Empathy across Socioeconomic Status and its Association with Aggressive Behaviour in Western Cape Children

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Abstract

Empathy is the ability to appreciate the emotions and feelings of others, and has been linked to prosocial behaviour (Decety & Michalska, 2010). Similarly, a lack of empathy has been linked to a tendency to be aggressive, making research in children a high priority (McDonald & Messinger, 2012). Socioeconomic status (SES), defined as the social and material resources an individual possesses, has been identified as a potential influence on empathy development. Among many, three components critical for empathic behaviour include affective empathy (i.e., the ability to viscerally share another's emotions), cognitive empathy (i.e., the ability to understand another's emotions), and regulatory processes. Damage to one or more components is thought to decrease empathic ability and increase the propensity for aggressive behaviour; empirical studies show inconsistent findings for this relationship. Furthermore, literature on SES as an influence on empathy development is not well researched, and thus leaves an explanatory gap that the current pilot study aimed to address. This study investigated whether variability in empathy exists across socioeconomic strata, and furthermore, how these findings predict occurrence of aggressive behaviour in children in the Western Cape. Using a cross-sectional design in which 83 participants were stratified according to high SES, medium SES, or low SES, I hypothesized that (a) lower SES would be associated with lower empathy, (b) that lower SES would be associated with higher aggression, and (c) that lower empathy predicts higher aggression. Results, however, suggested that (a) lower SES was associated with higher empathy, (b) that SES predicted higher aggressive behaviour, although not between medium and low SES groups, and (c) that empathy did not significantly predict aggressive behaviour. The present study provides a basis for future research on empathy, SES, and aggressive behaviour in children in a South African context.

Keywords: empathy; prosocial behaviour; aggressive behaviour; children; SES; cross-sectional design

Research suggests that the propensity for children to behave aggressively is apparent in early childhood, and is predictive of adult delinquency, criminality, and violence (Anderson & Huesmann, 2003; Tremblay et al., 2004). For example, Herrenkohl, Catalano, Hemphill, and Toumbourou (2009) have shown a general tendency for "behaviours like minor aggression" (p.4) to progressively worsen into more serious behaviours, including rape, assault, robbery, and homicide. Critically, South Africa has amongst the highest rates of aggressive and delinquent behaviour worldwide, with an injury death rate twice as high as the global average (Seedat, Van Niekerk, Jewkes, Suffla, & Ratele, 2009).

A host of factors have been implicated in the development of childhood aggression including child abuse, child neglect, and poor parenting (Kotch et al., 2008; Narang & Contreras, 2005). Several investigations have shown that empathy-related deficits are also predictive of aggressive behaviour (Dadds et al., 2008; Dadds et al., 2009; Decety & Moriguchi, 2007; Decety & Svetlova, 2012; McDonald & Messinger, 2012). Additionally, socioeconomic status (SES) has been linked to the development of empathy in children, although empirical findings investigating the relationship between empathy, SES, and aggressive behaviour in children are lacking (Kraus, Cote, & Keltner, 2010; Ma, Wang, & Han, 2011). This study investigated whether variability in empathy exists across socioeconomic strata, and furthermore, how these findings predict occurrence of aggressive behaviour in children.

Background

Empathic behaviour

Empathy is a complex construct resisting definition; For the present study it is defined as "the ability to appreciate the emotions and feelings of others, with a minimal distinction between the self and other" (Decety & Michalska, 2010, p. 886). Several inter-related components have been identified as facilitating the subjective experience of empathy (Blair & Blair, 2009; Dadds et al., 2009; Decety & Moriguchi, 2007; Decety, Norman, Berntson, & Cacioppo, 2012). Decety and colleagues (e.g., Decety & Jackson, 2004; Decety & Lamm, 2006; Decety & Moriguchi, 2007), have conceptualized empathic behaviour to exist within a theoretical framework, where brain processes involved in of one or more empathy components is thought to affect empathic behaviour.

The first component of empathy, the affective component, is the ability of an individual to viscerally share another's emotions (Decety & Jackson, 2004; Jolliffe & Farrington, 2007). This bottom up, affective empathy, is an unconscious, automatic activation

whereby response to perceptual and sensory input accounts for the sharing of another's emotions (Decety & Lamm, 2006; Decety & Moriguchi, 2007; Eisenberg & Eggum, 2009). For example, newborn infants display involuntary affective responsiveness when they become overtly distressed in response to other crying infants. This is a primitive example of emotional contagion; the automatic eliciting of similar emotion within the observer resulting from the perception of expressed emotion of another (Decety & Michalska, 2010; Decety & Svetlova, 2012).

The second component, the cognitive component, is concerned with understanding how an individual is feeling, without directly resonating with the specific feeling state (Decety & Jackson, 2004; Jolliffe & Farrington, 2007; Jones, Happe, Gilbert, Burnett, & Viding, 2010). This top down, cognitive empathy, involves conscious regulation of responses as influenced by higher order functioning, i.e., executive functions. This is demonstrated by the following situation: Bobby is driving home when he suddenly sees that Jane's car has broken down on the side of the road. Bobby previously having been in the same situation understands how Jane is feeling, without directly feeling her specific emotional state.

Regulatory processes are a final component necessary for the expression of empathic behaviour. These processes modulate and control subjective feelings, and the behavioural and physiological dimensions vital for the interpretation and experience of empathy (Decety & Moriguchi, 2007). Additionally, regulatory processes are critical to down regulate (i.e., reduce), or up-regulate (i.e., promote) emotion. Individuals who successfully regulate their emotions are therefore more likely to experience empathy, and engage with others in morally desirable ways (Decety & Moriguchi, 2007).

An example will demonstrate the framework of empathic behaviour. Bobby hears traumatic screaming and crying; he turns around and sees that Jane is being attacked by a group of angry lions. Here, bottom-up, affective empathy, automatically activates Bobby's perceptual and sensory input, thereby causing him to react emotionally. Top-down information processing requires conscious regulation and control of responses. Bobby's higher cognitive capacities enable him to consciously decide that if he tries to save Jane from the angry lions, he too will be attacked. Bobby therefore decides to run away and call for help.

Empathy and gender. Literature regarding the propensity for gender differences in empathy have been well documented. In specific, Reiners, Corcoran, Drake, Shiryane, and Vollm (2011) employed a measure of empathy (i.e., the Questionnaire of Cognitive and Affective Empathy; QCAE) on 640 male an female participants in the United States. Their findings, in accordance with similar empirical studies (see Baron-Cohen & Wheelwright,

2004; Jollife & Farrington, 2006) have shown that females scored significantly higher than males on measures of empathy, suggesting that females are more empathic than males. Michalska, Kinzler, and Decety (2013) corroborate this finding by arguing that females are biologically more empathic than males. Additionally, a disparity in empathic ability between genders is consistent with a biological disparity in parental investment, where females have shown to invest higher emotion in parent-child interactions and attachments (Decety & Svetlova, 2012). Empirical studies on psychiatric disorders associated with a lack of empathy, i.e., psychopathy and anti-social behaviour disorder, have also shown a propensity for gender differences in behaviour outcomes (Strand & Belfrage, 2005; Yang & Coid, 2007).

On the other hand, a social argument for differences in empathy between gender suggest that sex-differentiated processes account for the differences in empathy (Michalska et al., 2013). Specifically, social learning theory has shown that individuals learn behaviour through differential reinforcement, as well as through observational learning (Sigelman & Rider, 2009). Differences in empathic behaviour have been shown to develop in accordance with social motives that include principles of dominance for males, and intimacy for females. Sigelman and Rider (2009) corroborate this finding by arguing that gender differences in behaviour are learnt through differential reinforcement.

Empathy and Aggressive Behaviour.

There is no universal definition for aggressive behaviour, although it was defined for the present study as behaviour intended to inflict harm or injury (Anderson & Bushman, 2002). Specifically, two primary aggression types include *physical aggression*, defined as intentional harm caused to others through blatant physical acts (e.g., kicking, smacking), or verbal threat of such acts, and *relational aggression*, defined as intentional harm caused to others by damaging their social relationships or feelings of peer acceptance (e.g., ignoring others, maliciously gossiping, and excluding individuals from play) (Ostrov & Keating, 2004; Scrimgeour, 2007).

Literature shows that empathy has been linked to prosocial behaviour, defined as altruistic behaviour that benefits another (Decety et al., 2012; Decety & Lamm, 2006; Decety & Moriguchi, 2007; Scrimgeour, 2007). Literature on empathy deficits and aggression in children have however shown inconsistent findings. Decety et al. (2012), as well as others (see Decety & Moriguchi, 2007; Decety & Svetlova, 2012; McDonald & Messinger, 2012; Scrimgeour, 2007), have argued that deficits in empathy facilitate aggressive behaviour in children. Richardson, Hammock, Smith, Gardner and Signo (1994) provide a theoretical rationale for this relationship by arguing that high levels of arousal (e.g., being teased or

aggravated) facilitate cognitive incapacitation, thereby causing an individual to behave impulsively (e.g., hitting, kicking). Children with empathic deficits are less likely to inhibit aggressive behaviour as a result of exacerbated cognitive disruption (Richardson et al., 1994). Reebye (2005) has also argued that damage to regulatory processes increases aggression as a result of poor impulse control. A meta-analysis by Lovett and Sheffield (2007) provides conflicting findings showing that no consistent relationship was found between empathy and aggression in children. Empirical evidence therefore corroborates a need for additional research to provide a more nuanced understanding of the theory.

Callous Unemotional Traits. Callous-unemotional (CU) traits are relatively stable behaviours characterized by a lack of guilt, absence of empathy, and shallow affect (Frick & White, 2008). CU traits are predictive of antisocial and aggressive behaviour and have been linked to a host of risk factors, including both genetics and psychosocial influences (Frick & White, 2008; Pasalich, Dadds, Hawes, & Brennan, 2012).

Pasalich et al. (2012) have shown that the "affective quality of parent-child relationships" (p.1) plays a probable role in the socialization of aggressive children with elevated CU traits. First, a secure attachment relationship is necessary for moral development in children with CU temperament characteristics; "that is low arousal or fear" (p.1) (Fowles & Kochanska, 2000; Pasalich et al., 2012). Children internalize early interactions and expectations of attachment figures, thereby forming mental representations of attachment relationships (Bowlby, 1982). "These attachment representations influence children's cognitions, feelings, and behaviours in subsequent relationships" (p.1), thereby affecting how children relate to others (Bowlby, 1982; Pasalich et al., 2012). Second, increased parental warmth "predicts decreasing levels of CU traits in children" (p.1) (Kroneman, Hipwell, Loeber, Koot, & Pardini, 2011; Pardini, Lochman, & Powell, 2007; Pasalich et al., 2012). South Africa has one of the highest levels of poverty and inequality worldwide, and these contextual circumstances are thought to impact upon parenting ability, time, and resource that ultimately increase CU trait development (Neff, 2007; Pasalich et al., 2012).

The costs of aggressive and delinquent behaviour in children are detrimental to the perpetrators, victims, and the broader society. Childhood aggression is linked to a greater likelihood of social, personality, and psychotic disorders, substance use and/or abuse, unemployment, violent crime, and reduced quality of life in adolescence and adulthood (Dadds et al., 2009; Farrington & Loeber, 2002; Juon, Doherty, & Ensminger, 2006; McDonald & Messinger, 2012; Tremblay et al., 2004). Tremblay et al. (2004) have shown that victims of childhood aggression are increasingly vulnerable to physical and mental health

problems. The resulting costs that stem from mental health services, child welfare, juvenile justice, and special education for children with aggressive behaviours are "potentially enormous to society and extend over many years" (p.1767) (Foster, Jones, & the Conduct Problems Prevention Research Group, 2005). In specific, without appropriate intervention from early age, it is assumed that the costs of aggressive and delinquent behaviour will progressively accumulate across life, at both micro and macro levels.

Gender and aggressive behaviour. Reebye (2005) has shown that a propensity for genetic sex differences in aggression is apparent by early childhood. Specifically, females exhibit increased relational aggression compared to males who have increased physical aggression (Ostrov & Keating, 2004; Scrimgeour, 2007). Additionally, males are considered the most aggressive sex between both genders (Scrimgeour, 2007). An international cross-country study by Lansford et al. (2012) corroborates the finding that males are more aggressive than females, although they found no consistent relationship for differences in relational aggression between genders. Empirical studies are therefore critical to gain a more nuanced understanding of the relationship between gender and aggressive behaviour.

Empathy and Socioeconomic Status.

Socioeconomic status (SES) is defined as "the social and material resources an individual possesses" (p.1716), including income, occupational prestige, and educational attainment (Kraus et al., 2010). In particular, South Africa is in a unique position to investigate SES because of the country's variation in SES. Ataguba, Akazili, and McIntyre (2011) show that inequality in SES and access to social resources in South Africa is "typical and extensive" (p.1).

Social learning theory provides a theoretical rationale for poverty as a predictor of decreased empathy by arguing that behavioural tendencies are shaped through situational influences, observational learning, and modeling of behaviour (Sigelman & Rider, 2009). Poor communities are at increased risk of violence, criminality, gangsterism, substance use/abuse, and child abuse; all of which impact on the context in which children are raised (Margolin & Gordis, 2000; McIlwaine & Moser, 2001). Funk, Baldacci, Pasold, and Baumgardner (2004) have also shown that repeated exposure to real-life violence "may alter cognitive, affective, and behavioural processes" (p.23) that lead to desensitization and reduced empathy.

Few empirical studies regarding an association between SES and empathy were found, although a study by Jolliffe and Farrington (2004) showed that differences in empathy between offenders and nonoffenders were eliminated when SES was controlled for. A more

nuanced understanding of this theory is critical for research related to empathy, SES, and aggressive behaviour in children.

Rationale for Research

By definition, empathy is the ability of an individual to appreciate the emotions and feelings of others and is thought to be influenced by SES, defined as the material and social wealth of an individual. Three empathy components were identified as critical for empathic behaviour, including affective empathy, cognitive empathy, and regulatory processes. Deficits to one or more components have shown a tendency to be aggressive, although inconsistent findings pose an explanatory gap in the literature. This study seeks to address such gaps by gaining a more nuanced understanding of the relationship between empathy, SES and aggressive behaviour. Additionally, South Africa has amongst the highest rates in the world for aggressive and delinquent behaviour, making research on empathy and aggression in children a high priority. South Africa also provides a unique context within which to investigate dimensionalities of SES given a wide variation in SES. To date, no research has yet investigated childhood aggression in relation to empathy and SES in South Africa. The novelty of this study is significant in that it its findings may have implications for future research and prevention programmes.

Specific Aims and Hypotheses

The purpose of this study was to examine whether variability in empathy exists across SES, and furthermore, how these findings predict the occurrence of aggressive behaviour in children between 7 and 10 years of age in South Africa. Specifically, the following hypotheses were formulated:

1. SES predicts empathy such that lower SES is significantly associated with lower empathy (i.e., both cognitive and affective empathy)
2. SES predicts aggressive behaviour such that lower SES is significantly associated with higher aggressive behaviour.
3. Empathy predicts aggressive behaviour such that lower empathy is significantly associated with higher aggressive behaviour.

Method

Design and Setting

This study is part of a broader international project that aims to investigate the development of empathy and moral reasoning in children. This pilot study will serve as a preliminary measure of the relationship between empathy and aggressive behaviour across

socioeconomic status (SES) in children aged 7 to 10 years in Cape Town. This study used a between-subjects, quantitative cross-sectional design comparing three groups: a high SES group, a middle SES group, and a low SES group. A quasi-experimental method was used to collect data as participants were stratified according to SES, a pre-existing criterion. An asset index measure was used to establish SES criterion (see Appendix A). All study procedures took place at the various schools involved, during school hours. Data was collected from children as well as their parents.

Participants

Purposive sampling was employed to recruit participants from both public and private primary schools in the Western Cape over a four-month period. A demographic questionnaire (see Appendix B) allowed for identification of participants according to predetermined demographic criteria (e.g., age and gender). The final sample consisted of 83 participants aged 7 to 10 years: high SES (n = 27), middle SES (n = 27), and low SES (n = 29).

Across these SES groups, participants were matched as closely as possible on age and gender. Matching is particularly important as age and gender effects have been linked to aggression and empathy (O'Brien, Konrath, Gruhn, & Hagen, 2012; Ostrov & Keating, 2004; Schieman & Van Gundy, 2000).

Exclusion Criteria. Exclusion criteria included a diagnosis of mental retardation and/or intellectual disability, a diagnosis or history of social disorders such as oppositional defiant disorder and conduct disorder, attentional disorders such as attention deficit/hyperactivity disorder, pervasive developmental disorders, affective disorders, psychotic disorders, and/or substance abuse. Furthermore, a history of head injury and/or infantile meningitis, seizures/seizure disorders, and/or the diagnosis of any neurological condition resulted in exclusion. Information necessary for determining inclusion and exclusion was obtained through completion of a demographic questionnaire completed by parents/legal guardians (see Appendix B)

Inclusion Criteria. Both males and females between 7 and 10 years of age were included in this study. Children fluent in English were assessed in English, and all schools involved were English-medium.

Measures

Demographic information. ***Demographics questionnaire.*** Parents/legal guardians completed a questionnaire asking about basic demographic information (e.g., age, gender, race, home language), as well as information necessary for identification of exclusion, such as listing any serious health problems their child has had or whether the child is taking any

medications for behaviour issues, attention difficulties, or issues related to moods and feelings (see Appendix B).

Asset-index inventory. A basic asset-index inventory was used to obtain an estimate of participants' socioeconomic status (SES) and between-groups variation in SES (Booysen, 2001). The inventory utilized three criteria, namely total yearly household income, parent/guardian education, and a material and financial resource index. The resource index consists of 14 items and/or facilities that are found in households (i.e., fridge, washing machine, running water, domestic servant), and 3 items associated with financial resources (i.e., do you shop at supermarkets, have you got an account or credit card at a retail store) (see Appendix A). A total SES index was created by standardizing the three criteria into z-scores, and thereafter summating the scores into a composite value. Composite values were then ranked and divided accordingly, e.g., low SES, medium SES, and high SES.

Empathy measures. ***Pain-empathy task.*** The Pain-empathy task is a computer-based task said to measure affective empathy (i.e., the ability to viscerally share another's emotions). Participants are shown analogous pictures either depicting pain (e.g., a finger slammed in a door) or control scenarios depicting no pain (e.g., a finger that is next to a slamming door). Each scenario asks two questions, namely, "How much pain is the person in the picture experiencing", and, "How bad do you feel for the person in the picture." Scores are measured on two continuous scales, respectively: The first ranges from 'no pain' to 'lots of pain', and the second from 'not bad' to 'very bad.' None of these scenarios are gruesome or age-inappropriate. All pictures are appropriate for children as young as 3 years of age and have been taken from situations children readily observe in every-day life. This newly developed measure was developed and validated by Jackson, Meltzoff, & Decety (2005) and has shown to be a reliable measure of empathy in Japan (Moriguchi et al., 2006).

Situational assessment task. A situational assessment task developed by Colace (2010) was employed to assess children's tendencies to behave prosocially (i.e., a measure of altruistic behaviour). This situation involves direct observation of a child's behaviour in response to the researcher "unintentionally" dropping a stack of papers. Behaviour was rated on a seven-point scale assessing the level of helping behaviour, ranging from active indifference (1) to help and support with clear emotional sharing (7) (see Appendix C). A failure to find empirical studies that have used the situational assessment as a measure of empathy emphasizes a need for assessment.

Questionnaire of Cognitive and Affective Empathy. The Questionnaire of Cognitive and Affective Empathy (QCAE; Reiners et al., 2011), a parent-report questionnaire designed

to measure empathy was employed. This questionnaire consists of 31 close-ended questions to which the parent/guardian provides a response of *strongly agree, slightly agree, slightly disagree, or strongly disagree* (see Appendix F). These items load on two different subscales within the QCAE including a cognitive empathy scale (e.g., "I find it easy to put myself in somebody else's shoes"), and an affective empathy scale (e.g., "I get very upset when I see someone cry") (Reiners et al., 2011). A higher score on the QCAE is indicative of lower empathy. Reiners et al. (2011) employed the QCAE on a sample of 640 participants in the United Kingdom; results revealed that both construct validity and convergent validity were well established within the measure.

Inventory of Callous-Unemotional Traits. The parent-report version of the Inventory of Callous Unemotional Traits (ICU), designed to measure callous unemotional traits associated with aggressive behaviour was employed (Frick & Hare, 2002). This questionnaire is an inverse measure of affective empathy and consists of 24 close-ended questions to which the parent/guardian provides a response of *not true at all*, *somewhat true*, *very true*, or *definitely true* (see Appendix G). It has been found that the ICU is a reliable measure in a number of contexts including the United States (for example, see Byrd, Kahn, & Pardini, 2012; Ezpeleta, De La Osa, Granero, & Domenech, 2013; Frick & White, 2008; Viding, Simmons, Petrides, & Frederickson, 2009). A higher score on the ICU is indicative of higher empathy.

Overt behaviour measure. ***Observation measure checklist***. Systematic observation of overt behaviour during two school break periods was used to provide a measure of aggressive and/or prosocial behaviour. The item checklist was compiled of new criteria in addition to established criteria from well-known behaviour checklists including the child behaviour scale (Ladd & Profilet, 1996), the aggression scale (Orpinas & Frankowski, 2001), the Eyberg Child Behaviour Inventory (ECBI; Eyeberg, 1990), the disruptive behaviour rating scale (Mungus, Weiler, Franzi, & Henry, 1989), and the Overt Aggression Scale (Heilings et al., 2005)

A continuous scale that ranged from -8 to 8 was used to weight behaviours (see Appendix D). Two examiners were responsible for systematic observations of overt behaviour that were conducted for on average 10 minutes per participant; this included two 5-minute observations over two break periods. The observation measure checklist (see Appendix E) was piloted for this study.

Procedure

This study formed part of a large cross-cultural research project for which ethical approval was granted by the Ethics Committee of the University of Cape Town's Faculty of Humanities (see Appendix H), and permission to conduct research in public schools was granted by the Western Cape Education Department (see Appendix I), while private school involvement was also approved by each participating school's principle or governing body. .

Parents/legal guardians provided written informed consent (Appendix J), and children provided assent on the day of assessment, before testing commenced (see Appendix K). Each participant was seen on two separate occasions, each lasting between 45 minutes and an hour. Children were informed that they could withdraw from the study at any time or take a break should they feel tired. Confidentiality and anonymity of participant data was ensured by assigning each participant a unique study number. Researchers of this study were the only personnel with access to information linking study numbers to participant information. Tasks were administered according to a set protocol for both testing sessions (see Appendix L). Participants completed tasks in a quiet room, free of distractions. Participants were compensated with sweets and stickers after both testing sessions.

Direct systematic observation was employed to observe participants' overt behaviour during two school break times; each participant was observed for two 5-minute periods. Two test administrators were required to simultaneously observe participants behaviour, thereafter scoring behaviour quantitatively according to the observation measure checklist (see Appendix E).

Parents/legal guardians came in to the participant's schools to complete a set of relevant questionnaires that took approximately 1 hour. Parents/legal guardians completed questionnaires in a quiet room and in the presence of one of the investigators to ensure all questions were adequately understood. Parents/legal guardians were compensated R100 upon completion of all questionnaires.

Schools involved are in the process of being compensated. This includes either resource compensation (e.g., library books), or an educational talk on a topic of the schools choice. Feedback reports will be provided to the schools involved, in addition to individual feedback as per request by the participant's parents/guardians.

Data Analysis

All statistical analyses were completed using SPSS Statistics Version 21. Descriptive statistics were analyzed first to characterize performance on the four measures of empathy employed, and the measure of aggressive behaviour. Both the total sample and between-group (i.e., low SES, medium SES, and high SES) descriptive statistics were examined for outliers

in the data. In line with most psychological research, a statistical threshold was set at $\alpha = .05$. All assumptions were upheld unless otherwise stated. A post-hoc analysis was employed to determine the power of the study given the present sample size, $n = 85$.

Scoring of measures. ***Pain-empathy task.*** Participant responses to questions in the pain-empathy task generated a visual analog scale (VAS) score for each independent question; the maximum total for each question was 100. Using E-Prime, I created a final VAS score by generating an average score of all questions for each participant. A higher pain-empathy score indicates higher empathy.

Situational Assessment task. Participants helping response to a researcher "unintentionally" dropping a stack of papers served as a measure of empathy. Scores ranged from one to seven, with a higher score indicating higher empathy.

Questionnaire of Cognitive and Affective Empathy. This parent-report measure consisted of 31 questions that were scored on a four-point Likert scale. I created a total empathy score by summing independent scores of all question items; the maximum total for the QCAE was 124. A higher QCAE score indicates lower empathy.

Inventory of Callous Unemotional Traits. This parent-report measure consisted of 24 questions that were scored on a four-point Likert scale. I created a total empathy score by summing independent scores of all question items; the maximum total for the ICU was 96. A higher ICU score indicates higher empathy.

Observation Measure Checklist. This checklist served as a measure of prosocial, antisocial, and/or aggressive behaviour. Overt behaviours were scored according to a weighting system that ranged from -8 to 8 (see Appendix E). There is no minimum or maximum total score for the checklist as behaviours are quantified according to frequency over time. I created a total score for each participant by summing his or her individual scores. A higher score indicates prosocial behaviour, and a lower score indicates antisocial and/or aggressive behaviour.

Procedure. An internal reliability analysis was conducted on the QCAE, ICU, and the observation measure checklist to determine whether these measures where applicable in a South African context. Thereafter, a correlation analysis of the four empathy predictors were examined. Four separate simultaneous regression analyses were employed to test whether SES and gender significantly predict empathy. Thereafter, a hierarchical regression analysis was employed to test whether SES and gender significantly predicted aggressive behaviour. Similarly, a hierarchical regression analysis was employed to test whether empathy and gender significantly predicted aggressive behaviour.

Results

Internal reliability analysis.

Questionnaire of Cognitive and Affective Empathy. The QCAE has shown to be a reliable measure in the United Kingdom, but has yet to be employed in a South African context. I performed an internal reliability analysis on the QCAE to inform which items could be used to calculate this measure of empathy, thereby making the items more valid in a South African context. Reiners et al. (2011), have shown that two subscales exist within the measure, namely, the cognitive empathy scale, and the affective empathy scale. An internal reliability analysis showed that the cognitive scale obtained a Cronbach's α = .92, and the affective empathy scale, α = .62. According to Field (2009), a high reliability is one greater than .70, and corrected item total correlations below .30 should be excluded from analysis. Inspection of the corrected item total correlations revealed five items that should be excluded, thereby increasing the reliability of the affective empathy scale, α = .79. Analysis of the overall QCAE revealed a Cronbach's α = .85. Inspection of the corrected item total correlations revealed that seven items, including the problematic ones in the affective empathy scale, should be excluded from the overall QCAE, thereby increasing the reliability of the overall QCAE measure used in this pilot study, α = .92.

Inventory of Callous Unemotional Traits. Similarly, as far as I am aware, the ICU has not yet been employed in a South African context (i.e., published work). An internal reliability analysis was conducted on the 24-item ICU, revealing high reliability, Cronbach's α = .82. Three corrected item-total correlations were below .30, but were retained in the measure as exclusion did not warrant a significant change in α (i.e., α =.83).

Observation measure checklist reliability. An internal reliability analysis was conducted on this new pilot measure. An internal reliability analysis revealed a low Cronbach's α = .21 for the overall measure; only one corrected item-correlation was significantly higher than .30. This new measure has two subscales, the aggressive behaviour scale, and the prosocial behaviour scale. The aggressive behaviour scale revealed a Cronbach's α = .11, and the prosocial scale, Cronbach's α = .27. The item-corrected correlations for the aggressive behaviour subscale showed that only one item was significantly greater than .30. Although this measure has low reliability, it was pilot for the present study and will still be used in subsequent analyses.

Descriptive Statistics.

Sample Characteristics. A total of 83 children between the ages of 7 and 10 years

participated in this study and were stratified according to SES (low = 29, medium = 27, high = 27). They were matched as closely as possible on age and gender. The majority of the sample consisted of English-speaking children and Coloured children. It is apparent that the ethnic composition of the high SES group is very different to both medium and low SES groups. In specific, the high SES group contains the total sample number of Caucasian participants and has relatively few Black and Coloured participants. Sample characteristics for the overall sample, as well as the sample stratified by SES, are presented in Table 1.

Table 1
Sample Characteristics

	Low (n = 29)	Medium (n = 27)	High (n = 27)	Total (n = 83)
Age (Years)				
Mean (SD)	8.90 (.72)	8.59 (.57)	8.44 (1.09)	8.75 (.83)
Age (Months)				
Mean (SD)	110.69 (7.91)	109.19 (6.12)	107.26 (13.55)	109.08 (9.67)
Gender				
Female: Male	18: 11	13: 14	16: 11	46: 37
Ethnicity				
Black: Coloured: Caucasian	10: 19: 0	5: 22: 0	2: 9: 16	17: 50: 14
Home Language				
English: Afrikaans: Xhosa	17: 5: 7	22: 0: 5	25: 0: 2	66: 5: 12

Empathy and Aggressive Behaviour. Between-group differences for both empathy and aggressive behaviour outcomes are presented in Table 2. A higher QCAE score indicates lower empathy; it appears that QCAE scores increase across SES groups as SES increases. A higher ICU score indicates higher empathy; it appears that ICU scores decreases across SES groups as SES increases.

Gender. As can be seen in Table 1, the gender ratio was not equal across SES groups, and overall, more girls participated than boys. As gender has been associated with empathy and aggression, it would have been ideal to have matched groups perfectly. Given the time constraints of this research project, participants were only roughly matched on gender. Furthermore, multiple regression analysis does not require an equal number of males and females in the sample.

Measures of empathy. Four measures of empathy were employed. The correlations between these measures are presented in Table 3. Analysis of the correlations revealed that

only the QCAE and the ICU empathy measures are significantly correlated, $r = .28$, $p = .011$. No other correlations were significant (i.e., $p > .050$).

Table 2
Empathy and Aggressive Behaviour Comparisons

	Low ($n = 29$)	Medium ($n = 27$)	High ($n = 27$)	Total ($n = 83$)
Pain Empathy				
Mean (SD)	161.95 (20.39)	168.34 (24.47)	165.66 (22.23)	165.23 (22.26)
Situational Assessment				
Mean (SD)	4.03 (1.27)	4.40 (1.72)	4.44 (1.58)	4.29 (1.52)
QCAE				
Mean (SD)	44.24 (11.58)	49.85 (14.22)	51.48 (13.77)	48.42 (13.42)
ICU				
Mean (SD)	20.66 (11.36)	16.26 (9.55)	13.26 (7.01)	16.82 (9.90)
Aggressive Behaviour				
Mean (SD)	10.07 (9.23)	8.89 (12.15)	14.15 (8.45)	11.01 (10.18)

Note. QCAE = Questionnaire of Cognitive and Affective Empathy; ICU = Inventory of Callous Unemotional Traits.

Table 3
Intercorrelations Between Empathy Measures

	Situational Assessment	QCAE	ICU	Pain Empathy
Situational Assessment	-	.03	-.13	-.08
QCAE		-	.28*	.12
ICU			-	-.09
Pain Empathy				-

Note. QCAE = Questionnaire of Cognitive and Affective Empathy; ICU = Inventory of Callous Unemotional Traits.
*p < .05.

Socioecomomic Status as Predictor of Empathy

Four separate regression analyses were conducted to investigate the relationship between socioeconomic status and empathy. Four measures of empathy were used as outcome measures, namely the pain-empathy task, situational assessment, the QCAE, and the ICU. Gender was added as a potential predictor in each of these analyses, as gender is known to be associated with empathy. Correlations between these variables are presented in Table 3. For the four regression analyses, all coefficients' tables can be seen in Appendix M.

Pain-empathy. Simultaneous regression analysis was conducted to examine the

relationship between SES and gender (i.e., as potential predictors), and empathy, as measured by the pain-empathy task. Analysis of the correlations revealed no statistically significant correlations between SES and empathy, between gender and empathy, or between SES and gender. Further analysis revealed that SES and Gender did not significantly predict empathy, $F(2, 80) = .23$, $p = .797$, $R^2 = .001$.

Situational Assessment. Simultaneous regression analysis was conducted to examine the relationship between SES and gender, and empathy, as measured by the situational assessment task. Analysis of the correlations revealed no statistically significant correlations between SES and empathy, between gender and empathy, or between SES and gender. Further analysis revealed that SES and gender did not significantly predict empathy, $F(2, 80) = 1.35$, $p = .265$, $R^2 = .003$.

Questionnaire of Affective and Cognitive Empathy. Simultaneous regression analysis was conducted to examine the relationship between SES and gender and empathy, as measured by the QCAE. Analysis of the correlations revealed only a statistically significant correlation between SES and the QCAE, $r = .26$, $p = .008$. Further analysis revealed that together SES and gender significantly predicted empathy, as measured by the QCAE, $F(2, 80) = 3.95$, $p = .023$. Together SES and gender explained 9% of the variance in empathy, $R^2 = .09$. Furthermore, SES appears to have a significant influence on QCAE scores ($t = 2.49$, $p = .015$), whereas gender does not on its own ($t = 1.37$, $p = .174$).

Inventory of Callous Unemotional Traits. Simultaneous regression analysis was conducted to examine the relationship between SES and gender and empathy, as measured by the ICU. Analysis of the correlations revealed only a statistically significant correlation between SES and the ICU, $r = -.22$, $p = .022$. Further analysis revealed that together SES and gender did not significantly predicted empathy, $F(2, 80) = 2.97$, $p = .057$, $R^2 = .07$. Inspection of the coefficients table (see Appendix M) revealed that SES appears to have a significant influence on ICU scores, $p = .047$. I therefore decided to rerun the simultaneous regression analysis with gender excluded. This analysis revealed that SES did significantly predict ICU scores, $F(1, 81) = 4.17$, $p = .044$, and explains 5% of the variance in ICU scores. The coefficients table (see Appendix M) shows that SES does have a significant influence on ICU scores ($t = -2.04$, $p = .044$).

Socioecomomic Status as Predictor of Aggressive Behaviour

One hierarchical regression analysis was employed to examine the relationship between SES, gender, and aggressive behaviour, as measured by the observation measure checklist. Furthermore, the regression tested whether there was a significant interaction effect

between SES and gender. Gender was added as a potential predictor in each of the analyses, as gender is known to be associated with aggressive behaviour. Analysis of the correlations between these variables are presented in Table 9, and a coefficients' table can be seen in Appendix M.

SES and gender were entered as a block, followed by an interaction between SES and gender. Analysis of the correlations revealed that SES and aggressive behaviour, $r = .27$, $p = .008$, the interaction (i.e., SES and gender) and aggressive behaviour, $r = .21$, $p = .028$, as well as the interaction (i.e., SES and gender) and SES, $r = .94$, $p < .05$ were significantly correlated. Further analysis revealed that together SES and gender entered as a block significantly predicted aggressive behaviour, $F(2,80) = 3.69$, $p = .029$. Together SES and gender explained 8% of the variance in aggressive behaviour, $R^2 = .08$. Furthermore, SES appears to have a significant influence on aggressive behaviour scores ($t = 2.45$, $p = .016$), whereas gender does not on its own ($t = -1.11$, $p = .270$). When the interaction term was added to the model, there was no significant F change, $p = .241$, although the overall model was statistically significant, $F(3, 79) = 2.94$, $p = .038$. Analysis of the coefficients revealed that none of the predictor variables were statistically significant on their own: SES ($t = 1.93$, $p = .057$), Gender ($t = -.15$, $p = .253$), and the interaction between Gender and SES ($t = -.18$, $p = .210$).

Table 9

Intercorrelations Between SES, Gender, and Aggressive Behaviour

	Aggressive Behaviour	SES	Gender	Gender_ SES
Aggressive Behaviour	-	.27*	-.13	.21*
SES		-	-.23	.94*
Gender			-	-.03
Gender_SES				-

* $p < .05$

Empathy as Predictor of Aggressive Behaviour

One hierarchical regression analysis was employed to examine the relationship between empathy, gender, and aggressive behaviour, as measured by the observation measure checklist. Furthermore, the regression tested whether there was a significant interaction effect between empathy and gender. I chose the QCAE as the measure of empathy based on it being the better predictor of empathy as well as being more reliable. Gender was added as a potential predictor in each of the analyses, as gender is known to be associated with

aggressive behaviour. Correlations between these variables are presented in Table 10, and a coefficients' table can be seen in Appendix M.

Empathy and gender were entered as a block, followed by an interaction between empathy and gender. Analysis of the correlations revealed that gender and the interaction (i.e., empathy and gender), $r = .81$, $p = < .001$, as well as the interaction and empathy, $r = .67$, $p = < .001$, were significantly correlated. Further analysis revealed that together empathy and gender did not significantly predict aggressive behaviour, $F(2, 80) = .84$, $p = .43$, and nor did the interaction significantly predict aggressive behaviour when added into the model, $F(1, 79) = .07$, $p = .747$.

Table 10

Intercorrelations Between Empathy, Gender, and Aggressive Behaviour

	Aggressive Behaviour	Gender	Empathy	Empathy_Gender
Aggressive Behaviour	-	-.13	.05	-.07
Gender		-	.14	.81
Empathy			-	.67
Empathy_Gender				-

* p < .05

Discussion

The purpose of this pilot study was to gain a more nuanced understanding of the theory regards empathy, SES, and aggressive behaviour in children. Specifically, this study aimed to investigate whether SES was significantly related to empathy and/or aggressive behaviour, and how these variables predict occurrence of aggressive behaviour in children in a South African context. This study proposed that (a) SES would predict empathy such that lower SES children would have lower empathy, (b) that SES would predict aggressive behaviour such that lower SES children would exhibit higher levels of aggressive behaviour, and (c) that empathy would predict aggressive behaviour such that children with lower empathy would have higher levels of aggressive behaviour.

Socioeconomic Status as Predictor of Empathy.

The pain empathy task was not a statistically significant measure of empathy, and therefore could not be explained with reference to SES. A number of problems associated with this measure provide a plausible explanation for the failure of this this measure. First, although the pain empathy task has been successful in Japan, it cannot be assumed that this measure is applicable within a South African context (Moriguchi et al., 2006). Secondly, no

literature was found on reliability or validity properties of this measure. Furthermore, the data analysis of this task did not permit an internal reliability analysis of the measure, thus psychometric properties are absent. Third, I encountered a common practical issue with this task during testing procedures; specifically, the sensitivity of the touch screen computer that was used for this task accidentally captured data that was not specific to participant responses. Fourth, it is assumed that the age range of this sample is not appropriate for this task. Specific to most cases, children scored on the extremes ends for all questions, therefore representing an inability to discern between control and experimental picture scenarios that were presented.

The situational assessment task did not measure empathy as predicted by SES. A lack of empirical findings on the use of this measure as well as a lack of its psychometric properties emphasizes the unreliability of this measure. Given that this task is specific to 'helping behaviour', it is assumed that this measure is too general and does not tap into specific components of empathy, i.e., affective empathy or cognitive empathy (Decety & Jackson, 2004; Jolliffe & Farrington, 2007). In future, empirical studies should identify the psychometric properties of this measure as well as solution for increased reliability.

In accordance with previous literature, the QCAE in this pilot study appeared to be a reliable measure of empathy applicable within a South African context (Reiners at al., 2011). Given the reliable psychometric properties of this measure in an international context, it was assumed that this measure would retain its reliability when applied to another context, as in this case in South Africa (Reiners et al., 2011). It was found that SES and gender significantly predicted empathy in research participants, although the direction of the predicted relationship was contrary to the hypothesis initially posed, i.e. that lower SES would predict lower empathy. The present study found that as SES increased, participants empathy scores decreased. Gender as a unique influence in this study did not predict gender differences in empathy, although it seems that it did influence outcomes when combined with SES (Baron-Cohen & Wheelright, 2004; Jolliffe & Farrington, 2006, Michalska et al., 2013). The findings of this measure contrast to empirical evidence that suggests a lower SES context is influenced by factors, i.e., violence and crime, that negatively impact upon empathy development in children (Funk et al., 2004; Kraus et al., 2010; Sigelman & Rider, 2009). A practical problem I encountered with the QCAE was a common difficulty regards comprehension of questions as completed by lower SES parents/guardians. It is assumed that this potential language barrier may account for extreme scoring that was observed on QCAE questionnaires, therefore potentially explaining the inverse relationship that was revealed.

In accordance with previous literature, the ICU in this pilot study appeared to be a reliable measure applicable across many a context, including South Africa (Byrd et al., 2012; Frick & White, 2008; Viding et al., 2009). SES and gender did significantly predict empathy scores as measured by the ICU, although again, the direction of the predicted relationship is contradicted to what I initially proposed. The findings contrast in that they show empathy scores to decrease as SES increases, indicating that children of lower SES have higher empathy. Despite this inverse direction, this measure corroborates the finding from the QCAE outcome that indicated that a lower SES is associated with higher empathy. This was also observed by a positive correlation between the QCAE and the ICU. I expected these measures to be negatively correlated according to how they were scored, thus my initial prediction that lower SES would predict lower empathy was disconfirmed. Additionally, gender effects on empathy were only apparent when combined with SES as a predictor, thus interpretation of gender differences in empathy outcomes is not possible. This finding contrasts to literature that shows gender as having an independent influence on empathy (Baron-Cohen & Wheelright, 2004; Jolliffe & Farrington, 2006, Michalska et al., 2013) Furthermore, the language barrier as per the QCAE measure is also assumed to have effected comprehension and understanding of this measure, therefore potentially accounting for the observed results of this measure.

Socioeconomic Status as Predictor of Aggressive Behaviour.

As predicted, SES did predict aggressive behaviour such that lower SES participants would have higher aggressive behaviour. This hypothesis was confirmed across SES strata with the exception that the medium SES group revealed higher aggression when compared to low SES participants only. Given that this hypothesis was partially confirmed, it is in accordance with previous literature that suggests that lower SES contexts are vulnerable to influences that result in higher aggressive behaviour (Margolin & Gordis, 2000; McIlwaine & Moser, 2001; Sigelman & Rider, 2009). It was also shown that gender was not a unique influence on aggressive behaviour in children, although when combined with SES, it does elicit an influence. In accordance with earlier literature, this finding supports that no relationship was found for the unique effect of gender on aggressive behaviour (Lansford et al., 2012). Future research would benefit from examining the influence of gender on SES and how it relates to aggressive behaviour in children. Given that this new measure was piloted for this study and did not obtain high reliability, these results should be viewed with caution.

Despite this caution, this new measure has provided a basis for future investigation of aggressive behaviour in children in a South African context.

Empathy as predictor of aggressive behaviour

Empathy as measured by the QCAE revealed that empathy and gender did not predict aggressive behaviour in children in this study. Given that the observation measure checklist was piloted for this study and revealed a low reliability, it is not surprising that these results are not significant.

Limitations and Considerations for Future Research

Matching. This pilot study did not match participants based strictly on sociodemographic characteristics that included age, gender, and home language. Literature has shown that both age and gender have potential effects on empathy, therefore potentially effecting and/or biasing the present study's research findings (O'Brien et al., 2012; Ostrov & Keating, 2004; Scrimgeour, 2007). Additionally, it is assumed that a standardization of home language across the sample is necessary to reduce and/or eliminate misunderstandings that may occur during study procedures, and therefore affect test outcomes. Future research should match participants strictly on age, gender, and home language as to reduce within group variance, thereby enhancing reliability of findings.

Developmental trajectories. This study is assumed to have benefitted from providing a theoretical perspective on the age-related development of empathy in children. In specific, the age range of this pilot study (i.e., ages 7 to 10 years), could be vulnerable to differences in empathic ability, thereby potentially affecting and/or biasing the results of this study. Future research should examine whether a more appropriate age range exists in accordance with theory on the age-related development of empathy in children. The foundation phase (i.e., ages 3 to 7 years), is suggested as a potential age bracket (Field, 2010).

Measures. A number of limitations are associated with the parent-report measures and the observation measure checklist that the present study used. Firstly, a reliance on parent-report measures (i.e., the QCAE and ICU) reduces the reliability of empirical findings. In future, research should investigate alternative measures other than parent-report measures to investigate empathy in children.

Secondly, the observation measure checklist indicated that it was not an internally reliable measure of aggressive behaviour in children. This measure is also vulnerable to both observer bias effects as well as social desirability bias. In future, it would be beneficial to measure childrens behaviour that is not as obvious as direct observation among participants during their break times. It is suggested that researchers different to those involved in testing procedures should observe childrens behaviours; the assumption behind this is that children who are not familiar with the researchers are less likely to engage and/or take notice of them.

Another issue regarding the observation measure is that a 10-minute observation period, i.e., two five-minute sessions over two break periods, is not sufficient to gain a representative measure of overt behaviour. Additionally, it is suggested that both a qualitative and a quantitative measure of overt behaviour would be more representative of childrens behaviour as it seems that the observation measure is biased towards more readily observable behaviours by definition, i.e., physical aggression. Future research is assumed to benefit from a more comprehensive, and thus more representative, reflection of childrens overt behaviour.

Also in accordance with the observation measure is that it was not compared to other measures of childrens overt behaviour, i.e., the Child Behaviour Check List (Novik, 1999). In addition to the above, it is also suggested that future research should obtain measures of childrens aggressive and/or prosocial behaviour as rated by their fellow peers.

Contextual influences. A final limitation of this pilot study was that the method of SES stratification did not allow for observation of contextual influences, i.e., modeling of behaviour, between children from low, medium, and high SES backgrounds. From direct observation of childrens behaviour, I did recognize patterns of overt behaviour that were increasingly different between SES contexts. In future, research should collect sufficient participants from specific SES contexts as to examine contextual influences on behaviour.

Summary and Conclusions

An inconsistency in empirical findings regards the association between empathy and aggressive behaviour in children, as well as the potential effects of SES on both constructs, revealed a gap in empirical literature that highlighted the importance of gaining a more nuanced understanding of this theory.

In specific, the purpose of this pilot study was to investigate whether variability exists across SES strata, and how these findings predicted occurrence of aggressive behaviour in children in the Western Cape, South Africa. This study found an inverse relationship to what was expected given that findings show lower SES children to have higher empathy. Furthermore, this study partially confirmed the predicted hypothesis that lower SES children would have significantly higher aggressive behaviour. Finally, empathy as a predictor of aggressive behaviour in children revealed no significant findings.

The significance of this study is that given the novelty of this pilot study in a South African context, the findings provide a basis for future research into the relationship between empathy, SES, and aggressive behaviour in children. In specific, given that the partially confirmed hypothesis shows that low SES predicts higher aggressive behaviour, these findings may inform strategies for development of aggressive/delinquent behaviour

prevention programmes in a South African context. This is assumed beneficial given extreme rates of aggressive/delinquent behaviour in South Africa, as well as the enormous costs associated with such behaviour problems (Ataguba et al., 2011; Dadds et al., 2009; Farrington & Loeber, 2002). This study also provides a theoretical basis for the association between empathy, SES, and aggressive behaviour in the Western Cape, providing a groundwork for future investigation of the theory. A host of methodological flaws and their respective solutions also identified enables future research with the opportunity to better investigate empathy across SES in a South African context and how these constructs influence aggressive behaviour in children.

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Appendix A

Asset-Index Inventory

B. Parent Information:

1. What is the total yearly income of the household in which you live? (Tick the appropriate block):

[NOTE: This should be total household income, not personal income.]

0-35000:_____ 36000-75000:_____ 76000-125000:_____ 126000-175000:_____

176000-225000:_____ 226000-275000:_____ 276000-325000:_____ 326000-375000:_____

376000-425000:_____ 426000-475000:_____ 476000-525000:_____ more than 526000:_____

2. Highest level of education reached for mother, father and/or guardian (please circle appropriate number).

	Biological mother	Biological father	Guardian
1) 0 years (No Grades / Standards) = Never went to school	1.	1.	1.
2) 1-6 years (Grades 1-6 / Sub A-Std 4) = Didn't complete primary school	2.	2.	2.
3) 7 years (Grade 7 / Std 5) = Completed primary school	3.	3.	3.
4) 8-11 years (Grades 8-11 / Stds 6-9) = Some secondary education (didn't complete high school)	4.	4.	4.
5. 12 years (Grade 12 / Std 10) = Completed high school	5.	5.	5.
6. 13+ years = Tertiary education Completed university / technikon / college	6.	6.	6.
7. Don't know	7.	7.	7.

3. Parental employment: (Please circle appropriate number)

	Biological mother	Biological father	Guardian
1. Higher executives, major professionals, owners of large businesses	1.	1.	1.
2. Business managers of medium sized businesses, lesser professions (e.g. nurses, opticians, pharmacists, social workers, teachers)	2.	2.	2.
3. Administrative personnel, managers, minor professionals, owners / proprietors of small businesses (e.g. bakery, car dealership, engraving business, plumbing business, florist, decorator, actor, reporter, travel agent)	3.	3.	3.
4. Clerical and sales, technicians, small businesses (e.g. bank teller, bookkeeper, clerk, draftsperson, timekeeper, secretary)	4.	4.	4.
5. Skilled manual – usually having had training (e.g. baker, barber, chef, electrician, fireman, machinist, mechanic, painter, welder, police, plumber, electrician)	5.	5.	5.
6. Semi-skilled (e.g. hospital aide, painter, bartender, bus	6.	6.	6.

Appendix B

Demographic Questionnaire

International research guidelines suggest that researchers report some attributes of all research participants (e.g., children's gender, parents' educational background, etc.). To help us collect this information, we are asking you to complete this brief questionnaire. All your answers are kept private, and won't be used in a way that identifies you or your child. If you are uncomfortable answering any of the items, feel free to ignore them.

Today's Date (MM/DD/YY): _____

Who is completing this questionnaire? (Please √)

☐ Biological parent	☐ Grandparent	☐ Nanny
☐ Foster parent	☐ Aunt/Uncle	☐ Friend
☐ Stepparent	☐ Sibling	☐ Other

Are you the child's primary caregiver? (Circle one) Y / N

Your gender: M / F

Child's Information

Child's date of birth (MM/DD/YY): _____

Child's gender: M / F

Child birth order: Child number _____ out of _____ children.

Ages of siblings: Boy / Girl Age: _____

Boy / Girl Age: _____

Boy / Girl Age: _____

Child's height (in cm):_____ Child's weight (in kg): _____

Child's home language: _____

Child's race (Please √):

☐ Black South African ☐ Coloured ☐ Indian

☐ Other:

☐ Black African (Other) ☐ White/Caucasian

Please list any serious health problems this child has had:

_____

_____

Was this child born more than two weeks early? Y / N

Please list any medications this child is taking for behavior issues, attention difficulties, or issues related to moods and feelings:

_____

_____

Does this child currently attend (Please √):

☐ Daycare/Crèche ☐ Grade R

☐ Preschool ☐ Primary school (Grade:)

Household Information

Who does this child currently live with? (Please √ all that apply)

☐ Biological parent ☐ Grandparent ☐ Nanny

☐ Foster parent ☐ Aunt/Uncle ☐ Friend

☐ Stepparent ☐ Sibling ☐ Other

Who is this child's primary caregiver?

☐ Biological parent ☐ Grandparent ☐ Nanny

☐ Foster parent ☐ Aunt/Uncle ☐ Friend

☐ Stepparent ☐ Sibling ☐ Other

Languages currently spoken at home:

Home language:_____

Other: _____

Religion(s) practiced in the home: _____

Primary Caregiver Information

Current age: _____

Marital Status:

☐ Married ☐ Divorced

☐ Single ☐ Remarried

Child's Mother's level of education completed:

☐ 0-5 years ☐ 13-16 years ☐ Other

☐ 6-8 years ☐ Bachelor's degree

☐ 9-12 years ☐ Postgraduate degree

Child's Father's level of education completed:

☐ 0-5 years ☐ 13-16 years ☐ Other

☐ 6-8 years ☐ Bachelor's degree

☐ 9-12 years ☐ Postgraduate degree

Child's Primary caregiver's level of education completed:

☐ 0-5 years ☐ 13-16 years ☐ Other

☐ 6-8 years ☐ Bachelor's degree

☐ 9-12 years ☐ Postgraduate degree

Current job title:

Mother: _____

Father: _____

Primary caregiver: _____

Total family/household income last year:

☐ Less than R35 000	☐ R176 000-R225 000	☐ R376 000-R425 000
☐ R36 000-R75 000	☐ R226 000-R275 000	☐ R426 000-R475 000
☐ R76 000-R125 000	☐ R276 000-R325 000	☐ R476 000-R525 000
☐ R126 000-R175 000	☐ R326 000-R375 000	☐ More than R525 000

Thank you for taking the time to complete this questionnaire!

Appendix C

Situational Assessment of Helping Behaviour

Scale

1. Active indifference
2. No attention
3. Merely notices what happens
4. Interest and partial attempt to help
5. Help
6. Help and support
7. Help and support with clear emotional sharing

Appendix D

Observation Measure Checklist Scale Weightings

Aggressive Behaviour	Score
Careless with toys/objects Sulking	- 1
Yelling/shouting at things Name calling Mocking/teasing	- 2
Argues Yelling/ shouting at people Swearing	- 3
Throwing stuff Pretend to hurt toy Pretend to hurt child Spitting	- 4
Forcefully move child out of way/off toy Grabs toy Pokes/Pinch	- 5
Pulling Wrestles Pushing Shove	- 6
Breaking things Hitting things	- 7
Pulling hair Hit people Kicking Using “weapons” Bites	- 8
Prosocial Behaviour	
Shows something Smiles at others/ laughs	1

Friendly towards others Friendly verbal interaction with peers	2
Plays with others Joins in games/activities	3
Friendly nonverbal interaction	4
Caring behaviour to toy Gentle touching gesture	5
Hugs/walks arm in arm Holds hands	6
Waits patiently for turn on swings/toys Shares	7
Offers help Helps Comforts Tries to intervene in peer conflicts	8

Appendix E

Observation Measure Checklist

Behavior Observation	Frequency	Duration
Tries intervene in peer conflicts	**Antisocial behaviour**	
Yelling/shouting at people		
Friendly towards others		
Yelling/shouting at things		
Offers help		
Breaking things		
Shares		
Hit things		
Hold hands		
Hit people		
Smile at others		
Sulking		
Wait patiently for turn on		
Swearing		
swings/toys		
Spitting		
Plays with others		
Kicking		
Joins in games/activities		
Pushing		
Helps		
Throwing stuff		
Comforts		
Pulling hair		
Shows something		
Using ‘weapons’		
Friendly verbal interaction		
Name calling		
with peers		
Mocking/teasing		
Friendly nonverbal interaction		
Shove		
with peers		
Poke/pinch		
Caring behavior to toy		
Forcefully move child out of	**Exclude**	
way/off toy		
Solitary play		
Argues		
Careless with toys/objects		
Grabs toys		
Bites		
Pretend to hurt child		
Pretend to hurt toy		
	Prosocial behavior	
Tries intervene in peer		

Appendix F

Questionnaire of Cognitive and Affective Empathy

People differ in the way they feel in different situations. Below you are presented with a number of characteristics that *may or may not apply to* ***your child***. Read each characteristic and indicate how much you agree or disagree with the item by selecting the appropriate box. Answer quickly and honestly.		Strongly agree	Slightly agree	Slightly disagree	Strongly disagree
1.	My child sometimes finds it difficult to see things from another's point of view.				
2.	My child is usually objective when he/she watches a film or play, and doesn't often get completely caught up in it.				
3.	My child tries to look at everybody's side of a disagreement before he/she makes a decision.				
4.	My child sometimes tries to understand his/her friends better by imagining how things look from their perspective.				
5.	When my child is upset at someone, he/she will usually try to "put his/herself in the person's shoes" for a while.				
6.	Before criticizing somebody, my child tries to imagine how he/she would feel in their place.				
7.	My child often gets emotionally involved in his/her friends' problems.				
8.	My child is inclined to get nervous when others around him/her seem nervous.				
9.	People my child is with have a strong influence on his/her mood.				
10.	It affects my child very much when one of his/her friends seems upset.				
11.	My child often gets deeply involved with the feelings of a character in a film, play, or novel.				
12.	My child gets very upset when he/she sees someone cry.				
13.	My child is happy when he/she is with a cheerful group and sad when others are glum.				
14.	It worries my child when others are worrying and panicky.				
15.	My child can easily tell if someone else wants to enter a conversation.				
16.	My child can pick up quickly if someone says one thing but means another.				
17.	It is hard for my child to see why some things upset people so much.				
18.	My child finds it easy to put him/herself in somebody else's shoes.				
19.	My child is good at predicting how someone will feel.				
20.	My child is quick to spot when someone in a group is feeling awkward or uncomfortable.				
21.	Other people tell my child he/she is good at understanding what others are feeling and what others are thinking.				
22.	My child can easily tell if someone else is interested or bored with what he/she is saying.				
23.	Friends talk to my child about their problems as they say that my child is very understanding.				
24.	My child can sense if he/she is intruding, even if the other person does not tell him/her.				
25.	My child can easily work out what another person might want to talk about.				
26.	My child can tell if someone is masking their true emotion.				
27.	My child is good at predicting what someone will do.				
28.	My child can usually appreciate the other person's viewpoint, even if he/she does not agree with it.				
29.	My child usually stays emotionally detached when watching a film.				
30.	My child always tries to consider the other person's feelings before he/she does something.				
31.	Before my child does something, he/she tries to consider how his/her friends will react to it.				

Appendix G

Inventory of Callous Unemotional Traits

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

21. The feelings of others are unimportant to him/her.	0 Not true at all	1 Somewhat true	2 Very true	3 Definitely true
22. Hides his/her feelings from others.	0	1	2	3
23. Works hard on everything.	0	1	2	3
24. Does things to make others feel good.	0	1	2	3
1. Expresses his/her feelings openly.	0	1	2	3
2. Does not seem to know "right" from "wrong".	0	1	2	3
3. Is concerned about schoolwork.	0	1	2	3
4. Does not care who he/she hurts to get what he/she wants.	0	1	2	3
5. Feels bad or guilty when he/she has done something wrong.	0	1	2	3
6. Does not show emotions.	0	1	2	3
7. Does not care about being on time.	0	1	2	3
8. Is concerned about the feelings of others.	0	1	2	3
9. Does not care if he/she is in trouble.	0	1	2	3
10. Does not let feelings control him/her.	0	1	2	3
11. Does not care about doing things well.	0	1	2	3
12. Seems very cold and uncaring.	0	1	2	3
13. Easily admits to being wrong.	0	1	2	3
14. It is easy to tell how he/she is feeling.	0	1	2	3
15. Always tries his/her best.	0	1	2	3
16. Apologizes (says he/she is sorry) to persons he/she has hurt.	0	1	2	3
17. Tries not to hurt others' feelings.	0	1	2	3
18. Shows no remorse when he/she has done something wrong.	0	1	2	3
19. Is very expressive and emotional.	0	1	2	3
20. Does not like to put the time into doing things well.	0	1	2	3

Appendix H

UCT Ethical Approval

UNIVERSITY OF CAPE TOWN

Department of Psychology

University of Cape Town Rondebosch 7701 South Africa
Telephone (021) 650 3414
Fax No. (021) 650 4104

5 March 2013

Dr. Susan Malcolm-Smith
Department of Psychology
University of Cape Town
Rondebosch 7701

Dear Dr Malcolm-Smith,

I am pleased to inform you that ethical clearance has been given by an Ethics Review Committee of the Faculty of Humanities for your project:

The development of moral reasoning

Please use the reference PSY2013-001 if required. I wish you all the best for your study.

Yours sincerely,

Johann Louw PhD
Professor
Chair: Ethics Review Committee

Appendix I

Western Cape Education Department Ethical Approval

REFERENCE: 20130315-8009
ENQUIRIES: Dr A T Wyngaard

Dr. Susan Malcolm-Smith
Department of Psychology
UCT
Private Bag
Rondebosch

Dear Dr. Susan Malcolm-Smith

RESEARCH PROPOSAL: THE DEVELOPMENT OF MORAL REASONING

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Approval for projects should be conveyed to the District Director of the schools where the project will be conducted.
5. Educators' programmes are not to be interrupted.
6. The Study is to be conducted from **01 May 2013 till 20 September 2013**
7. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
8. Should you wish to extend the period of your survey, please contact Dr. A.T Wyngaard at the contact numbers above quoting the reference number?
9. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.

10. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
11. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
12. The Department receives a copy of the completed report/dissertation/thesis addressed to:

    The Director: Research Services
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards.

Signed: Dr. Audrey T Wyngaard

Directorate: Research

DATE: 15 March 2013

Appendix J

Informed Consent

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

The Development of Moral Reasoning

Principle Investigator:

Dr Susan Malcolm-Smith
Senior Lecturer
Department of Psychology
University of Cape Town

Principle Investigator:

Dr Jean Decety
Department of Psychology
University of Chicago

Dear Parent/Legal guardian,

You and your child are invited to participate in a research study investigating the development of moral reasoning in children. This study focuses on how children of different ages feel about good and bad behaviour.

What is involved in this study?

Approximately 360 children aged 3 to 13 years will participate in this study. If your child participates, a researcher will guide her/him through several computer-based tasks. In one task, children will be asked to view pictures of hands or feet in neutral situations (e.g. a hand opening a door) or in situations that could be painful (e.g. a hand getting stuck in a door). In another task, children will view short videos of one person accidentally hurting another person (e.g. a person being bumped) or one person intentionally hurting another person (e.g. a person being pushed). After viewing these pictures and videos, children will be asked how mean the person in the picture is and how good/bad the action was. All pictures are appropriate for children as young as 3 years of age and have been taken from situations children readily observe in every-day life.

Additionally, children will complete a number of pencil and paper tasks. In one such task, your child will answer questions about short stories. These questions will look at their ability to take another person's point of view. Children will also play a game where they have an

opportunity to share rewards (stickers or sweets) with others or not, and their interactions with others (such as their friends) will be observed. Altogether this study will take about 90 minutes of your child's time. All sessions will take place either right after school, or during the school day (depending on your and your child's school's preference). We will take a break after completing some of the tasks, and take additional short breaks if your child gets tired.

We also have a number of questionnaires that will ask you questions about your own views and questions about your child's views. Your completion of these documents is completely voluntary.

Are there any benefits to taking part in the study?

Your child will receive a snack for her/his participation, as well as some stickers of her/his choice, and you will receive R100 if you complete all questionnaires. The results of this research could provide essential information about how children process emotional and moral information and this may be helpful in planning effective educational programs for children with social difficulties.

What are the risks of the study?

There are no risks to you or your child through participating in this research. However, if any child does become at all upset, or tired, she or he may stop participating at any point. We would like to emphasize that participation in this study is entirely voluntary, and will not affect your child's education. All results will be securely stored, and kept strictly confidential.

If you would like your child to participate in the study, please complete the consent form, as well as the demographics survey, and return to your child's school. Please answer all the questions as accurately and truthfully as possible. We understand that some of this information may be sensitive, but be assured that all information will be kept strictly confidential.

Should you have any questions or queries about the research or your participation, please do not hesitate to contact Lea-Ann Pileggi: (email) leapileggi@gmail.com, or Susan Malcolm-Smith: (phone) 021 650 4605, (email) Susan.Malcolm-Smith@uct.ac.za, or contact Professor Johann Louw (Psychology Ethics Committee): (phone) 021 650 4314 (email) Johann.Louw@uct.ac.za.

Consent Form

The research project and the procedures associated with it have been explained to me. I hereby give my permission for my child to participate in the above-described research project.

Child's name: _____

Parent/guardian's name: _____

Signature of parent/guardian: _____

Date: _____

We will send the questionnaires to you via your child's school once we have received consent. Please provide a contact number below.

If you prefer to complete the questionnaires telephonically, please indicate which time/s would be most convenient to receive this phonecall. Alternatively, please provide an email address if you would prefer the questionnaires be forwarded to you via email.

Phone: _____ Time/s: _____

Email: _____

Appendix K

Assent

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF PSYCHOLOGY

The Development of Moral Reasoning

Assent Form

Hello! We want to tell you about a research study we are doing. A research study is a way to learn more about something. We would like to find out more about how children feel about good and bad behaviour.

If you agree to join this study, you will be asked to do some tasks on the computer. For example, we will show you some pictures and ask you how you feel about them. We will also show you some short movies on the computer screen. These are not the kind of movies you see on TV. They are movies that we made to help us study how children feel about good and bad behaviour. It is very important that you watch the pictures carefully. You will also be asked to do some other tasks, like tell us the meaning of some words, and we will ask you to answer questions about short stories we will read to you.

Together these tasks will take about 90 minutes. We will take a break after you've done some of the tasks. We can take other short breaks too if you get tired.

You do not have to join this study. It is up to you. No one will be angry with you if you don't want to be in the study or if you join the study and change your mind later and stop.

Do you have any questions about the study? If you think you can do it and you don't have any more questions about it, will you sign this paper? If you sign your name below, it means that you agree to take part in this study.

Child's Signature: _____ Date: _____

Interviewer's Signature: _____ Date: _____

Appendix L

Protocol

Consent form

Session 1

Assent form

Moral task

Hierarchy task

Pain-empathy task

Dictator game

SNAP game

Session 2

DCSS/Flanker/ToM (counterbalance)

WPPSI/WASI (Vocabulary and Matrix reasoning subtests)

Digit span (taken from WISC)

Falling of papers

Observations during break

Observation measure checklist

Appendix M

Coefficient Tables

Empathy as Predictor of Socioeconomic Status

Table 4

Coefficients Table for Pain Empathy

Model	Coefficients					
	B	*SE*	Beta	*t*	*p*	Tolerance
Constant	160.73	7.55		21.28	.000	
Gender	3.15	4.98	.07	.63	.528	.999
SES	.24	.97	.03	.25	.807	.999

Table 5

Coefficients Table for Situational Assessment

Model	Coefficients					
	B	*SE*	Beta	*t*	*p*	Tolerance
Constant	4.95	.51		9.73	.000	
Gender	-.46	.34	-.15	-1.36	.179	.999
SES	.06	.07	.10	.90	.373	.999

Table 6

Coefficients Table for QCAE

Model	Coefficients					
	B	*SE*	Beta	*t*	*p*	Tolerance
Constant	42.96	4.40		9.77	.000	
Gender	3.98	2.90	.15	1.37	.174	.999
SES	1.40	.56	.27	2.49	.015	.999

Table 7

Coefficients Table for ICU

Model	Coefficients					
	B	*SE*	Beta	*t*	*p*	Tolerance
Constant	13.12	3.22		4.07	.000	
Gender	2.79	2.12	.14	1.31	.193	.999
SES	-.83	.41	-.22	-2.02	.047	.999

Table 8

Coefficients Table for ICU

Model	Coefficients					
	B	*SE*	Beta	*t*	*p*	Tolerance
Constant	17.11	1.06		16.19	.000	
SES	-.85	.42	-.22	-2.04	.044	1.000

Socioeconomic Status as Predictor of Aggressive Behaviour

Table 10

Coefficients Table for SES, Gender, and Aggressive Behaviour

Model	Coefficients					
	B	*SE*	Beta	*t*	p	Tolerance
Constant	14.36	3.47		4.14	.000	
SES	1.10	.45	.26	2.45	.016	.999
Gender	-2.54	2.29	-.12	-1.11	.270	.999
Constant	14.45	3.50		4.18	.000	
SES	2.58	1.34	.62	1.93	.057	.110
Gender	-2.62	2.28	-.12	-1.15	.253	.998
SES_Gender	-1.07	.91	-.38	-1.18	.210	.110

* p < .05.

Empathy as Predictor of Aggressive Behaviour

Table 11

Coefficients Table for Empathy, Gender, and Aggressive Behaviour

Model	Coefficients					
	B	*SE*	Beta	*t*	*p*	Tolerance
Constant	12.05	5.22		2.31	.023	
Gender	-2.88	2.38	-.14	-1.21	.231	.84
Empathy	.056	.09	.07	.64	.523	.84
Constant	8.72	13.35		.65	.516	.82
Gender	-.48	9.18	-.02	-.05	.959	.03
Empathy	.13	.27	.16	.47	.642	.03
Empathy_Gender	.-.50	.18	.-16	-.27	.787	.02

* p < .05.

Plagiarism Declaration

1. I know that plagiarism is wrong. Plagiarism is using another's work and to pretend that it is ones own.
2. I have used the *American Psychological Association (APA)* as the convention for citation and referencing. Each significant contribution to, and quotation in, this essay from the work, or works of other people has been attributed and has cited and referenced.
3. This essay is my own work.
4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.
5. I acknowledge that copying someone else's assignment or essay, or part of it, is wrong, and declare that this is my own work.

Signature: _____

Date: _____