Deficiencies in Empathy as a Predictor of Aggression in Young Children

Danielle Woolley
ACSENT Laboratory
Department of Psychology
University of Cape Town

Supervisor: Susan Malcolm-Smith
Word count:
Abstract: 200
Main body: 9607

Abstract

Understanding the factors which influence aggression is a crucial step towards reducing the high rates of violence in South Africa. Developmental deficiencies in empathy are closely related to antisocial behaviour and may therefore be an important predictor of aggression. This pilot study had two main objectives. First, to investigate whether deficiencies in empathy predict aggressive behaviour in young children, and second, to examine which measure(s) of empathy best predict aggressive behaviour in young children. Various measures of empathy and social cognition were used to address difficulties of operationalising empathy, and problems with measuring empathy in young children. Parent-report questionnaires, observation methods, and performance-based measures were used to assess the relationship between empathy and aggression in 72 Grade 1 children. As predicted, children with lower empathy scores had higher aggression scores. In particular, high callous-unemotional traits were found to be a significant predictor of aggression in young children. In addition, findings tentatively suggest that basic theory of mind difficulties, indicated by poor first order false belief reasoning, had a moderate relationship with aggressive behaviour and may be useful for identifying deficiencies in empathy in young children.

Keywords: empathy; aggression; child development; callous-unemotional traits; theory of mind; affective empathy; cognitive empathy

Research suggests that early onset of aggressive behaviour predicts greater likelihood of lifetime aggression, delinquency, and criminality (Baldry & Farrington, 2000; Moffitt, 1990). Violence and aggression are major issues throughout the world and even more so in South Africa, where the rates of rape, domestic violence and crime are among the highest in the world. Police reports indicate that from 2010 to 2011 alone, approximately 2.1 million serious crimes were committed in South Africa (South African Police Service, 2011). Furthermore, acts of violence and aggression have detrimental consequences for the victims, the aggressors and their communities (Phelps, 2001).

Even with the vast number of treatment programs claiming to reduce aggression, there is still a lack of effective treatment for youth with aggressive behaviour. To illustrate, even the most "effective" treatments have been found to reduce aggressive behaviour by only 12 to 25% and little is known about their long term effectiveness (Lovett & Sheffield, 2007). Consequently, in a violent society such as South Africa, investigating the strongest predictors of aggressive behaviour is crucial in order to create effective intervention and prevention strategies as well as screening procedures aimed at reducing aggression at its earliest stages of development.

The literature on aggressive behaviour suggests that a host of factors, such as inadequate parenting and child abuse, may be potential predictors of such behaviour (Miller & Eisenberg, 1988; Schaffer, Clark, & Jeglic, 2009). Among other factors, the literature on aggression also hints at the potential influence that deficiencies in empathy may have on aggressive behaviour. Deficiencies in empathy may be a particularly important predictor of aggression as research shows that early aggression is associated with later antisocial behaviour in adults, and that an important feature of antisocial behaviour is low empathy (Silverthorn & Frick, 1999; Viding, Blair, Moffitt, & Plomin, 2005).

This study investigated whether deficiencies in empathy are an influential predictor of aggressive behaviour in young children in South Africa. The current study formed part of a broader pilot study investigating a number of possible risk factors associated with aggression in Grade 1 children. A larger, representative study of these factors and their relationship with aggression in children in the Cape Town area is expected to follow from this work.

Background

Proposed Relationship between Empathy and Aggression

A large body of research suggests that empathy is positively associated with prosocial

behaviour, whereas deficiencies in empathy are related to aggressive, antisocial and delinquent behaviour (Cohen & Strayer, 1996; De Wied et al., 2005; Strayer & Roberts, 2004). However, details regarding the proposed relationship between empathy and aggression differ and findings have been somewhat inconsistent and ambiguous across studies (Jolliffe & Farrington, 2004; Miller & Eisenberg, 1988).

As it stands, within South Africa, almost no research has investigated the relationship between empathy and aggression. The few studies that were found were Master's dissertations that were only partially related and most of which were more than 20 years old. However, if empathy is a strong predictor of aggression, with such high levels of violence and aggression in South Africa, one would expect to find a greater number of individuals with low levels of empathy. Due to the particularly high levels of violence in South Africa, research is necessary to investigate whether empathy plays as big a role in predicting aggressive, antisocial behaviour in South Africa as opposed to the First World countries where research on empathy and aggression has been most frequently conducted.

Is Empathy Related to Aggression? Possible Reasons for Inconsistent Findings

Although many studies suggest that there is an inverse relationship between empathy and aggression, findings have been somewhat mixed and ambiguous (Jolliffe & Farrington, 2004, Miller & Eisenberg, 1988). Inconsistencies may result from a number of factors, including difficulties and inconsistencies in the conceptualisation of empathy, the possibility that aggressive individuals have specific deficiencies in cognitive or affective components of empathy, the age groups of participants, and the types of methods and measures used to assess empathy (Lovett & Sheffield, 2006; Shechtman, 2002). Furthermore, research findings suggest that the gender and socioeconomic status of participants may have confounding effects on the relationship between empathy and aggression (Shechtman, 2002; Warden & Mackinnon, 2003).

Problems of conceptualising and operationalising empathy. Empathy is a highly problematic construct to conceptualise and operationally define due to large inconsistencies in the definitions used within the literature and the general trend of avoiding discussion about this lack of consensus (Preston & De Waal, 2002). To illustrate, many overlapping terms are used in referring to various aspects of empathy; these include affective mimicry, sympathy, affective concern, theory of mind, affective contagion, emotion understanding, and personal distress (Decety, 2010; Gini, Albiero, Benelli, & Altoè, 2007; Lovett & Sheffield, 2007).

The most commonly used conceptualisation of empathy suggests that empathy is a multidimensional construct consisting of an affective component and a cognitive component, both of which are necessary and operate jointly to give rise to empathic ability (Gini et al., 2007; Yeo, Ang, Loh, Fu, & Karre, 2011). According to this definition, the *affective component* of empathy refers to the ability to feel and share the emotional state of others, where that emotional state is more consistent with the other person's situation than one's own (Dadds et al., 2008). The *cognitive component* of empathy involves the ability to identify and understand the emotional states and perspectives of others (De Wied, Goudena, & Matthys, 2005; Gerdes, Segal, & Lietz, 2010).

Although commonly used, this conceptualisation of empathy is by no means the only one in use. For example, in his social-neuroscience perspective on empathy, Decety (2010) conceptualises empathy as consisting of three different components: affective sharing, emotion understanding, and emotion regulation. In addition, the literature sometimes refers to another aspect of empathy, referred to as helping behaviour, which involves the act of responding compassionately or prosocially towards other people's distress (Dadds et al., 2008; Levenson & Ruef, 1992; Preston & De Waal, 2002).

Such variation illustrates that conceptualising and operationalising empathy is not a straightforward task. However, although the various conceptualisations of empathy may differ, many highlight the importance of various social cognitive abilities in the development and acquisition of empathic ability. To elaborate, empathising is a social skill which aids us in interacting with other human beings and is thus socially adaptive and advantageous (Preston & De Waal, 2002). In order to be empathetic, one needs to possess the ability to identify, understand, feel and share the emotional states and perspectives of others (De Wied et al., 2005). Therefore, empathic ability is closely associated with social cognition constructs such as emotional understanding, emotion recognition, and theory of mind ability.

For instance, theory of mind (ToM) involves the ability to recognise the mental states (including the thoughts, beliefs, and feelings) of others (Baron-Cohen, Leslie, & Frith, 1985). Although ToM is a well-established construct that is most commonly related to autism and mentalising behaviour, it has often also been associated with empathy (Baron-Cohen, 2009; Blair, 2005). With all these conceptual overlaps and disagreements in definition, it is clear that treating empathy as a unidimensional construct is certainly incorrect. In order to get a more comprehensive operationalisation of this complex construct, it is may be best to use a broad operational definition of empathy which includes various conceptualisations of empathy and overlapping social cognitive constructs.

Possible deficiencies in specific components of empathy. A large body of research has utilised the dual conceptualisation of empathy as being made up of an affective and a cognitive component. Such research has investigated the possibility that aggressive individuals have specific deficiencies in cognitive or affective components of empathy and that this may be partly responsible for inconsistent associations between empathy and aggression. Some research findings suggest that aggressive individuals have deficiencies in both cognitive and affective dimensions of empathy, as was the case in a study that compared empathy between conduct-disordered and normal adolescents (Cohen & Strayer, 1996). In contrast, the findings of a number of studies provide support for different relationships between aggression and specific components of empathy (Miller & Eisenberg, 1988; Schaffer et al., 2009; Yeo et al., 2011).

Deficiencies in affective empathy. It is proposed that the more affective empathy a potential aggressor possesses, the more likely s/he is to share the negative emotional reaction of an individual, therefore feeling concerned and inhibiting his or her own aggressive behaviour to prevent the pain and suffering of that individual (Miller & Eisenberg, 1988). Some research findings suggest that deficiencies in affective empathy appear to be more strongly associated with aggressive behaviour than are deficiencies in cognitive empathy (De Wied et al., 2005; Shechtman, 2002). Such individuals are proposed to have normal levels of cognitive empathy and can therefore understand and identify the perspectives and emotions of other people. However, because they do not affectively experience the negative reactions of others as a result of their aggressive behaviour, they may continue to act aggressively towards those around them (Sutton & Koegh, 2000).

Sutton, Smith and Swettenham (1999) go one step further to suggest that some individuals may have deficits in affective empathy but superior cognitive empathy. Sutton and colleagues (1999) suggest that these aggressors use their superior perspective-taking abilities and low affective empathy to actively manipulate others. For these individuals, victims' distress is believed to further reinforce aggressive behaviour (Gini et al., 2007). However, such behaviour is heavily associated with psychopathy and is an extreme and uncommon form of aggressive, antisocial behaviour (Barry et al., 2000).

Deficiencies in cognitive empathy. In contrast, the findings of several studies provide evidence in favour of a stronger relationship between aggression and deficiencies in cognitive empathy as opposed to deficiencies in affective empathy (Jolliffe & Farrington, 2004). In line with this research, it has been theorised that aggressive children have deficiencies in perspective-taking. Therefore, they fail to understand and tolerate the perspectives of others

and instead, incorrectly interpret the intentions and social cues of others in distressing, threatening, and hostile ways (Dodge & Frame, 1982; Gini et al., 2007). As a result of these hostile attributions, such individuals might feel justified in causing harm or distress to others. In support of this theory of hostile attributions, a meta-analysis of 41 studies found that aggressive children were more likely to infer hostile attributions to the intentions of others (De Castro, Veerman, Koops, Bosch, & Monschouwer, 2002).

Over and above the general relationship between empathy and aggression, determining which, if any, of these proposed empathy components have a greater influence on aggressive behaviour would have implications for intervention strategies aimed at targeting and reducing aggressive behaviour. Further empirical evidence is necessary to untangle these contradictory findings.

Problems with methods of assessing empathy in young children. Cohen and Strayer (1996) argue that the inconsistent research findings in the literature on empathy and aggressive behaviour may reflect differences in the types of measures used. Furthermore, the discrepancies in findings may be compounded further by the use of certain methods of assessment with different age groups (Lovett & Sheffield, 2007).

Various methods have been used to measure empathy (Miller & Eisenberg, 1988). The most typically used methods are self-report measures such as questionnaires that attempt to assess dispositional empathy, and behavioural measures such as picture/story vignettes and responses that are aimed at assessing situational empathy (De Wied et al., 2005; Gerdes et al., 2010). However, there appears to be a lack of valid measures (Dadds et al., 2008). In a systematic review of the relationship between affective empathy and externalising behaviour, Miller and Eisenberg (1988) found that of four common methods used to assess empathy, self-report questionnaire methods produced the only significant relationship between affective empathy and aggression.

However, there are a number of problems with self-report questionnaires assessing aggression and/or empathy. First, aggressive, antisocial individuals with low empathy may be less self-aware and more prone to dishonesty, therefore under-reporting their aggressive behaviour (Lovett & Sheffield, 2007). Second, using self-report methods of assessing empathy in children is challenging. The large majority of children below the age of 8 years may lack the abilities and insight needed to adequately understand and report on their emotional states (Dadds et al., 2008).

Due to the problems of using self-report questionnaires to assess empathy in such young children, there has been a heavy reliance on using behavioural measures of empathy.

However, a recent review of 17 studies, which included self-report and behavioural measures, found that the negative relationship between empathy and aggression is much weaker and less consistently found in children as opposed to adolescents and adults (Lovett & Sheffield, 2007). Given that the relationship is stronger and more consistent in adolescents and adults, such findings may suggest that the measures frequently used with young children are not consistent with their current developmental stages of empathy and aggression. Consequently, it is imperative that future research generates age-appropriate measures and uses multiple methods of assessment in order to acquire more accurate and all-inclusive assessments of empathy in young children.

In addition, Dadds and colleagues (2008) highlight the importance of using multi-informant assessments when conducting research with young children. Doing so may result in more accurate and reliable assessments of children's empathy across diverse situations (Achenbach, 2006). However, only a very limited number of studies have actually included either parent or teacher reports of children's empathy in addition to performance-based, observational, or self-report measures (Dadds et al., 2008).

Summary and Conclusions

In conclusion, there appears to be a trend suggesting that empathy is inversely related to aggressive, antisocial behaviour, and positively related to prosocial behaviour. However, further research is required to investigate the relative impact of the different components of empathy on aggressive behaviour. The lack of agreement in the literature about how to define empathy highlights the importance of using a broad definition of empathy which utilises various conceptualisations of empathy and overlapping constructs in attempting to better operationalise empathy. Furthermore, this review has emphasised the need to measure empathy using multiple informants and multiple methods of assessment in younger children. Doing so may help to more adequately measure empathy and thus, gain a more comprehensive understanding of the influence of empathy on aggressive behaviour. Research is necessary to address the lack of knowledge regarding the prevalence of deficiencies in empathy and the relative strength of empathy, in comparison to other potential factors, as a predictor of aggression in South African individuals.

Specific Aims and Hypotheses

The present research had two important objectives. First, to investigate to what extent deficiencies in empathy predict aggressive behaviour in Grade 1 children in South Africa.

Two hypotheses were proposed. The first hypothesis looked broadly at whether empathy scores predicts aggressive behaviour in children, whereas the second hypothesis was concerned more precisely with whether specific deficiencies in affective empathy or cognitive empathy more strongly predict aggressive behaviour in children.

Hypothesis 1: Empathy scores will significantly predict aggressive behaviour such that higher levels of empathy will be associated with less aggressive behaviour.

Hypothesis 2: The strength of the relationship between aggressive behaviour and deficiencies in empathy may be different for cognitive and affective components of empathy.

Second, as a pilot study, another important aim of the study was to examine which measure(s) of empathy best predict aggressive behaviour in young children in South Africa. This research question was exploratory and no specific predictions were made about which measures would be best.

This was the first study, to my knowledge, that has investigated the association of deficiencies in empathy with aggressive behaviour in South Africa. In addition, this study is one of only a few to use many different empathy measures and multiple informants to try capture the relationship between empathy and aggression in young children.

Methods

Design and Setting

The study was cross-sectional as it examined the relationship between empathy scores and aggression in a specific age group of children. A quantitative, correlational design was used to investigate the association between empathy scores, as the predictor variables, and aggressive behaviour, as the outcome variable.

Data were collected from the children as well as from their parents or guardians. All data collection involving the children took place on the children's school premises in one of three rooms set aside for conducting the testing. Data required from the children's parents or guardians were collected at their homes, work, a public library, or at the school, depending on their preference.

Participants

Seventy two children, all of whom were currently in Grade 1, took part in the study. However, only 65 of the participants' parents or guardians participated in the study as 7 of them, after having given consent, could not be contacted or decided not to participate in the parent interviews. All of the participants were Coloured. The age of participants ranged from 6 years 0 months to 8 years 0 months. Participants were recruited from a single English-medium primary school in Cape Town. Of the 115 eligible participants, all participants who consented were included in the study. The basic demographic characteristics of participants are presented in *Table 1* below.

The chosen school is situated in a historically Coloured, working class area of Cape Town. In terms of socioeconomic status (SES), the school falls in the fourth quintile out of five, of which the first quintile is the poorest. Parents are expected to pay school fees (although minimal in comparison to schools in the fifth quintile). Scores on the SES measure, a basic household inventory, ranged from 9 to 15, where the minimum possible score was 0 and the maximum possible score was 15. As indicated in *Table 1*, the SES of participants was high overall and there was limited variation.

Table 1. Demographic characteristics of participants

Demographic information	Participants (n = 72)
Age (Years)	
Mean (*SD*)	6.58 (.43)
Gender	
Male: Female	30:42
Socio-economic status*	
Mean (*SD*)	12.28 (1.85)

Note. * All parent-report measures had a smaller sample size (n = 65).

Inclusion criteria. Most of the measures used in the pilot study had not yet been translated into Afrikaans and/or Xhosa at the time of the study. As a result, only children who were proficient in speaking and understanding English were eligible for inclusion in the study. Furthermore, only children currently in Grade 1 were eligible for participation. The

sample was limited to young children because the long-term objective of the research programme in which this study is nested is to develop prevention and intervention strategies aimed at reducing aggressive behaviour at its earliest stages of development. In order to do so, the aim of the pilot study was to first identify which factors are the strongest predictors of aggressive behaviour in young children. The sample was specifically restricted to children in Grade 1 for the reason that the greatest number of children are likely to be enrolled in schools in Grade 1. Therefore, the sampling frame is likely to be the greatest among this age bracket of children and the research findings are less likely to be confounded by factors that may cause children to drop out of school in later years. Furthermore, prior to roughly 5 years of age, children are still developing the skills necessary to maintain effortful control of their behaviour and therefore, aggressive behaviour is still too unstable and unreliable to measure long-term aggressive tendencies (Zhou et al., 2007).

Measures

Demographic information. A basic asset-index household inventory (Booysen, 2001; see Appendix A) was used as a rough estimate of participants' socioeconomic-status and was used to assess the variation in SES among participants. The inventory consists of a list of 15 items and/or facilities that are found in households, from which a total SES score is calculated. The items and facilities range from basic necessities (such as running water in the house) to more expensive luxuries (such as owning a car).

Measure of aggression. The school-age version of the *Child Behavior Checklist* (CBCL; Achenbach & Rescorla, 2001) is commonly used to assess a broad range of emotional and behavioural problems in children aged 6 to 18 years old. As the pilot study was primarily concerned with which factors predict aggression, only the externalising subscale of the CBCL was used. The externalising subscale includes items measuring various rule breaking and aggressive behaviours. The externalising subscale was used as the operational definition of the outcome variable, aggression, and was assessed using the parent-report version (see Appendix B).

Although the CBCL has not been formally validated in South Africa, the CBCL has been used in a number of South African studies (Barbarin, Richter, & de Wet, 2001; Cluver, Gardner, & Operario, 2007). In a South African study by Palin and colleagues (2009), the externalising subscale of the CBCL was found to have strong internal consistency, with an alpha coefficient of .88. Although psychometric properties of the CBCL are lacking for South African samples, the CBCL has high reliability and validity for American samples

(Achenbach & Rescorla, 2001). Furthermore, the CBCL is recognised internationally and has been validated cross-culturally in a wide range of societies, including other African countries such as Ghana and Ethiopia, and countries such as Brazil that have high rates of income inequality like South Africa (Ivanova, 2007; Roessner, Becker, Rothenberger, Rohde, & Banaschewski, 2007).

Measures of empathy. In order to address the problems of measuring empathy in children as young as 6 – 8 years of age, a multi-method and multiple-informant approach was used to more accurately and comprehensively measure empathy in this age group. Furthermore, measures used to assess aspects of social cognition that have conceptual overlap with aspects of empathy, such as theory of mind and emotion understanding, were deemed necessary to include in the operational definition of empathy.

Parent-report measures. Due to the weak and inconsistent relationship between empathy and aggression that is often found for children within the literature, two questionnaires were used to more thoroughly assess children's empathy-related behaviour.

The *Griffith Empathy Measure* (GEM; Dadds et al., 2008) is a 23-item parent-report measure (see Appendix C) of children's empathy which, in addition to providing an overall empathy score, measures and calculates total scores for two empathy subscales: a cognitive empathy component and an affective empathy component. The GEM is an adapted version of the Bryant Index of Empathy for Children and Adolescents (Bryant, 1982). In this adapted version, all items on the self-report Bryant Index of Empathy were reworded in order to make it suitable for a parent-report format and responses were changed to a nine-point Likert scale, which ranges from strongly disagree (-4) to strongly agree (4).

The GEM does not appear to have been used previously in South Africa. However, total scores on the GEM show adequate convergent validity ($r = .412$, $p < .01$) with scores on the Bryant Index of Empathy, which has been widely used and shows adequate construct validity as a measure of empathy (Bryant, 1982; Lovett and Sheffield, 2007). Furthermore, in a study on the psychometric properties of the GEM by Dadds and colleagues (2008), a factor analysis indicated that the GEM has two non-random dimensions, an affective factor and a cognitive factor, that are uncorrelated ($r = .068$) and have acceptable reliability for both the affective factor ($\alpha = .83$) and the cognitive factor ($\alpha = .62$).

The *Callous-Unemotional Screening Device* (CUSD, see Appendix D) is a short questionnaire used to assess callous-unemotional traits typically associated with low empathy and reduced emotional distress (Barker, Oliver, Viding, Salekin, & Maughan, 2011). This 9-item parent-report measure is a modified combination of the Strengths and Difficulties

Questionnaire (SDQ; Goodman, 1997) and the Antisocial Process Screening Device (APSD; Frick & Hare, 2002). The combined and modified screening device includes only items from the SDQ and APSD that load on the callous-unemotional factor (Dadds, Fraser, Frost, & Hawes, 2005). The measure was renamed 'Temperament Screening Device' on the parent questionnaires in order to avoid the stigma and response alterations that may have occurred by using the term 'callous-unemotional'.

This screening device was used because the combined set of items has been found to be a better measure of callous-unemotional behaviour and a better predictor of future delinquency than either of the original questionnaires used in isolation (Dadds et al., 2005). The SDQ has been used in South Africa before but has not yet been validated (Cluver et al., 2007). In contrast, the APSD does not appear to have been previously used in South Africa. However, both have been widely used internationally and are reported to have high predictive validity: findings suggest that the callous-unemotional traits subscale of the ASPD is a strong predictor of later antisocial outcomes and that the SDQ is a strong predictor of the presence or absence of psychiatric disorders (Goodman, Ford, Simmons, Gatward, & Meltzer, 2000; McMahon, Witkiewitz, & Kotler, 2010).

Children's performance-based tasks. In addition to parent reports which aimed to assess children's general dispositional empathic behaviour, children's empathy was also assessed more directly via three performance-based tasks to help gain a richer and more thorough assessment of children's empathy. Due to the lack of age-appropriate self-report and performance-based measures for assessing empathy in children as young as 6 - 8 years of age, well-established measures used to assess aspects of social cognition that are related to empathy were used. The first task assessed emotion recognition ability, the second task assessed emotion understanding, and the third task assessed basic theory of mind false belief reasoning. All of these constructs are related to the ability to identify and understand the emotions and perspectives of others, which are important aspects of empathic ability (Decety, 2010; De Wied et al., 2005; Preston & De Waal, 2002).

Two of the performance-based tasks were from the social perception domain of the NEPSY-II (Korkman, Kirk, & Kemp, 2007) battery of neuropsychological tests that has been developed for use with children from the ages of 3 - 16 years old. The *Affect recognition subtest* of the social perception domain consists of four different tasks which assess the ability to recognise and distinguish basic emotions (sad, fear, happy, disgust, anger, and neutral) expressed on children's faces in photographs. Each item requires the child to indicate which children's faces display the same emotion. The tasks gradually increase in difficulty.

The photographs that are used feature children of various races and are therefore considered to be appropriate for use in South Africa. Furthermore, race was held constant in the study and therefore controlled for cross-racial effects.

The *Contextual task* is a 6-item task from the Theory of Mind subtest that assesses the child's ability to recognise the appropriate emotion experienced in different social contexts. In the task, the child is shown a picture illustrating a social situation and is asked to indicate which of four photographs, each showing a child's face expressing a different emotion, is most appropriate for how a specific person in the picture would feel.

The *Location-Change False Belief task* (Steele, Joseph, & Tager-Flusberg, 2003), is a variation of the widely used Sally-Anne task, which is a first-order false belief task that measures basic theory of mind (ToM) ability. The Sally-Anne task is a gold-standard measure of ToM in the field of Autism research and theory of mind development (Baron-Cohen et al., 1985; Steele et al., 2003). The task consists of two similar stories in which a central object is moved while the main character is absent from the room. In the original task, each story is acted out with props. However, an adapted version of the task was used (Robberts, 2008). Each story was instead presented in a picture story format and was placed in front of the child to follow as the examiner read each of the two stories. The use of the pictures had the advantage of reducing linguistic and memory demands that could have possibly resulted in children's underachievement on the task (Robberts, 2008). Each story was followed by two control questions, which assessed the child's attentional and cognitive capacity, and two test questions, which assessed false belief reasoning.

Standardised direct observation of social behaviour. An observation of social behaviour was included in order to directly assess children's actual tendencies to engage in empathic, prosocial behaviour. Children's altruistic, prosocial behaviour was assessed using a situational assessment developed by Colace (2010). The situation involved the researcher "unintentionally" dropping some sheets of paper as s/he got up to escort the child back to class. The degree of helping behaviour that the child displayed in response to the situation was rated using a 7-point scale (see Appendix E), ranging from active indifference (1) to help and support with clear emotional sharing (7).

Procedure

Collection of child data. Each child was tested individually in a separate room provided by the school. Informed assent was collected from each child directly before the tests were administered. The testing took approximately one and a half hours per child and

was split into two 45 minute sessions with an adequate break and refreshments in between. These two sessions were used to administer all tests and measures used by the larger study. Of the total time, the last 30 minutes was allocated to administering the Location-change false belief task, the two sets of NEPSY-II tasks, and the observation of helping behaviour.

The first order false belief task was administered first, followed by the Affect Recognition task, and then the Contextual task. At the end of the testing session the observational of helping behaviour took place. As the researcher got up to escort the child back to class, the researcher "unintentionally" dropped their papers and observed and recorded the child's readiness to help.

Collection of parent data. Written informed consent was obtained from the children's parents or legal guardians prior to the parent interviews. The children's parents or guardians were administered all of the parent-report questionnaires, including those used by the larger study, via structured interviews. The set of questionnaires took 45 minutes to an hour to complete. Two researchers were present for each interview. One researcher explained the questionnaires and asked all interview questions, while the other recorded the response answers.

Ethical considerations

The present study followed the University of Cape Town's (UCT) guidelines for ethical research with human subjects. The larger pilot study was granted ethical approval from the Western Cape Education Department to collect data from a specified school in Cape Town. Additionally, the pilot study received ethical approval from the Research Ethics Committee of the UCT Department of Psychology.

Written informed consent and assent (see Appendix F and G) were obtained from the parents or legal guardians and the child respectively prior to their participation in the study. All parents and children were advised that participation in the study was voluntary, that they could discontinue participation at any time, and that all the information obtained would be kept confidential. However, parents were informed that they would be notified and referred to appropriate services for assistance if their child was found to be at risk for a developmental disorder. The principal investigators of the study were responsible for such decisions.

There were no real risks to participants involved in the study. As a small incentive, parents received gift vouchers for participation in the study. The children received refreshments and a small toy as a token of appreciation. To show appreciation to the school,

Grade 1 books were donated to the school and the principal investigator lead a workshop for school teachers on managing learners' disruptive behaviour.

Data Analysis

SPSS Statistics version 20.0 was used for all statistical analyses. Prior to the main inferential analysis, descriptive statistics were computed to gain an understanding of the central tendency and distribution of the data. Reliability analyses using Cronbach's alpha were calculated for all questionnaire measures to investigate the reliability of the measures and to assess item-total correlations. Pearson's correlations were computed for all the variables included in the regression analyses. All variables were expected to have directional relationships with aggressive externalising behaviour and therefore, one-tailed tests of significance were used.

For the main analyses, two hierarchical multiple regression analyses were conducted to investigate whether deficiencies in empathy significantly predict externalising, aggressive behaviour in this sample, and also to examine which measure(s) of empathy best predict externalising, aggressive behaviour in young children. All of the assumptions underlying multiple regression analysis were checked and upheld. Of particular importance was the issue of multicollinearity, as the different predictor variables measuring empathy were likely to be highly correlated. However, the VIF and tolerance values indicated no multicollinearity. Diagnostic statistics were calculated and found to be acceptable. All cases of missing data were excluded pairwise for analyses. The statistical significance threshold for all analyses was set to $p = 0.05$.

The outcome variable for both regression analyses, aggressive externalising behaviour, consisted of the calculated total raw score for the externalising subscale of the parent-report version of the CBCL. For the first regression analysis, the predictor variable of interest consisted of all measures of empathy. For each measure, the calculated total raw score for that measure was used. Gender was entered as a categorical predictor variable and was coded as 1 for males and 2 for females. SES was also included as a predictor variable. For the second regression analysis, a series of predictor variables, measuring empathy, were included. Again, each of these predictor variables consisted of the calculated total raw score for the measure(s).

In addition, supplemental analyses were computed to examine whether a developmental delay in some participants theory of mind abilities (as measured by the Location-change false belief task) might be obscuring the relationship between empathy and

aggression. Descriptive statistics and correlations were calculated to investigate differences in performance on the Location-change false belief task between the overall sample and a subgroup of the sample (n = 10) that scored one standard deviation or more above the mean on the outcome variable (i.e. the externalising subscale of the CBCL).

Results

Reliability Analysis of Questionnaire Measures

Cronbach's alpha was used to calculate the reliability (internal consistency) of each of the questionnaires used in the study. The Cronbach's alpha value was .870 for the externalising subscale of the Child Behaviour Checklist (CBCL). Cronbach's alpha values of between .70 and .80 are generally thought to demonstrate that a measure has high reliability (Cortina, 1993; Schmitt, 1996). The alpha value for the externalising subscale of the CBCL therefore indicates that this questionnaire has strong reliability.

Conversely, the alpha value for the overall GEM was very low (α = .466). However, the GEM is comprised of two subscales, which can be assessed independently. The alpha values were .675 for the affective empathy subscale and .382 for the cognitive empathy subscale. Two items from the cognitive empathy subscale were identified as having particularly weak item-total correlations. When item 13 (α = -.113) and item 21 (α = .050) were removed, the alpha value for the cognitive subscale increased to .577. Thus, isolating the two subscales and removing the two weakest items from the cognitive empathy subscale of the GEM increased the alpha values substantially.

The alpha value for the Callous-Unemotional Screening Device (CUSD) was .661. These alpha values for the CUSD and two subscales of the GEM, although not indicating high reliability, indicate acceptable reliability, especially when considering the fact that personality trait measures often have low alpha scores for reliability (Davis, Panksepp, & Normansell, 2003). The separate subscales of the GEM were used for analyses in place of the less reliable overall GEM.

Regression Analyses

The intercorrelations matrix (in table 2 below) indicates that the Callous-Unemotional Screening Device had a moderate, positive and significant correlation with the outcome variable, aggressive externalising behaviour. In addition, the Location-change false belief (theory of mind) task had a small, negative and non-significant correlation with aggressive

externalising behaviour. However, the correlation was trending towards significance (p = .074). All other variables had non-significant relationships with the outcome variable.

Table 2. Intercorrelations matrix for overall sample of participants

Measures	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Externalising subscale of CBCL	-									
2. Gender	.042	-								
3. SES	-.152	-.230*	-							
4. Affect recognition	-.061	-.011	.309**	-						
5.Contextual task	.018	-.107	.145	.274**	-					
6. Location change false belief task	-.182	-.037	.252*	.239*	.058	-				
7. Observation of helping behaviour	.087	.080	.160	.084	-.075	.229	-			
8. Affective empathy subscale	.057	.291**	-.168	-.171	-.008	-.084	-.075	-		
9. Cognitive empathy subscale	.000	-.060	.316*	.015	.067	-.063	.174	-.366**	-	
10. CUSD	.511**	-.035	-.168	-.010	.011	-.329**	.057	-.125	-.066	-

Note. Gender was coded as 1 for males and 2 for females.
* Significance at .05 level.
** Significance at .01 level.

Hypothesis 1. The first hierarchical multiple regression analysis was used to investigate hypothesis one, which stated that empathy scores will significantly predict aggressive behaviour, with higher levels of empathy associated with less aggression. For this analysis, gender was entered in the first block, SES was entered in the second block, and all empathy measures were entered in a third block. The final model summary table for the regression analysis (shown in table 3) indicated that empathy scores significantly predicted aggressive externalising behaviour, with higher empathy scores associated with lower

aggression scores. In contrast, gender and SES were not significant predictors of aggressive externalising behaviour and were therefore excluded from the final model.

Table 3. Final model summary for first regression analysis.

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	F	df1	df2	Sig.
1	.537	.288	.201	7.017	3.294	7	57	.005

Hypothesis 2. The second hierarchical multiple regression analysis was used to investigate hypothesis two. Variables were entered in blocks in the following order: the social perception subscale of the NEPSY-II which consists of the affect recognition task and contextual task; first order false belief task; observation of helping behaviour; affective empathy subscale of the GEM; cognitive empathy subscale of the GEM; and the CUSD. The various measures of empathy were not collapsed together into one predictor as the aim here was to assess the relationship between certain measures of empathy and aggression individually, and to establish which measure(s) of empathy most reliably predict externalising, aggressive behaviour in young children.

Hypothesis two stated that the strength of the relationship between aggressive behaviour and deficiencies in empathy may be different for cognitive and affective components of empathy. The initial model summary (in Table 4) shows that neither the affective empathy subscale of the GEM (in model 4) nor the cognitive empathy subscale of the GEM (in model 5) were found to be significant predictors of aggressive externalising behaviour.

Table 4. Initial model summary for second regression analysis.

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	R Square Change	F	F Change	df1	df2	Sig.
1	.071	.005	-.027	7.954	.005	.155	.155	2	62	.856
2	.186	.035	-.013	7.899	.030	.727	1.865	1	61	.540
3	.231	.053	-.010	7.887	.019	.844	1.189	1	60	.503
4	.235	.055	-.025	7.945	.002	.691	.129	1	59	.632
5	.237	.056	-.042	8.010	.001	.574	.045	1	58	.749
6	.537	.288	.201	7.017	.232	3.294	18.573	1	57	.005

Third research question. This second regression analysis was also used to examine which measure(s) of empathy best predict aggressive behaviour in young children in South Africa. The initial model summary table for the second hierarchical multiple regression analysis (in table 4) shows that of the various empathy measures, the Callous-Unemotional Screening Device was the only significant predictor of the outcome variable. As a result, the CUSD was the only predictor included in the final model. The final model summary (in table 5) thus indicates that the CUSD, for which high scores indicate low empathy, significantly predicts aggressive externalising behaviour and explains 26.1% of the variance in aggressive externalising behaviour in this sample.

Table 5. Final model summary for second regression analysis.

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	F	df1	df2	Sig.
1	.511	.261	.249	6.800	22.263	1	63	.000

Supplemental Analyses

The descriptive data for the Location-change false belief task (which measures basic theory of mind ability) indicated that a very high proportion of the children in this sample have underdeveloped theory of mind abilities for their age group. To illustrate, only 62.5% of participants got full marks on the Location-change false belief task. 22.2% of participants got two or less questions correct ($M = 1.31$) out of a possible maximum score of 4. However, on average, these 22.2% of participants had high scores for the control questions ($M = 3.44$). This indicates that such participants most likely have specific theory of mind difficulties for their age group rather than cognitive difficulties, which would impair their performance on both the first order false belief questions and control questions.

Normative data suggests that the number of individuals with theory of mind deficits in the general population is low, and that by the age of four or at least five years, the large majority of children should be getting full marks for first order false belief tasks (i.e. the Location-change false belief task) (Chasiotis, Kiessling, Hofer, & Campos, 2006; Wellman & Woolley, 1990). As a result, it is highly unusual that as many as 22% of participants, at age six or seven, would score so poorly on this task. Therefore, it is possible that in this sample there is a developmental delay in some children's acquisition of theory of mind reasoning. As a result, there may be two groups in this sample: children with actual low theory of mind abilities and associated high aggressive externalising behaviour; and children whose theory of

mind development is lagging, but who still have low or average scores of aggressive externalising behaviour. In order to investigate whether a developmental delay may be obscuring the relationship between theory of mind ability (as measured by the Location-change false belief task) and aggression, the performance of a subgroup of participants (n = 10), who scored one standard deviation or more above the mean on the outcome variable, was examined in comparison to the overall sample of participants (n = 72).

An inspection of the demographic statistics indicated that of the 10 most aggressive participants, there was an equal proportion of male (n =5) and female (n = 5) participants. In terms of descriptive statistics, the subgroup of participants with the highest aggression scores, on average, performed more poorly on the Location-change false belief task (M = 2.80, SD = 1.03) than the overall sample of participants (M = 3.25, SD = 1.16).

In addition, for this subgroup of participants with higher aggression, a Pearson's correlation for scores on the Location-change false belief task and the externalising subscale of the CBCL was calculated. For the subgroup of aggressive participants, scores on the Location-change false belief task had a larger, negative correlation with aggressive externalising behaviour (r = -.360) in comparison to the correlation for the overall sample (r = -.182). The correlation was non-significant. However, this was most likely due to the small sample size (n = 10). A post-hoc power analysis was conducted for the correlation between the Location-change false belief task and the outcome variable for the aggressive subgroup. The statistical power for the correlation was .28. The likelihood of finding a significant correlation was therefore very low.

Discussion

The present research had two important objectives. First, to investigate to what extent deficiencies in empathy predict aggressive behaviour in Grade 1 children in South Africa. Two hypotheses were proposed. The first hypothesis looked broadly at whether empathy predicts aggressive behaviour in children, whereas the second hypothesis was concerned more precisely with whether specific deficiencies in affective empathy or cognitive empathy more strongly predict aggressive behaviour in children. Second, another important aim of the study was to examine which measure(s) of empathy best predict aggressive behaviour in young children in South Africa.

Deficiencies in Empathy as a Predictor of Aggressive Behaviour

The first hypothesis examined broadly whether deficiencies in empathy predict aggressive behaviour in young children. In line with the hypothesis, deficiencies in empathy significantly predicted aggressive behaviour and thus, higher empathy scores were associated with less aggression.

Although an inverse relationship between empathy and aggression has frequently been found among adolescents and adults, the association has often appeared to be less consistent and weaker for young children (Burke, 2001; Gonzalez, Field, Lasko, LaGreca, & Lahey, 1996; Lovett & Sheffield, 2006). In contrast, the results of this study provide evidence that empathy scores can significantly predict aggression in young children. Whereas many past studies have frequently relied on the use of a single self-report or behavioural measure to assess empathy in young children, the present study aimed to make improvements by utilising a multi-informant approach and by using a wide range of methods to assess empathy. As a result, rather than suggesting that the association between empathy deficits and aggression is poor in early childhood, past research findings may reflect the use of limited and inappropriate empathy and/or aggression measures for young children (Lovett & Sheffield, 2006).

Furthermore, research into the factors influencing aggressive behaviour has focused largely on the role of factors such as poor parenting practices, negative peer relations, and exposure to violence (Dahlberg, 1998). In comparison, the role of empathy has been frequently under-examined and excluded or given little focus in models of aggressive behaviour (see Loeber & Hay, 1997). However, along with a number of other studies, the findings of this study provide further support that deficiencies in empathy may be an important predictor of aggressive behaviour and suggest that the role of empathy should be given more attention within theoretical models of aggression.

In terms of gender, research suggests that there are gendered differences in both empathy and aggressive behaviour, with females on average scoring higher on measures of empathy and lower on measures of aggression in comparison to males (Rueckert & Naybar, 2008; Warden & Mackinnon, 2003). However, contrary to previous findings, gender was not found to be a significant predictor of aggressive behaviour in this study. In fact, there were an equal number of male and female participants in the subgroup of participants with the highest aggression scores, suggesting that females may also have high levels of aggression. However, the sample size for this subgroup was very small and there was an overrepresentation of female participants within the overall sample. Therefore, these findings are only preliminary

and a full examination of the associations between empathy, aggression and gender should be examined in the larger study that will follow from this pilot study.

Specific Deficiencies in Affective and Cognitive Empathy

The second hypothesis stated that the strength of the relationship between aggressive behaviour and deficiencies in empathy may be different for cognitive and affective components of empathy. In contrast to predictions, the results indicated that neither of the two empathy components were significant predictors of aggressive behaviour and both had only negligible relationships with aggression.

Past research on the relative importance of affective empathy and cognitive empathy has been largely inconclusive. Whereas some studies have found that deficiencies in cognitive empathy are more strongly related to aggression, other findings suggest that affective empathy deficits are primarily responsible for aggressive behaviour (De Castro et al., 2002; Shechtman, 2002). Nonetheless, the finding that neither affective empathy nor cognitive empathy was related to aggressive behaviour was unexpected.

A possible reason for the lack of significant associations between each of the empathy components and aggressive behaviour may be due to the observed problems with using the Griffith Empathy Measure, from which the cognitive and affective empathy scores are derived. The GEM utilised a nine-point Likert scale with three anchored points (‘strongly disagree’ on the far left, ‘neutral’ as the middle score, and ‘strongly agree’ on the far right). First, many of the parents appeared to have difficulties understanding and differentiating between the meanings of the unmarked response options. Second, many parents displayed tendencies to either use only extreme response options or only options close to the middle. Therefore, the intensity of responses may have been meaningless and different scores on the GEM may not have reflected true differences in empathy, making it difficult to meaningfully compare scores across participants. For these reasons, parents and guardians may be unable to use this response format reliably and it may be necessary to adopt a simpler scale if this measure is used in South Africa in the future.

Predictive Utility of the Various Empathy Measures

Due to the difficulties of conceptualising empathy and also measuring empathy in young children, various different types of empathy measures, drawing on a broad operational definition of empathy, were used. As a result, an important exploratory aim of the study was to examine which measure(s) of empathy would best predict aggressive behaviour in young

children. The Callous-Unemotional Screening Device stood out as the only significant predictor of aggressive behaviour for this sample of young children. However, the results also tentatively suggest that the Location-change false belief task (which measures basic theory of mind ability) may be a good empathy measure and a useful predictor of aggressive behaviour in young children. The relationship between the Location-change false belief task and the outcome variable is only tentative because of limited analyses of the aggressive subgroup and the small sample size. The fact that the CUSD had a negative, moderate and significant correlation with the first order false belief task does suggest that they have good convergent validity.

The finding that callous-unemotional traits (CU traits) were an important predictor of aggression is not surprising given the literature and research implicating callous-unemotional traits in aggressive, antisocial, and psychopathic behaviour (Frick & White, 2008; Hawes & Dadds, 2005; Pardini, 2006). In addition, the literature also suggested that ToM deficits may increase aggressive and delinquent behaviour (Capage & Watson, 2001). The Location-change false belief task is a well-established, standard first order false belief measure that unequivocally demonstrates the ability to infer mental states in others and has been used in a host of studies to establish developmental onset of theory of mind abilities (Baron-Cohen et al., 1985; Chasiotis et al., 2006; Wellman & Woolley, 1990). Therefore, it is likely to be an important indicator of early deficiencies in empathy.

Although CU traits and ToM are treated as distinct constructs rather than as dimensions or measures of empathy, research suggests that both constructs have considerable conceptual overlap with the empathy construct. CU-traits have been found to be highly related to deficiencies in empathy, lower emotional distress and affective-interpersonal impairment (Pardini, Lochman, & Frick , 2003; Viding et al., 2005). Furthermore, research suggests that CU traits and ToM could even be subsumed into the most common conceptualisation of empathy as consisting of an affective and a cognitive component and could be used to assess these different empathy components. For example, a study on empathy and bullying found that high scores for CU traits were associated with low affective empathy (Munoz, Qualter, & Padgett, 2011). In terms of ToM, neuropsychological empathy research, which frequently conceptualises empathy as consisting of affective contagion, cognitive empathy and motor mimicry, commonly defines ToM ability as cognitive empathy (Blair, 2005).

Such findings suggest that the CUSD may be a better measure of affective empathy and the Location-change false belief task may be a better measure of cognitive empathy in

comparison to the respective GEM subscales claiming to measure these empathy components. High empathy scores on both the Location-change false belief task and the CUSD were associated with lower aggression. Therefore, if these measures are used to assess the respective empathy components instead of the GEM subscales, the results of this study support past research suggesting that deficiencies in both affective and cognitive empathy components are related to greater aggression (Cohen & Strayer, 1996).

Looking at the remaining three empathy measures (the two social perception NEPSY-II tasks and the observation of helping behaviour), their relationships with the outcome variable were all very weak. In terms of the observation of helping behaviour, past research consistently shows that prosocial behaviour is inversely related to aggression (Cohen & Strayer, 1996). The weak relationship found between helping behaviour and aggression may reflect the simplicity of the task and the need to observe helping behaviour across a number of diverse settings in order for observational measures to accurately assess behaviour.

The Affect recognition and Contextual tasks both had weak associations with the outcome variable. However, the two measures had a small, positive and significant correlation with each other, which would be expected as they together form the social perception domain of the NEPSY-II battery. A possible explanation for these measures weak relationships with aggression may be that, at this age, these children's social perception abilities are not well-developed and therefore these measures do not clearly indicate deficiencies in empathy among children of 6 - 8 years of age. These measures may perhaps work better with older children to identify deficiencies in empathy and predict aggressive behaviour. Given the unexpectedly poor ToM development, this is likely.

Limitations and Directions for Future research

The findings of this study have limited generalisability due to certain demographic characteristics of the sample and a number of exclusion criteria for participants that were used in this pilot study. All participants were Coloured, English-speaking children, were from a single school, and there was limited variation in socio-economic status among these children. In terms of SES, the study likely failed to find a significant association between SES and aggression due to the high average and very limited variation in SES. Although the direction of the relationship between empathy and aggression would be expected to be the same across populations (as empathy is a social skill which helps us relate to and act prosocially to others), SES may influence the relationship between empathy and aggressive behaviour. To illustrate, research indicates that poverty and violence are closely linked

(Jewkes, 2002). Furthermore, deficiencies in empathy are often related to child abuse and negative parental practices, which are also associated with poverty (Dahlberg, 1998). As a result, it is possible that in poor communities, SES could act as a moderating variable, therefore aggravating both aggressive behaviour and deficiencies in empathy. The larger study that will follow from this pilot study aims to address these problems of limited generalisability by translating the measures into Xhosa and Afrikaans so that a more representative sample can be recruited.

In addition, there are a number of problems with empathy research in general. Lovett and Sheffield (2007) draw attention to the fact that there are no existing empathy measures for which normative data has been collected in order to understand individuals' raw scores and gain some sense of what the average person scores on empathy measures. Collecting normative data is therefore an important future direction for empathy research in South Africa and abroad. In addition, there are large discrepancy between empathic ability and the actual tendency to behave empathically towards others and there is much debate in the literature about the extent to which empathy is a fixed dispositional trait or a context-specific behaviour (De Wied et al., 2005; Gerdes et al., 2010). Although we may consider ourselves to be empathic, there are situations in which other immediate needs may prevent us from acting empathically towards others. Therefore, empathy measures which can reliably measure empathic tendencies across situations and settings need to be created.

Another limitation of the current study was that it used a cross-sectional design and therefore, was unable to assess the stability of empathy and aggressive behaviour over time. In general, there has been a lack of empathy research using repeated measures designs to assess the stability of empathy over time (Lovett & Sheffield, 2007). This is an important future direction for research investigating the utility of empathy for predicting lifetime aggressive behaviour. The objective of the larger study that will follow from this research is to produce a representative longitudinal cohort study that tracks the relationship between empathy (as well as other important risk factors) and aggression over time.

Lastly, because this study made use of a correlational design, it is not possible to make causal claims about the influence of empathy on aggressive behaviour. Therefore, it is also possible that instead of empathy inhibiting aggression, the inverse relationship may exist; that is, aggressive behaviour may actually reduce one's capacity for empathy in order to justify one's actions (Cohen & Strayer, 1996). The possibility of this reversed causal relationship requires investigation as it could potentially suggest that violent societies hinder the development or manifestation of empathy.

Summary and Conclusion

This study investigated whether deficiencies in empathy are an influential predictor of aggressive behaviour in young children in South Africa. The study replicated the results of studies conducted in other settings: deficiencies in empathy significantly predict aggressive behaviour (Cohen & Strayer, 1996; De Wied et al., 2005; Miller & Eisenberg, 1988). Of all the empathy measures used in this study, the Callous-Unemotional Screening Device, which measures CU traits, was found to be the only significant predictor of aggression in this sample of young children. However, the results also tentatively suggest that theory of mind ability (specifically first order false belief reasoning) is associated with aggressive behaviour in young children and may be important for identifying early deficiencies in empathy. These findings have potential implications for prevention, intervention and screening procedures aimed at reducing early aggressive behaviour. Although there appears to be a genetic basis for ToM deficits and CU traits, past research shows that ToM deficits and CU traits may both be reduced by certain parental practices such as increased mentalising talk and sharing of positive affect (Pardini, Lochman, & Powell, 2007). Therefore, basic ToM and CU trait measures could be used to identify children who have early developmental deficiencies in empathy and lead to the implementation of preventative strategies aimed at informing parents about how to minimise their children's deficiencies in empathy.

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Appendix A

SES Household Inventory

HOUSEHOLD INVENTORY How many of the following do you have in your household at this time? (please tick the box if you have at least one in your home)			
Running water inside the house	☐	Electricity inside the house	☐
Flushing toilet inside the house	☐	Radio/Hi-fi	☐
Car	☐	Television	☐
Fridge	☐	Video machine/DVD	☐
Microwave Oven	☐	DSTV/ Satellite	☐
Washing machine	☐	Computer	☐
Landline telephone	☐	Internet	☐
Cellphone	☐		

Apart from your immediate family, how many other people live in your household? _____

Of the additional members of your household, how are they related to your 1st Grade child?

_____

_____

_____

_____

_____

_____

Appendix B

The Child Behaviour Checklist

CHILD BEHAVIOR CHECKLIST FOR AGES 6-18 CBCL Page 1/3

Child's Full Name: _____ Child's Age: _____ Child's Ethnic Goup: _____

Child's Gender: Boy ☐ Girl ☐ Child's Birth date: Month_____/Day_____/ Year_____

Grade in school: _____ Today's Date: Month_____/Day_____/ Year_____

Please fill out this form to reflect your view of the child's behaviour even if other people might not agree. Feel free to print additional comments beside each item and in the space provided on page 2. **Be sure to answer all items.**

PARENTS' USUAL TYPE OF WORK, even if not working now.
(Please be specific— for example, auto mechanic, high school teacher,homemaker, laborer, lathe operator, shoe salesman, army sergeant.)

FATHER"S TYPE OF WORK:_____ YOUR RELATION TO THE CHILD:

MOTHER"S TYPE OF WORK:_____ Biological Parent ☐ Step Parent ☐ Grandparent ☐

PARENT/ CAREGIVER'S AGE: _____ Adoptive Parent ☐ Foster Parent ☐

THIS FORM FILLED OUT BY: _____ Other (specify): ☐ _____
(Full Name):

_____

YOUR GENDER: MALE ☐ FEMALE ☐

1. About how many close friends does your child have? (Do *not* include brothers & sisters)

☐ None ☐ 1 ☐ 2 or 3 ☐ 4 or more

2. About how many times a week does your child do things with any friends outside of regular school hours? (Do *not* include brothers & sisters)

☐ Less than 1 ☐ 1 or 2 ☐ 3 or more

3. Does your child receive special education or remedial services or attend a special class or special school?

☐ No ☐ Yes - **kind of services, class, or school:** _____

_____

_____

4. Has your child ever had a serious head injury?

☐ No ☐ Yes – please describe: _____

_____

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months***, please mark the ***2*** if the item is ***very true or often true*** of your child. Mark the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is **not true** of your child, mark the **0**. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know) **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

CBCL Page 2/3

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months***, please mark the ***2*** if the item is ***very true or often true*** of your child. Mark the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is **not true** of your child, mark the **0**. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know) **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

☐ 0 ☐ 1 ☐ 2 2. Drinks alcohol without parents' approval (describe):

_____

_____

_____

☐ 0 ☐ 1 ☐ 2 3. Argues a lot

☐ 0 ☐ 1 ☐ 2 16. Cruelty, bullying, or meanness to others

☐ 0 ☐ 1 ☐ 2 19. Demands a lot of Attention

☐ 0 ☐ 1 ☐ 2 20. Destroys his/her own things

☐ 0 ☐ 1 ☐ 2 21. Destroys things belonging to his/her family or others

☐ 0 ☐ 1 ☐ 2 22. Disobedient at home

☐ 0 ☐ 1 ☐ 2 23. Disobedient at school

☐ 0 ☐ 1 ☐ 2 26. Doesn't seem to feel guilty after misbehaving

☐ 0 ☐ 1 ☐ 2 28. Breaks rules at home, school, or elsewhere

☐ 0 ☐ 1 ☐ 2 37. Gets in many fights

☐ 0 ☐ 1 ☐ 2 38. Gets teased a lot

☐ 0 ☐ 1 ☐ 2 39. Hangs around with others who get in trouble

☐ 0 ☐ 1 ☐ 2 43. Lying or cheating

☐ 0 ☐ 1 ☐ 2 57. Physically attacks people

☐ 0 ☐ 1 ☐ 2 63. Prefers being with older kids

☐ 0 ☐ 1 ☐ 2 67. Runs away from home

☐ 0 ☐ 1 ☐ 2 68. Screams a lot

☐ 0 ☐ 1 ☐ 2 72. Sets fires

☐ 0 ☐ 1 ☐ 2 73. Sexual problems (describe):

_____

_____

_____

☐ 0 ☐ 1 ☐ 2 81. Steals at home

☐ 0 ☐ 1 ☐ 2 82. Steals outside the home

☐ 0 ☐ 1 ☐ 2 86. Stubborn, sullen, or irritable

☐ 0 ☐ 1 ☐ 2 87. Sudden changes in mood or feelings

☐ 0 ☐ 1 ☐ 2 88. Sulks a lot

☐ 0 ☐ 1 ☐ 2 89. Suspicious

☐ 0 ☐ 1 ☐ 2 90. Swearing or obscene language

☐ 0 ☐ 1 ☐ 2 94. Teases a lot

CBCL Page 3/3

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months***, please mark the ***2*** if the item is ***very true or often true*** of your child. Mark the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is **not true** of your child, mark the **0**. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know) **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

☐ 0 ☐ 1 ☐ 2 95. Temper tantrums or hot temper

☐ 0 ☐ 1 ☐ 2 96. Thinks about sex too much

☐ 0 ☐ 1 ☐ 2 97. Threatens people

☐ 0 ☐ 1 ☐ 2 99. Smokes, chews, or sniffs tobacco

☐ 0 ☐ 1 ☐ 2 101. Truancy, skips school

☐ 0 ☐ 1 ☐ 2 104. Unusually loud

☐ 0 ☐ 1 ☐ 2 105. Uses drugs for nonmedical purposes (***don't*** include alcohol or tobacco) (describe):

_____

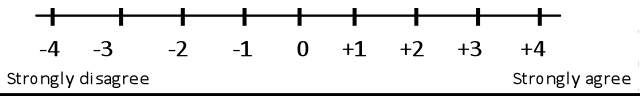
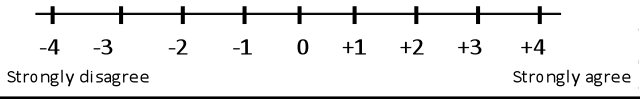
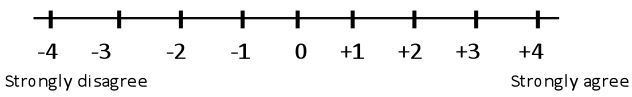
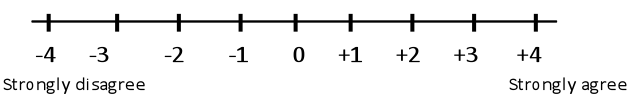
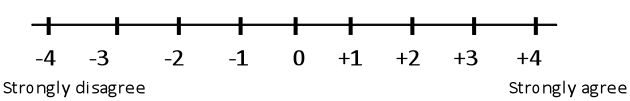
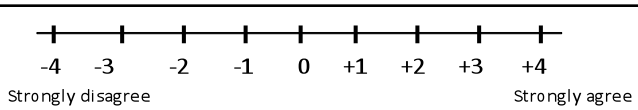
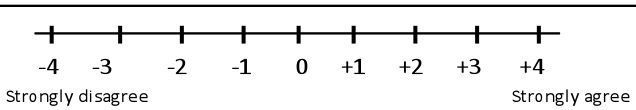
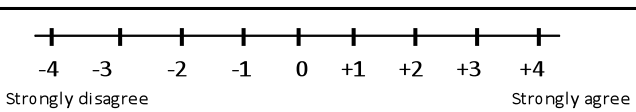
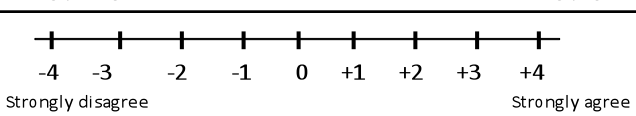
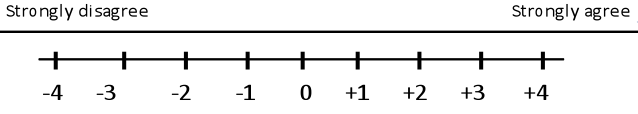
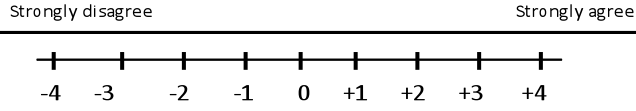
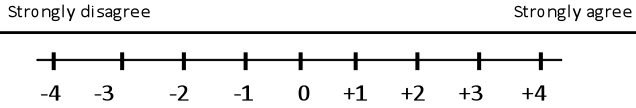
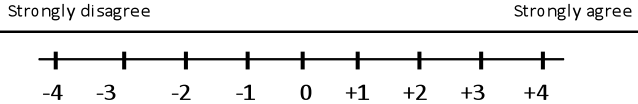
_____

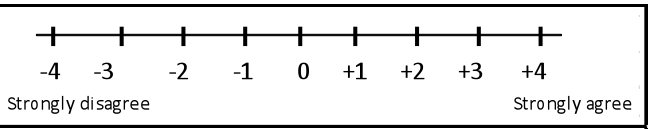
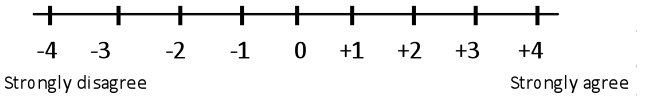
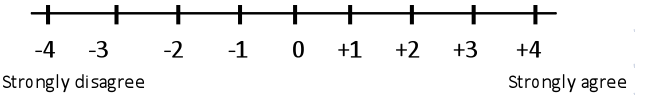
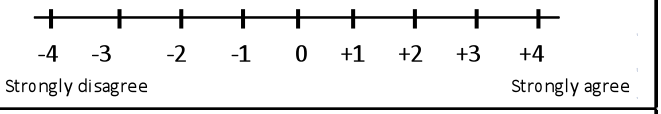
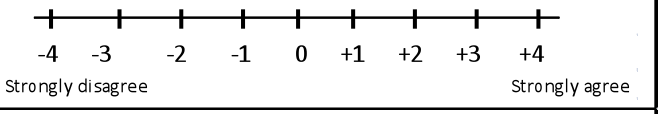
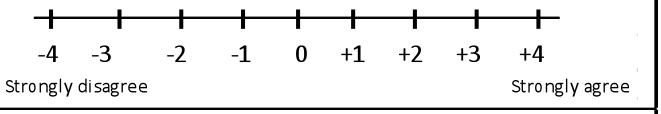
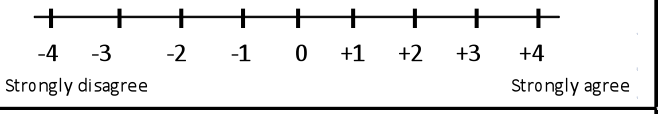
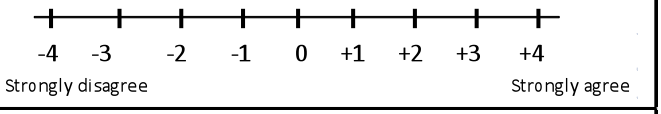
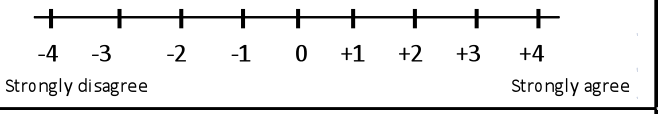
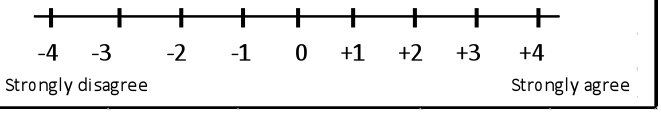
_____

☐ 0 ☐ 1 ☐ 2 106. Vandalism

Appendix C

Griffith Empathy Measure

The Griffith Empathy Measure		Page 1/2
1	It makes my child sad to see another child who can't find anyone to play with.	
2	My child treats dogs and cats as though they have feelings like people.	
3	My child reacts badly when he/she sees people kiss and hug in public.	
4	My child feels sorry for another child who is upset.	
5	My child becomes sad when other children around him/her are sad.	
6	My child doesn't understand why other people cry out of happiness.	
7	My child gets upset when he/she sees another child being punished for being naughty.	
8	My child seems to react to the moods of people around him/her.	
9	My child gets upset when another person is acting upset.	
10	My child likes to watch other people open presents, even when he/she doesn't get one themselves.	
11	Seeing another child who is crying makes my child cry or get upset.	
12	My child gets upset when he/she sees anther child being hurt.	
13	When I get sad my child doesn't seem to notice.	

14	Seeing another child laugh makes my child laugh.	
15	Sad movies or TV shows make my child sad.	
16	My child becomes nervous when other children around him/her are nervous.	
17	It's hard for my child to understand why someone else gets upset.	
18	My child gets upset when he/she sees an animal being hurt.	
19	My child feels sad for other people who are physically disabled (e.g., in a wheelchair).	
20	My child rarely understands why other people cry.	
21	My child would eat the last biscuit on the plate, even when he/she knows that someone else wants it.	
22	My child acts happy when another person is acting happy.	
23	My child can continue to feel okay even if people around are upset.	

Appendix D

The Callous-Unemotional Screening Device

Temperament Screening Device **Please complete all questions: The response options for each question are** **0 = not at all true; 1 = sometimes true; 2 = definitely true**			
My child/ This child	**0 = not at all true**	**1 = sometimes true**	**2 = definitely true**
1. Is concerned about other people's feelings	☐	☐	☐
2. Feels guilty if s/he does something wrong	☐	☐	☐
3. Break promises	☐	☐	☐
4. Shares with other children	☐	☐	☐
5. Is helpful if someone is hurt, upset or ill	☐	☐	☐
6. Is kind to younger children	☐	☐	☐
7. Volunteers to help others	☐	☐	☐
8. Is disobedient to adults	☐	☐	☐
9. Is inconsiderate of other people's/children's feelings	☐	☐	☐

Appendix E

Observation of helping behaviour

OBSERVATION OF HELPING BEHAVIOUR:

7-point rating scale:
(Circle the appropriate number)

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 F
Parent Consent Form

Consent Form

University of Cape Town

Consent to participate in a research study:

Risk Factors for Poor Development in First-graders

Dear Parent,

Study purpose

You and your first-grade child are being invited to participate in a research study being conducted by researchers from the Department of Psychology at the University of Cape Town. The purpose of this study is to map the prevalence of certain factors that place children at risk for poor development.

Study procedures

If you decide to participate in this study, you will be interviewed for approximately 60 minutes, either at home or at the school – this is your choice. The interview will include questions about your parenting history as well as your child's behaviour. Your child will be assessed at school. The assessment will include tests of ability to do academic work and to get along with others. Their height and weight will also be measured. They will be assessed over two 60 minute sessions and breaks can be taken whenever they need them. We will also be discreetly observing your child in the classroom and during breaks. In addition, we will also be asking your child's teacher to provide us with information about his/her academic performance and behaviour at school.

Possible risks and benefits

There are no real risks involved in this study. Your child may become tired during the assessments, but he/she will be encouraged to take breaks whenever needed. Your child will be provided with refreshments during the assessment as well as a small toy upon completion. You will be offered a R50 cell phone or supermarket voucher to thank you for your time.

One very real benefit is that this study will provide your child with a developmental assessment which he/she would not likely get otherwise. You can be assured that, in the event that we should find your child to be at risk for any problems, we will notify you and refer you to the appropriate resources.

Alternatives

You may choose not to participate in this study. Your decision will not affect your or your child's relationship with the school in any way.

Voluntary participation

Participation in this study is completely voluntary. You are free to refuse to answer any question. You are free to change your mind and discontinue participation at any time without any effect on your relationship with the school.

Confidentiality

Information about you and your child for this study will be kept confidential. You and your child's consent form and other identifying information will be kept in locked filing cabinets. The information obtained will not be disclosed to anybody else but the researchers involved. Any reports or publications about this study will not identify you or any other study participant. The computers used to type up the data will be password protected.

Questions

Any study-related questions or problems should be directed to the following researchers:

Dr. Catherine Ward 021 650 3422

Dr. Susan Malcolm-Smith 021 650 4605

Questions about your rights as a study participant, comments or complaints about the study may also be presented to Ms. Rosalind Adams (021 650 3417).

Please fill out the last page and send it back to Portavue primary school by **MAY 31st**. You are welcome to keep the first two pages.

*To be filled out and sent back to Portavue primary school by **MAY 31st**

I have read the consent form and am satisfied with my understanding of the study, its possible risks, benefits and alternatives. I hereby voluntarily consent to the participation of me and my child in the research study as described.

---------- ----------

Signature of participant (parent) Date

---------- ----------

Name of participant (printed) Witness

Please tick the options that are most convenient for you

- € I prefer that the researchers interview me at home

  Preferred interview time at home:

  - € Morning (8am - 12pm)
  - € Afternoon (13pm-17pm)
  - € Evening (17pm-20pm)

- € I prefer to come to Portavue primary school for my interview

  Preferred interview time at Portavue Primary:

  - € Morning (8am - 12pm)
  - € Afternoon (13pm-17pm)

My home telephone number:

My home address:

Appendix G
Informed Assent Form for Children

UNIVERSITY OF CAPE TOWN
DEPARTMENT OF PSYCHOLOGY

Assent Form

(To be read to the child participant before testing begins)

Hello! We want to tell you about a research study we are doing. A research study is a way to learn more about something.

If you agree to join this study, you will be asked to do some tasks like drawing pictures, telling me about the meaning of some words, and building puzzles with blocks. We will also measure your height, arm and head with a measuring tape. Then we will measure your weight on a scale.

There will be two sessions, both about an hour long. If you get tired, we can take a break at any time. When you are finished with the tasks, you will get a small toy and something to eat and drink.

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

Any questions?

If you sign your name below, it means that you agree to take part in this research study.

---------- ----------

Date (MM/DD/YEAR) Signature of Child Participant

Signature of Test Administrator

Plagiarism Declaration

Danielle Woolley

Honour Research Report

1. I know that plagiarism is wrong. Plagiarism is the use of another's work and to pretend that it is one's own.

2. This essay/ report/ project is my own work.

3. I have used the author/ date method of citation. Each significant contribution to, and quotation in, this essay/ report/ project from the work or works, of other people have been attributed, cited and referenced.

4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as their own.

Signature: Danielle Woolley Date: 29 October 2012