $M = 99.9746$; degree: $M = 99.9777$, $SD = .0036$; other: $M = 99.9752$; $SD = .0027$). Mean scores differ at three decimal places due to the transformation of the teacher-rated CU variable.

Table 2.5: Association between demographic variables and rejection sensitivity

Variable	In relation to Rejection Sensitivity
Family status	$F(1, 51) = 2.56$
Parental Education	$F(4, 48) = .87$
Parental Occupation	$F(5, 47) = 1.26$
Participant Gender	$F(1, 61) = 2.17$
Participant Age	$r = .19$

Table 2.6: Association between demographic variables and CU Traits

Variable	In relation to teacher-rated CU Traits	In relation to CU interview responses
Family status	$F(1, 51) = .15$	$F(1, 51) = .04$
Parental Education	$F(4, 48) = 2.67^*$	$F(4, 48) = .78$
Parental Occupation	$F(5, 47) = .32$	$F(5, 47) = .77$
Participant Gender	$F(1, 61) = 2.96$	$F(1, 61) = .03$
Participant Age	$R = -.08$	$R = -.18$

* $p < 0.05$; ** $p < 0.01$

Table 2.7 illustrates that there emerged a significant association between proactive relational aggression and parental level of education. Higher levels of proactive relational aggression were evident amongst children whose parents received no formal qualifications compared with those

whose parents attained at least GCSEs or equivalent (no qualifications: $M = 19.87$, $SD = .08$; up to sixteen: $M = 19.81$, $SD = .06$; up to eighteen: $M = 19.77$, $SD = .05$; degree: $M = 19.78$, $SD = .06$; other: $M = 19.75$, $SD = 0.00$). Mean scores differ at one decimal place due to the transformation of the proactive relational aggression measure. Given that parental education level is associated with child verbal IQ (Rowe, Jacobson & Van den Oord, 1999), and child verbal IQ has been consistently shown to predict aggression (e.g. Moffitt, 1990), this finding is consistent with the existing literature. Nevertheless, it is unclear why this association should be limited to proactive relational aggression in the current data set.

Table 2.7: Association between demographic variables and aggression

Variable	In relation to Reactive Phys Aggression	In relation to Proactive Phys Aggression	In relation to Reactive Rel Aggression	In relation to Proactive Rel Aggression
Family Status	$F(1, 51) = 1.35$	$F(1, 51) = 1.48$	$F(1, 51) = .00$	$F(1, 51) = .20$
Parental Education	$F(4, 48) = 2.05$	$F(4, 48) = 1.45$	$F(4, 48) = 1.58$	$F(4, 48) = 3.40^*$
Parental Occupation	$F(5, 47) = 1.68$	$F(5, 47) = 2.54^*$	$F(5, 47) = 1.75$	$F(5, 47) = 2.33$
Participant Gender	$F(1, 61) = 5.17^*$	$F(1, 61) = 7.56^{**}$	$F(1, 61) = .16$	$F(1, 61) = 1.40$
Participant Age	$R = .23$	$R = .23$	$R = .24$	$R = .26^*$

* $p < 0.05$; ** $p < 0.01$

It also emerged that proactive physical aggression differed significantly in relation to parental occupation (see table 2.7). Children whose parents were homemakers were rated as showing higher levels of proactive physical aggression than children of parents with other occupations

(homemaker: $M = 19.86$, $SD = .08$; unemployed: $M = 19.75$; $SD = .00$; semi-skilled manual: $M = 19.76$, $SD = .03$; skilled manual: $M = 19.78$; $SD = .06$; white collar: $M = 19.77$; $SD = .06$; professional: $M = 19.76$; $SD = .03$). It is unclear why such a difference might have emerged in these data. Mean scores differ at one decimal place due to the transformation of the proactive physical aggression measure.

Also evident from table 2.7 is that boys were rated as significantly more (reactively and proactively) physically aggressive than girls (Reactive physical aggression: Boys: $M = 19.82$, $SD = .07$; Girls: $M = 19.79$, $SD = .06$. Proactive physical aggression: Boys: $M = 19.80$, $SD = .07$; Girls: $M = 19.76$, $SD = .03$). Mean scores differ at one decimal place due to the transformation of the reactive and proactive physical aggression measures. There was no significant gender difference, on the other hand, with regard to relational aggression. This finding is consistent with the literature, which demonstrates higher levels of physical aggression in boys compared with girls (e.g. Moffitt, Caspi, Rutter & Silva, 2001), whilst girls display equal if not higher levels of relational aggression compared with boys (see Galen & Underwood, 1997).

Finally, there was a significant positive correlation between age and proactive relational aggression (see table 2.7). Older children showed significantly higher levels of proactive relational aggression than younger children ($R = .26$, $p = .04$). The correlations between age and other forms of aggression also closely approached significance, indicating a trend towards older children displaying higher levels of aggression more generally (reactive physical aggression: $R = .23$, $p = .07$; proactive physical aggression: $R = .23$, $p = .07$; reactive relational aggression: $R = .24$, $p = .06$).

Based on the analyses in this section, we decided to control for gender, age, parental education level and parental occupation in the main analyses, in order to statistically control for the potentially confounding influence of these variables.

2.3.3. Validation of the empathy interview

Since the interview task was a newly designed measure, it was considered appropriate to carry out some analyses to help validate the measure. We conducted correlations between the different sub-scales of the interview measure (empathic thoughts, empathic feelings, empathic actions, total empathy, theory of mind and callous/ unemotional responses) and several other measures of functioning. We decided to look at teacher-rated empathy (dispositional empathy) and teacher-rated CU traits, since these were independent measures of similar constructs to the interview ratings of empathy and CU responses. We also included two sub-scales from the teacher-rated CSBQ (from which the aggression scales were derived), measuring aspects of pro-social functioning (relational inclusion and leadership). These were chosen due to the literature attesting to the positive association between both theory of mind and empathy, and pro-social behaviour (e.g. Eisenberg & Fabes, 1990; Slaughter, Dennis & Pritchard, 2002). Thus, significant positive associations between the theory of mind and empathy scales on the interview, and independent measures of pro-social behaviour, would provide evidence for the validity of the theory of mind and empathy scales of the interview. "Relational inclusion" and "Leadership" items on the CSBQ are listed in table 2.8 below.

Before embarking upon the analyses, an investigation of the distribution of the new variables was warranted. The "relational inclusion" and "leadership" variables were both normally distributed ($z = -.78$ and $-.17$ respectively). Both the "empathic thoughts" and the "empathic feelings" scales of the

interview were also normally distributed ($z = -1.31$ and -1.10 respectively). “Empathic actions” and “theory of mind” on the other hand were significantly skewed ($z = -2.75$ and -2.74 respectively). In other words, children tended to obtain scores at the high end of the scales (high empathic actions and theory of mind scores). After square root transformations, the distributions of the two skewed variables were closer to acceptable limits of normality, although still significantly skewed (empathic actions: $z = -2.35$; theory of mind: $z = -2.39$). For this reason, all correlations involving skewed variables were conducted using Spearman’s RHO, whilst correlations between variables meeting assumptions of normality of distribution for parametric tests employed Pearson’s r .

Table 2.8: “Relational Inclusion” and “Leadership” items on the CSBQ

Relational Inclusion	Leadership
When this child notices that another child has been left out of an activity or game, s/he invites the child to join the game.	This child is often the leader of peer group activities or games.
This child is friendly to most children, even those s/he doesn’t like very much.	Other children follow this child’s lead in social situations.
This child feels sorry for children who are often rejected by peers and tries to help them.	Other children seek out this child for advice/ help.

Table 2.9 details the correlations between the interview sub-scales and the self-report and teacher measures of functioning. It is evident that each of the sub-scales of the interview correlates with at least one of the self-report and teacher measures of functioning, supporting its validity. The pattern of inter-correlation is different for each of the interview sub-scales, providing some evidence for the independence of the sub-scales and support for their ability to differentiate between different aspects of functioning.

Table 2.9: Correlations between interview scales and other measures of child functioning

Variable	Dispositional Empathy	Teacher-rated Relational Inclusion	Teacher-rated Leadership	Teacher-rated Callous/ Unemotional Traits
Empathic Thoughts	$r = .16$	$r = .18$	$r = .26^*$	$R = -.02$
Empathic Feelings	$r = .11$	$r = .36^{**}$	$r = .28^*$	$R = -.35^{**}$
Empathic Actions	$R = .28^*$	$R = .10$	$R = .12$	$R = -.11$
Total Empathy	$r = .17$	$r = .25^*$	$r = .28^*$	$R = -.18$
Total Theory of Mind	$R = .09$	$R = .24$	$R = .42^{**}$	$R = -.17$
CU Responses	$R = -.25^*$	$R = -.23$	$R = -.09$	$R = .28^*$

$p < 0.05$; $**p < 0.01$

Only the “empathic actions” scale of the interview’s empathy sub-scales was significantly correlated with the dispositional empathy measure, suggesting that the two scales may measure some common factor distinguishable from the aspects of empathy measured by the interview’s other scales. The “empathic feelings” sub-scale, unlike “empathic actions”, was significantly positively correlated with both pro-social variables (relational inclusion and leadership) and negatively correlated with teacher-rated callous/ unemotional traits. Thus, children who gained high scores on the empathic feelings sub-scale of the interview tended to be rated by teachers as skilled at including others in social activities and leadership, and showing little or no callous or unemotional traits. These findings correspond with the literature indicating that empathic deficits

and callous/unemotional traits are positively associated and characteristic of a psychopathic personality profile (see Frick & Ellis, 1999). The findings also correspond with research implicating empathy in the development of pro-social skills (Eisenberg & Fabes, 1990). Taken together, these findings offer support for the validity of the interview empathy measure, and highlight the empathic feelings sub-scale as the most strongly associated with the predicted measures of functioning.

We predicted, on the basis of research linking theory of mind competency with pro-social behaviour (e.g. Slaughter et al, 2002), that the "theory of mind" sub-scale would be positively correlated with relational inclusion and leadership. This prediction was partly corroborated. Children who were skilled at understanding other people's thoughts and feelings according to the interview task, were rated by teachers as skilled at leadership. The positive association between theory of mind and relational inclusion also approached significance ($R = .24$, $p = .057$). This finding provides validation for the theory of mind sub-scale of the interview.

Finally, the "callous/ unemotional" sub-scale of the interview was significantly positively correlated with the teacher-rated callous/ unemotional measure. This indicates that the interview items were successful in tapping into the concept of CU traits, as demonstrated by its positive association with an established measure. The interview's situation-specific measure of callous/ unemotional responses could therefore provide a valid estimation of a child's general callous and unemotional tendencies. The negative correlation between the interview CU scale and dispositional empathy was also significant ($R = -.25$, $p = .05$), whilst the association between the interview CU scale and teacher-rated relational inclusion approached significance ($R = -.23$, $p = .07$). There was thus a tendency towards children whose interviews contained callous or unemotional responses according to the experimenter, also showing low levels of self-rated dispositional empathy and low

levels of teacher-rated relational inclusion. The association between interviewer-rated CU traits and independently (by multiple sources) rated measures of social and psychological functioning offers support for the validity of this scale.

Drawing on the above findings, the following variables from the interview task were carried forward to the main analyses: "empathic feelings", as opposed to "total empathy", due to its stronger association with measures of pro-social functioning and personality traits; "theory of mind", as a measure of cognitive ability distinguishable from the emotional quality of empathy (i.e. not as a main predictor variable); and "callous/unemotional responses", on the basis of the correlation between this sub-scale and an established measure of callous/ unemotional traits. The two new variables added to the main analyses, theory of mind and empathic feelings, were found to be uncorrelated with all of the demographic variables.

2.3.4. Correlations between aggression variables

Table 2.10 displays the inter-correlations between the four aggression variables. Given that three of the four variables were significantly skewed, Spearman's RHO correlations were used. The variables correlated very strongly, suggesting that discriminating between them in separate analyses may not be appropriate or possible. Children rated by teachers as aggressive in one domain also tended to be rated as aggressive across all other domains, perhaps due to teachers being unable to discriminate between the different forms of aggression, or alternatively reflecting the nature of aggression in normative samples of children such as this.

The least strongly correlated domains of aggression were reactive relational aggression with proactive physical aggression ($R = .60$, $p = .00$), which therefore showed the clearest

discrimination. The distinction between these two aspects of aggression also has strong face validity given the different methods of displaying aggression (physical versus relational) and the different implicit motivations for doing so (reactive versus proactive). For this reason, we decided to carry forward only these two domains of aggression into the main analyses, acknowledging that we would have limited capacity to answer our research questions in the absence of other distinguishable domains of aggression.

Table 2.10: Correlations between aggression variables

	Proactive Physical	Reactive Relational	Proactive Relational
Reactive Physical	R = .73**	R = .77**	R = .82**
Proactive Physical		R = .60**	R = .67**
Reactive Relational			R = .83**

* p<0.05; **p<0.01

2.3.5. Main analyses: Associations between aggression and empathy, CU traits and rejection sensitivity

Table 2.11 displays the Spearman's RHO correlations between the independent variables (dispositional (self-report) empathy, situational (interviewer-rated) empathy, theory of mind, dispositional (teacher-rated) CU traits and situational (interviewer-rated) CU traits) and the dependent variables (proactive physical aggression and reactive relational aggression).

The negative association between proactive physical aggression and dispositional empathy approached significance ($R = -.24, p = .06$). The association between reactive relational aggression and dispositional empathy was not significant ($R = -.05, p = .67$). These results are in the hypothesised direction: we predicted that empathy would be associated with proactive, but not reactive aggression. The results were also consistent with the hypothesis that there would be a stronger negative association between proactive physical aggression and empathy ($R = -.24, p = .06$) than between proactive physical aggression and theory of mind ($R = .04, p = .78$). Situational empathy, however, was not significantly associated with either measure of aggression (proactive physical aggression: $R = -.06, p = .67$; reactive relational aggression: $r = -.09, p = .47$), and thus also contrary to our hypothesis, it did not emerge as a stronger predictor than theory of mind of proactive physical aggression.

Spearman's RHO correlations between the two CU variables (teacher-rated CU traits and interview CU responses) and the aggression variables revealed a significant negative association between aggression and teacher-rated CU traits (proactive physical aggression and teacher-rated CU: $R = .40, p = .00$; reactive relational aggression and teacher-rated CU: $r = .33, p = .01$). The hypothesis that CU traits would be significantly positively associated with proactive but not reactive aggression was not borne out, indicating that higher levels of CU traits were evident amongst aggressive children, regardless of the form of aggression they engaged in. This finding is consistent with the results of the inter-correlations between the aggression variables, which revealed that they were difficult to distinguish from one another. Interview CU responses did not significantly correlate with either form of aggression (proactive physical aggression: $r = .10, p = .42$; reactive relational aggression: $r = .04, p = .78$).

Consistent with the hypothesis, rejection sensitivity was significantly positively associated with reactive relational aggression ($r = .29, p = .02$), but not with proactive physical aggression ($r = .18, p = .16$). Thus, children who perceived others' actions as rejecting tended to be rated by teachers as having high levels of reactive, but not proactive aggression.

Table 2.11: Correlations between aggression and predictor variables

	Dispositional Empathy	Situational Empathy	Theory of mind	Teacher- rated CU traits	Interview CU responses	Rejection Sensitivity
Proactive Physical Aggression	R = -.24 ($p = .06$)	R = -.06	R = .04	R = .40**	R = .10	R = .18
Reactive Relational Aggression	R = -.05	R = -.09	R = .03	R = .33**	R = .04	R = .29*

* $p < .05$; ** $p < 0.01$

2.3.6. Main analyses: Dispositional Empathy, Teacher-rated CU traits and Rejection Sensitivity as independent predictors of proactive physical aggression and reactive relational aggression

In order to determine the unique independent contribution of dispositional empathy, teacher-rated CU traits and rejection sensitivity to the variance in the aggression measures, regression equations were conducted controlling for the effects of age, gender and parental occupation. These three predictor variables (dispositional empathy, teacher-rated CU traits and rejection sensitivity) were the only independent variables entered into the regression equations, since these were the only variables emerging as significant or marginally significant predictors of aggression.

Due to the fact that the two aggression variables were significantly skewed, linear regression equations could not be used. Therefore we carried out Logistic Regression equations, in order to determine the extent to which the independent variables would predict the odds of being aggressive versus not being aggressive. Before conducting Logistic Regression equations, the two aggression variables were re-coded into categorical variables. The proactive physical aggression variable was dichotomised, such that the 45 children scoring the lowest possible score of four were coded as "1" (no evidence of proactive physical aggression), and the 18 children rated by teachers as above four were coded as "2" (some evidence of proactive physical aggression). The regression equation would therefore predict the odds of falling into group 1 versus group 2, and the odds with which falling into group 2 would increase on the basis of an increase in the independent variables.

The reactive relational aggression variable could not be split into two groups equal in size to the proactive physical aggression variable, and therefore was split into three groups, roughly equivalent in size to the smallest group of the proactive physical aggression variable. Thus, children scoring below five became group "1" (N = 20; lowest level of reactive relational aggression), children scoring above five but below 10 became group "2" (N = 21; middle level of reactive relational aggression), and children scoring above ten were assigned to group "3" (N = 22; highest level of reactive relational aggression). An Ordinal Logistic Regression was conducted with this three-category dependent variable, to predict the odds of falling into higher categories denoting greater levels of reactive relational aggression, on the basis of increasing scores on the independent variables.

Table 2.12 illustrates the results of the Logistic Regression equation with proactive physical aggression as the dependent variable. Entered as predictors were gender, age and parental occupation, followed by dispositional empathy and teacher-rated CU traits (the two independent variables that were significantly, or marginally significantly, correlated with proactive physical aggression in the analyses above). Overall, the model significantly predicted proactive physical aggression ($X^2(5) = 11.04, p = .05$), accounting for 29.4% of the variance. The only predictor variable to explain a significant proportion of the variance in proactive physical aggression, independently of the effects of the other predictor variables, was teacher-rated CU traits ($B = .13, Wald = 5.88, p = .02$). Thus, for one unit increase in teacher-rated CU traits, the odds of a child displaying proactive physical aggression increase by 1.14. Interaction effects of the independent variables by gender were looked at but no significant interactions emerged.

Table 2.12: Logistic Regression equation: DV = Proactive Physical Aggression

Variables entered	B (SE)	Wald Statistic	df	p - value	Exp b
Gender	-.39 (.84)	.22	1	.64	.68
Age	.07 (.08)	.89	1	.35	1.07
Parental Occupation	.18 (.29)	.41	1	.52	1.20
Dispositional Empathy	.02 (.11)	.02	1	.88	1.02
Teacher-rated CU traits	.13 (.05)	5.88	1	.02	1.14
Constant	-.17.94	1.88	1	.17	.00

$R^2 = .29$ (Nagelkerke). Model $X^2(5) = 11.04, p = .05$

Table 2.13 details the outcome of the Ordinal Logistic Regression equation, with reactive relational aggression as the dependent variable. Gender, age and parental occupation were entered as predictors, as were rejection sensitivity and teacher-rated CU traits, the two independent variables found to be significantly correlated with reactive relational aggression. The overall model was found to significantly predict 36% of the variance in reactive relational aggression ($\chi^2 (5) = 20.28, p = .00$).

Table 2.13: (Ordinal) Logistic Regression equation: DV = Reactive Relational Aggression

Variables entered	B (SE)	Wald Statistic	df	p - value
Gender	.69 (.61)	1.30	1	.25
Age	.05 (.05)	1.00	1	.32
Parental Occupation	-.05 (.21)	.06	1	.81
Rejection Sensitivity	.21 (.11)	3.44	1	.06
Teacher-rated CU traits	.14 (.05)	9.31	1	.00

$R^2 = .36$ (Nagelkerke). Model $\chi^2 (5) = 20.28, p = .00$

The independent contribution of rejection sensitivity to the variance in reactive relational aggression approached significance ($B = .21, Wald = 3.44, p = .06$), indicating that as rejection sensitivity increased, the odds of falling into the highest scoring group for reactive relational aggression went up. This marginally significant effect was in the hypothesised direction. The independent contribution of teacher-rated CU traits was significant ($B = .14, Wald = 9.31, p = .00$), indicating that, above and beyond the influence of the other predictors in the model, an increase in

teacher-rated CU traits significantly increased the odds of falling into the highest-scoring category for reactive relational aggression. No significant interaction effects emerged between gender and any of the independent variables in this model.

2.3.7. Summary of results

Preliminary validation for the interview task was established, indicating that the sub-scales were measuring distinct and valid aspects of functioning that were correlated with independent measures of social and psychological functioning.

The four domains of aggression were highly inter-correlated, precluding separate analyses for each of these variables. Instead, only the two domains of aggression with the clearest distinction between them were used in the main analyses (proactive physical aggression and reactive relational aggression).

Rejection sensitivity was significantly positively associated with reactive, but not proactive aggression, consistent with our hypothesis. This association approached significance after controlling for the influence of demographic factors and teacher-rated CU traits. Teacher-rated CU traits explained a significant proportion of the variance in both proactive physical aggression and reactive relational aggression, over and above demographic factors and other significant predictor variables. However, contrary to our hypothesis, CU traits did not differentiate between the different forms of aggression. A non-significant trend emerged, in the hypothesised direction, towards a positive association between dispositional empathy and proactive, but not reactive aggression. However, this association was not independent of the effects of demographic factors or teacher-rated CU traits.

2.4 Discussion

This study set out to fulfil two main objectives. Firstly, to test a theoretical model distinguishing between proactive and reactive aggression on the basis of distinct cognitive and emotional processes thought to underlie and maintain each separate domain of aggression. Specifically, we proposed on the basis of previous research, that empathy and callous/unemotional traits would predict proactive aggression, whilst rejection sensitivity would be predictive of reactive aggression. Secondly, we aimed to design an ecologically valid measure of situational empathy and to begin the process of validating this measure. These research questions were investigated in a non-clinical sample of ten- to twelve-year-old schoolchildren.

2.4.1. Descriptive statistics

Preliminary analyses revealed that there was a very low level of aggression amongst this non-clinical sample, particularly with regard to physical aggression. It is worth noting that a limitation of research such as this, focussing on non-clinical samples, is the potential for low levels of aggressive behaviour. This makes predicting variance in levels of aggression difficult, since there is such little variability to predict. This point should be borne in mind when interpreting the results of the present study and their implications for clinical practice. Replication of these results, using very large samples, will be necessary to determine the extent to which our findings based on a few children displaying higher levels of aggression than their peers, can be generalised to normative samples in general.

Another finding that affected the potential to answer the research questions using this sample, was the extremely high inter-correlation between the different domains of aggression. Thus,

children who displayed high levels of one form of aggression also tended to be aggressive across other domains. It was therefore difficult to distinguish between the different forms of aggression due to the high overlap. This could reflect the nature of aggression in a non-clinical population, suggesting that perhaps only amongst clinical samples can one observe a distinction between a reactively aggressive child and a proactively aggressive child. Alternatively, the finding could reflect the teachers' difficulty distinguishing between different forms of aggression. For example, it would be difficult in a busy classroom to determine which aggressive acts were reactive or proactive, unless the teacher was particularly observant of a child's peer interactions throughout the day. Relatedly, teachers would not necessarily be party to the relational aggressive acts occurring amongst children in their class. Not inviting someone to a party, for example, is not easily observable. Peers would possibly be better able to identify the subtleties of aggressive behaviour engaged in by children in their class. Future research would therefore benefit from an inclusion of peer-rated measures of aggression in addition to teacher ratings. Nevertheless, one would expect some degree of overlap between the different forms of aggression, particularly those derived from the same questionnaire and the same rater. Indeed, previous research has reported a high correlation between reactive and proactive aggression (e.g. Price & Dodge, 1989). It may be, therefore, that a larger sample is required to distinguish adequately between these highly correlated domains of aggression. Since there was such a high degree of overlap between the aggression variables in this study, we chose to focus on the two most theoretically and statistically distinct domains of aggression: reactive relational aggression and proactive physical aggression.

2.4.2. Associations between cognitive & emotional processes and aggression

The most robust predictor of higher levels of both reactive relational and proactive physical aggression was the presence of higher levels of teacher-rated C/U traits. Contrary to our

prediction, C/U traits were not more strongly predictive of proactive than reactive aggression. Previous research has reported that C/U traits are characteristic of a particularly violent and persistent form of conduct disorder (Frick & Ellis, 1999), which we proposed to be commensurate with more proactive forms of aggression that lack an emotional trigger. The finding that C/U traits did not distinguish between the different forms of aggression in this sample could indicate that the presence of C/U traits increases the likelihood of engagement in aggression more generally amongst the non-clinical population, and that only very high levels of C/U traits predict proactive aggression specifically. Children with high levels of proactive aggression were either not adequately identified in our sample by teachers, and could therefore not be distinguished from reactively aggressive children on the basis of C/U traits, or our sample did not contain a sufficient number of proactively aggressive children.

Also worthy of note is the finding that interviewer-ratings of situational C/U traits during the video task did not emerge as a significant predictor of either form of aggression. This was a more stringent test of the association between C/U traits and aggression, given that ratings of aggression and ratings of C/U traits were derived from different sources (teachers versus an experimenter), and that the C/U trait measure was situation-specific (based on one occasion and a specific situation) whilst aggression was a dispositional rating (a child's general pattern of behaviour). Several explanations could account for this finding. The interviewer rating of C/U traits could lack validity, and in fact not be measuring the construct of C/U traits. This is unlikely given that the interview C/U measure was significantly negatively associated with the children's self-rating of empathy, and significantly positively correlated with the teacher-rating of C/U traits. Another explanation is that the teacher-rated C/U traits measure is simply a measure of aggression, and overlapping items account for the strong association between teacher-rated

aggression and teacher-rated C/U traits. However, the APSD from which the teacher-ratings of C/U were derived, has been validated as measuring a distinct construct from aggression (Frick & Hare, 2001), and a distinction has been made in previous research between aggressive children with and without C/U traits (Frick & Ellis, 1999). More likely is the possibility that, given that teachers completed both the C/U measure and the aggression measure at the same time, children rated as aggressive were likely to be rated as correspondingly high on C/U traits. This could be a reporting bias on the questionnaires, which leads to an inflation of the association, or reflect the possibility that aggressive children are labelled as callous/ unemotional, even in the absence of such an association. One final explanation for the finding that no association was found between interviewer-rated CU traits and aggression is that the study was simply under-powered to detect the more conservative association between measures completed by different raters. We calculated that the sample size required to detect a moderate significant association in this study was 85. Our N of 63 therefore may not have been sufficient to detect small significant associations.

Drawing on our model implicating empathic deficits in the development and maintenance of proactive aggression, we proposed that empathy would significantly predict proactive, but not reactive aggression. The model was based on the hypothesis that empathy inhibits aggression (Eisenberg & Strayer, 1987) and that the propensity towards proactive acts of aggression in particular, is based on an underlying lack of anxiety and emotional arousal (Vitaro *et al*; 2002). Our results showed a trend in the hypothesised direction. The negative association between dispositional empathy and proactive physical aggression closely approached significance, whilst the association between dispositional empathy and reactive relational aggression was not significant. Thus, children who rated themselves as highly empathic on a self-report questionnaire,

were likely to be rated by teachers as displaying low levels of proactive physical aggression, but not reactive relational aggression. Given our low power to detect significant associations due to the low sample size, this trend may well have reached significance with a larger sample size. The finding therefore offers some tentative support for the hypothesis that empathic deficits could underlie proactive aggression, whereas different processes account for engagement in reactive aggression (Vitaro *et al*; 2002). One account of the mechanism by which low levels of empathy may be associated with high levels of proactive aggression, is via a reward-dominant response style, characteristic of psychopathic individuals (O'Brien & Frick, 1996). Thus, proactively aggressive children may engage in this behaviour because they have been positively reinforced for being aggressive (Dodge, 1991), and have learned to seek gains in the form of social status, or material goals from their behavioural interactions. The focus on attaining goals could interfere with the development of empathic skills, or alternatively a deficit in the capacity to empathise could enable this more goal-oriented response set.

Whilst some support for the model is offered by the finding of a near-significant association between dispositional empathy and proactive physical aggression, there are a number of factors to take into account. Firstly, the association was not independent of the influence of C/U traits. However, given that the dispositional empathy measure was derived from a different rater to the aggression measure, whereas the C/U variable was teacher-rated in line with the aggression measure, this test was a particularly stringent one. Furthermore, the fact that dispositional empathy discriminated between the two domains of aggression whilst C/U traits did not, offers some support for the independent contribution of dispositional empathy. Possibly without the conservative estimation of the independent contribution of predictor variables afforded by the non-parametric regression equation, and with greater power to detect significant associations given a

larger sample size, a more robust association between empathy and proactive aggression would have emerged. Further research would be necessary to quantify such a speculative assertion.

The second point to consider is the possibility that the difference reflected the physical versus relational distinction between the two domains of aggression, rather than the proactive versus reactive distinction. That is to say, lower levels of empathy may be more strongly associated with high levels of physical aggression than high levels of relational aggression, and not relate at all to whether the aggression is reactive or proactive. Nevertheless, previous research asserts that the association between empathy and aggression applies to both physical and relational aggression (Kaukiainen *et al*; 1999; Loudin, Lucas & Robinson, 2003), suggesting that the differential associations with empathy are perhaps more likely to relate to the proactive/reactive distinction between the two domains of aggression.

The finding that interviewer-rated situational empathy was not significantly associated with either domain of aggression, and did not correlate more strongly with one domain of aggression over the other, also warrants some attention. It is possible that the interviewer-rated empathy tapped a different aspect of empathy than the self-report dispositional measure. The inter-correlations between the sub-scales of the empathy interview indicated that the dispositional empathy measure correlated more strongly with the "empathic actions" sub-scale than any other. We opted to use the "empathic feelings" scale, since this was significantly positively correlated with teacher-rated leadership and social inclusion and significantly negatively correlated with teacher-rated C/U traits, whereas the "empathic actions" scale was not. The "empathic actions" scale was also the most positively skewed of the interview empathy sub-scales, suggesting that it was the easiest for the children to perform well on. It is perhaps more straightforward to know how one should

respond to another's distress than it is to have corresponding empathic thoughts and feelings. One can be behaviourally reinforced for acting in a "socially acceptable" way, and hence this scale was the one on which children tended to gain high scores. Relatedly, the self-report questionnaire from which the dispositional empathy score is derived, is also open to such demand characteristics. Questionnaires which require a person to respond positively or negatively to an empathic answer are more likely to achieve a positive response than open-ended questions in which the child can answer any way they choose. The correlation between these two scales could therefore reflect either the ease of the tasks required by these sub-scales, or the potential for both sub-scales to be open to demand characteristics. If we assume, then, that the "empathic feelings" scale is a measure of more complex empathic skills than the "dispositional empathy" measure, why was it only the latter measure that distinguished between reactive and proactive aggression? The finding could simply reflect the relative difficulty in demonstrating an association between a situational measure (situational empathy) and a dispositional measure (aggression) than between two dispositional measures (dispositional empathy and aggression). It could also be that it is a child's propensity towards responding in a socially acceptable way, rather than their empathic skills, that is associated with their tendency to refrain from aggressive behaviour. The findings should therefore only be taken as tentative support for the hypothesis that empathic deficits underlie proactive aggression even amongst non-clinical populations, given the numerous plausible competing explanations. Since linking psychopathic characteristics to children and to normal variations in behaviour is a controversial subject (Seagrave & Grisso, 2002), it is appropriate to be cautious about the interpretations of these findings.

The above considerations notwithstanding, our finding that dispositional empathy correlated more strongly than situational empathy with aggression runs directly counter to the majority of recent

studies reviewed in the literature, which indicate that situational rather than dispositional empathy is more strongly associated with aggression (Lovett & Sheffield, 2007). However, these previous studies differed from the present study. One used an experimenter rating of both aggression and situational empathy, which is likely to have inflated the association due to shared method variance (Strayer & Roberts, 2004); and the three other studies used clinically referred or delinquent young people (Cohen & Strayer, 1996; deWied *et al*; 2005; Kaplan & Arbuthnot, 1985). Only one very early study found a significant association between aggression and situational empathy amongst a non-clinical sample of children (Feshbach & Feshbach, 1969), but a subsequent study using the same measures did not replicate the findings (Marcus *et al*; 1985), and the validity of the measures used in both studies have since been criticised (Lovett & Sheffield, 2007). It is possible that the characters in the vignettes used in the present study did not resonate with our 21st century UK sample of children. Indeed, the likeability and similarity of the characters to the participants are important factors in evoking empathic responses (Zillman & Cantor, 1977). However, this is unlikely to have been an influential factor, since we found high levels of empathy in the present study. More likely is the possibility that situational measures of empathy are associated with clinical levels of aggression. Since this is the first study to look at these associations in a community sample, replication of our findings with future research will be necessary to clarify our conclusions.

The hypothesis that rejection sensitivity would predict reactive but not proactive aggression, was also supported by this study. Rejection sensitivity was significantly positively associated with reactive relational aggression but not proactive physical aggression. In other words, the tendency to perceive others' behaviour as rejecting was associated with higher levels of reactive relational aggression but not proactive physical aggression. This finding extends research demonstrating

that hostile attributional biases characterise reactively aggressive children, whereas proactively aggressive children do not show such a bias (Crick & Dodge, 1996). Dodge (1991) proposed that the hostile attributional bias evident amongst reactively aggressive children stems from early childhood experiences of a lack of intimacy with attachment figures, which leads children to experience caregivers, and consequently others in general, as hostile. We proposed that these early experiences could also predispose children to experience others as rejecting, in line with Downey *et al.*'s (1998) description of rejection sensitive children. The finding that rejection sensitive children are more aggressive than non-rejection-sensitive children (Downey *et al.*; 1998) was therefore further advanced by this study, which suggests that rejection sensitivity may specifically characterise reactive, rather than proactive aggression.

There are, however, reasons to be cautious in interpreting the above results. Rejection sensitivity did not independently predict reactive relational aggression after accounting for the influence of teacher-rated C/U traits, which emerged as the only independent predictor of reactive relational aggression. Nevertheless, as mentioned previously, there is reason to infer that the association between the aggression measures and teacher-rated C/U traits may be artificially inflated by response biases, thus making it a very stringent test of the predictive power of rejection sensitivity to explain unique variance in reactive relational aggression over and above the contribution of C/U traits. The fact that the unique variance explained by rejection sensitivity still approached significance even after controlling for C/U traits strongly suggests that there may be a significant independent association between reactive relational aggression and rejection sensitivity.

A second point to consider is that it is equally plausible that rejection sensitivity characterises relationally aggressive individuals, and distinguishes them from those who are physically

aggressive, as it is to assume that the difference reflects the proactive versus reactive distinction between the two domains of aggression. This interpretation has substantial face validity in light of the relational nature of rejection sensitivity. If a child perceives others as being socially rejecting towards them, it makes intuitive sense that this child would retaliate by being socially rejecting towards others, rather than physically aggressive. Indeed, Underwood (2003) proposed that rejection sensitivity is a promising concept to consider in understanding the cognitive and emotional processes underlying relational aggression. No research to our knowledge has attempted to distinguish between physical and relational aggression in relation to rejection sensitivity. This is therefore an important area for future research, and one that could help disentangle the critical aspect of aggression that is associated with rejection sensitivity.

Some interesting gender differences emerged with regard to behavioural and cognitive functioning, and these warrant some consideration. Some theorists have claimed that relational aggression is a predominantly female activity (Crick *et al*; 1999). In the present study, whilst there was a significant gender difference with regard to physical aggression, with boys displaying higher levels than girls, there was no significant gender difference in levels of relational aggression. However, contrary to stereotypical ideas regarding gender-specific aggression (see Underwood, 2003), this finding does not suggest that relational aggression is characteristic of girls only. In fact, boys were equally likely to engage in this form of aggression. It does indicate, however, that estimations of female levels of aggression based on indices of physical aggression alone (e.g. Moffitt *et al*; 2001) may not provide an accurate picture of girls' aggressive behaviour (Crick *et al*; 1999).

Girls also presented with significantly higher levels of dispositional empathy than boys, replicating similar findings in some previous studies (e.g. Baron-Cohen & Wheelwright, 2004). One

mechanism by which this difference may emerge is via differential socialisation of boys and girls. Fivush, Brotman, Buckner and Goodman (2000), for example, reported that parents used more emotional language when talking to their daughters about sad events than they did with their sons. Furthermore, emotional experiences were more likely to be discussed with reference to their interpersonal context with daughters than with sons. These different experiences of parental narrative about emotions could foster emotional development in girls, and could explain how girls may come to develop more sophisticated empathic skills than boys.

Despite the above differences in levels of aggression and empathic skills between boys and girls, there emerged no significant interaction between gender and empathy (or indeed between gender and any other predictor variable) in predicting aggression. We may have predicted, for example, on the basis of the above findings, that empathy does not inhibit relational aggression in girls but that it does in boys. This is drawn from the observation that despite overall higher levels of empathy in girls than boys, there is not a corresponding gender difference in levels of relational aggression. However, this hypothesis was not borne out by the findings. Nevertheless, our limited power to detect significant differences could have impeded the potential to investigate this question accurately. In addition, our hypothesis about the association between empathy and aggression related specifically to proactive aggression, and we proposed that relational aggression would follow a similar pattern to physical aggression in that low empathy would predict high levels of proactive (but not necessarily reactive) relational aggression. Given that in the analyses of this study we did not focus on proactive relational aggression as an outcome variable, we could not fully investigate the nature of relational aggression or any potential gender differences in its associated cognitive processes. Further research will be necessary to determine

the extent to which differential cognitive or emotional processes could predict different forms of aggression in boys compared with girls.

2.4.3. Validation of the empathy interview

Our second main objective in this study was the development and validation of a new, ecologically valid, measure of situational empathy. The rationale and decision-making process behind the design of the interview will be discussed in detail in the critical appraisal section to follow. For the purposes of this discussion, we shall focus on the validation of the interview. Although none of the sub-scales of the interview emerged as significant predictors of the aggression variables, this was the first study to examine situational empathy amongst a pre-adolescent community sample. There was also other evidence to suggest that the interview tapped appropriate and valid aspects of emotional processing. We anticipated that the various domains of empathy and theory of mind would be positively associated with prosocial behaviour (leadership and relational inclusion), given the evidence in the literature attesting to the higher level of social skills demonstrated by children with an advanced capacity for understanding and/or sharing another's perspective (Eisenberg & Fabes, 1990; Slaughter *et al*; 2002). The fact that the sub-scales were differentially associated with prosocial behaviour and other measures of emotional and psychological functioning (dispositional empathy and teacher-rated C/U traits), in a direction consistent with previous literature, indicates that the sub-scales are tapping distinct and valid aspects of emotional processing, and not simply overlapping constructs.

The association between the empathic actions sub-scale of the interview and the dispositional empathy measure was discussed in detail in the section above. Other sub-scales of the interview also correlated with different aspects of functioning. The empathic feelings sub-scale, for example,

was significantly positively correlated with teacher-rated social inclusion and leadership, and negatively correlated with teacher-rated C/U traits. These associations are in the expected direction, since children with high scores for empathic feelings (reporting their own feelings in the situation as linked to the feelings of the other person) tended to be rated by teachers as skilled at including other children in activities and being the leader in social groups. They also showed low levels of teacher-rated C/U traits. Empathic thoughts (demonstrating that cognitions in the situation are based on the other person's perspective) and theory of mind (demonstrating an understanding of the other person's thoughts and feelings), on the other hand, were significantly positively correlated with leadership only. This finding is consistent with the notion that the emotional component of empathy is the important deficit in individuals with psychopathic tendencies who present with callous and unemotional traits, as opposed to the cognitive component of empathy or cognitive perspective taking abilities more generally (Blair, 2005).

The C/U sub-scale of the interview was significantly positively associated with the well-established teacher-rated C/U measure, and negatively correlated with self-rated dispositional empathy, as we would predict based on the overlap between the concept of C/U traits and that of a lack of empathy (Frick, 1998). The fact that the interview sub-scales correlated not only with the expected domains of functioning, but that these measures were all derived from different sources (self-report and teacher-ratings), strengthens the validity of this new measure and suggests that it is a promising instrument for further development in future studies.

2.4.4. Conclusions

To summarise, this study has found tentative support for the hypothesis that there are distinct cognitive and emotional processes associated with reactive and proactive aggression amongst a non-clinical sample of children. Specifically, the possibility that empathy could be important for understanding proactive aggression, whilst rejection sensitivity could relate specifically to reactive aggression has been highlighted. Callous-unemotional traits appear to be associated with aggression more generally, contrary to our hypothesis that they would be uniquely associated with proactive aggression. This could reflect the nature of aggression in normative populations, indicating a lack of distinction between forms of aggression, or it could be due to measurement error on the part of the teachers. Due to the limitations of the data collected, it was not possible to investigate fully the differential associations between the different domains of aggression and the emotional and cognitive processes. Further research will therefore be necessary to tease apart the extent to which the relational versus physical distinction or the reactive versus proactive distinction between the two domains of aggression studied, are responsible for the differences noted. Our preliminary validation of the new empathy measure also provides an area for future research, with further work needed to establish its utility in measuring empathy in non-clinical and clinical populations. The fact that the measure did not distinguish between the different forms of aggression in this study could reflect a need to review the questions and scoring criteria or could indicate that the particular measures of empathy would perhaps relate more strongly to clinically significant levels of aggression.

Implications of these findings for further research include the need for larger sample sizes in studies of non-clinical populations, and further emphasis on distinguishing reliably between different forms of aggression. Possibly using peer ratings as well as teacher ratings could improve

this distinction. Clinically, the tentative findings to date suggest a need to consider the form of aggression in designing interventions for aggressive behaviour, and indicate that preventative interventions for low levels of aggression could also benefit from a consideration of the form of aggression. Nevertheless, further research will be necessary before specific interventions for particular sub-types of aggression can be outlined. A more detailed consideration of these and other related issues is included in the critical appraisal to follow.

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Part 3: Critical Appraisal

Critical Appraisal

In this section I will begin by reflecting upon the process of carrying out this research, including the background to my interest in this area and the rationale for the study, my experiences of conducting the research, and its impact on my thoughts about the priorities and concerns that we as clinicians should have around working with aggressive children. Next, I shall outline in more detail the methodological limitations of the study, and extend the issues touched upon in the discussion with regard to the clinical implications of the research.

3.1 Personal reflections on the research process

3.1.1 Selecting a research area

My interest in childhood aggression arose from integrating my empirical knowledge on the development of aggressive behaviour gained from my Ph.D research, with my clinical experiences prior to and during clinical training. My Ph.D examined the risk factors associated with pre-school conduct problems (at age three), and attempted to determine which risk factors, if any, predicted continued conduct problems at ages four and five. Whilst early intervention and prevention of conduct problems are a priority for research and clinical initiatives at present, I was struck by the fact that distinguishing between young children displaying normative and age-appropriate behaviour which they would grow out of, from those whose behaviour warranted cause for concern, was a very difficult task. It emerged that there was great potential for change amongst three-year-olds, and therefore their behaviour over time was changeable and unstable. Furthermore, many of the interesting cognitive and emotional processes that have been linked with aggressive behaviour cannot be measured in such young children, and therefore could not be included as potential risk factors or predictors of persistent aggressive behaviour. Prior to the

Ph.D research, my clinical experience of working with adolescents in an inpatient tier four service had made me aware of the importance of early intervention, having witnessed the severity and intractability of established aggressive behaviour. Bearing in mind the difficulties in accurately identifying persistent aggression amongst pre-schoolers, and at the other end of the spectrum, the multitude of problems associated with long-term aggressive behaviour amongst adolescents, my interest in this area lead me to the middle childhood period. I hoped that this age group would constitute a young enough population to inform preventative or early intervention initiatives, yet developmentally advanced enough that behavioural problems could be more accurately identified and more complex cognitive and emotional processes could be studied.

Having observed young people presenting with longstanding aggressive behaviour interact with peers in an inpatient setting, I noticed that many conflicts arose, frequently seeming to result from young people feeling left out or excluded from cliques or activities. In addition, there were often beliefs amongst staff teams about these children having "no empathy" or "psychopathic tendencies", which seemed to offer a simple explanation for their behaviour and lead to a perception that these young people were beyond help. Often, they would be excluded from the unit, which I felt was sometimes a re-enactment of the rejection that these young people had experienced by their families, peers, schools and mental health services in the past. This lead me to the literature on "rejection sensitivity" and empathy, which I had often conceptualised as two competing accounts of aggressive behaviour, but on closer reading of the literature I began to re-think in terms of two separate pathways to aggression: one associated with reactive aggression and the other linked with proactive aggression.

3.1.2 Process of developing the empathy interview

The rationale for developing the empathy interview came from my observations that most empathy measures were questionnaire-based and seemed to lack ecological validity. For a process as emotionally evocative as empathy, a task that attempted to induce empathy in a "live" situation was considered more appropriate and more akin to real-life situations. I chose to use a video task because of the potential for the characters and vignettes to engage the children and induce thoughts and feelings that would be evoked in real life. A semi-structured interview afforded a way of exploring the child's emotions and gaining a detailed insight into their understanding of and justification for their emotional experiences, whilst providing a structure for a quantitative scoring system. Strayer's (1993) Empathy Continuum (EC) was the most ecologically valid task that I came across, using videotaped vignettes to present real-life situations to children. Indeed, I used a shortened version of the vignettes for my empathy interview. However, the interview for the EC task did not seem to capture adequately the child's potential to feel empathy in the given situation. The child was simply asked, "how does the character in the story feel?" and then, "how do you feel?" Anecdotally, in our discussions about this task, my supervisors and I agreed that we did not necessarily feel sad or angry or happy whilst watching the vignette, but could imagine that we would feel such emotions if we were one of the characters in the story. In order to elicit the emotions that the child would experience if they were in the situation, we asked the child to imagine themselves in the position of the other character in the story, e.g. "Imagine that you are this lady. How are you feeling now?"

Theory of mind questions tapped the extent to which children could understand another's perspective (e.g. "what is the character thinking/ feeling and why?"). In including questions relating to theory of mind, we hoped that it would be possible to assess the extent to which empathy

measured a different skill to perspective-taking per se, and to perhaps map the development of these skills. Further research will be necessary to address the latter question, administering the interview to different age groups and assessing whether the scores on theory of mind correspond with the scores on empathy, or whether skills in one domain tend to precede the other. Research to date suggests that the two skills may develop in tandem (Strayer, 1987). In relation to the former question, whether theory of mind and empathy refer to different constructs, we found preliminary evidence that they are separate domains, by virtue of their differential associations with independent measures of prosocial behaviour. Further research to replicate this finding is required before we can generalise these findings to the population in general.

We decided to include items measuring “empathic actions” (“what would you do now if you were this person?”) because this was felt to be a separate but related skill to affective and cognitive empathy. The EC interview did not include this aspect of empathy, but we were interested in whether empathic actions could occur in the absence of empathic thoughts or feelings. Thus, is it possible to be socialised into behaving appropriately and to do so because of the social rewards associated with behaving in a socially acceptable way, rather than based on an empathic understanding of another person’s position? The findings seemed to indicate that empathic actions were indeed endorsed more often than empathic feelings or thoughts, suggesting that they may occur independently of empathic feelings and thoughts. The finding that the empathic actions sub-scale was the only aspect of empathy that correlated with the self-report measure of dispositional empathy was interesting, and one tentative interpretation of this was that social desirability could impact upon both the tendency to act empathically and the tendency to complete an empathy questionnaire positively. Taken together, the findings support our contention that the

affective, cognitive and behavioural components of empathy should be included and considered separately in the empathy interview.

My experience of administering this interview confirmed some of our initial ideas, and also raised some issues to be addressed in the further development of this measure. Firstly, children genuinely seemed to enjoy the task and they engaged well in the activity. Unlike the questionnaire completion, they did not tend to state boredom, fidget, or appear to be unmotivated to participate. There was much excitement about whose turn it was next, and what the videos would be about. I overheard children telling each other that it was fun, and some even asked to complete the task again. When I telephoned parents to collect the demographic information, they often commented that their child had talked excitedly about the task when they got home. Nevertheless, perhaps in part because the task was so engaging, it was time-consuming, with some children's interviews lasting up to forty-five minutes. This made the task of completing a high volume of interviews in a short time period very difficult, particularly when working within the constraints of a busy school timetable which had to be negotiated around. Scoring the interviews was therefore also time-consuming. However, the gains from attaining a comprehensive account of the children's emotional experiences far outweighed the costs of collecting the data, particularly given how enjoyable the task was to complete with the children. One aspect of the task that may need some adjustment is the vignettes themselves. As mentioned above, the clips were taken from Strayer's (1993) original measure, which was drawn from Canadian and American film and TV footage from the 1970s and 80s. The quality of the picture was grainy, and the clips were dated. Children often commented on this whilst watching them. Perhaps a more up-to-date and culturally normative set of clips taken from UK television, or especially made for the purposes of this task, would add to the ecological validity of this measure. Indeed, participants' perceptions of the likeability of the

characters in vignettes are an important factor in effectively inducing empathic responses (Zillman & Cantor, 1977). Designing the clips from scratch was beyond the remit of the present study, but is an important point to consider for future studies using this measure.

3.1.3 Clinical reflections

The results of this study lead me to reflect upon my clinical experiences of working with aggressive children, and this was made all the more salient by the fact that alongside carrying out this research, I had elected to undertake my third year placement in another inpatient adolescent unit. One of the frustrations for me about conducting a D.Clin.Psy research project after having completed a Ph.D, was that one could not become completely immersed in the research process since three days of the week were spent on placement. Nevertheless, I found that this experience equipped me with much more of an appreciation for the clinical applications of the research, by integrating my thinking about the research project with my day-to-day work at the unit. This process was reciprocal, in that my clinical experiences also informed my interpretation of the research findings that I was processing at the same time. The strongest finding to emerge from the research was that the most robust predictor of any form of aggressive behaviour was the presence of callous and unemotional traits. On the face of it, this finding appeared to confirm the "bad seed hypothesis" that I had witnessed amongst some members of the staff team at the original adolescent unit I worked at. In other words, that there is something innately bad about aggressive children, and that nothing that can be done to intervene.

However, my time on my current placement coincided with an influx of referrals of aggressive and violent young people, and there was understandably considerable debate amongst the staff team about how to understand and deal with the conflicts arising within this client group. At this unit,

there was much more emphasis on understanding the history and experiences of the young people, and how this may be influencing their interactions with their peers on the unit. Callous and unemotional traits were thought about, but in the context of the environment that they grew up in and the experiences that they may have had with caregivers. Contrary to the conceptualisation of violent acts stemming from an inborn “evil” instinct, such as the media portrayal of Jamie Bulger’s killers, this hypothesis acknowledges the role of nurture and experience. I was reminded of the ideas presented by Camila Batmanghelidjh in a series of presentations to professionals and TV appearances in 2004 to promote her charity “kids company” (see www.kidsco.org.uk). She argued from a purely anecdotal perspective that unprotected or abused children shut down emotionally as a way of protecting themselves from their traumatic experiences, but that as a result their “emotional numbness” might lead to an impaired capacity to empathise with others and thus no barriers exist to prevent them from inflicting harm on others. In extreme circumstances, some children might come to despise vulnerability, due to their shame at their own humiliation as victims of abuse. This process, Batmanghelidjh proposed, could lead to crimes of hatred and violence against others perceived as vulnerable. The hypothesis is consistent with Bowlby’s (1944) theory pertaining to the importance of early attachment relationships for later social functioning and emotional regulation. Bowlby observed that a sub-group of delinquent adolescents presented as emotionally detached, much like Batmanghelidjh’s “emotionally numb” children, and a similar explanation for the origins of this state of detachment was put forward.

Drawing on the above hypotheses, I came to understand callous and unemotional traits as arising from traumatic experiences and poor attachment relationships. This made the concept much more palatable for me, in that it did not dismiss children as “evil”, but rather offered a developmental account of the establishment of these traits, and suggested some possible intervention strategies,

such as family work to address attachment issues, or individual/ group based psychotherapy to explore attachment relationships through the therapeutic relationship or group processes. Both of these interventions were offered at the adolescent unit, with some degree of success in some cases. I felt that this way of thinking helped to move professionals away from a feeling that certain behaviours on the unit were inevitable and that they were helpless to intervene. This touches upon a wider societal belief about aggressive and violent behaviour and its origins, perhaps because it is easier to demonise certain individuals than to accept society's role in creating environments which foster the development of aggression (see Gilligan, 1996). It is important that research findings attesting to the role of C/U traits in the development and maintenance of aggression are disseminated in such a way as not to reinforce the notion that these children are "bad seeds". Clinically, I have witnessed the positive difference that can be brought about for young people by a change in staff perception about this issue.

3.2 Methodological limitations

3.2.1 Participant issues

The minimum sample size estimated for this study in order to detect significant effects was 85. However, the final sample size was 63. This would have reduced the power of this study and increased the likelihood of making a type II error. Thus, the study may have been under-powered to detect associations that were in fact present. This is a possible explanation for the null findings with regard to the association between the interview sub-scales and aggression, and the lack of independent association between dispositional empathy and proactive physical aggression and between rejection sensitivity and reactive relational aggression. Large sample sizes are

particularly important for community studies such as this whereby small effects are expected and therefore high power is necessary.

Another participant issue for this research relates to the schools and families that agreed to participate. It is perhaps not surprising that it was the schools with policies for managing difficult behaviour that tended to be interested in research about aggression and willing to participate in the study. By the same token, anecdotally the teachers commented that the parents who returned their consent forms and agreed for their children to take part tended to be the parents of the least aggressive and higher functioning children. It is likely, therefore, that we have selected a particularly non-aggressive sample of children, perhaps not representative of the levels of aggression seen in these particular schools as a whole, and moreover not representative of the levels of aggression present in other schools not so interested in managing and understanding aggressive behaviour. This is a problem for community samples in general, reflecting the likelihood that the people who do not consent tend to be the very people of interest in the study (Farrington, Gallagher, Morley, Ledger & West, 1990). The only way to try to overcome this issue is to spend a great deal of time and resources engaging with the schools and helping them to encourage parents to take part. In my previous experience of conducting longitudinal research in nurseries, this process can take a long time, and parents tend not to engage in research and clinical initiatives until the staff that they know and trust are engaged enough to support the cause of the research. In the "NIPPERS" project in Camden and Islington (2000-2004), and its sister project the "Hackney Children Stepping Forward Project" (2002-2006), we observed that this process took up to two years. This sort of investment was obviously not possible within the time frame and budget of this project.

Also worthy of note is the fact that the sample obtained consisted of a very low percentage of ethnic minority families. This reflects the demographic characteristics of the two particular schools involved in the study, but is not representative of the proportion of ethnic minority families across the population of school-children in London. This has implications for the generalisability of the findings, particularly when considering a construct such as rejection sensitivity. It is possible that past experiences of discrimination and prejudice could predispose some ethnic minority groups to expect and perceive rejection in their social interactions. Indeed, experience of discrimination amongst different ethnic groups has been proposed to underlie the higher rate of mental illnesses amongst certain ethnicities (Bhui *et al*, 2005). This study therefore does not take into account the potentially complex interaction between ethnicity, experiences of discrimination, rejection sensitivity and aggression.

3.2.2 Measurement issues

The child-completed questionnaires were administered to groups of up to twenty children at a time. This generally seemed to work well, and children were supervised to ensure that they did not converse with one another about the questionnaires or copy one another's responses. Nevertheless, it is possible that the presence of other children in the room increased the social desirability of their responses, for example children may have been conscious that people could see their answers. Administration of a social desirability scale may have been one way of addressing this issue, and is an idea worth considering in future studies administering questionnaires in group settings.

The teacher-completed questionnaires were also open to some degree of bias. As mentioned in the discussion, the ratings of children's behaviour on the aggression questionnaire could have

influenced the ratings of callous/unemotional traits which were in the same questionnaire pack completed at the same time. Whether this accurately reflects the association between aggression and C/U traits, or highlights a labelling bias in schools whereby aggressive children tend to be perceived as callous and unemotional, is unclear. It is likely that including the two questionnaires together to be rated at the same time, by the same rater, will have inflated any labelling bias already present. In support of this interpretation, the independent measure of C/U traits (experimenter-rated) was not found to be significantly associated with aggression. Shared-method variance is a problem for child studies in general and whilst children's behaviour can be different in different contexts, efforts should be made where possible to gain data from multiple informants (Hawker & Boulton, 2000).

Teachers were also busy and overworked, and in some cases needed considerable prompting to return the questionnaires. Thus, the potential for the questionnaire completion to have been rushed cannot be overlooked. In addition, some teachers appeared to have different response styles, with some rating all children in their class as very low in aggression, and others reflecting more variation in their ratings of children in their class. This could be because teachers with a particularly aggressive child in their class tended to underestimate the levels of aggression of other children in the class, or because some teachers were less concerned about aggressive behaviour and thus perceived it as less of a problem or noticed it less. Furthermore, as touched upon in the discussion, teachers may not necessarily be best placed to rate more covert or relational forms of aggression. Peer ratings could be included in the battery of measures in future studies, to provide an alternative perspective on the behaviour of their classmates. However, one would have to carefully consider the practicalities of administering peer ratings of aggression, and take into account the potential for children to be afraid of peers finding out how they rated them.

The potential for the above factors to have confounded the findings is a limitation of this study, and one that should be considered in designing future studies in this field.

The battery of measures used in this study included a number of unpublished scales. This is a limitation of the study, since fewer studies have used unpublished measures, and thus the norms and validity of the scales are less well established than frequently used measures. The Children's Social Behaviour Scale (CSBS) developed in Nicki Crick's research group is an unpublished rating scale, employed in this study as a measure of reactive and proactive relational and physical aggression. We opted to use this measure because, to our knowledge, no other scale has been developed that taps all four of the domains of aggressive behaviour that were of interest in this study. Furthermore, the scale was constructed by combining two well established measures: Dodge and Coie's (1987) teacher-rated instrument of reactive and proactive aggression, and Crick's (1996) measure of relational aggression. The use of this scale was therefore justified as appropriate for use in this study. The Children's Empathic Attitudes Questionnaire (CEAQ; Funk *et al*, 2006) was used as a measure of dispositional empathy. This is also an unpublished scale, but like the CSBS, was based on two well established measures: the Bryant Empathy Questionnaire (Bryant, 1982) and the Interpersonal Reactivity Index (IRI; Davis, 1994). Since the measure was user-friendly and quick to administer, designed to address weaknesses that had been identified with the validity of the established measures, was due to be published in the near future and had demonstrated high levels of validity and reliability in preliminary validation studies, we considered this an appropriate scale for this study. Finally, the use of the empathy interview designed especially for this study was justified as a means of developing an ecologically valid tool for assessing situational empathy. Results pertaining to this scale were interpreted tentatively and with the aim of generating further studies to test out and improve the validity of the measure.

A final issue worthy of note with regard to the limitations of measurement in this study relates to the measures that were not included, and that may have contributed to our understanding of the associations found in this study between aggression and aspects of emotional and cognitive functioning. Perhaps the most significant omission is the absence of a measure of hyperactivity. Research has consistently shown that children displaying symptoms of both AD/HD and aggression (usually studied in the form of conduct disorder) fare worse than children with only symptoms of aggression, in that their antisocial behaviour is more varied, severe and enduring. Moffitt (1990), for example, followed up a group of 453 boys from the age of three to 15 years, and explored the developmental trajectories of four sub-groups defined at age 13: children who showed delinquent and antisocial behaviour only, children with both hyperactivity and delinquent/antisocial behaviour, children with hyperactivity only, and finally a group of comparison children with no symptoms of behavioural dysfunction. At age 13 the co-morbid group presented with significantly poorer scores on scales measuring IQ, reading achievement, verbal ability and memory than the other sub-groups, and between the ages of five and 13, the co-morbid group were consistently more antisocial than the other sub-groups at every age. Further, at age 15 the co-morbid group scored significantly higher on self-reported aggression, and higher (though not significantly so) on self-reported theft and vandalism. Whether the presence of hyperactivity would mediate or moderate the association between aggression and cognitive and emotional processes such as empathy and rejection sensitivity could not be addressed in this study. However, it is an interesting and important point to consider. Perhaps it is the combination of hyperactivity alongside aggression that is responsible for the different cognitive profile and expression of aggression seen in proactively aggressive children compared with reactively aggressive children, and that without considering the role of hyperactivity we are neglecting a major contributing factor in the development and maintenance of aggression (see Lynam, 1996).

3.3 Clinical implications

Our tentative finding that rejection sensitivity was significantly associated with reactive relational aggression offers some insight into potentially useful intervention strategies, although it will be necessary to first determine with further research whether it is reactive aggression or relational aggression that is specifically associated with sensitivity to rejection. The following suggestions for clinical interventions in the light of the research findings are therefore made cautiously. Replication and clarification of the findings through further research will be necessary before these clinical initiatives can be applied.

Rejection sensitivity is believed to stem from poor attachment relationships in which absent or unavailable caregivers are perceived as rejecting, thus influencing expectations and interpretations of future social interactions (Downey *et al*; 1998). I mentioned at the start of this section that my observations of aggressive adolescents in inpatient settings drew my attention to the frequent conflicts that these young people would find themselves in with peers. These conflicts seemed to be triggered by perceived rejection from peer groups or activities. One-to-one therapy and group-based therapy could be used to explore attachment issues and help to facilitate an understanding of the origins of young people's perceptions of others in their social interactions. One strategy that I have seen put to good use in inpatient settings is the use of community meetings, in which issues and problems arising within the therapeutic community are discussed in a group setting with staff and young people present. This affords an opportunity to explore different people's perspectives and feelings about conflicts, with staff supervision and support to help the young people communicate their position and work through their disagreements. Such a process can foster a sense of community and belonging, perhaps by challenging young people's experiences of rejection.

Of course, the above example is a clinical intervention, and the present study was concerned with a non-clinical sample. Nevertheless, there would be some scope in introducing something similar to a community meeting in schools as a way of intervening with normative levels of reactive or relational aggression, by preventing the escalation of aggression. If a sense of group cohesion and inclusion could be encouraged by facilitating discussions about social interactions within the school, children may learn alternative ways of interpreting others' behaviour and may achieve a heightened sense of self-awareness.

Raising awareness of the potentially debilitating effects of perceived rejection could also go a long way towards preventing the escalation of aggression. This is applicable to both clinical services and local communities such as schools, with implications for the way in which aggression is managed. For example, exclusion from school or from an inpatient unit as a consequence of aggression could reinforce a child's sense of rejection. If such strategies are necessary, then the rationale for the exclusion should be carefully explained and couched in terms of unacceptable behaviour rather than the person themselves being the grounds for exclusion, and emphasising that the desired outcome is to find a way that the child can be a harmonious member of the community. Preferably, alternative strategies for managing aggressive behaviour should be implemented that do not involve rejection from the community. One example could be focussing on rewarding non-aggressive ways of dealing with conflict (e.g. negotiation) with privileges associated with being a part of the group, such as being able to chair a meeting or lead a sports team, or be involved in organising a group outing or activity.

As mentioned previously, the above ideas, particularly those that relate to managing aggression in clinical settings, should be considered tentative and dependent upon replication and extension of the findings of this study to other community samples and clinical samples. However, the results

of the present study have enabled us to begin hypothesising about the mechanisms behind different forms of aggression, and some of the ways that this new understanding could impact positively upon clinical practice.

3.4 Conclusions

Despite its limitations this project has contributed in important ways to the research in this field. Without new and creative methods of measuring emotional constructs such as empathy, we cannot advance our understanding of the complex association between "live" empathy and aggression. This, however, will take some time to develop, and the present study serves as the first step towards developing such a measure. This is the first study of our knowledge to attempt to disentangle the different forms of aggression in a community sample, and it has highlighted some important areas of consideration for future studies, such as obtaining a variety of informants of behaviour and gaining a large and representative sample. Whilst we have not achieved definitive answers to the research questions set out at the beginning, we have found some tentative evidence in support of considering different domains of aggression separately, and paved the way for future research in this area. The potential clinical implications generated from this research are testament to the gains that could be made in this important field of research, and this should provide the incentive to continue in our endeavour to understand the complexities of aggression, however difficult that task proves to be.

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Appendices

Appendix A

Summary tables of results (from Part 1: Literature Review)

Table 1.1: Studies employing dispositional measures of empathy with child participants

Study	Sample	Measures (aggression)	Measures (empathy)	Aggression- empathy association	Gender differences?
Bryant (1982)	258 schoolchildren from first, fourth and seventh grade (126 boys, 132 girls)	Nine-item teacher report rating scale (Feshbach, 1956)	Bryant's (1982) Empathy Index (self-report scale: 22 items, yes/no response)	Negative association (first and fourth grade boys only) No association for seventh graders	Negative association in boys only
MacQuiddy et al. (1987)	23 five- to seven-year-old boys	Eyberg Child Behaviour Inventory (Parent report)	Bryant's Empathy Index	No association	N/A
Gonzales et al. (1996)	39 seven- to twelve-year-old boys	Teacher Report Form (TRF; Achenbach & Edelbrock, 1988)	Bryant's Empathy Index	No association	N/A
Kaukiainen et al. (1999)	526 schoolchildren from three age groups (ten-, twelve- and fourteen-years-old) (274 girls, 252 boys)	Direct & Indirect Aggression Scales (Bjorkqvist et al. 1992): Peer nomination checklist: five-point scale	Peer estimation of empathy (Kaukiainen et al. 1995): five-point scale	Negative association (except for indirect aggression in twelve-year-olds)	No gender differences
Warden and Mackinnon (2003)	58 UK primary school children selected from a sample of 131	Experimenter-rated measure of social behaviour: 21 prosocial children, 23 bullies and 23 victims identified	Bryant's Empathy Index	Negative association	Girls more empathic and bully less
De Wied et al. (2005)	49 eight- to twelve-year-old boys	Diagnosis of a disruptive behaviour disorder	Bryant's Empathy Index	Negative association	N/A

Table 1.2: Studies employing dispositional measures of empathy with adolescent participants

Study	Sample	Measures (aggression)	Measures (empathy)	Aggression-empathy association	Gender differences?
Kaplan and Arbuthnot (1985)	40 thirteen- and fourteen-year-olds (20 girls, 20 boys)	"delinquents" (juvenile correctional facility) versus controls (junior high school)	Bryant's Empathy Index	No association	No gender differences
Lee and Prentice (1988)	54 adolescent boys (average age: sixteen-years-old)	"delinquents" (from juvenile correctional facility) versus controls (from junior high school), personality rating scale.	Self-report: Interpersonal Reactivity Index (IRI; Davis, 1994), Questionnaire Measure of Emotional Empathy (Mehrabian & Epstein, 1972)	No association	N/A
Cohen and Strayer (1996)	62 fourteen- to eighteen-year-olds (29 boys, 33 girls)	Clinical diagnosis of conduct disorder	Bryant's Empathy Index, Empathic Concern (IRI)	Negative association	No gender differences
LeSure-Lester (2000)	40 twelve- to sixteen-year-olds (34 boys, 6 girls)	Group home staff ratings of peer and staff directed aggression	Self-report 30-item empathy scale	Negative association	No gender differences
Burke (2001)	46 thirteen- to eighteen-year-old boys	Status: sex offender versus public high school	Davis' IRI	Negative association	N/A
Endresen and Olweus (2002)	2268 sixth- to ninth-graders (1093 girls, 1193 boys)	Self-report: attitudes towards and participation in bullying	Self-report: similar to Bryant's Scale	Negative association	No gender differences
Joliffe and Farrington (2006)	720 15-year-old school children (344 girls, 378 boys)	Bullying scale (self-report) adapted from Whitney & Smith (1993). Measures direct and indirect aggression on a 5-point scale	Basic Empathy Scale (Joliffe & Farrington, 1995): 20-item self-report scale	Negative association overall for girls Specific negative associations by gender	Girls: Indirect bullying negatively associated with empathy Boys: Violent bullying negatively associated with empathy

Table 1.3: Studies employing situational measures of empathy with child participants

Study	Sample	Measures (aggression)	Measures (empathy)	Aggression-empathy association	Gender differences?
Feshbach and Feshbach (1969)	88 four- to seven-year-old children (44 girls, 44 boys)	Nine-item teacher-report scale of aggression	Emotional concordance between participant and slide show character (low versus high empathy groups)	Positive association in four- to five-year-old boys Negative association in six- to seven-year-old boys	No association in girls Interaction between age and empathy in boys
Marcus et al. (1985)	32 children aged 41-81 months (21 boys, 11 girls)	1-item teacher rated scale (adapted from Feshbach & Feshbach, 1969)	As above but also facial and vocal emotional expressiveness	No association	No gender differences
Gill and Calkins (2003)	99 two-year-olds (50 girls, 49 boys)	Parent-completed Child Behaviour Checklist (CBCL, Achenbach, 1992): High versus low scoring groups selected	Laboratory-based experimental scenarios: Emotional and behavioural responses to other's distress	Positive association	No gender differences
Strayer and Roberts (2004)	24 five-year-olds (12 boys, 12 girls)	Experimenter coding of aggression during play	Overall empathy: emotional and cognitive responses to vignettes and parent and teacher ratings of empathy	Negative association	No gender differences
De Wied et al. (2005)	49 eight- to twelve-year-old boys	Clinical diagnosis of a disruptive behaviour disorder; corroborated by parent and teacher report	Emotional and cognitive responses to vignettes	Negative association	N/A

Table 1.4: Studies employing situational measures of empathy with adolescent participants

Study	Sample	Measures (aggression)	Measures (empathy)	Aggression-empathy association	Gender differences?
Kaplan and Arbuthnot (1985)	40 thirteen- and fourteen-year-olds (20 girls, 20 boys)	"delinquents" (juvenile correctional facility) versus controls (junior high school)	Stories depicting adolescent conflict: emotional responses coded	Negative association	Negative association in boys only
Cohen and Strayer (1996)	62 fourteen- to eighteen-year-olds (29 boys, 33 girls)	Clinical diagnosis of conduct disorder	Emotional concordance between participant and slide show character	Negative association	No gender differences

Appendix B

Children's Social Behaviour Scale (CSBS)

Crick *et al.*

Children's Social Behaviour Questionnaire – Teacher Report

	Never True				Almost Always True
1. This child is often the leader of peer group activities or games.	1	2	3	4	5
2. When angered or provoked by another child, this child reacts by ignoring the child or by giving them the “silent treatment”.	1	2	3	4	5
3. This child is submissive with other children.	1	2	3	4	5
4. When mad at another child, this child attempts to get even by hitting, pushing or shoving the child.	1	2	3	4	5
5. This child tries to get what s/he wants by telling friends that s/he will not like them anymore unless the friends do what the child says.	1	2	3	4	5
6. Other children follow this child's lead in social situations.	1	2	3	4	5
7. This child tries to get his/her own way through physical domination.	1	2	3	4	5
8. When other children do not invite this child to join a group activity, this child assumes that s/he has been purposefully excluded and retaliates by excluding those children from future activities.	1	2	3	4	5

	Never True				Almost Always True
9. When this child notices that another child has been left out of an activity or game, s/he invites the child to join the game.	1	2	3	4	5
10. This child tries to get what s/he wants by threatening to physically harm another child unless the child does what s/he says.	1	2	3	4	5
11. This child would rather play alone than with other children.	1	2	3	4	5
12. When angered or provoked by another child, this child reacts with physical fighting.	1	2	3	4	5
13. This child tries to get his/her own way by keeping other children from playing with him/her unless they do what s/he wants.	1	2	3	4	5
14. This child is friendly to most children, even those s/he doesn't like very much.	1	2	3	4	5
15. When mad at another child, this child attempts to get even by spreading rumours or mean lies about them.	1	2	3	4	5
16. This child tries to control peers by threatening to beat them up unless they do what the child says.	1	2	3	4	5

	Never True				Almost Always True
17. When other children accidentally bump into this child, s/he assumes that s/he has been hurt on purpose and retaliates with physical fighting.	1	2	3	4	5
18. Other children seek out this child for advice/ help.	1	2	3	4	5
19. This child tries to control peers by threatening to exclude them from important activities (e.g. games, future birthday parties) unless the peers do what the child says.	1	2	3	4	5
20. This child tries to get other children to beat up a peer when the peer will not do what s/he says.	1	2	3	4	5
21. This child gives into other children or does what other children want.	1	2	3	4	5
22. When this child sees other children whispering to each other, s/he assumes that the children are talking about him/her and s/he reacts by trying to reject the children in the same way.	1	2	3	4	5
23. When this child hears a mean name called by another child, s/he assumes that the child is talking about him/her and reacts by yelling mean names at them.	1	2	3	4	5
24. This child feels sorry for children who are often rejected by other peers and tries to help them.	1	2	3	4	5

**Never
True**

**Almost
Always
True**

**25. This child tries to get other children to dislike or
exclude a peer when the peer will not do what the
child wants.** **1 2 3 4 5**

Appendix C

Situational Empathy Task: Content of Vignettes

Vignette 1: Alex

Alex, a teenage boy, answers the telephone at home. His mother is on the other end of the line, calling from work. She asks him whether he has eaten and if he has any homework, but Alex ignores her questions or snaps at her. Eventually, he begins to ask her for some money to get something he wants, but his mother interrupts him, saying, "Alex, I have to go – I'm being paged. I'll see you in the morning". Alex replies, "Thanks a lot!" and hangs up the telephone. Next, he tries to phone his father but is met with an answer phone message. Alex slams down the phone and shouts, "You're never home!" He throws himself onto his bed and appears to be crying.

Vignette paused for interview questions.

The next day, Alex and two friends walk into a shop and steal something. They run out of the shop, and Alex tells his friends that he is going ski-ing with his Dad and that he has bought him some expensive ski goggles from France. The friends tease him, saying that they don't believe him and that they don't think he has a father. As his friends walk away laughing, Alex shouts after them, "It's true! I swear it's true!" Camera pans to a close-up of Alex's sad face.

Further interview questions.

Vignette 2: Cadillac (Prior to showing the vignette, the following background information is given:)

"The boy we're about to see is a popular boy at school. He asked one of the less popular girls in his class for some help with his homework, and in return promised the girl and her friends a ride in his car. The girl has helped him with his homework. Let's see what happens next...."

Four girls arrive excitedly on the beach. They walk along chatting and giggling, and then see the boy. One of them exclaims, "That's him!" and they all swoon and giggle. The boy hides his face and looks embarrassed. One girl approaches the boy and says, "Let's go". The boy takes her aside and tells her that he cannot be seen with the girls in his Cadillac because they're all ugly. Vignette is paused on a close-up of the girl's disappointed-looking face.

Vignette paused for interview questions.

The boy agrees to take the girls in his car.

Vignette 3: Runaway Boy

A woman meets a boy in the street at night. He asks her for the time, and tells her that he has missed his last bus home. He walks along with her, talking about how he was meant to stay at a friend's house but wasn't allowed, etc. They come to some steps outside the woman's hotel. The boy says, "Sure gets cold standing around, huh?"

Vignette paused for interview questions.

The woman lets the boy in and makes him something to eat while they talk. Then, over the telephone, social services tell her that the boy has run away from a children's home and that she should keep him there until someone arrives to collect him. The woman tells the boy that someone is coming. He gets up to run, looking scared.

Vignette paused for interview questions.

The woman tries to grab hold of the boy to keep him there. He hits her and runs away.

Appendix D

Situational Empathy Task:

Sample of interview questions and scoring criteria

Sample Interview Questions:

Vignette 3: Runaway boy

Interview questions for part 1:

- What did you see happening in this clip?
- What might the boy be thinking? Why might he think that?
- How might he be feeling? What might be some of the reasons?
- Imagine you are the woman. What are you thinking? Why?
- How are you feeling if you are the woman? Why?
- What would you do now? Why?
- What would you think if the woman told the boy he could not come in?
(The boy's feelings might be hurt. Is it still ok to not let him in? Why?)
- What about if she invited him in and let him stay? Is that ok?

Interview questions for part 2:

- Tell me what you saw happening in this clip.
- What might the boy be thinking? Why?
- How might he be feeling? Why?
- Imagine that you are the woman. What are you thinking? Why?
- How are you feeling if you are the woman? Why?
- What would you do now? Why?
- What would you think if the woman made the boy stay and wait for social services?
(The boy might be upset about that. Is it still ok?)
- What if she let the boy hide and told social services that he had gone? Is that a good idea?

Show final part of vignette.

Sample Scoring criteria:

VIGNETTE 3 – RUNAWAY BOY

1. Identification of psychological and emotional state of character
(Theory of Mind – Separate scores for thoughts and emotions)

This section relates to the child's ability to identify the thoughts and feelings of the characters in the vignette. Some questions relate to the main character in the vignette, which the child describes in third person, others relate to the child putting themselves in the position of a different character in the vignette, describing how they would think and feel *if it were them*, i.e. in first-person narrative.

The more thoughts and feelings identified, the more appropriate to the situation, and the more complex the reasons given for the character having the thoughts and feelings described, the higher the score obtained.

1a – Vignette 3, part 1 – Third person thoughts:

A woman meets a boy in the street at night. He asks her for the time, and tells her that he has missed his last bus home. He walks along with her, talking about how he was meant to stay at a friend's place but wasn't allowed, etc. They come to some steps outside the woman's hotel. The boy says, "sure gets cold standing around, huh?"

Question:

- What might the boy be thinking and why?

N.B. Often children talk about feelings in this section too. If so, code under section 1b.

Scoring:

Number

- 0** **No thoughts identified**
(e.g. "I don't know", "nothing", no response)
- 1** **One thought identified**
(e.g. "he's thinking, 'I hope she lets me in'")
- 2** **Two or more thoughts identified, or one thought with more than one idea contained therein**
(e.g. "he's thinking, 'I hope she lets me in, I have nowhere else to go'")

"NUMBER" SCORE (0-2): ____

Appropriateness

- 0** **Unrelated/ strange/ incongruous**
(e.g. "he's thinking about what to wear tomorrow" or "he's thinking about the tv programme he was just watching" with no appropriate explanation given regarding the relevance to this situation)
- 1** **Loosely related**
(e.g. "he's thinking, 'it's cold out here'" but no mention of a desire to be let in or any thoughts about being alone, homeless or having nowhere to go or no money)

- 2 Appropriate to situation**
(e.g. “he’s thinking, ‘I hope this lady lets me in because I’ll freeze out here all night and I don’t know what will happen to me’” or “‘I hope this lady lets me in, maybe I can steal something from her’”)

“APPROPRIATENESS” SCORE (0-2): ____

Complexity and reasoning

- 0 No reason given, or unrelated/ strange reasons given**
(e.g. “he’s thinking, ‘I hope she lets me in’ because he really likes hotels”)
- 1 Basic reasons**
(e.g. just repeating the situation: “he’s thinking, ‘I hope she lets me in’ because he wants to be let in”)
- 2 Complex thoughts and reasons**
(e.g. “he’s thinking, ‘I hope she lets me in’ because he has nowhere to go and he might be hoping she’ll take care of him” or “he’s thinking, ‘if she lets me in I can steal all her money and buy some food/ shelter/ clothes’”)

“COMPLEXITY & REASONING” SCORE (0-2): ____

2. Empathic responding

(Empathy – separate scores for emotional, cognitive and behavioural empathy)

This section is concerned with the extent to which the child’s thoughts, feelings and actions represent a *positive* empathic response to the other person’s mental or emotional state. This relates only to the first-person narrative questions in which the child is asked to *imagine they are in the position of one of the characters*.

2a – Vignette 3, part 1 – Empathic Thoughts:

A woman meets a boy in the street at night. He asks her for the time, and tells her that he has missed his last bus home. He walks along with her, talking about how he was meant to stay at a friend’s place but wasn’t allowed, etc. They come to some steps outside the woman’s hotel. The boy says, “sure gets cold standing around, huh?”

Question:

Imagine that you are the woman. What would you be thinking now and why?

N.B. Often children talk about feelings in this section too. If so, code under section 2b.

Scoring:

- 0 No positive link between thought and emotion/thought of other**
(e.g. “I would be thinking, ‘what a friendly boy’ i.e. no mention of boy’s situation, thoughts or feelings)
Include thoughts that are negatively linked with other’s situation
(e.g. “I would be thinking, ‘he looks like a yob, I’m not letting him in my house’” but no understanding of how the boy may feel to be on his own)

If the child says, "I would be thinking, 'I'm not letting him in, but I'd be worried about him being on his own'" this demonstrates some empathic thought, so code as 1 or 2 depending on the complexity of the explanation

- 1 Thought positively linked to the person's situation but no reason given, or reason inadequately explained**
(e.g. just stating the situation, such as: "I'd be thinking, 'I should let him in'" with no reference to the boy's situation, thoughts or feelings)
- 2 Complex positive link between thought and other's emotion/thought**
(e.g. talks about how the person's mental or feeling state leads them to their thought, such as: "I would be thinking, 'this poor boy has probably got nowhere to go, I want to try and help him'")

EMPATHIC "THOUGHTS" SCORE (0-2) – VIGNETTE 1, PART 1 ____
--

2b – Vignette 3, part 1 – Empathic Feelings:

A woman meets a boy in the street at night. He asks her for the time, and tells her that he has missed his last bus home. He walks along with her, talking about how he was meant to stay at a friend's place but wasn't allowed, etc. They come to some steps outside the woman's hotel. The boy says, "sure gets cold standing around, huh?"

Question:

Imagine that you are the woman. How would you be feeling now and why?

N.B. Often children talk about thoughts in this section too. If so, code under section 2a.

Scoring:

- 0 No positive link between feeling and emotion/thought of other**
(e.g. "I would be feeling tired, because it's really late at night", i.e. no mention of boy's position)
Include feelings that are negatively linked with other's situation
(e.g. "I would be feeling annoyed with him for talking to me because I just want to go home to bed")
- 1 Feeling positively linked to the person's situation but no reason given, or reason inadequately explained, or sympathetic rather than empathic response i.e. feeling *for* the other person**
(e.g. just stating the situation, such as: "I would be feeling sad because he's homeless" with no reference to the boy's thoughts or feelings, or "I would be feeling sorry for him")
- 2 Complex positive link between feeling and other's emotion/thought**
(e.g. talks about how the person's mental or feeling state leads them to their feeling, such as: "I would be feeling sad because he has nowhere to go and he might be feeling lonely or scared")

EMPATHIC "FEELINGS" SCORE (0-2) – VIGNETTE 3, PART 1 ____
--

2c – Vignette 3, part 1 – Empathic Actions:

A woman meets a boy in the street at night. He asks her for the time, and tells her that he has missed his last bus home. He walks along with her, talking about how he was meant to stay at a friend's place but wasn't allowed, etc. They come to some steps outside the woman's hotel. The boy says, "sure gets cold standing around, huh?"

Question:

Imagine that you are the woman. What would you do now and why?

N.B. The following questions should be scored under this section too ("What if the mother/father didn't come home?" "What if they decided to come home straight away?")- score the highest score obtainable from the combination of the 3 questions

Scoring:

- 0 No positive link between action and emotion/thought of other**
(e.g. "I would go home", i.e. no mention of boy's position)
Include actions that are negatively linked with other's situation and which do not take into account a desire to engage in prosocial action or consideration of prosocial action
(e.g. "I would leave him there and go inside" but with no mention of the boy's position. If the child says they would not let him in but gives an indication that they would have considered letting him in or taking him somewhere safe or informing someone, or that they wanted to do one of those things or similar but couldn't because of the circumstances, score as 1 or 2, depending on the complexity of explanation)
- 1 Action positively linked to the person's situation but no reason given, or reason inadequately explained**
(e.g. just stating the situation, such as: "I would let him in because he wants to be let in" with no reference to boy's situation, thoughts or feelings)
- 2 Complex positive link between action and other's emotion/thought**
(e.g. talks about how the person's mental or feeling state leads them to their action, such as: "I would let him in/ take him to the police station so that he would have somewhere warm and safe to spend the night and he wouldn't be scared/ lonely")

EMPATHIC "ACTIONS" SCORE (0-2) – VIGNETTE 3, PART 1 ____

Appendix E

Children's Empathic Attitudes Questionnaire (CEAQ)

Funk, Fox, Chan & Brouwer, 2006

Below is a list of statements about situations that happen to children every day. Please read each statement carefully. Mark the answer that describes how you feel. Your answers are private and no-one will know how you answered.

1. When I'm mean to someone, I usually feel bad about it later.

No	Maybe	Yes
1	2	3

2. I'm happy when the teacher says my friend did a good job.

No	Maybe	Yes
1	2	3

3. I would get upset if I saw someone hurt an animal.

No	Maybe	Yes
1	2	3

4. I understand how other children feel.

No	Maybe	Yes
1	2	3

5. I would feel bad if my Mum's friend got ill.

No	Maybe	Yes
1	2	3

6. Other people's problems really bother me.

No	Maybe	Yes
1	2	3

7. I feel happy when my friend gets a good grade.

No	Maybe	Yes
1	2	3

PLEASE TURN OVER & COMPLETE THE QUESTIONS ON THE OTHER SIDE

8. When I see a child who is upset it really bothers me.

No	Maybe	Yes
1	2	3

9. I would feel bad if the child sitting next to me got into trouble.

No	Maybe	Yes
1	2	3

10. It bothers me when my teacher doesn't feel well.

No	Maybe	Yes
1	2	3

11. I feel sorry for children who can't find anyone to hang out with.

No	Maybe	Yes
1	2	3

12. Seeing a child who is crying makes me feel like crying.

No	Maybe	Yes
1	2	3

13. If two children are fighting, someone should stop it.

No	Maybe	Yes
1	2	3

14. It would bother me if my friend got grounded.

No	Maybe	Yes
1	2	3

15. When I see someone who's happy, I feel happy too.

No	Maybe	Yes
1	2	3

Appendix F

Antisocial Process Screening Device (APSD)

Frick & Hare, 2001

Teacher report – attitudes and behaviour questionnaire

Please read each statement and decide how well it describes the child. Mark your answer by circling the appropriate letter (NT, ST, DT) for each statement.

	Not At All True	Sometimes True	Definitely True
1. Blames others for his/her mistakes	NT	ST	DT
2. Engages in illegal activities	NT	ST	DT
3. Is concerned about how well s/he does at school/work	NT	ST	DT
4. Acts without thinking of the consequences	NT	ST	DT
5. His/her emotions seem shallow and not genuine	NT	ST	DT
6. Lies easily and skillfully	NT	ST	DT
7. Is good at keeping promises	NT	ST	DT
8. Brags excessively about his/her abilities, accomplishments or possessions	NT	ST	DT
9. Gets bored easily	NT	ST	DT
10. Uses or cons other people to get what s/he wants	NT	ST	DT
11. Teases, makes fun of other people	NT	ST	DT
12. Feels bad or guilty when s/he does something wrong	NT	ST	DT
13. Engages in risky or dangerous activities	NT	ST	DT
14. Can be charming at times, but in ways that seem insincere or superficial	NT	ST	DT
15. Becomes angry when corrected or punished	NT	ST	DT
16. Seems to think that s/he is better than other people	NT	ST	DT
17. Does not plan ahead, leaves things until "last minute"	NT	ST	DT
18. Is concerned about the feelings of others	NT	ST	DT
19. Does not show feelings or emotions	NT	ST	DT
20. Keeps the same friends	NT	ST	DT

Appendix G

Children's Rejection Sensitivity Questionnaire (CRSQ)

Sample Questions

Downey, Lebolt, Rincon & Freitas, 1998

	very true	sort of true	not true
6. I would feel like it was probably my own fault.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I would feel like the teacher doesn't like me because she didn't want me to have the video game.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I would keep thinking—over and over—why didn't she want to give it to me?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I would feel sad because she picked someone else instead of me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I would feel like I'll never get what I want.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I would pick on that child who got to take it home because he or she always gets treated better than me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Next time when the teacher wants me to be quiet in class, I won't.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I would feel hurt that she chose someone else.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. After that I would stay away from that teacher because you just can't trust her.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I would feel like she doesn't care about me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I would feel like she'll never give me the video, so what's the point of even asking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix H

Covering Letter for Parental Information Form

Insert school address

Date

Dear Parent,

We are writing to inform you about a research project which will be taking part in school over the next few months. Dr Natalie Reilly is a trainee Clinical Psychologist studying at University College London. Her research involves looking at children's behaviour and their thoughts and feelings about other people's behaviour.

Dr Reilly is looking at the behaviour, thoughts and feelings of children aged between 10 and 12 years old. All children in your child's class have been approached about the study, and being invited to participate is not linked to your child's behaviour.

We have included information sheets about the research for both you and your child, along with a consent form. The research is entirely voluntary and it is up to you whether you wish your child to participate. Dr Reilly would be grateful if you could read the information sheets. If you are happy for your child to take part then please complete the form and return it to school as soon as possible.

Yours sincerely,

School

Appendix I

Parental Information Form

Parental Information Form

An investigation into how 10-12 year-old children behave, and how they think and feel about other people's behaviour

Your child is being invited to take part in a research study that is taking place in schools in London and Sussex. Before you decide whether you would like your child to take part, it is important for you to understand why the research is being carried out and what it will involve.

What is the purpose of the study?

Behaviour that is difficult to manage is very common in children and can put a lot of demands on parents and teachers. This study aims to try and understand more about what affects children's behaviour by looking at the relationship between the way children behave and their thoughts and feelings about other people's behaviour.

Why have I been chosen?

In order to look at the way children think and feel about other people's behaviour, a whole range of children need to be considered. It was thought that the most effective way to obtain a range of children would be to ask a whole school to join the study. Therefore your child is being invited as part of his/her year. All children in his/her class have been invited to participate in this study. This should in no way be taken as a reflection on your child's behaviour.

What will it involve?

The study will involve your child watching some short video clips of people behaving in different ways, and completing a set of two questionnaires and a short interview with the researcher, Dr Natalie Reilly, at school. She has seven years experience of working with children. The video task will last for around thirty minutes and the questionnaires should take a maximum of thirty minutes to complete. The questionnaires ask the child about their thoughts and feelings about the video clips and about some other social situations. They also ask how the child thinks the people in the clips were thinking and feeling. Your child's teacher will also complete a questionnaire about his or her behaviour. In addition, if you are happy for her to do so, Natalie will contact you by phone to ask a few background information questions. This information is so that children with similar families can be compared. The information is confidential and you do not have to complete these questions if you do not wish to.

Do I have to take part?

The study is entirely voluntary. Your child will be reminded of this before starting to watch the video and fill in the questionnaires. Should he or she wish to stop taking part at any point, this is perfectly ok.

What will happen to the questionnaires?

The information on the questionnaires will be kept confidential. The questionnaires will be coded so that children cannot be identified by their names. They will be marked and compared to the questionnaires completed by the teachers. Parents and teachers will be provided with a summary of the findings of the study.

What are the disadvantages of taking part?

The main disadvantage is that your child will miss an hour of school to take part. However, the school feels that this research is relevant and the researcher will liaise with teachers to ensure that work is not missed. A possible disadvantage is that your child may not want to complete the questionnaires on the day. This is not a problem and as explained above, your child is free to withdraw from the study at any time.

Who is organising the research?

Dr Natalie Reilly (PhD), Trainee Clinical Psychologist at University College London, is the chief investigator in the study. She is doing the research as part of a post graduate degree in Clinical Psychology. The study is supervised by Dr Stephen Butler and Dr Pasco Fearon, both clinical psychologists working with children and families in Camden and Islington.

Having read this information, if you do wish your child to take part in this study then please fill in and return the form enclosed to school. Thank you.

Appendix J

Children's Information Form

Children's Information Form

You are being asked to take part in a study looking at the way children behave and how they think and feel about other people's behaviour. All children in your class have been asked to take part.

The study will mean filling in some questions about your thoughts, feelings and behaviour in different situations. You will also be shown some video clips and asked to fill in some questions about them. Some questions ask you to rate how much you think or feel a certain way and some ask you to rate how much you think another person is thinking or feeling a certain way. Some of the questions might seem hard so there will be someone there to help you. Also some of the questions might be about things that are difficult to think about. It is important to know that there are no right or wrong answers and that this is *not* a test.

In order to fill in the questions and watch the video, you will have to miss a lesson in school. Natalie Reilly will come into school and show the video to you in small groups. She will then take you to a quiet area to complete the questions.

You do not have to take part in this study and even if you start you can stop if you want to.

Talk about this with the person who cares for you and if you want to take part then let them know. You will be asked again on the day that Natalie comes to school so it does not matter if you change your mind.

If you have any questions then you could ask your class teacher about the study.

Appendix K

Consent Form

Consent Form

An investigation into how 10-12 year-old children behave, and how they think and feel about other people's behaviour

Chief Investigator – Dr Natalie Reilly

I confirm that I have read and understood the information sheet about this study

(Please tick box)

I understand that my child is a volunteer and is free to withdraw at any time

I give my consent for my child to take part in the above study

Name of Child

Name of Parent/Guardian

Relationship to Child

Signature of Parent/Guardian

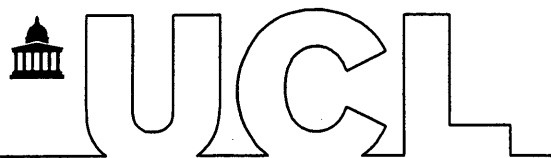
Date

In addition I would be happy for Dr Natalie Reilly to contact me at home to ask a few background information questions

Please fill in contact number below if you are happy for Natalie to do this:

Appendix L

Ethical Approval Letter



Dr Pasco Fearon
Department of Clinical Health Psychology

03 April 2006

Dear Dr Fearon

Re: Notification of Ethical Approval

Re: Ethics Application: 0637/001: An investigation into how 8-11 year old children behave and how they think and feel about other people's behaviour

I am pleased to confirm that following your satisfactory responses to the remarks made by members of the UCL Research Ethics Committee, the above application has been given ethical approval for the duration of the project.

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 Ms _____, Ethics Committee Administrator (_____), 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.

Letter to Dr Fearon 04/04/2006

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

Chair of the UCL Research Ethics Committee

Cc: Dr Natalie Lia Reilly, Department of Clinical Health Psychology (despatched copy to home address)