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**Associations between Parenting
and Children's Socio-emotional Well-being:
The Role of Empathy and Social Understanding**

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Thesis submitted for the degree of Doctor of Philosophy

University of Sussex

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Statement

I hereby declare that this thesis has not been, and will not be, submitted in whole or in part to another University for the award of any other degree.

Nikki Luke

28th September 2012

Acknowledgements

I had intended to keep this section brief but I have so many people to thank and I won't get the chance again, so here goes...

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UNIVERSITY OF SUSSEX

Nikki Luke

Thesis submitted for the degree of Doctor of Philosophy

**Associations between Parenting and Children's Socio-emotional Well-being:
The Role of Empathy and Social Understanding.****Summary**

The socio-emotional well-being of maltreated children is a key priority for practitioners and policy-makers alike; yet not enough is known about the developmental mechanisms that might link children's parenting experiences with their psychosocial adjustment. Previous research suggests that parental abuse and neglect can have adverse effects on children's peer relationships and self-perceptions. Emerging theoretical and empirical work suggests that children's social understanding and empathy could play a key role as mediators of these effects, but we have little knowledge about the differentiated pathways that might be uncovered by adopting a multidimensional conceptualisation of parenting experiences, social understanding and empathy, and peer reputations and self-perceptions. This thesis includes five papers reporting on a programme of empirical research conducted in order to address this gap in knowledge.

The first, a meta-analysis and systematic review, revealed a complex and differentiated profile of social understanding among maltreated children. The second paper reports on a thematic analysis of a focus group and detailed semi-structured individual interviews with foster carers. In line with our theoretical model, carers readily identified children's

difficulties with social understanding and empathy as relevant explanations for their socio-emotional problems. The third paper presents a new multidimensional self-report measure of empathy in children, demonstrating differentiated connections with socio-emotional functioning.

The fourth paper presents comparisons between maltreated children in foster care and their classmates at school (aged 7-11 years), using measures that assess their peer reputations, self-perceptions, social understanding and empathy. Results indicate both direct links from maltreatment status to self-perceptions, as well as indirect links via children's theory of mind skills, their prosocial responses to others' emotional states and their behavioural reputations. The final paper delves deeper into the variations within the non-maltreated sample, uncovering links between specific features of the children's parenting experiences and their behavioural reputations, peer status and self-perceptions, via emotion understanding and empathic responses.

Overall, the findings from this programme of research highlight the interplay of parenting experiences and socio-emotional competence in understanding school-aged children's psychosocial functioning. The results carry implications for further research as well as for applied work to support maltreated children and the adults who work with and care for them.

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Chapter 1: Introduction

1.1 Introduction

The existing literature suggests that differences in children's parenting experiences can influence their self-perceptions and the ways in which they relate to others (e.g., see Bornstein, 2002, for a review). There is some provisional support for the idea that this impact might be mediated by children's developing social understanding and empathy (Dodge, Bates, & Pettit, 1990), but the links between these factors have not as yet been fully explored, and research into these relationships has often been hampered by a narrow focus arising from unidimensional conceptions of the key variables. Moreover, little is known about how this mediational effect might be realised in the extreme parenting environment of maltreatment. This thesis aims to address these gaps in the current knowledge by testing a mediational model of the links between: a) negative parenting experiences; b) social understanding and empathic responding; and c) peer reputations and self-perceptions. In doing so it will present a multidimensional approach which enables an examination of the specific profiles of strengths and difficulties that may be associated with particular parenting experiences.

The purpose of this introduction is to provide an overview of the existing evidence and theoretical explanations that inform our understanding of the relationships between our key variables. Our specific goals in presenting this introduction are: first, to outline the current state of research on the links between parenting experiences and children's socio-emotional well-being, and between parenting and children's socio-cognitive responses; second, to provide details of a series of theoretical approaches which have attempted to explain these links; third, to provide justification for our theoretical model and its particular application to maltreated children; and finally, to outline the research questions, aims, and methodological approach of the new empirical work.

Social and Emotional Well-being in Children: Individual Differences

Developmental psychologists have for some time endeavoured to understand individual differences in children and their experiences with respect to various aspects of social and emotional well-being. In any group of children, we can observe differences in the way that individuals view themselves, as well as in how they are viewed by other members of the group. Peer reputations involve a sense of evaluation which is also reflected in self-perceptions. Differences in the fit between the individual's ideal self-concept and the actual concept held by self or others make this an emotionally laden aspect of children's development (Harter, 1998). Both self-perceptions and peer reputations can fall along a continuum from negative to positive, and it has been argued that the positivity or negativity of perceptions held by the self and others can shape children's ongoing socio-emotional development (e.g., Newcomb, Bukowski, & Pattee, 1993; Rubin, Coplan, & Bowker, 2009). Individual differences in self-perceptions and peer reputations have been implicated in a number of outcomes during childhood and beyond. Even in the child's first years of education, successful peer relationships can show a crucial link with their school competence (Verschuere, Marcoen, & Schoefs, 1996). Conversely, problematic outcomes can result when self-perceptions and peer relations are more negative. Low self-esteem in children has been linked with depression and delinquency (Rosenberg, Schooler, & Schoenbach, 1989) and adult mental and physical health problems (Trzesniewski, Donnellan, Moffitt, Robins, Poulton, & Caspi, 2006), while peer rejection has been shown to be a risk factor in the development of internalising symptoms (Lee & Hankin, 2009) and educational problems including academic failure and school drop-out (Hatzichristou & Hopf, 1996).

According to Gifford-Smith and Brownell (2003), over 30% of the interactions children engage in during middle childhood are with their peers. Interaction in the peer

group also becomes more distinct from the adult world at this age, and there is less direct supervision of contact. Acceptance by the peer group therefore becomes particularly salient during this period (Parker & Gottman, 1989). Social acceptance refers to the attitude of other members of the group towards the child: specifically, the degree to which an individual is liked or disliked by their peers. A substantial body of work has been conducted in this area in an attempt to identify the correlates of peer acceptance and rejection. Social acceptance is commonly measured in the school context, as this presents a convenient social group within which all members have frequent contact. Using the method of ‘sociometric nominations’ developed by Coie, Dodge, and Coppotelli (1982), children can identify the classmates whom they most like to spend their free time with, and those whom they least like. Standardising the numbers of nominations they receive, within each classroom, gives an indication of relative levels of acceptance and rejection.

Proximal predictors of social acceptance include the degree to which children engage in particular types of behaviour that might be viewed in either a positive or negative light by their peers. Children’s social acceptance and rejection scores can be analysed alongside a number of behavioural factors measured using peer nominations or naturalistic observations, to ascertain whether individual children are typically prosocial and cooperative, shy and withdrawn, or aggressive and disruptive. These behavioural descriptors allow us to look beyond the more general notion of ‘peer relations’ to examine individual profiles of positivity and negativity within the peer group and how these relate to peer acceptance and rejection. A meta-analysis of papers reporting this type of investigation was conducted by Newcomb et al. (1993), and the results indicated that specific peer profiles are linked to particular types of social behaviour. While subsequent work has highlighted the complexity of these relations, in general, prosocial

behaviour has been shown to predict peer acceptance (Wentzel & Erdley, 1993), whereas aggressive behaviour has been linked to peer rejection (Coie, Dodge, & Kupersmidt, 1990), particularly in girls (Kerestes & Milanovic, 2006). Yet behavioural links with peer rejection are not always clear-cut: aggressive children can be liked by some as well as disliked by others, and conversely, peer rejection can be the result of either aggression or social withdrawal (Howe, 2010). In the present thesis, we therefore incorporate an evaluation of the complex links between behavioural reputations in the peer situation and relative levels of peer acceptance and rejection.

The experience of peer acceptance or rejection has also been implicated in children's sense of self-worth. Self-esteem or self-worth can be seen as the evaluative component of an individual's self-concept (Blascovich & Tomaka, 1991). Studies have shown that children's self-worth can suffer in the face of peer rejection (Boivin & Bégin, 1989), even where this has been experimentally manipulated (Nesdale & Pelhée, 2009). Moreover, particular types of social behaviour have been shown to relate to self-worth. Donnellan, Trzesniewski, Robins, Moffitt, and Caspi (2005) found links between more aggressive behaviour in children and lower self-esteem, which held even after controlling for children's IQ, socio-economic status, and academic achievement.

The general sense of self-evaluation implied in the concept of self-worth or self-esteem has been argued to depend on children's perceptions about their own competence in the areas of life where they feel it is most important to succeed (Harter, 1986). Harter (1982) suggested that these different areas might include social acceptance, behavioural, academic, and athletic competence, and physical appearance. An individual child can hold a concept of the self which includes a specific profile of differentiated strengths and difficulties across these domains, but their general sense of self-worth will be determined by how closely this profile matches their 'ideal' self. We

might therefore expect problematic peer relationships to be particularly salient for children's perceptions about their social acceptance; moreover, negative behavioural reputations might be reflected in perceptions of the self as someone who is generally badly behaved. Verschueren, Doumen, and Buyse (2012) point out that most studies fail to measure both general and specific dimensions of the self-concept, an issue which we have addressed in this thesis with the use of a multidimensional measure of self-perceptions (Harter, 1985).

Antecedents of Self-perceptions and Peer Reputations

Given the importance of self-perceptions and peer reputations for children's social and emotional well-being, researchers have attempted to uncover their potential antecedents. A popular approach within the literature has been the investigation of social factors that might contribute to the way children come to think about themselves and to enact the kinds of behaviours that result in particular peer reputations. One social factor that has generally come to be accepted as having an impact on children's social and emotional well-being is the variation in children's parenting experiences. The ways in which parents interact with their children can differ across a range of dimensions, each of which might affect the developing child. Before examining these dimensions in detail, it is important to acknowledge the potential for a bidirectional influence between parenting and children's socio-emotional functioning. For example, a child who displays aggressive behaviour might provoke their parents to use harsher punishments, which could in turn prompt further externalising behaviours in the child (Patterson, Bank, & Stoolmiller, 1990). Notwithstanding this reciprocal influence, however, there are theoretical reasons to suppose that specific aspects of children's parenting experiences might contribute to their self-perceptions and peer reputations.

Theoretical explanations for children's self-perceptions and social reputations often centre on the ways in which social interactions can help shape development. Hamachek (1978, p. 255) contended that "... a sense of inferiority is developmental or learned, rather than innate." Individual differences in the positivity or negativity of perceptions of the child held by the self and others might therefore be expected to relate to differences in the child's early experiences with caregivers. Indeed, there is evidence that children begin to develop self-evaluations based on adults' reactions at around the age of 18 months (Stipek, Recchia, & McClintic, 1992). A number of theoretical perspectives have aimed to outline the salient features of the child's relationship with their caregivers. One widely-cited perspective draws on the principles outlined in attachment theory.

Attachment theory, as proposed by Bowlby (e.g., 1964, 1973) postulates that children possess an innate drive to form an attachment bond with a primary caregiver (usually, but not always, the mother). Infants display instinctive attachment behaviours such as crying when feeling threatened. In a healthy relationship, these behaviours will prompt the caregiver to restore proximity and thereby foster a sense of security in the infant. The secure attachment relationship is thus characterised by children's belief that their needs for comfort and protection will be met. However, not all caregivers respond in the same way, and these differences in responses to the child help to shape the way in which the individual's self-concept is formed. Through repeated interactions with the caregiver, the child comes to internalise an 'internal working model' (IWM) of the self, the other, and the relationship between self and other (Bowlby, 1969). The kind of warm and responsive caregiving through which a secure attachment is formed leads to the development of an IWM of the self as someone who is lovable, while inconsistent or harsh parenting can make the child feel unlovable (Thompson, 2008).

Support for the influence of attachment security on children's social and emotional well-being has come from two different approaches. The first of these involves classifying children's attachment style as secure or insecure, and comparing groups of children displaying these attachment styles on self-perceptions and peer relations. This approach is based on the assumption that the child's IWM of the self constructed in interactions with the primary caregiver forms the basis of a sense of self-worth; moreover, it assumes that the IWM of the relationship between self and other is generalised from the early relationship with the primary caregiver to subsequent relationships with peers. Consequently, differences in children's attachment security have been shown to predict the positivity and negativity of their self-concepts (Doyle, Markiewicz, Brendgen, Lieberman, & Voss, 2000). Even in middle childhood, children's perceived levels of parenting security predict their sense of self-worth (Booth-LaForce et al., 2006). Studies have also shown that differences in children's attachment styles are linked to the ways in which they relate to peers. A meta-analytic review by Schneider, Atkinson, and Tardif (2001) showed that a secure attachment relationship with a parent was linked to peer success, particularly during the middle childhood period. An argument can be made that this is because the knowledge that parents will offer a safe refuge in times of distress gives securely attached children the confidence to initiate more peer interactions than those who do not have the reassurance of a secure base. The link between attachment security and peer acceptance has been shown to exist independently of differences in children's temperament (Szewczyk-Sokolowski, Bost, & Wainwright, 2005). At the other end of the continuum, insecurely attached boys have been found to be less accepted and more rejected by peers, and were judged as more likely to start fights, less socially competent, and having more behavioural problems (Cohn, 1990).

Further support for an attachment perspective comes from studies which have examined the types of parenting behaviour that are generally assumed to contribute to the child's attachment security. A secure bond is thought to develop in the context of warm and sensitive parenting (de Wolff & van IJzendoorn, 1997); this involves the expression of positive affect and affection towards the child, as well as responding to their needs (Davidov & Grusec, 2006). Consequently, children whose parenting experiences are characterised as warm, sensitive, and responsive are more likely to develop a positive self-concept and higher self-esteem (Clark & Symons, 2000). This positive link between parental warmth and children's self-esteem has also been observed across different cultures (Farruggia, Chen, Greenberger, Dmitrieva, & Macek, 2004), and the relationship appears to hold for more specific self-concepts: Stocker (1994) found that children who perceived their parenting experiences as lacking in warmth were more likely to see themselves as being badly behaved. Warm and sensitive parenting has also been linked to children's success in peer relationships (Davidov & Grusec, 2006). Moreover, this positive style of parenting has been shown to relate to the kinds of behaviours that make the difference between peer acceptance and rejection. Studies indicate that prosocial behaviour is more likely where parenting is warm (Laible, Carlo, Torquati, & Ontai, 2004), whereas a lack of warmth predicts more externalising behaviours (Buschgens et al., 2010).

In contrast to the warm and sensitive parenting style associated with children's secure attachments, insecure attachments can occur where parenting is hostile and punitive, indifferent and neglectful, or cold and rejecting. The resultant IWMs paint the self as unworthy and unlovable and set up expectations in the child that subsequent relationships will be similarly negative in character. Studies have shown that lower self-esteem can be predicted by experiences of harsh (Amato & Fowler, 2002),

indifferent (Rosenberg, 1963), and rejecting parenting (Steinhausen & Metzke, 2001). Negative parenting experiences also have implications for children's social development. Parental hostility has been linked to poorer social adjustment (Haskett & Willoughby, 2007), and more specifically to lower levels of acceptance and higher rejection by peers (Criss, Pettit, Bates, Dodge, & Lapp, 2002). Furthermore, there are links with more negative aspects of children's social behaviour: those who practise harsh, neglectful, or rejecting parenting are more likely to have children who are aggressive with peers (Buschgens et al., 2010; Knutson, DeGarmo, & Reid, 2004; Laible, Carlo, Torquati, & Ontai, 2004). In addition, parents can act differently towards individual children, and studies with identical twins have shown that this differential treatment has important implications for children's socio-emotional development, as the twin whose parenting experiences are more supportive and less harsh displays more prosocial behaviours and fewer behaviour problems than their sibling (Deater-Deckard et al., 2001).

The direction of causality running between perceived parenting experiences, negative self-perceptions, and problematic peer relationships has been conceptualised in different ways. The concept of the IWM as a mechanism by which children's early self-perceptions are formed lends weight to the suggestion that the primary influence of parenting experiences lies in children's views about themselves. However, children also hold IWMs about social relationships which can influence the way they interact with peers. Moreover, differences in children's self-perceptions can mean that they approach peer relationships in distinct ways, and so perceptions of self-worth can mediate the link between parenting and social competence (Booth-LaForce et al., 2006). Subsequently, however, the feedback obtained from interactions with peers can also influence children's self-perceptions, which explains how peer rejection can lead to a

diminished sense of self-worth (Boivin & Bégin, 1989). This suggests that by the time they reach middle childhood, children's self-perceptions are shaped at least in part by the influence of parents and peers. In a recent paper, Verschueren et al., (2012) noted that most studies reporting on the links between social relationships and children's self-perceptions have tended to focus on one level of influence: for example, the child's relationship with parents, peers, or teachers. The present thesis addresses this gap by investigating dimensions of both parent and peer relationships in relation to children's self-perceptions.

Our discussion of the influences on children's socio-emotional well-being has so far centred on experiences of parenting that run along a continuum from positivity to negativity. Rubin, LeMare, and Lollis (1990) propose two pathways by which parenting experiences might lead to different types of social behaviour that can make peer rejection more likely. In the first pathway, a combination of the child's temperament and the parent's authoritarian style can provoke avoidant attachment; this frustrating relationship leads to heightened levels of aggression and subsequent peer rejection. In the alternative pathway, the child's wariness combines with maternal unresponsiveness and inconsistency to produce an insecure attachment; social behaviour is then characterised by withdrawal, increasing the likelihood of peer rejection. We can examine the viability of this explanation by conceptualising these pathways as representing two types of extreme negative parenting experiences: physical abuse and neglect.

Extremes of Parenting: The Case of Maltreatment

Child maltreatment represents the extreme case of children's negative parenting experiences. Definitions of maltreatment incorporate a range of parenting practices including physical, sexual, and emotional abuse, physical and emotional neglect, and

permitting a child to witness domestic violence (Manly, 2005). Maltreatment of any kind represents a challenge to healthy development, as abusive and neglectful families fail to provide the kind of predictable experiences that are commonly believed to aid children's typical progress to maturity. Maltreatment has therefore been termed a 'natural experiment' in which comparisons can be made between children who are reared in atypical conditions and their more typical peers (Kim & Cicchetti, 2004). There is some indication that particular subtypes of maltreatment might predict developmental sequelae that are markedly different than others. Although witnessing domestic violence can clearly have an impact on children's emotional well-being (e.g., Bogat, DeJonghe, Levendosky, Davidson, & von Eye, 2006), research suggests that effects are more severe when abuse is experienced rather than witnessed (Kulkarni, Graham-Bermann, Rauch, & Seng, 2010). Moreover, in comparison with physical abuse and neglect, sexual abuse typically involves a different distribution of perpetrators (e.g., in the proportion of non-parental perpetrators) and can lead to a very distinct set of outcomes (Trickett & McBride-Chang, 1995). For these reasons, our subsequent discussion and the empirical work contained herein focus solely on children's experiences of physical abuse or neglect.

Our previous discussion of the importance of attachment style for children's socio-emotional functioning is of direct relevance in the case of maltreatment. Children who have experienced abuse or neglect are less likely to be securely attached than their peers, but are more likely than other children to be categorised as insecure-disorganised (Stronach et al., 2011), with up to 80% of maltreated children being classified as such (Howe, Brandon, Hinings, & Schofield, 1999). Disorganised attachment is characterised by behaviour which indicates that the child has no consistent strategy for attaining proximity to the caregiver (Main & Solomon, 1986), and is thought to result

from a lack of nurturant caregiving (Howe et al., 1999). Moreover, this atypical pattern of attachment styles relates to characteristic types of internal working models, as maltreated children have more negative representations of their caregivers than do nonmaltreated children (Toth, Cicchetti, Macfie, & Emde, 1997). Dean, Malik, Richards, and Stringer (1986) found that maltreated children held two conceptions of adult-child relations: children helping adults but not the reverse, and adults being above criticism with children always to blame. Older children in their sample developed a new model, which the authors named 'perfect-parent-worthless-child'.

Given the aforementioned links between more typical forms of negative parenting and children's problematic self-perceptions and peer relations, it may be unsurprising to find that parental maltreatment has been linked to similar issues surrounding children's socio-emotional well-being. Indeed, there is a wealth of evidence that maltreated children are at greater risk of a range of difficulties, though on the whole these studies have focussed on a narrow range of outcomes. First, maltreatment has been shown to relate to poorer self-esteem (Burack et al., 2006). This finding has been reliably shown using self-report measures (e.g., Gil & Bogart, 1982; Oates, Forrest, & Peacock, 1985), story stem tasks (Toth et al., 1997), retrospective interviews with adults who were maltreated as children (Luke & Coyne, 2008), and reports by counsellors and social workers (Benbenishty & Oyserman, 1995; Kaufman & Cicchetti, 1989). There is also evidence that self-esteem is most affected when abuse is ongoing (Kazdin, Moser, Colbus, & Bell, 1985). Fonagy, Gergely, Jurist, and Target (2002) argue that in the context of the maltreating family, the child's attempts to identify with their caregiver can undermine their own mental state by making them feel worthless. As yet, however, little is known about more domain-specific self-

perceptions in maltreated children such as those about social acceptance and behavioural competence.

Establishing quality friendships could play an important buffering role for the effects of maltreatment. Bolger, Patterson, and Kupersmidt (1998) argue that friendships can help maltreated children to develop emotional security and provide a context in which they can practise their social skills. Yet this support may not be forthcoming, as maltreated children are less likely to be liked by peers (Haskett & Kistner, 1991) and more likely to experience peer rejection (Kim & Cicchetti, 2010). Research is also emerging on the particular behavioural reputations that might be more likely for maltreated children, including the presence of ‘problem’ factors such as externalising behaviour or aggression (Dodge, Bates, & Pettit, 1990). Physical abuse before children begin school has been shown to predict externalising problems several years later (Dodge, Pettit, Bates, & Valente, 1995). Similarly, Finzi, Ram, Har-Even, Shnit, and Weizman (2001) found that physically abused children were more aggressive than both neglected and nonmaltreated children; aggression in this sample was negatively associated with secure attachment and positively associated with insecure avoidant attachment.

There is some indication that specific aspects of children’s maltreatment experiences might make particular antisocial behaviours more likely. Hoffman-Plotkin and Twentyman (1984) and, later, Prino and Peyrot (1994) found that abused children were more aggressive and neglected children were more socially withdrawn. More recently, Manly, Kim, Rogosch, and Cicchetti (2001) looked at differential effects of maltreatment subtypes and periods and found that physical abuse during the preschool period was a stronger predictor of later externalising behaviours and aggression than other possible permutations of maltreatment subtype and timing. The severity of the

maltreatment experience may also be important, as the same study showed that the severity of physical abuse in preschool predicted later externalising problems and aggression, while the severity of neglect in preschool predicted later internalising behaviours and social withdrawal. Displays of aggression and withdrawal have also been shown in response to others' distress: Klimes-Dougan and Kistner (1990) observed more of these inappropriate behavioural responses in physically abused children when compared with controls.

As well as antisocial acts, a small body of research has aimed to capture the negative feelings of maltreated children in social encounters. Wodarski, Kurtz, Gaudin, and Howing (1990) have shown that physically abused children are more likely to express feelings of aggression in comparison to neglected children and controls. In contrast, both physical abuse and neglect were linked to anger and depression in a sample ranging from 2 to 17 years old (Turner, Finkelhor, & Ormrod, 2006). Further, children's emotional capacities have been shown to explain some of the differences in their social behaviour: in Shields and Cicchetti's (1998) study, emotional lability and negativity mediated the link between maltreatment and aggression. Moreover, difficulties with emotion regulation have been found to mediate the links between maltreatment experiences and children's observed externalising behaviours (Shonk & Cicchetti, 2001) and peer-nominated aggression (Teisl & Cicchetti, 2008).

Besides the presence of negative behavioural reputations, maltreated children have also been shown to be lacking in some of the more positive social behaviours such as cooperative and prosocial behaviour (e.g., Alink, Cicchetti, Kim, & Rogosch, 2012; Anthonysamy & Zimmer-Gembeck, 2007). Kaufman and Cicchetti (1989) examined both the presence of negative peer outcomes and the absence of positive outcomes in their sample of maltreated 5- to 11-year-olds. They found that maltreated children were

more withdrawn and showed fewer prosocial behaviours than their peers; in addition, physically abused children were more aggressive in comparison to the other groups. Similarly, Salzinger, Feldman, Hammer, and Rosario (1993) found that abused children were seen as less cooperative and more aggressive than their peers; they were also less liked and more disliked. Moreover, abused children had atypical views about the quality of their friendships, including seeing their friends as less supportive and more negative and having more friends from younger age groups rather than same-age peers.

Subsequent work has focussed on the ways in which particular behavioural reputations held by maltreated children relate to their social standing among peers. Haskett and Kistner (1991) showed that 3- to 6-year-olds who had been physically abused typically displayed less positive and more negative behaviour (both aggressive and withdrawn), and were less well-liked by peers. Similarly, Anthonysamy and Zimmer-Gembeck (2007) found that maltreated children were more rejected, less accepted, and less liked by peers; this pattern was mediated by negative behaviours in the form of more aggression and withdrawal and less prosocial behaviour. Rogosch and Cicchetti (1994) also found that physically abused children displayed heightened levels of aggression and withdrawal, as well as more peer rejection; children who showed both types of behaviour had particular problems with social competence. The authors suggested that these results show how the two pathways outlined by Rubin et al. (1990) can blend in some children's experience. Work by Bolger and Patterson (2001) added a further dimension to this relationship, showing that the chronicity of maltreatment predicted children's peer rejection both concurrently and over time; this relationship was mediated by aggression. Indeed, a review of the research conducted by Hildyard and Wolfe (2002) suggests that neglected children may be at greater risk than abused

children of social withdrawal and low peer popularity, due to the increased likelihood of chronicity in this subtype of maltreatment.

The literature on child maltreatment also outlines the ways in which children's peer relations and self-perceptions might be related. Harter (1999) argued that the self relies on the internalisation of socialisation experiences; following early parental negativity, maltreated children may lose important peer feedback and support due to enforced isolation, or experience peer rejection owing to increased aggression or withdrawal. In support of this, Kaufman and Cicchetti (1989) showed that maltreated children had lower self-esteem, and this was linked to lower prosocial and more aggressive, disruptive, and withdrawn behaviours. Bolger et al. (1998) showed that for maltreated 8- to 10-year-olds, chronicity of maltreatment was linked to lower social preference scores and poorer self-esteem. Examining maltreatment subtypes separately, they showed that neglected children had more problematic social relationships, while for physically abused children, frequent maltreatment was linked to lower self-esteem. However, a high quality friendship could buffer the effects of maltreatment on self-esteem. The probability of such buffering effects is reduced, unfortunately, by the fact that maltreated children also expect less positivity from others, which is consistent with the notion that their IWMs are characterised by a lack of self-worth. Salzinger, Feldman, Ng-Mak, Mojica, and Stockhammer (2001) showed that physically abused children were less likely to expect peers to say they liked them; this expectation predicted greater aggression and less prosocial behaviour, which in turn predicted less positive and more negative peer status. A weaker path led from more negative expectations to less positive status, via more withdrawn behaviour. However, there is evidence that this expectation may only emerge by middle childhood: Barnett, Vondra, and Shonk (1996) found that maltreated 6- and 7-year-olds rated themselves as highly

socially accepted contrary to teacher ratings, while 8- to 11-year-olds said they were poorly accepted, matching teacher ratings.

The evidence reviewed here shows that children whose parenting experiences are marked by physical abuse and neglect are at greater risk of negative self-perceptions and problematic peer relations. What is lacking in the literature is a fine-grained approach which measures both the specific behavioural reputations that can predict peer acceptance or rejection, *and* children's self-concepts in the salient dimensions of social acceptance and behavioural competence as well as global self-worth. Moreover, it is crucial for any intervention work that we gain an understanding of the mechanisms by which maltreatment experiences come to be translated into social and emotional difficulties.

The Role of Social Understanding and Empathy

We propose that one mechanism that mediates the effects of parenting experiences (both in the general population and in the extreme case of maltreatment) lies in the interrelated constructs of social understanding and empathy. Social understanding, known alternatively as 'theory of mind' or 'mentalising', involves an appreciation of mental and affective states, including beliefs and desires, and the role that they play in social behaviour and interactions (Carpendale & Lewis, 2006). Empathy is commonly defined in terms of emotional responses to another person's affective state, specifically those in which the recognition of the other's state produces a similar emotion in the observer (Eisenberg et al., 1996). In this section we discuss the typical course of development in social understanding and empathy, before considering the roots of these responses in children's parenting experiences. Finally, we review the evidence connecting social understanding and empathy to socio-emotional well-being.

The development of social understanding. ‘Social understanding’ is an umbrella concept, incorporating a range of skills which children develop in order to explain and predict the behaviour of others. Miller (2012) outlines a number of developments in infancy which might act as precursors to social understanding. First, the development of joint attention in infants (as seen for example in gaze following) involves the move from dyadic interaction with another person or an object to include both the other *and* the object, and reveals the infant’s understanding of the other’s connection to the object (Moore & Dunham, 1995). Second is the development of social referencing: the use by infants of others’ emotional cues to guide their own response in novel or ambiguous situations (e.g., Sorce, Emde, Campos, & Klinnert, 1985). A final precursor is infants’ developing understanding of intentionality, by which they come to see others’ actions as goal-related and use this knowledge to guide their own actions (Tomasello, Carpenter, Call, Behne, & Moll, 2005). These precursors are clearly delineated from the ‘true’ social understanding which comes later in children’s development. Moore and Corkum (1994) argue that rather than social understanding being revealed in episodes of joint attention, these interactions provide the context in which social understanding develops. Similarly, Carpendale and Lewis (2006) suggest that joint attention does not indicate a clear understanding of others’ attention, but instead represents the infant’s expectations about their interactions; the authors call this “an ‘understanding in action’ or a sensorimotor ‘understanding’ of attention” (p. 92). The change in children’s development from these early precursors to ‘true’ social understanding can be viewed as a move from social-perceptual processes, represented by implicit social intuition, to the social-cognitive processes of later social understanding, represented by reflection and explicit concepts (Tager-Flusberg & Sullivan, 2000).

Early evidence of social understanding lies in children's developing use of language to talk about the internal mental states of self and others. Internal state talk is present from an early age. Bartsch and Wellman's (1995) analysis of young children's conversations showed that children began to talk about desires and the emotions related to desire fulfilment at around the age of 2. Discussion of beliefs appeared later, at about 3 years. This indicates that children have an earlier understanding of the link between desire and behaviour than between belief and behaviour; they also understand how behaviour can be modified according to whether the desire is fulfilled or unfulfilled.

There is also a clear progression in the development of the skills that constitute 'true' social understanding. The appearance of particular abilities at different ages supports our conceptualisation of social understanding as a set of related but distinct skills. One of the earliest to appear is Level 1 perspective-taking (knowing whether or not another person can see something); this is acquired at around the age of 2-and-a-half (Miller, 2012). By the age of 3, children understand that two parties who hold differing information about a situation can have conflicting beliefs about it (Wellman & Bartsch, 1988). Level 2 perspective-taking (knowing the way in which a person sees something) emerges by around age 4 (Miller, 2012), and the knowledge that appearance can differ from reality is generally achieved at about age 4 to 5 (Flavell, Flavell, & Green, 1983). This evidence indicates that social understanding is not something which arrives 'fully formed' at a particular age, but instead involves the gradual development of a range of skills.

One skill in particular is often held up as the key development in children's social understanding. False belief understanding refers to children's knowledge that another person can hold a belief about an object or situation which is untrue, and that this false belief can guide their behaviour. It was first tested in children with the

introduction of Wimmer and Perner's (1983) unexpected transfer task; an alternative was introduced in the form an unexpected contents task (Hogrefe, Wimmer, & Perner, 1986), and these two continue to be the primary methods of assessing false belief understanding. The emergence of this skill is generally noted by about the age of 4: Wellman, Cross, and Watson's (2001) meta-analysis of children's performance on first-order false belief tasks showed a rapid increase in the likelihood of success during the child's fourth year. Flynn, O'Malley, and Wood (2004) looked at the development of first-order false belief in more detail, conducting a microgenetic study in which 3-year-olds were tested every four weeks for a total of six trials. They showed that false belief understanding developed from an initial state of no understanding, to a period where children's performance on the tasks was unstable, to complete understanding. The same pattern of results was shown when using a wider battery of false belief tasks (Flynn, 2006). In other words, the development of false belief understanding is a gradual process. The notion that false belief is a skill which is related to but distinct from other aspects of social understanding is supported by the results of a meta-analysis conducted by Wellman and Liu (2004). The analysis showed that children's understanding of desire precedes their understanding of belief, mirroring the developmental sequence in children's use of internal state language; moreover, they understand ignorance before false beliefs. The authors also developed a scale which indicated a developmental progression in understanding from diverse desires, to diverse beliefs, followed by false beliefs, and then real versus apparent emotions.

Miller's (2012) review shows that most children under the age of 4 fail tests of first-order false belief; however, there have been some attempts using alternative tasks to show the beginnings of false belief understanding developing in under-4s. For example, Clements and Perner (1994) used looking-behaviour studies and found that 3-

to 4-year-olds' eye movements were consistent with first-order false belief understanding, suggesting that very young children might have a form of implicit understanding before the ability to explicitly access this understanding appears after age 4. Similarly, Bartsch and Wellman (1995) have shown in conversation analyses that children as young as 3 years old make reference to false beliefs in their talk. Overall, this evidence suggests that children have some knowledge of false beliefs even before they are able to pass traditional tests; moreover, it suggests that false belief understanding develops first as partial knowledge, rather than a miraculous shift in thinking at age 4.

The development of social understanding does not stop with first-order false belief understanding, though much of the research in the field focusses on this preschool achievement. Chandler (e.g., Chandler & Sokol, 1999) in particular criticises this 'one miracle' view of development, and his argument has more recently been taken up by Miller (2012). Second-order false belief adds another mental state to that involved in first-order understanding as children must understand that one person's belief about a second person's belief can be false; moreover, the target of the belief in question is not an object or event but another belief, meaning that the child must be able to embed propositions within each other ('A thinks that B thinks that...'). The tasks of second-order false belief are therefore more complex than those for first-order reasoning in terms of the amount of material which children must store in working memory and the wording of the questions. Perner and Wimmer were again responsible for the first measure to assess this skill in children; in their ice cream truck task (Perner & Wimmer, 1985), children need to be able to understand that one story character has a false belief about a second character's belief regarding the whereabouts of the titular ice cream truck. This increased complexity requires greater cognitive capability, which is why the

ability to pass tests of second-order reasoning does not emerge until the child is of school age. Even when others have attempted to simplify the second-order reasoning task by making the stories less complex and including probe questions throughout the procedure (e.g., Sullivan, Zaitchik, & Tager-Flusberg, 1994), children still need to be at least 5 years old to have a reasonable chance of success.

As well as developments in children's understanding of others' thoughts, desires, and beliefs, the periods of early and middle childhood also see developments in children's understanding of emotions. Early understanding of basic emotions is succeeded by the understanding of masked and mixed emotions, which emerges over childhood (Flavell et al., 2002). To examine this, Pons, Harris, and de Rosnay (2004) describe their development of the Test of Emotion Comprehension, a battery of tasks assessing numerous aspects of children's emotion skills. Their analysis showed that by 5 years of age, most children can pass tests of emotion recognition, understanding the external causes of emotion, and how reminders (e.g., of a dead pet) can prompt particular emotions. By 7 years, children could understand the role of desires and beliefs in provoking emotions, as well as appreciating the use of one emotion to mask internal feelings. Finally, by 9 to 11 years, children were able to understand that situations could prompt mixed emotions, select appropriate emotion regulation strategies, and see the link between morality and emotions.

Traditionally, theoretical explanations of social understanding have fallen into several camps. The *modularity approach* (e.g., Frith, Morton, & Leslie, 1991) places its emphasis on a biological basis for social understanding, with an innate modular region of the brain biologically maturing to produce development. In this approach, social interaction influences development simply by acting as a trigger for the maturation of biological mechanisms. *Simulation theorists* (e.g., Harris, 1992) hold that making sense

of others' actions depends on the ability to use one's own experiences of thoughts and feelings to imagine oneself in someone else's place. Some simulations are more difficult than others, and this is reflected in the emergence of increasingly complex modes of social understanding over the course of children's development. Finally, the *theory theory approach* (e.g., Perner, 1995; Wellman, 1990) claims that children's knowledge of other minds takes the form of an informal theory, based on the observations of others' actions (as mental states are unobservable). The child's theory is directed at a specific domain (e.g., emotions or beliefs), and enables them to specify cause-and-effect relationships and use these to explain others' behaviour. From this perspective, developments in children's social understanding represent the changes to the theory that occur in light of social experiences. Carpendale and Lewis (2006) have criticised these major approaches for their failure to capture the importance of social interaction in the development of social understanding. Indeed, we follow Carpendale and Lewis in using the term 'social understanding', rather than the more commonly-used 'theory of mind', as the latter implies a preference for the theory theory explanation of development. In using this term, we aim to stress the centrality of the social factors implicated in children's developing understanding of self and others, and in particular the role played by parenting experiences.

The development of empathy. While researchers exploring children's social understanding have disagreed on whether early indicators such as attentional gaze and social referencing indicate 'true' social understanding or simply the rudimentary skills on which understanding is built, those investigating the development of empathy have struggled to agree about how the concept itself should be defined. Empathy has been conceptualised in a number of ways; indeed, the very variety of definitions of the concept can make comparisons difficult. Most definitions stress the presence of an

affective reaction in response to another's emotion display. Generally, in order for this reaction to be considered 'empathic' it must be congruent with the stimulus display (Eisenberg & Miller, 1987*b*). This kind of matching of affects has been termed 'emotional contagion' (Lennon & Eisenberg, 1987), as it involves the unconscious reflection of another's emotional state. A related but distinct type of affective response described by Lennon and Eisenberg (1987) is personal distress, a state of heightened physiological arousal that occurs in response to the other's situation. Unlike emotional contagion, personal distress need not involve a matching of affect, so that the same response can result from witnessing displays of sorrow, anger, or fear.

Alternative definitions of empathy have focussed not on the affective dimension but on the cognitive processing of emotional stimuli. Empathy definitions such as Borke's (1971) state that in order for someone to be considered 'empathic', they must not only recognise the emotion state that another person is displaying, but also appreciate why they might be feeling that way. This type of cognitive response may be seen as more closely related to social understanding than the more affective component of empathy. Feshbach (1975) has argued that the dichotomy between definitions stressing the cognitive or affective dimension of empathy is unproductive. Instead, Feshbach called for a definition which incorporated both the ability to have a cognitive appreciation of the other person's role and affective state, and the affective capacity to respond emotionally to another's situation; as such, the ability to experience a fully 'empathic' response is contingent on the development of social understanding. Feshbach saw the development of empathy aligned with the child's increasing social experiences and cognitive capacity, as well as the move from an egocentric to an allocentric perspective. A number of subsequent researchers have adopted just such an integrated definition (e.g., de Wied, Goudena, & Matthys, 2005).

Yet empathic responding does not end at an affective or cognitive response. Importantly, a number of definitions also recognise that a capacity for empathy also involves the presence of an altruistic or prosocial response towards others. This type of response might be seen as indicating concern for the other's situation, and as such is seen as a more other-focussed response than the self-focus of personal distress (Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983). This type of prosocial motivation may represent the most mature form of empathic response. Zahn-Waxler and Radke-Yarrow (1990) have reviewed the evidence on the development of factors contributing to empathy. By age 2, children have the cognitive capability to interpret others' mental states, the affective capability to have an emotional reaction to others' states, and the behavioural repertoire to offer comfort in response. However, early prosocial behaviours include an element of self-interest as children attempt to relieve their own distress; it is only later in development that there is a move to prosocial behaviours which are motivated by empathic concern. Rosenblum and Lewis (2003) have argued that empathic awareness is necessary but not sufficient for prosocial responding; to do this, a child must have the emotion regulation skills that enable them to tolerate the physical arousal that comes with distress.

Hoffman (1984) outlined his theory of the development of empathy, which describes empathic responses as proceeding through four stages. In the first, infants show global empathy: akin to Lennon and Eisenberg's (1987) emotional contagion, this arises because young babies do not yet have a distinct sense of self and is seen, for example, when one baby starts crying and another joins in. The second stage is 'egocentric' empathy, in which the child's emerging awareness of a separate sense of self means they can begin to offer comfort to others in distress, though this is often given in a form that would be comforting to the infant themselves (e.g., offering an

adult a teddy bear). In the third stage, the child's newly-found cognitive role-taking ability makes them capable of experiencing empathy for another person's feelings and an awareness that feelings can differ dependent on individual needs and interpretations. Finally, late childhood brings an awareness of affective states outside of the specific situation and empathy for another person's general condition. Hoffman conceptualises these developments in empathic responding as arising from the constant interaction of cognitive mental state awareness with developing affective arousal. He also states that particular empathic responses can be self-reinforcing; in other words, if a child is distressed to see someone else in distress, then the strength of this connection is increased for future encounters. We might, then, expect to see differences in children's empathic responses as a function of prior levels of distress in the family context.

Individual differences: Cognitive, language, and neurophysiological factors.

Carpendale and Lewis (2006) state that research on social understanding has in the past focussed on generalisations: largely, a preoccupation with the age at which most children can pass false belief tasks. Instead, the authors argue for the need to look at individual differences in the acquisition of social understanding in order that we might come to understand some of the factors that can explain them. Having reviewed the evidence and theory on the typical developmental sequence of children's social understanding and empathy, we now come to consider some of the potential sources of individual differences in these socio-cognitive responses.

Initially, the study of individual differences focussed on a population for whom social relational difficulties were symptomatic: children with autism spectrum disorders. Baron-Cohen, Leslie, and Frith (1985) compared autistic children's understanding of first-order false belief with that of a group of children with Down syndrome, and of a group of controls. They found that most autistic children were unable to pass the false

belief task, while most of the Down syndrome and typically developing children passed; this was despite the autistic group having a higher verbal mental age than the Down syndrome group. Baron-Cohen (1995) has argued that these and similar findings support a modular view of theory of mind, and that autism involves damage to a ‘shared attention module’ which in turn impairs a ‘theory of mind module’ that then impacts on social relationships.

Subsequent research indicates that it is not merely children with developmental disorders such as autism who are prone to displaying individual differences in social understanding and empathic responding. In terms of factors within the child, there is a close relationship between children’s executive function and language abilities and the development of social understanding and empathy. Executive functioning (EF) has been defined as “...the set of higher order processes (e.g., inhibitory control and working memory) that underpin flexible goal-directed behaviour” (Hughes, 2011*b*, p. 33). Studies have shown that EF relates to a number of dimensions of social understanding and empathy, including first- and second-order false belief (Cutting & Dunn, 1999; Perner, Kain, & Barchfield, 2002). Several aspects of executive functioning appear to be related to social understanding: Hughes (1998) showed links with measures of inhibitory control, attentional flexibility, and working memory. However, inhibitory control may be particularly salient for task performance: Russell et al.’s (1991) salience hypothesis states that the awareness of physical reality takes priority over children’s understanding of mental states, so that if a child knows where something really is, they cannot inhibit this response.

As we have already seen, children’s use of internal state language is seen as an important precursor to mature levels of social understanding. Many authors on the topic see language as central to the development of children’s socio-cognitive skills: for

example, Dunn, Brown, and Beardsall (1991) argue that conversations give children the means for reflecting on feelings. Hughes (2011*b*) states that language plays a key role in permitting children to move from intuitive to reflective modes of social understanding; she also stresses the importance of social experiences for this move. Moreover, there is empirical evidence to support the relationship between language and social understanding in particular. Milligan, Astington, and Dack's (2007) meta-analysis showed a moderate-to-large effect size in the relationship between language and social understanding, while Ruffman, Slade, Rowlandson, Rumsey, and Garnham (2003) found that children's language abilities predicted their later social understanding.

The relationships between language, executive functions, and social understanding and empathy could operate in various ways. It is possible that language and EF are prerequisites for social understanding and empathy: children need language to enable them to name and understand particular emotions, desires, and beliefs, and they need executive functions to enable them to inhibit self-focussed responses in social situations to consider the viewpoint of the other. Alternatively, the function of language can be viewed from a Vygotskian perspective: early nonverbal developments in social interaction such as joint attention are followed by the interpersonal learning of language, which is then internalised and can be used intrapersonally for socio-cognitive reasoning (Carpendale & Lewis, 2006). This would suggest that the relationship between language and social understanding or empathy is primarily a bidirectional or transactional one. Miller (2012, p. 64) also argues that the relationship may operate in both directions, but suggests "...the primary causal direction is from executive function or language to theory of mind and not the reverse." In support of this, Hughes (1998) showed that 4-year-olds' EF predicted their theory of mind skills a year later, but earlier theory of mind did not predict later EF. Similarly, Milligan et al.'s (2007) review of

longitudinal research showed a stronger predictive relationship from language to social understanding than was true for the reverse.

Miller (2012) argues that language and EF are less likely to affect the emergence of social understanding and empathy *per se*, but instead are more likely to facilitate their expression in standard measures. In support of this, Moses (2001) notes that children might fail false belief tasks not due to a lack of social understanding, but because they lack the EF they need to suppress responses which are based on their fuller knowledge. More mature use of language could also help children to pass some of the more advanced tasks of social understanding such as second-order false belief tests, which are highly dependent on children's verbal abilities (Miller, 2012). The links between executive function and language abilities on the one hand and social understanding and empathic responses on the other give further cause for concern with regards to maltreated children, who have been shown to under-perform relative to their peers on tests of both EF and language (Culp et al., 1991; Pears, Fisher, Bruce, Kim, & Yoerger, 2010). More specifically, maltreated toddlers have been shown to have internal state lexicons that are both delayed and impoverished (Beeghly & Cicchetti, 1995).

Further factors contributing to individual differences have been investigated. One which has received much attention of late is the relationship between neural processes and social understanding, and this bridges the gap between explanations that focus on factors within the individual child and the role of social experiences. Brain imaging work and research on adult patients with localised lesions indicates that the prefrontal cortex (PFC) plays a major role in social and emotional understanding, though it has also been shown that discrete areas are involved in processing different kinds of information (Shamay-Tsoory, 2009). Shamay-Tsoory and Aharon-Peretz (2007) found that patients with damage to the ventromedial (VM) area had difficulties

with affective perspective-taking, while Saxe and Powell's (2006) brain imaging study showed that the right and left temporo-parietal junction and the posterior cingulate showed increased activation when participants read a story about someone's thoughts. In relation to empathy, Cattaneo and Rizzolatti (2009) suggest that it is the activation of so-called 'mirror neurons' in the parieto-frontal region while watching another's goal-directed action that creates empathic arousal. Indeed, Decety, Michalska, and Akitsuki (2008) conducted an fMRI study with 8- to 10-year-olds and found increased activity in the neural circuits involved in the experience of pain when children were watching videos of others in pain.

The development of typical neurophysiological processes can be affected by experiences of negative parenting. Belsky and de Haan (2011) outline the ways in which maltreatment can impact on the development of brain structures during a period of experience-dependent formation of synapses, which follows after more genetically-driven processes. For example, Perry, Pollard, Blakley, Baker, and Vigilante (1995) have shown that early traumatic environments can lead to atypical neural activity, which causes problems with the organisation of the cortical-limbic areas involved in empathy, affect regulation, and attachment. In addition, de Bellis et al.'s (2002) clinical sample of maltreated children and adolescents with post-traumatic stress disorder showed several brain areas that were smaller than those of controls; particularly salient for social understanding and empathy was the reduced size of the prefrontal cortex. Maltreatment trauma can also affect the development of the right hemisphere, which has been implicated in the processing of socio-emotional information (Schore, 2001). Instead of helping infants to manage their physiological arousal, maltreating parenting induces atypical arousal: higher than average in the case of physical abuse, and lower than average for neglect (Schore, 2001). These atypical states of arousal last a long

time as parents do not provide any means of repair, and thereby alter the biochemistry of the developing brain. In this way, individual differences in children's neurophysiological responses to social situations can be affected by negative parenting experiences.

Individual differences: Parenting factors. There is a large and growing body of evidence to suggest that the development of social understanding and empathy is rooted in children's social experiences. Of particular relevance to the current thesis is the notion that differences in children's experiences with their parents can have a profound effect on their developing socio-cognitive responses. Indeed, the discussion of individual differences in brain structure and function has highlighted the importance of children's parenting for their processing of social and emotional information. Carpendale and Lewis (2004) argue that social understanding is constructed through a gradual process of interacting with others and experiencing regularities in those interactions. The authors claim that contrary to the 'theory theory' view of the child as a scientist, social understanding is at first a practical process based on action. In line with this argument, we adopt here Astington's (1996) Vygotskian perspective in our investigation of social understanding and empathy, stressing the move from social to individual by the child's internalisation of cultural tools first encountered in a social process. This approach fits with evidence indicating links between particular types of task performance and 'real-world' activities; for example, Peskin and Ardino (2003) have shown that children's scores on an unexpected transfer task related to their hide-and-seek ability, while better performance on an unexpected contents task was more strongly linked to children's ability to keep a secret.

Fernyhough (2008) has outlined a number of Vygotskian principles which are relevant in explaining the development of children's social understanding and empathy.

First, and as discussed by Astington (1996), children's socio-cognitive responses are acquired by a process of internalisation. Second, the concept of the 'zone of proximal development' means that caregivers scaffold children's development, adjusting the amount of support given in line with children's developing abilities. Third, by naïve participation the adult draws the child into practices they don't at first understand, for example by using internal state language in conversations before children have a clear mental representation of the links between language and internal states. Fourth, Fernyhough stresses the importance of semiotic mediation as understanding is constructed by participation in language-based interactions. Finally, he argues that there is a process of dialogic thinking involved in higher cognition: by participating in social interactions, the young child is exposed to alternative perspectives on reality which are then internalised. Cognitive structures are adjusted to accommodate these multiple perspectives.

Dunn (e.g., Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991) has argued that it is adaptive for a child to try and make sense of the interactions of the members of their first social group: the family. And in a seminal piece of research, Dunn (1988) placed parenting at the heart of children's developing social and emotional understanding. Dunn observed children aged 1 to 3 at home and recorded evidence of their early social skills in the context of interactions with mothers and siblings. She found that parents played a key role by means of their responses to children's conflicts with parents or siblings. Children became aware of family rules and standards by around 2 years old, and they were taught that they were accountable for harming others. Mothers scaffolded their children's learning by providing clear and continual articulation of family rules, matched to the child's cognitive ability, and mothers' expectations of their children's behaviour and understanding changed in line with the

child's development. As children developed language skills, they began to use 'Why?' questions following conflicts over their goals, and Dunn argued that this indicated they were trying to ascertain the reasons for others' behaviour for the practical purpose of explaining it or influencing their future behaviour. In response, mothers referred to family rules and the consequences of actions for other people.

Alongside advances in children's cognition, Dunn claimed that emotion played a central role in the development of social understanding. At 18 months, conflicts with parents and siblings over personal rights (e.g., to toys or food) produced more angry responses than other topics of conflict such as destructive behaviour. Subsequently, at 36 months children were more likely to use justifications following conflicts over rights than over any other topic. Dunn suggested that this showed children were reserving their most mature form of social understanding for the issues that mattered most to them. Moreover, she felt that children's vigilance to social cues was likely to be heightened in times of conflict due to raised stress levels. Like Carpendale and Lewis (2004), then, Dunn saw social understanding as developing to serve a practical purpose, but went further in specifying the parenting conditions under which it was most likely to arise.

As with socio-emotional well-being, there are theoretical and empirical reasons to suppose that the negativity of parenting experiences, particularly at its extreme, might be related to children's difficulties with social understanding and empathic responding. Crick and Dodge (1994) describe a number of stages involved in the processing of social information that might be affected by adverse parenting experiences. Central to their model is a stored 'database' of memories and social knowledge, which influence each stage of information-processing, including the interpretation of social stimuli in light of previous experience, as well as the selection and evaluation of behavioural

responses. More negative parenting experiences can therefore bias children towards maladaptive processing patterns. Indeed, harsh discipline has been shown to predict children's difficulties with social information-processing, specifically, lower attention to relevant social cues, a bias towards hostile explanations of others' actions, and less adaptive response generation and evaluation (Weiss, Dodge, Bates, & Pettit, 1992). In turn, social information-processing problems were partial mediators of the link between harsh parenting and teacher-reported aggression.

Other aspects of children's socio-cognitive responding have also been shown to be influenced by children's parenting experiences. At the extreme of negative parenting, there is some evidence that maltreated children perform worse than their peers on tasks measuring emotion recognition (Fishbein et al., 2009), understanding of the causes and consequences of emotions (Edwards, Shipman, & Brown, 2005), and false belief understanding (Cicchetti, Rogosch, Maughan, Toth, & Bruce, 2003). Similarly, maltreated children have been shown to be less empathic in their responses to others' emotional states (Main & George, 1985; Straker & Jacobson, 1981). Less empathic responses have also been linked to more commonplace experiences of parental negativity, including lower warmth (Strayer & Roberts, 2004; Zhou et al., 2002) and greater use of physical punishment (Cornell & Frick, 2007).

Explanations for the link between parenting and socio-cognitive

development. Going beyond general notions of parental negativity, researchers have examined a number of specific dimensions of parenting practices in an attempt to explain the emergence of children's difficulties with social understanding and empathic responding. The first of these is related to children's attachment security. A secure attachment relationship has been shown to relate to children's performance on tasks of social understanding (Fonagy, Redfern, & Charman, 1997), as well as their empathic

responding (Panfile & Laible, 2012). But what is it about a secure attachment relationship that might enable children to develop more mature forms of socio-cognitive responding? Fonagy and Target (1997) reviewed the research on attachment and social understanding, and concluded that the type of sensitive caregiving which leads to a secure attachment relationship is also implicated in the development of social understanding; this would explain any associations found between the two.

Sensitive caregiving involves the parent's awareness of their infant's current state of comfort and distress, and responses that are based on the infant's needs. This kind of parental attunement to the infant's state has been shown to relate to children's ability to use emotion cues to predict behaviour (Legerstee & Varghese, 2001). Moreover, by receiving sensitive caregiving children are themselves encouraged to participate in a process of responsive mutuality in their subsequent social interactions. Ensor, Spencer, and Hughes (2011) showed that mother-child mutuality when children were 2 years old was related to increased emotion understanding a year later. This kind of connected responsiveness between parent and child is likely to be largely or entirely absent in environments of extreme hostility, abuse, and neglect, where parents often fail to mirror their children's signals (Fonagy, Gergely, Jurist, & Target, 2002).

There are alternative explanations for the common finding that attachment security is linked to children's socio-cognitive functioning. Elizabeth Meins has argued that what is important is not the level of attachment security *per se*, but the extent to which the caregiver treats their child as an intentional agent with their own mental states. In support of this, Meins et al. (2002) showed that this type of maternal 'mind-mindedness' towards 6-month-olds predicted children's later understanding of false beliefs and the distinction between appearance and reality; in contrast, attachment security did not. The results held even after controlling for children's receptive

language scores and maternal education (Meins et al., 2003). Similar results have been obtained by de Rosnay, Pons, Harris, and Morrell (2004), who found that mothers' use of internal state language when describing their children was associated with children's understanding of emotions and false beliefs. Meins and colleagues have argued that mind-mindedness acts as a scaffolding context in which children begin to make sense of their own mental states, suggesting that mind-mindedness operates as a kind of "joint attention to the mind" (Meins et al., 2003, p. 1208). Indeed, Sharp and Fonagy (2008, p. 748) describe mind-mindedness as "... 'a meeting of minds' between parent and child", a process based on the parent's ability and motivation to share mental states with others. Mind-mindedness is also likely to be lacking in the maltreating home. What is apparent is the need for a focus on the social partner; something which is lacking in maltreating parents, who more often show an elevated focus on the self (Wiehe, 2003).

Beyond mind-mindedness, there is also evidence that the specific use of internal state language (ISL) may be important for children's developing social understanding and empathy. Dunn et al. (1991*b*) argued that by talking more about internal states (thoughts, feelings, and beliefs) families can encourage their children's awareness of the alternative perspectives of others. The authors found that the frequency and quality of mothers' ISL was connected to children's social understanding. Reporting on individual skills, Dunn et al. (1991*b*) showed that participation in family discourse that included ISL when children were 2 predicted their understanding of emotions and false beliefs at age 3. Maternal ISL has also been shown to be predictive of the child's later social understanding even after controlling for earlier social understanding (Ruffman, Slade, & Crowe, 2002). ISL is also important for the cognitive dimension of empathy: maternal use of ISL with 3- and 4-year-olds has been shown to predict children's emotion understanding a year later (Denham, Zoller, & Couchod, 1994). More

specifically, mothers' explanations of emotions to their preschoolers also predicted children's emotion understanding (Garner, Dunsmore, & Southam-Gerrow, 2008).

The importance of ISL might be moderated by gender. LaBounty, Wellman, Olson, Lagattuta, and Liu (2008) found that mothers' and fathers' use of emotion state words with 3-year-olds predicted different aspects of children's social understanding: mothers' emotion ISL predicted children's emotion understanding, whereas the same type of ISL in fathers predicted children's false belief understanding. Fathers' use of causal explanations that referred to beliefs and desires made a further contribution to false belief understanding. The authors found that mothers talked more about emotions than did fathers, suggesting that when practised, fathers' ISL might have a greater impact.

Work with populations of children who typically exhibit or encounter communication difficulties lends weight to the argument for the importance of ISL. Peterson and Siegal (1999) built on the previous work with autistic children to examine the atypical development of deaf children. They compared deaf children from hearing families versus native signing families, oral deaf children, hearing controls, and a group of autistic children. The results showed that the performance of deaf children from hearing families and that of the autistic children were similar, and both were poorer than the other groups. The authors argued that this showed the impact of communication difficulties on social understanding, which might take its effect via an inability to communicate about mental states. Delays in false belief understanding in deaf and blind children (e.g., Russell, Hosie, Hunter, Banks, & Macaulay, 1997) suggest that social interaction and communication are crucial for the development of social understanding. This challenges the theory theory view, as it shows that children do not

simply use social interactions to collect data to confirm or disconfirm a pre-existing theory (Carpendale & Lewis, 2006).

ISL might be particularly important in the context of negative family interactions; Laible and Song (2006) found that when the emotional quality of parent-child discourse was less positive, the frequency of parental discourse about negative emotions predicted more advanced emotion understanding in children. Yet it is at the extremes of negative parenting that ISL is most likely to be deficient. Abusive and neglectful families are less likely to foster children's awareness of other perspectives by the discussion of mental states, as maltreating mothers have been shown to use less ISL than their peers (Edwards et al., 2005).

Related to the frequency of family ISL is the use of inductive versus power-assertive disciplinary strategies. Ruffman, Perner, and Parkin (1999) showed that when mothers used inductive strategies with 3- to 5-year-olds (telling their children to reflect on the other person's feelings), this predicted the child's more advanced false belief understanding, even after controlling for mental age. On the other hand, Pears and Moses (2003) found that the use of power-assertive techniques predicted poorer understanding of discrepant and false beliefs in 3- to 5-year-olds, but also better emotion knowledge. Recognising and understanding others' emotions was also predicted by parental responses which prompted children to focus on the other person. The authors argued that the discrepancy in findings for power-assertive parenting may be due to their commonly being accompanied by displays of strong emotion, fitting with Dunn's (1988) work on the development of social understanding in family conflicts.

Other-focussed discourse has also been linked to empathy. Farrant, Devine, Maybery, and Fletcher (2011) found that besides a direct link between maternal cognitive empathy and child cognitive empathy, mothers who displayed high levels of

affective empathy tended to encourage their children to take the perspectives of others, which in turn was linked to greater child cognitive empathy. This had social benefits, as children with more cognitive empathy were also seen as more prosocial. For maltreated children placed in foster care, this promotion of the child's capacity to reflect on others has also been shown to predict good progress in children's behaviour and relationships (Schofield & Beek, 2005*a*).

As well as adopting more frequent talk about internal states, parents can also influence their children's development by their emotion socialisation behaviours. Zahn-Waxler and Radke-Yarrow (1990) have argued that the family is a framework for children's early experiences of distress in themselves and others, as well as of typical reactions to distress. The development of empathy is therefore affected by differences in caregivers' sensitivity and nurturance, discipline techniques and altruism. In support of this, Klimes-Dougan and Kistner (1990) showed that physically abused children were more likely than their peers to show aggression or withdrawal in response to peer distress.

Emotion socialisation can occur by means of a number of parenting behaviours. Eisenberg, Cumberland, and Spinrad (1998) argue that parents can socialise children's reactions to affective states through their own reactions. These can be supportive or unsupportive, self- or other-focussed; they can be punitive and minimise the legitimacy of children's feelings, or offer comfort and strategies for managing emotions. Alternatively, parents can socialise via their own emotional expressiveness, encouraging imitation and providing the contextual information that is needed for mature emotion understanding. Moreover, parental affective displays can help to shape the child's internal working model and self-perceptions. In support of this, Michalik et al. (2007) found a link between parental positive expressivity when children were aged 4 to 8 and

the child's sympathetic reactions to others' situations; moreover, longitudinal modelling using follow-up data from 8 years later suggested these constructs were stable over time.

The extent to which parents aim to control their children's affective displays may also be implicated in the socialisation of other-focussed reactions. Eisenberg, Fabes, Schaller, and Miller (1991) found that in middle childhood, children whose parents were more restrictive of any inappropriate emotional displays by the child that might harm others showed greater sympathy towards others' distress. Conversely, where maternal control of *non*-harmful emotional displays was high, children displayed heightened personal distress responses.

Emotion socialisation is another avenue through which the maltreating family can have its deleterious effects. Maltreating mothers are less likely to validate their children's emotions and more likely to indicate that they are invalid; moreover, they are less likely to use explicit emotion coaching in conversations (Shipman et al., 2007). All of these factors mediate the relationship between maltreatment and less adaptive emotion regulation. Moreover, abused and neglected children have been shown to expect less emotion support from their mothers and were less likely to display their emotions to mothers; they also had fewer adaptive strategies following outbursts of anger (Shipman & Zeman, 2001). Mothers in that study showed less understanding of their children's emotional displays and could identify fewer coping strategies to suggest to children. These parenting factors mediated the relationship between maltreatment and children's regulation of emotion expression and physiological arousal.

The emotion displays of maltreating parents may themselves be distorted, making it difficult for children to understand the links between context, affect, and behaviour. Abusive mothers have been shown to produce less recognisable facial

expressions in comparison to nonmaltreating mothers (Camras et al., 1988). Moreover, the type of inconsistent emotional signals that are common in abusive parents (Pollak & Sinha, 2002), coupled with inconsistencies in maternal responsiveness (Cicchetti et al., 2003), can make it difficult for maltreated children to make mental representations of the ways in which situations and emotions are commonly paired. This has implications not only for their social understanding, but also their capacity to respond prosocially.

Any or all of these parenting practices might be implicated in the links between negative parenting experiences and children's developing socio-cognitive abilities. At the extreme of this relationship, Lee and Hoaken (2007) argue that differential maltreatment effects may be observed. Physical abuse is likely to lead to hyper-vigilance to threat and a bias towards interpreting ambiguous situations as based on hostile intent; in contrast, neglectful parenting means that children do not receive typical forms of emotion socialisation and can have subsequent problems with emotion regulation. Both of these pathways can conceivably lead to aggressive behaviour; so while the outcomes can look the same, the mechanisms by which this behaviour develops can be very different. Indeed, there is evidence that different maltreatment experiences might be linked to specific profiles of strengths and difficulties in social understanding and empathy. Experiences of physical abuse, for instance, might be expected to predict particular 'strengths' in responding to stimuli depicting anger. In support of this, work conducted by Pollak and Tolley-Schell (2003) has shown that physically abused 8- to 11-year-olds responded quicker than nonmaltreated children when an angry face was the target, and had difficulty disengaging attention from angry faces to complete a task. Similarly, abused children have been shown to be more attentive to visual and auditory anger cues than controls, whether these cues are relevant to the task or not (Shackman, Shackman, & Pollak, 2007). In contrast, neglected

children might be expected to show overall deficits in emotion knowledge given the lack of emotion socialisation in their experiences with parents.

Miller (2012) argues that there is a distinction between the kind of differences that exist between individuals in their developmental acquisition of skills and examples of atypical development such as autism that can prevent some skills from being developed at any stage. Research thus needs to address whether the extreme parenting experiences of maltreatment simply alter the ‘typical’ developmental progress of social understanding and empathy to produce a distinctive profile of strengths and weaknesses, or prevent the skills from being developed altogether.

How Do Social Understanding and Empathy Relate to Peer Reputations and Self-perceptions?

Hughes and Leekam (2004) point out the need to consider how developments in children’s social understanding can transform children’s interactions with others. As Dunn (1996) notes, many aspects of relationships including shared humour and manipulation of power rely on an understanding of the social partner’s thoughts, motivations, and desires. Dunn’s (1988) work with young children has shown that parents’ behaviour following conflict situations in the home can help children gain a greater appreciation of the mental and emotional states of others. This leads to a growing understanding of the ways in which behaviour can impact positively or negatively on others. By middle childhood in particular, children have a strong desire to be accepted by the peer group (Parker & Gottman, 1989), and a well-developed set of social understanding skills and empathic responses enables them to appreciate the kinds of behaviours that are more likely to provoke a positive or negative reaction from their peers. Moreover, a developing understanding of others’ mental states makes it likely

that children will be sensitive to the reactions and opinions of their peers (Dunn, 1996), and this could influence the way they feel about themselves.

In support of these hypothesised connections, there is evidence that more mature forms of socio-cognitive responding can promote positive social relationships. Reviews of the literature have shown that empathy has positive links with prosocial, cooperative, and socially competent behaviour (Eisenberg & Miller, 1987*b*), and negative links with aggressive, externalising, and antisocial behaviour (Miller & Eisenberg, 1988). Similar relationships with behavioural reputations also exist for the skills which constitute social understanding. Caputi, Lecce, Pagnin, and Banerjee (2012) showed that children's social understanding predicted prosocial behaviour, which in turn predicted success with peers. Specific types of social understanding have also been examined in relation to children's peer relations. Overall social competence (more prosocial and less aggressive/disruptive/withdrawn behaviour) is predicted by children's false belief understanding, particularly when it is achieved at an early age (Astington, 2003). Cooperative play has been shown to relate to young children's understanding of beliefs and emotions (Dunn & Cutting, 1999; Lalonde & Chandler, 1995). Above 5 years old both false belief and emotion understanding are linked to peer popularity (Slaughter, Dennis, & Pritchard, 2002), and a little later, understanding of second-order false beliefs is related to greater peer competence and prosocial behaviour (Baird & Astington, 2004). In addition, Banerjee and Watling (2005) have shown that children who have poorer understanding of *faux pas* situations (involving unintentional insults) are more likely to hold a rejected or controversial status within the peer group. Emotion knowledge has also been implicated in children's peer success: Miller et al. (2005) found that emotion recognition at the start of the school year was predictive of lower

peer rejection and victimisation later in the year, even after controlling for prior levels of rejection.

The link between socio-cognitive responses and children's behavioural reputations may be especially important in the context of maltreatment, particularly given the evidence that maltreated children's peer relations are characteristically more negative. Dodge et al. (1990) showed that the link between physical abuse and teacher-rated aggression was mediated by specific problems with social information processing: paying less attention to social cues, having a greater hostile attribution bias, and generating less competent solutions. This was replicated (with the exception of the link with hostile attribution biases) by Dodge, Pettit, Bates, and Valente (1995). Conversely, more advanced social understanding can help buffer against the experience of harsh parenting in terms of subsequent behavioural problems (Hughes & Ensor, 2006).

It is important to acknowledge the possibility of reciprocal relations. Indeed, evidence from Banerjee, Watling, and Caputi's (2011) longitudinal study indicated a bidirectional inverse relationship between social understanding and rejection within the peer group. Similarly, Lansford, Malone, Dodge, Pettit, and Bates (2010) offer a developmental cascade approach, by which a snowballing effect of problematic social information-processing, aggression, and peer rejection means that each of these influences the other in a continual process over time.

A Mediational Model

The theoretical and empirical evidence presented here suggests that children's parenting experiences, socio-cognitive responses, and socio-emotional well-being are inter-related. Based on this information, we propose a mediational model in which the

links between negative parenting experiences and children's problematic peer relations and self-perceptions are mediated by their difficulties with social understanding and empathy. We suggest that while one problem for development is represented by general negativity in the parent-child relationship, an examination is needed of the particular dimensions of negativity (lack of warmth, hostility, indifference, or rejection) that might predict specific features of children's socio-cognitive functioning and socio-emotional well-being. Moreover, we expect to find that the extreme experiences involved in child maltreatment will predispose abused and neglected children towards a particular profile of strengths and difficulties, shaped by their socialisation experiences. This is likely to consist firstly of problematic behavioural reputations, with maltreated children viewed by peers as characteristically displaying more antisocial (fighting, being disruptive) and less prosocial (cooperative) behaviour. Second, we expect their self-perceptions of behavioural competence to be poorer than those of their peers, and for this to be linked to lower self-worth. Third, maltreated children are likely to have difficulties with tasks of social understanding, particularly in its most mature forms, but we may find that the frequent exposure to anger and fear in the maltreating home gives them an advantage over their peers in recognising these particular emotions in others. Finally, we expect to find that the empathic responses of maltreated children will be less mature than those of their peers, as indicated by greater personal distress and lower prosocial responding.

While a number of studies have examined specific aspects of social understanding and empathy in relation to parenting and socio-emotional variables, the use of multidimensional measures which capture children's abilities across a wide range of skills and responses is a novel feature of this thesis. Figure 1.1 illustrates the dimensions featured in our model and the hypothesised links between variables.

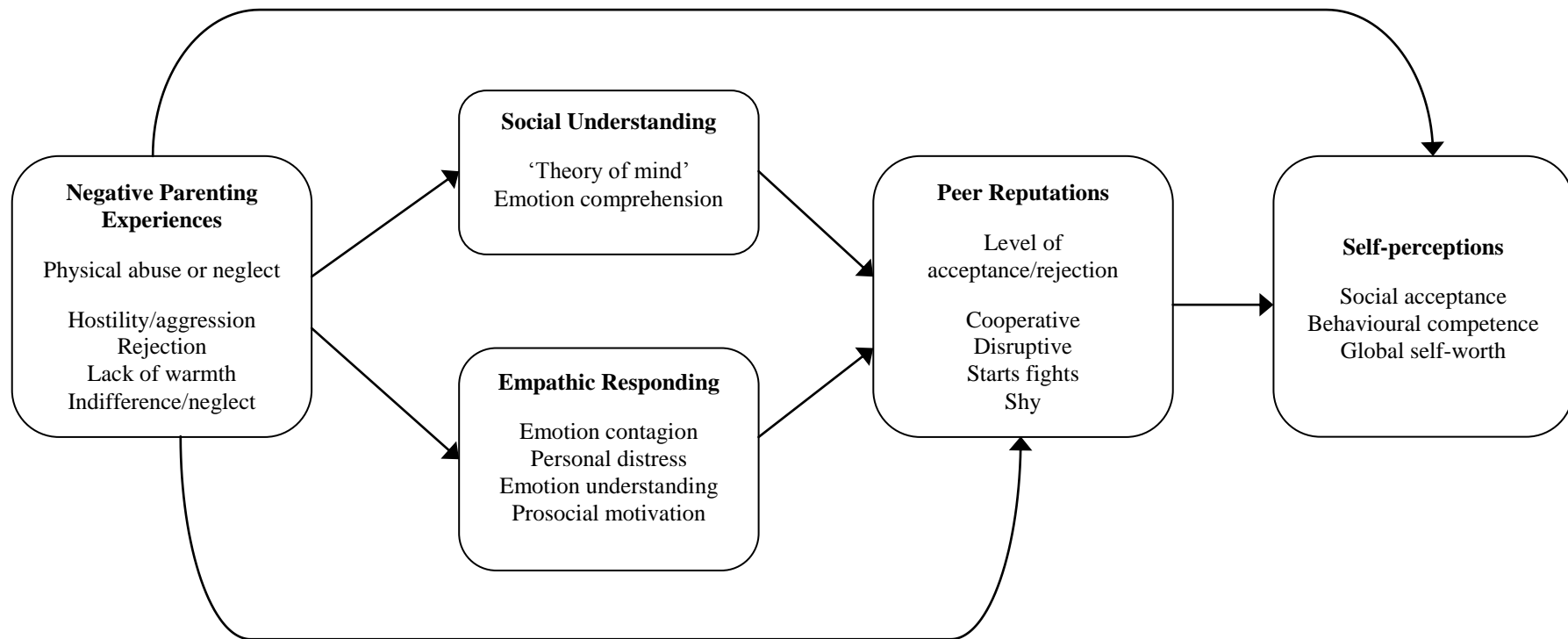


Figure 1.1. Illustration of variables in our proposed mediational model.

1.2 Research Questions and Aims

The thesis reports on a programme of work designed to test a mediational model, according to which associations between children's adverse parenting experiences and more negative peer relationships and self-perceptions might be explained by problematic profiles of social understanding and empathic responding. Miller (2012, p. 201), writing specifically about social understanding, has argued that work is needed to address several important questions: "What is the nature of children's theory of mind? Where do both the common and distinctive elements come from? And how does theory of mind affect other aspects of children's development?" The new empirical work reported here tackles these questions, and extends them to the study of empathic responding. In doing so, our overall aim was to examine how particular parenting experiences might be linked to children's social understanding and empathy, and evaluate the extent to which these socio-cognitive responses mediate the links between parenting and children's peer reputations and self-perceptions.

First, we aimed to examine the multidimensional nature of children's peer reputations and self-perceptions in relation to their negative parenting experiences. Specifically, we were interested in two approaches to examining this. In the first, we aimed to see whether children who had experienced physical abuse or neglect at the hands of their parents would show less positive and more negative behavioural reputations with peers, and to examine how this would relate to self-perceptions of behavioural competence and social acceptance. Our second approach to examining parenting involved asking nonmaltreated children about their perceptions of parenting experiences, in order to determine the salient dimensions that would relate to children's socio-emotional well-being.

Second, we aimed to examine the particular parenting experiences by which individual differences in children's social understanding and empathy might arise. As discussed previously, research into children's social understanding has often adopted a 'one miracle' approach (Chandler & Sokol, 1999), with an emphasis on the age at which children in general show that they have an understanding of false beliefs (Miller, 2012). Instead, we aimed to ascertain whether and how children's understanding of other people's mental and emotional states might involve particular patterns of strengths and difficulties that could be linked to variations in their social experiences.

Third, we aimed to ascertain the differentiated links between specific aspects of children's social understanding and empathic responding and particular behavioural reputations and self-perceptions. This examination was to be conducted in both our maltreated and nonmaltreated samples to allow a comparison of the salient relationships involved.

Finally, as a test of our mediational model, we aimed to investigate the role of individual differences in social understanding and empathy as mediators of the relationship between negative parenting experiences and problematic peer reputations and self-perceptions.

For our original empirical work, we chose to investigate these factors in a sample of children aged 7 to 11 years. Many of the key skills involved in social understanding emerge in early childhood, and we have already discussed the focus in the literature on the timing of children's acquisition of first-order false belief understanding. Yet there are further skills involved in social understanding which continue to develop beyond the preschool years (e.g., understanding of complex emotions continues to develop until age 11; Pons, Lawson, Harris, & de Rosnay, 2003), and there is a need for research on individual differences in this developmental period

(Miller, 2012). Moreover, peer acceptance becomes particularly salient during middle childhood (Parker & Gottman, 1989), and so the links between social understanding, empathy, peer reputations, and self-perceptions, are likely to be especially evident at this time.

1.3 Methodological Approach

In addressing our research questions we adopted a range of qualitative and quantitative methods. This approach permitted us to look at both the nomothetic and idiographic relationships between the variables in our model, enabling us to capture both the broader links between variables and the details of how these translate to children's everyday experiences. In doing so we were conscious of the need to 'step behind' the data and ensure that the voices of those most central to this process could be heard. This dual approach to the data began at the point of our initial review of the literature. By conducting a meta-analysis and systematic review of the research on maltreatment and social understanding, we were able to synthesise the current knowledge about the relationship between these variables. The meta-analysis enabled us to quantify the effect of maltreatment on children's emotion knowledge; moreover, the in-depth systematic review allowed us to draw out the key messages emerging from the research.

We were also keen to establish the plausibility of our mediational model, and chose to evaluate its viability by speaking to a sample of people with extensive experiences of the social and emotional well-being of maltreated children: foster carers. We felt that carers could offer a unique perspective on the details of children's social understanding and empathy and the ways in which these might impact on socio-emotional outcomes. The use of a focus group and semi-structured interviews allowed us to cover key themes we extracted from the existing literature as well as to identify

new directions that emerged from the carers' accounts. Over the course of the interviews, points of particular interest could be followed up, permitting us access to detailed accounts of children's experiences and behaviours, and the ways in which carers conceptualised these as relating to children's parenting experiences. Further qualitative work is reported in our penultimate paper, in which we briefly explored one child's responses to socio-emotional stimuli and how these might be indicative of a particular profile of strengths and difficulties.

With our hypotheses firmly supported by a literature review incorporating both quantitative and qualitative elements, and an in-depth interview study, the bulk of the work reported in this thesis focussed on the use of self-report questionnaires, sociometric surveys, and individual tasks with children in schools. We used these measures with children who had experienced physical abuse and neglect, as well as a sample of their classmates who had experienced more typical forms of negative parenting. Using these methods meant that we could identify broad patterns of relationships between children's perceptions of parenting experiences, their social understanding and empathic responding, and peer reputations and self-perceptions. By collecting quantitative data on these variables we were able to conduct robust statistical tests to determine the specific mediational patterns in our data that would both advance our theoretical understanding of the impact of negative parenting and allow us to make predictions about the ways in which maltreatment might lead foster carers and practitioners to encounter specific profiles of strengths and difficulties in the children with whom they work.

Our methods incorporated information from multiple informants. We gathered qualitative data on children's socio-emotional well-being and socio-cognitive responding from maltreated children's foster carers. Children from the peer group at

school provided us with sociometric nominations indicating the individuals in their class whom they associated with particular behavioural reputations. Finally, the children themselves provided self-reports of empathic responding and self-perceptions, and completed tasks to assess their social understanding. This multi-informant approach ensured that any relationships observed between variables were less likely to be due to the similarity of the methods employed, and offered us a more rounded picture of children's development.

Given that our work involved children and in particular a sample of vulnerable children in foster care, we also faced a number of ethical considerations that were addressed in the design of our studies. Institutional consent was gained from Research Governance Committees at the University of Sussex and the Local Authority of Brighton and Hove. For our interview study, individual consent was gained from our interviewees prior to data collection, and all participants were given the opportunity to end the interviews at any point or to withdraw their data from the study up to a given date. In addition, transcripts of foster carers' accounts were stripped of any references to names or places, to ensure that the experiences they related were both confidential and anonymous.

For our school studies, head teachers provided institutional consent for work to be conducted in their schools, and information letters were sent home to parents and carers giving them the opportunity to refuse permission for their child to participate. At the beginning of each session conducted in schools, children were explicitly told that they could withdraw at any time without providing a reason, and that they could skip over any questions they did not wish to answer. Their assent to complete each measure was also sought, having first explained what the survey would be about and the type of items they would be asked to respond to. All children completed measures in the

familiar environment of their school during the course of a normal day, and maltreated children were not separately identified, singled out, or treated any differently to any of their classmates in the course of the research. A two-digit numerical code was assigned to each child, and these were used in place of names for all school-based measures. The measures involved items very commonly utilised in research on social relationships and self-perceptions. In addition, the instructions for the perceived parenting measure (which was only used with nonmaltreated children) asked children to think about “your parents or the adults you currently live with”, to accommodate the fact that children may be cared for by adults who are not their biological parents.

Following completion of the measures, pupils were asked if they had any questions about the surveys. They were reminded of the normal procedures for seeking help if they were feeling bad or upset. This included at least one named contact (e.g., a particular staff member, student support officer, etc.) whose name had been given to the researcher by the head teacher prior to data collection. Also, since it was possible that a small number of vulnerable pupils could be feeling upset yet not be confident enough to approach an adult for help, pupils’ attention was drawn to other notification and support strategies available in the school (e.g., anonymous worry box, peer mentors/buddies, etc.), as identified by school staff. Relevant staff who regularly worked with the pupils were also made aware that the pupils had completed these surveys. Staff could then monitor classes to ensure that support was available for any vulnerable pupils. Finally, a letter was sent home to the parents/carers of participating children, restating the topics covered by the measures and encouraging parents to contact the researchers if they had any questions or concerns about the study.

1.4 Overview of Empirical Studies

The thesis includes five papers to address our aims. A summary of each paper is given below.

Paper 1: Differentiated Associations between Childhood Maltreatment

Experiences and Social Understanding: A Meta-analysis and Systematic Review

In our initial paper we aimed to synthesise and review the existing literature on the links between childhood physical abuse and neglect and the various constituent skills of social understanding. Our goal was to capture the current understanding about how maltreatment might impact on social understanding, particularly in terms of specific skills or age groups, thus appraising the plausibility of including social understanding as a mediating variable in our proposed model. A systematic review of the literature would also enable us to identify any gaps in current understanding that could be addressed in our subsequent research. We adopted a systematic approach to the literature search, specifying clear inclusion and exclusion criteria to ensure that the search was both sensitive enough to incorporate a broad range of studies but also focussed on our particular variables of interest. The paper reports the results of our systematic review of 51 empirical studies. In addition, there were a sufficient number of studies on the links between maltreatment and emotion knowledge to warrant conducting a meta-analysis on the data from these papers. Alongside the overall meta-analysis of these 19 studies, we also conducted moderator analyses to ascertain whether effect sizes differed according to the skill being tested or the sample's age group. Our main hypothesis in this paper was that physically abused or neglected children would underperform relative to their nonmaltreated peers in measures of social understanding.

Paper 2: Maltreated Children's Social Understanding and Empathy: A Preliminary Exploration of Foster Carers' Perspectives

Having examined one section of our proposed mediational model by reviewing the literature on the links between parental maltreatment and problematic social understanding, we next wanted to explore the viability of the full model. In order to determine whether our model provided a plausible explanation of the day-to-day experiences of children in care, we conducted qualitative work with a sample of 10 foster carers and 2 social workers. The study involved a focus group and individual interviews in which carers were asked to describe any experiences they had looking after children with problematic peer relationships or self-perceptions. Carers were questioned about potential links between these outcomes and specific aspects of children's social understanding and empathic responding. The paper reports on a thematic analysis of the focus group and interview transcripts. Our research questions in this paper were: 1) Do carers' experiences with maltreated children support a model in which difficulties in social understanding and empathy mediate the relationship between maltreatment and problematic self-perceptions and peer relations? and 2) What is the current status of carers' knowledge about – and attitudes towards – ways of supporting the children who have difficulties with these skills in order to improve their socio-emotional well-being?

Paper 3: A Multidimensional Assessment of Children's Empathy: Differentiated Links with Socio-emotional Functioning

Our multidimensional approach included a definition of empathy that incorporated both cognitive and affective components, as well as the motivation to act prosocially. Existing empathy scales were found to assess one or two of these factors, but none had yet measured all three. In addition, we were interested in measuring the

relationships between the affective, cognitive, and motivational aspects of empathy and three distinct but related socio-emotional outcomes: peer reputations, self-perceived social acceptance, and loneliness. This study describes the first British use of the new four-factor Empathy Questionnaire (Pouw, Rieffe, Oosterveld, & Stockmann, 2012), with a sample of 156 8- to 11-year-olds. The initial aim of this study was to evaluate the multidimensional conceptualisation of empathy as an affective, cognitive, and motivational response to others' affective states, by conducting a confirmatory factor analysis of the four-factor structure of the Empathy Questionnaire using a British sample. The subsequent aim was to examine specific links between the distinct dimensions of empathy and children's socio-emotional outcomes, in terms of their peer reputations, self-perceived social acceptance, and loneliness. Our hypotheses in this paper were first, that more 'advanced' forms of empathy (emotion understanding and prosocial responding) would predict more positive and less negative peer reputations; second, and in contrast, higher levels of personal distress were expected to predict more peer nominations for shy/socially withdrawn behaviour; finally, we expected to find a positive relationship between the advanced forms of empathic responding and children's self-perceived social acceptance and a negative relationship with their levels of loneliness.

Paper 4: Socio-emotional Outcomes for Maltreated Children: The Role of Empathy and Social Understanding

In this paper we tested our mediational model in an examination of the links between maltreatment and particular profiles of behavioural reputations and self-perceptions. We examined whether these links were mediated by specific patterns of difficulties for maltreated children in social understanding and empathy. Our investigation employed a range of multidimensional measures to highlight the potential

for individual differences in strengths and difficulties. We first conducted introductory work to identify links between children's peer reputations and self-perceptions and experiences of parental maltreatment. We subsequently conducted some preliminary qualitative work in order to evaluate the viability of our approach; in undertaking this work we were keen to establish whether it was possible for a child to show strengths in one area (e.g., emotion understanding) while still showing subtle biases in another (e.g., understanding the links between behavioural reputations and peer rejection). Finally, our main study tested the full mediational model in a sample of 20 maltreated children aged 7 to 11 years and 120 of their classmates matched for age and sex. Our work tested three hypotheses which were fundamental to our mediational model. First, we expected to find that maltreated children would have more negative and less positive peer relationships (in terms of behavioural reputations and levels of peer acceptance and rejection), and more negative self-perceptions. Second, we hypothesised that our maltreated group would achieve lower scores than their nonmaltreated peers in tests of social understanding and empathy; we also expected that these deficits would be more pronounced for more developmentally 'advanced' constituents of social understanding and empathy, such as second-order false belief understanding and prosocial responses. Finally, we expected to find that children's scores in assessments of social understanding and empathy would mediate the relationship between maltreatment status and the socio-emotional outcomes of peer relationships and self-perceptions.

Paper 5: Social Understanding and Empathy as Mediators of the Links between Perceived Parenting Experiences and Children's Socio-emotional Well-being

In our final paper we examined the first stage of our mediational model in greater depth, by investigating how – in the general population – specific dimensions of negative parenting might be related to particular behavioural reputations and associated

self-perceptions, and to specific profiles of social understanding and empathy. Drawing on data collected at the same schools that participated in the studies reported in Paper 4, two studies ($N = 103$ and 137) measured 7- to 11-year-old children's subjective perceptions of their parenting experiences, which might be expected to be more significant for perceptions of the self and other social relationships than reports given by parents. Our work tested three hypotheses, which were generally in line with those examined in the previous paper. First, we expected to find that children with more negative perceived parenting experiences would have more negative and less positive peer relationships in the form of behavioural reputations and levels of peer acceptance and rejection, and more negative self-perceptions. Second, we hypothesised that negative parenting would be linked to lower scores in tests of social understanding and empathy. Third, we expected to find that children's scores in assessments of social understanding and empathy would mediate the relationship between negative parenting and socio-emotional well-being as represented by peer relationships and self-perceptions. Moreover, we felt that it was likely that different dimensions of perceived negative parenting would be particularly salient for the variables in our model. For example, given prior research showing links between harsh parenting and atypical social information-processing (Weiss et al., 1992), we reasoned that hostile/aggressive parenting might be the dimension that was most salient in predicting children's reputations for starting fights and disruptive behaviour, and that this relationship would be mediated by poorer social understanding. In contrast, we expected that in line with previous research using parent-reports (e.g., Strayer & Roberts, 2004), children's perceptions of lower parental warmth would predict lower empathy. Given the age of our sample, we reasoned that low warmth might have its greatest effect on the more

mature forms of empathy such as prosocial responding, and that this would in turn inversely relate to a reputation for cooperative behaviour with peers.

**Chapter 2: Paper 1 – Differentiated Associations between
Childhood Maltreatment Experiences and Social
Understanding: A Meta-analysis and Systematic Review**

2.1 Abstract

The extreme parenting experiences encountered by children who are physically abused or neglected place them at increased risk for impaired socio-emotional development. There is growing evidence that maltreated children may apprehend interpersonal encounters in different ways from children without such traumatic histories. This systematic review examines the links between childhood physical abuse and neglect and various constituent skills of social understanding (including emotion recognition and understanding, perspective-taking, false belief understanding, and attributional biases) in 51 empirical studies. The review incorporates a meta-analysis of 19 studies on emotion recognition and understanding in this population. This showed an overall negative effect of maltreatment, but moderation analyses revealed that significantly stronger effects were found for measures of emotion understanding rather than recognition, and for younger rather than older age groups. The broader review also reveals a complex and differentiated profile of social understanding among maltreated children. Directions for future research that addresses individual differences in children's experiences, both within and outside the maltreatment context, are discussed.

2.2 *Introduction*

It is widely accepted that early experiences of physical abuse or neglect can have damaging consequences for children's social and emotional development. For example, child maltreatment has been linked to peer rejection and social reputations for more negative and less positive behaviour (e.g., Anthonysamy & Zimmer-Gembeck, 2007). Yet not enough has been done to distil and interpret the key messages from the body of empirical work linking parental maltreatment with children's cognitive, behavioural and affective responses to social situations. Of particular interest is the growing evidence that maltreated children may apprehend interpersonal encounters – and the emotions and other mental states associated with them – in different ways from children without such traumatic histories. Such data on maltreated children's 'social understanding' have the potential to shed light on the processes underlying key socio-emotional outcomes for this vulnerable group. For example, given that differences in social understanding are known to predict the positivity and negativity of peer interactions (e.g., Banerjee, Watling, & Caputi, 2011; Dunn & Cutting, 1999; Hughes, 2011*b*), the problematic peer relationships of maltreated children could at least partly be rooted in difficulties with social understanding.

Indeed, a recent paper reporting on interviews with foster carers (Luke & Banerjee, 2012 – see Paper 2, this thesis) suggests that this kind of mediational model is a highly plausible explanation of the kinds of complications that carers recognise in maltreated children's everyday experiences. But how robust is the evidence for a distinctive profile of social understanding in children who have experienced maltreatment? The present work synthesises and interrogates the existing literature

concerning the social understanding of those who have experienced parental physical abuse and/or neglect (hereafter termed ‘maltreated children’).¹

Social understanding is conceptualised here as the ability to understand feelings, beliefs and desires and their role in social behaviour, an ability often termed ‘theory of mind’ (Premack & Woodruff, 1978), ‘perspective-taking’ or ‘mentalising’ (Carpendale & Lewis, 2006). It includes what has been called ‘emotion knowledge’: the ability to recognise specific emotional expressions in others and to understand the type of situations that can give rise to particular emotions (Sullivan, Bennett, Carpenter, & Lewis, 2008). This kind of awareness and understanding of others’ emotions may also be conceptualised as one important component of empathy. However, it has a distinctively cognitive dimension, in comparison with other aspects of empathy which are principally affective (“feeling what another person is feeling”) or behavioural (“responding compassionately to another person’s distress; Levenson & Ruef, 1992, p. 234).

While research on some aspects of social understanding in a maltreated population has been discussed elsewhere (e.g., Smetana & Kelly, 1989; Wolfe, 1987) as yet there has been no systematic review of the literature, and a review incorporating more recent research is needed. Furthermore, there is a pressing need to make sense of the mixed findings in the existing literature, particularly with regard to the influence of maltreatment on emotion recognition and emotion understanding. A meta-analysis of the data would go some way to illuminating our understanding of maltreated children’s emotion skills. The purpose of the present review, which incorporates such a meta-analysis, is to evaluate the strength of evidence for the hypothesis that physically abused

¹ It should be noted that studies which focus solely on those who have experienced sexual abuse are outside the scope of this review. In comparison with physical abuse and neglect, sexual abuse involves a markedly different distribution of perpetrators (e.g., proportion of non-parental perpetrators) and can lead to a very distinct set of developmental sequelae (Trickett & McBride-Chang, 1995).

or neglected children underperform relative to their nonmaltreated peers in measures of social understanding.

In presenting this hypothesis we are keen to emphasise that the responsibility for any damaging effects is not assumed to lie simply in the physical acts of abuse or neglect themselves: as Wolfe (1987) points out, the developmental effects of maltreatment are tied up in the broader context of the child's relationship with his or her parents. Our hypothesis is based on the argument that social understanding consists of a set of skills which develop gradually within the context of social interactions (Carpendale & Lewis, 2004). If 'normal' development occurs in the presence of an average expectable environment including interactions with nurturing adults and a larger social group (Cicchetti & Lynch, 1995), then maltreating families represent an atypical environment in which the development of the skills necessary for social understanding may be impaired.

Traditional social learning approaches (e.g., Bandura, 1973) might suggest that this is because maltreated children imitate the kind of negative social behaviours modelled for them by more powerful others. However, research on child development has time and again underlined the active role played by children in constructing their own understanding of the world on the basis of transactions between self and environment. Taking a Vygotskian approach, we can conceive of the developing mind "primarily as *activity*, which can extend beyond the skin to interpenetrate with other minds in interpersonal exchanges" (Fernyhough, 2008, p. 228). This approach emphasises the child's internalisation of the 'tools' for social interaction, which are first displayed in parent-child communications. From this perspective, the maltreating relationship brings with it an impoverished or distorted set of tools for the child to internalise.

In fact, research evidence suggests that children growing up with abuse or neglect are at risk of developing diminished or distorted social understanding precisely because the type of parenting they experience fails to provide the tools needed for typical development. Maltreating parents are more likely to have insecurely attached children (e.g., Howe and colleagues, 1999, claim 80% are Type D ‘insecure/disorganised’), putting them at risk of developing distorted representations of what is involved in a ‘typical’ relationship. Moreover, it has been argued (e.g., by Scott & Crooks, 2004) that maltreating fathers in particular typically base interactions with children on their own needs, rather than the child’s. This is reflected in a novel study by Wiehe (2003) which built on previous work with sexually abusive parents (e.g., Hall, Shepard, & Mudrak, 1991) to show that physical abusers were also characterised by increased narcissism and lower empathy. This emerging work suggesting a greater focus on the self might mean that maltreating parents are less likely to engage in the kind of parenting practices which encourage social understanding, such as mind-mindedness and mutuality, the use of internal state language, and emotion socialisation. Below we examine each of these factors in relation to the development of social understanding in a maltreating context.

Aspects of Social Understanding

Before turning to evidence regarding the impact of maltreatment on social understanding, we must first clarify our position with regard to the multidimensionality of this construct. Our position that the development of social understanding involves acquiring a *set of skills* reflects a view in which ‘social understanding’ is an umbrella concept, incorporating a range of skills including emotion recognition and understanding, perspective-taking, attribution of intentions, and false belief understanding. There has been some debate about the relatedness of the skills involved

in social understanding. One study by Hughes and Dunn (1998) showed a close relationship between preschoolers' performance on emotion understanding and false belief tasks. In contrast, Cutting and Dunn's (1999) subsequent study indicated no unique relationship between emotion understanding and false belief understanding, once age and language ability were controlled. In line with Cutting and Dunn, we suggest that while these various skills are related aspects of social understanding, they are distinct abilities and that consequently, individual experiences may lead maltreated children to display patterns of differentiated deficits in social understanding.

Supporting evidence for the conceptualisation of social understanding as a multidimensional construct has emerged from neuroscience research. A range of recent studies with adults have investigated the existence of distinct neural structures and processes that might underlie some of the skills we have outlined here. While the majority of work using brain imaging, localised stimulation, and examination of patients with lesions has shown that the prefrontal cortex (PFC) plays a major role in social understanding, it is likely that discrete areas are involved in processing different kinds of information (Shamay-Tsoory, 2009). One example from research on brain damage indicated that patients with orbitofrontal damage showed no impairment on tests of first- or second-order false belief, but were poorer at passing tests of *faux pas* understanding (Stone, Baron-Cohen, & Knight, 1998). Other types of differentiation have also been shown: for example, Shamay-Tsoory and Aharon-Peretz (2007) found that patients with damage to the ventromedial (VM) area had difficulties in adopting the affective perspective of others, but their cognitive perspective-taking was intact. Conversely, Saxe and Powell's (2006) brain imaging study showed that the right and left temporo-parietal junction and the posterior cingulate responded when participants read a story about someone's thoughts, but not about their bodily sensations; the medial

prefrontal cortex (mPFC), which had previously been implicated in theory of mind studies (e.g., see review by Gallagher & Frith, 2003) responded equally to both types of story. The authors suggest that this supports a broader role for the mPFC in social understanding, while more specific regions are involved in processing others' mental (as opposed to sensory) states.

The emergence of increasingly complex categories of social understanding over the course of young children's development – from early joint attention, to the understanding of emotions and then beliefs – also lends weight to the suggestion that they are distinct skills. Moreover, Dunn (1995) suggests that emotion knowledge and false belief understanding show different developmental antecedents and sequelae. This is evident in the language used at different points in children's development, with emotion state talk preceding talk about others' beliefs (Carpendale & Lewis, 2006). Further, Saxe, Carey, and Kanwisher (2004) present evidence to suggest that the move from understanding others' intentions to belief attribution is reflected in two distinct neural mechanisms, rather than the development of a single mechanism. Many of the key skills involved in social understanding emerge in early and middle childhood. Pons, Lawson, Harris, and de Rosnay (2003) outline a developmental progression in emotion knowledge in children aged 4 to 11 years, from the recognition of affective states to the understanding of complex causes of emotion and the possibility of mixed emotions. We might therefore expect to find differences in children's abilities on the basis of maltreatment subtype and the specific aspect of social understanding being measured; moreover, the periods of early and middle childhood are likely to provide the strongest evidence of maltreated children's inferior performance due to the particular salience of emerging skills of social understanding at this point in children's development.

Parenting, Maltreatment, and Social Understanding: A Conceptual Rationale

According to attachment theory, children's interactions with their primary caregivers shape the development of their internal working model (IWM) of self-other relationships. In maltreating families, inconsistent parenting makes it difficult for children to interpret and predict their parents' behaviour (Cicchetti, Rogosch, Maughan, Toth, & Bruce, 2003), and children then carry these difficulties forward into their other social relationships. From this perspective, the impaired social understanding of a maltreated child can be seen as part of a highly distorted IWM, which is the product of an insecurely developing attachment relationship.

Meins and colleagues (e.g., 2002, 2003) have explored this relationship further and discovered that the key factor may not be the secure or insecure attachment classification in itself, but rather the mother's display of 'mind-mindedness'. In longitudinal studies they found that mothers' appropriate mind-related comments to their 6-month-olds predicted the children's theory of mind scores (Meins et al., 2002) and stream of consciousness understanding (Meins et al., 2003) at 4 years of age. Yet, while maternal mind-mindedness is clearly an important factor for infants, our understanding and prediction of outcomes may be enhanced by adopting a dyadic perspective on the infant-caregiver relationship. In a study of preschoolers by Ensor, Spencer and Hughes (2011), for example, mutuality in mother-child interactions (operationalised as mother-child responsiveness and dyadic reciprocity and co-operation) predicted children's performance on an emotion understanding task 1 year later. In the maltreating context this kind of mutuality may be absent. Abusive parents can produce inconsistent or frightening emotional signals (Pollak & Sinha, 2002) which do not mirror the child's own expressed affect, leading to problems with the child's developing emotion understanding (Fonagy, Gergely, Jurist, & Target, 2002).

Neglectful parents also fail to mirror the child's affect, but in addition often offer no emotional signals of their own. From a Vygotskian perspective, both these patterns of maltreating parenting fail to provide the alternative versions of reality that are usually represented in parent-child dialogue and which lead the child to appreciate multiple perspectives (Fernyhough, 2008).

Mind-mindedness and mutuality both require a degree of other-awareness that is lacking in the maltreating parent. This heightened egocentrism is also reflected in the lower levels of internal state language (ISL) used by maltreating mothers (Edwards, Shipman, & Brown, 2005). Ensor and Hughes (2008) note that adaptive conversations are contexts in which the other's mental state – which may differ from the child's own state – are represented. In their study, mothers' mental-state references made in connected turn-taking when children were aged 2 predicted children's social understanding 2 years later. Similarly, Dunn, Brown and Beardsall's (1991) observations of preschoolers in the family setting showed that those who experienced more family discussions about a diverse range of emotions, their causes and consequences, performed better at an affective perspective-taking task 3 years later. Moreover, Ruffman, Perner, and Parkin (1999) found that mothers of 3- to 5-year-olds who favoured the disciplinary strategy of encouraging their children to reflect on their victim's feelings had children with more advanced false belief understanding. Ensor and Hughes (2008) suggest that the key mechanism might be a shared focus in conversations, making similarities and differences in mental states more salient. Crucially, children need to learn about the connections between events and particular internal states, and Dunn (1988) points out that this kind of reasoning often occurs following conflict events within the family. Learning these connections may be more difficult to achieve in the face of inconsistent parenting, particularly in abusive

situations where parents themselves are the source of conflict. In line with this, Pashley's (2010) use of narrative therapy uncovered a link between adverse childhood experiences and the use of mental state terms that showed little relevance to the events being described.

Children's developing emotion knowledge may depend on more than the use of internal state language in conversation to represent others' mental states, however. Effective emotion socialisation also involves parental validation of children's emotional expression. Validations from parents reflect an acceptance of the child's emotional state and directions for coping with their emotions. In the maltreating context, this behaviour may be lacking. Shipman et al. (2007) found that physically abusive mothers were less validating of their children's discussion of negative emotion experiences (anger, sadness and fear) in the family than were nonmaltreating mothers. This lack of validation is reflective of maltreating parents' own difficulty with emotion understanding: Shipman and Zeman (2001), for example, found that physically abusive mothers showed less understanding than nonmaltreating mothers of the reasons why children might display anger, sadness and happiness.

An atypical emotional environment could also bias maltreated children's responses to particular affective states. Pollak (2008) outlines a hypothesis in which maltreated children's processing of emotions is affected by the alteration of sensory thresholds in response to early social experiences. From this point of view, early experiences make certain stimuli more salient, and children's developing perceptual systems become 'tuned-in' to these stimuli. The limited information-processing capacity available to young children in particular means that attention may be directed towards the negatively-valenced emotional cues that are most useful in predicting caregivers' behaviour (Pollak, Cicchetti, & Klorman, 1998). In support of this, Pollak

and Tolley-Schell's (2003) ERP study showed that physically abused children had a larger P3b component than controls in response to 'invalid angry' trials (responding to a target location on the other side of the screen to a previously-viewed angry face), reflecting the greater effort needed to disengage attention from angry facial cues. Abused children's response times to valid angry trials (face and target on same side of screen) were faster than both angry and happy valid trials for controls, perhaps reflective of their greater familiarity with angry expressions. Similarly, Shackman, Shackman, and Pollak's (2007) sample of physically abused children had a larger P3b component in response to angry facial cues posed by their mothers than did nonmaltreated children; this effect was not seen for happy or sad faces. Taken together, the results of these neurophysiological studies suggest that the experience of physical abuse might predispose children to display a hyper-responsivity to anger cues.

Children's cognitive processing of information within social situations is also likely to be affected by maltreating parenting experiences. Crick and Dodge's (1994) model of social information-processing outlines a series of 'mental steps' involved between children's exposure to a social situational cue and their behaviour. Of specific relevance to maltreatment, the model proposes that central to the steps of social information-processing is a 'database' of stored memories, acquired rules, social schemas and social knowledge, all of which both influence and are influenced by each step of the process. Social experiences and social feedback are therefore at the heart of the model. Repeated experiences of abuse or neglect would therefore bias children towards maladaptive processing styles. In support of this, Weiss, Dodge, Bates, and Pettit (1992) found that mothers who reported using higher levels of harsh discipline had children who paid less attention to social cues in hypothetical peer interaction scenarios, and who showed greater likelihood of selecting an aggressive response.

Moreover, harsh discipline was associated with children's bias towards attributing hostile intent to the stories' protagonists. This suggests that while their attention towards salient social cues might be limited, the predisposition to interpret ambiguous cues as evidence of hostility, which Pollak and his colleagues had shown using adult stimuli, was similarly prevalent in a peer context. This biased view had direct consequences for children's behaviour, with maladaptive social information processing mediating the relationship between harsh discipline and children's aggressive behaviour at school.

Developmentally, children who are exposed to a wider variety of social situations will develop new responses and adjust their database accordingly. Conversely, previously acquired patterns become more rigid. For the maltreated child, the diversity of social situations may be restricted for several reasons, such as the family's reduced social circle (Sidebotham, Heron, & Golding, 2002). In addition, young children whose experiences of physical abuse prompt a cycling through the information-processing model in terms of a hostile attribution bias are likely to provoke a consistently negative response from peers. This confirmation of their expectations reinforces the attribution bias and prevents these children from accessing alternative, more adaptive interpretations and behavioural responses.

Indeed, the way in which maltreatment histories hinder the social-cognitive development of children may lie to some extent in the problematic relationships with siblings (Linares, 2006) and peers (Anthonysamy & Zimmer-Gembeck, 2007) that stem from, and then amplify, difficulties in social understanding. Brown, Donelan-McCall, and Dunn (1996) found that preschoolers in fact used more mental-state terms in conversations with siblings and friends than with mothers. Moreover, the frequency of mental state talk showed a positive correlation with performance on a false belief task

(see also Hughes & Dunn, 1998; Hughes, Lecce, & Wilson, 2007). Recent longitudinal work by Banerjee, Watling, and Caputi (2011) suggests a bidirectional relation between social understanding and peer rejection, with children's understanding of complex *faux pas* scenarios (involving unintentional insults) both being inhibited by rejection and in turn increasing the likelihood of future rejection. Hughes and Ensor (2005) explain that what is important is the quality, rather than the simple presence of sibling (and, by extension, peer) relationships; higher quality relationships are likely to mean more time spent together, with greater chance of practising skills in social understanding. Thus, if the quality of these relationships is compromised by early maltreatment experiences, this constitutes an accumulating risk for children's development.

The Present Study

The theory and research introduced above build a compelling justification for the basic hypothesis that social understanding (incorporating emotion knowledge and mentalising skills) is a problematic area for children who have experienced physical abuse and neglect. Our account of inter-related theoretical perspectives gives rise to the hypothesis that such difficulties are likely to be especially evident during early and middle childhood, when key skills develop in this area. On the other hand, we can also expect that the pattern of difficulties will not be uniform, given that maltreated children are theoretically likely to exhibit biased responses to particular emotions and social situations.

Now, a systematic review of the literature is needed to assess the strength of direct evidence relating to our hypotheses. Moreover, given the accrual of studies focussing on maltreated children's emotion recognition and emotion understanding, a meta-analysis of the data will help to address systematically the questions of if, how, and to what extent these skills are impaired in this population. Further, moderation

analyses will allow us to examine the role of age (early childhood, middle childhood, or older) and emotion skill type (emotion understanding, emotion recognition, or ‘emotion knowledge’, a composite of both these emotion skills). If the evidence suggests that maltreated children lag behind their peers in social understanding, and/or exhibit distinctive biases in their understanding, this knowledge can inform practitioners’ decisions to provide supportive interventions which could improve this vulnerable group’s chances of success in the social sphere. The review will also help to identify potential gaps in existing research, which might be investigated in future studies. Below, we first describe the methodology and findings of our meta-analysis and systematic review, before addressing the theoretical and broader implications of the work in our final discussion.

2.3 Method

Literature Search

An initial search for all articles relevant to the review was conducted using *PsycINFO* and *Web of Science* electronic databases. The search parameters specified any peer reviewed journal article containing: a) one of the key word stems ‘child*’, ‘infant*’, or ‘adolescent*’, and b) one of the key words or word stems ‘parenting’, ‘abuse*’, ‘neglect*’, or ‘maltreat*’, and c) any of the key word stems or phrases ‘empath*’, ‘emotion*’, ‘mentalis*’, ‘mentaliz*’, ‘social understanding’, ‘social information’, ‘social cognit*’, ‘theory of mind’, ‘perspective-taking’, or ‘mental state’. The search excluded any articles containing the keywords ‘substance’ or ‘review’. Articles published at any time from the beginning of the database records until the search cut-off date (February 2012) were included. This search produced an initial list of 6257 articles.

PsycINFO was also searched for unpublished dissertations using the same keywords. The abstracts of all dissertations registered since 1995 (the point at which full abstracts are available) and featuring the keywords listed above were checked for relevance to the review.

In addition to the search of electronic databases, hand searches were made of a number of key journals: *Adoption & Fostering*, *Attachment & Human Development*, *British Journal of Developmental Psychology*, *British Journal of Social Work*, *Child Abuse & Neglect*, *Child Abuse Review*, *Child & Family Social Work*, *Child Development*, *Child Maltreatment*, *Children and Youth Services Review*, *Cognition and Emotion*, *Development and Psychopathology*, *Developmental Psychology*, *Infant and Child Development*, *Journal of Abnormal Child Psychology*, *Journal of Child and Family Studies*, and *Social Development*. The abstracts of all articles printed in these journals since January 1980 (or their first volume, if later) were checked for relevance to the review. Further articles were suggested by a citations search using *PsycINFO* and by scanning the References section of included articles.

The volume of articles suggested by the searches reflects the sensitivity of the search terms used. In deciding which key words and phrases to specify in the search, sensitivity took precedence over specificity; thus, a number of broader terms were used to reduce the risk of missing any relevant studies. A large number of the articles suggested by the searches were therefore excluded at the title stage. For example, studies concentrating solely on victims of sexual abuse (as opposed to those comparing sexual abuse with other subtypes of maltreatment) were excluded at this stage. Similarly, because our focus was on cognitive skills, studies focusing on the affective rather than the cognitive aspect of empathy were rejected.

The abstracts of all remaining articles were then read. Articles which fell outside of the scope of the review were excluded, for example, those with no comparison of maltreatment status or severity. In addition, while a number of studies reported on research conducted with children raised in institutions, these were judged to fall within the scope of the review only if they reported children's maltreatment histories. All articles remaining on the list were read in full; only a small number of articles were rejected at this stage. Table 2.1 shows the number of articles excluded at each stage of the review; Table 2.2 shows the reasons why articles were excluded. These methods produced a final list of 51 articles within the scope of the review. Characteristics of the studies are detailed in Table 2.3.

Notes were made on each study using a standardised review template. The template included sections on the study sample (representativeness and level of match with control group), recruitment procedures, validity of measures used, thoroughness of procedural description, choice and outcome of statistical analyses, and the validity of authors' interpretations of the data.

Meta-analysis Criteria

The 51 articles identified for inclusion in the review covered four distinct aspects of social understanding: 38 measured emotion skills (including either separate measures of recognition or understanding, or a composite measure of emotion knowledge), 5 measured perspective-taking, 3 measured first-order false belief and 10 measured hostile attribution bias. None of the studies measured second-order false belief. It has already been suggested that each of these skills appears at a different

Table 2.1

Number of articles excluded at each stage of the literature search, by source

Source	Novel results	Excluded at title	Excluded at abstract	Excluded at article	Included
Database search	6257	5782	370	58	47
‘Cited by’ search	1018	925	77	14	2
Reference list search	15	N/A	7	8	0
Dissertation search	1242	1172	58	10	2
Journal hand searches	19	N/A	19	0	0
Total	8551	7879	531	90	51

Table 2.2

Number of articles excluded from review, by reason

Reason for exclusion	Articles excluded
Non-empirical study	2612
Sample outside review scope	3324
Review outcomes not measured	2554
No control group/no analysis by maltreatment status or severity	1
Paper not available in the UK and authors unable to mail a copy	9
Total	8500

point in children's development and is linked to distinct sequelae (Carpendale & Lewis, 2006; Dunn, 1995). On this basis, and because of the large proportion of studies on emotion skills in our review, the decision was made to conduct a separate meta-analysis of the data on this area of social understanding.

The criterion for inclusion in the meta-analysis was therefore that studies should provide behavioural data which allowed comparison between maltreated and non-maltreated subjects on emotion recognition (ER) emotion understanding (EU), or emotion knowledge (EK; a composite of ER and EU). Eleven of the 38 studies examining emotion skills were excluded either because the authors did not measure a behavioural outcome (e.g., Cicchetti & Curtis, 2005), or because the behavioural outcome specified could not be said to discriminate between participants on the basis of superior emotion recognition or understanding (e.g., Pollak & Kistler, 2002, measured emotion category boundaries using morphed photographs). Studies were included where maltreatment was specified as either a between-groups variable or where its prevalence or severity was measured as a continuous variable. Where the same sample was used in two studies (Camras and colleagues, 1988; 1990), only the earlier results were analysed. Finally, where the data required to calculate effect sizes (group means and standard deviations or *F* statistics where maltreatment was a between-subjects variable; correlations where maltreatment was a continuous variable) were not available in the published article, study authors were emailed for further information. The data were no longer available for 7 of the 38 studies, which were excluded from the meta-analysis but retained in the systematic review.

Nineteen studies were identified as eligible for inclusion in the meta-analysis. Characteristics of the studies are detailed in Table 3. The samples from the 19 studies comprised a total of 6155 children; the mean number of participants per study was 324

Table 2.3

Details of studies included in the review

Reference; country	Number of subjects ^a	Maltreatment subtypes ^b	Age group and range ^c	Skill tested ^d (controlled for IQ or language) ^e	Methodology	Effect size using Cohen's <i>d</i> and (<i>p</i> -value) ^f
Ayoub et al. (2006, Study 1); USA	27 (M) 26 (NM)	PA/SA/EA/NE	EC (1 year 10 months to 6 years 1 month)	HAB (N)	Retelling stories of mean and nice interactions	N/A
*Barahal et al. (1981); USA	17 (M) 16 (NM)	PA	MC (6 to 8 years; mean 7 years 6 months)	EU ER PT (Y)	Labelling emotions and identifying causes, telling story from different perspectives	-0.953 (.010)
Benedetti et al. (2011); Italy	40 (CV)	PA/DV (or feeling unloved, living in disorganised home)	AD (26 to 49 years)	ER (N)	Matching emotion pairs	N/A
Berlin et al. (2011); USA	499 (CV)	PA/NE	AD (12 to 41 years)	HAB (N)	Assigning intent to story characters	N/A

*Bowen & Nowicki (2007); UK	1068 (M) 4166 (NM)	PA/SA/EA/NE	MC (7.5 to 10.5 years)	ER (Y)	Labelling emotions	0.078 (.023)
Burack et al. (2006); USA	49 (M) 49 (NM)	PA/SA/NE	MC/AD (7 to 12 years and 13 to 17 years)	PT (T)	Telling story from different perspectives	N/A
Calvete & Orue (2011); Spain	650 (CV)	PA/DV/VA	AD (13.7 years mean)	HAB (N)	Assigning intent to story characters	N/A
*Camras et al. (1983); USA	17 (M) 17 (NM)	PA	EC (3 years 7 months to 6 years 4 months)	ER (N)	Selecting photo for emotion label	-1.058 (.004)
*Camras et al. (1988); USA	20 (M) 20 (NM)	PA (some NE)	EC (3 years 4 months to 7 years 3 months; mean 4 years 11 months)	ER (N)	Selecting photo for emotion label	-1.018 (.002)
Camras et al. (1990); USA	20 (M) 20 (NM)	PA/NE	EC (3 years 4 months to 7 years 3 months; mean 4 years 11 months)	ER (M)	Selecting photo for emotion label	N/A

Cicchetti & Curtis (2005); USA	35 (M) 24 (NM)	PA/SA/NE	EC (2 years 4 months to 3 years)	ER (Y)	Passive viewing of emotion photos	N/A
Cicchetti et al. (2003); USA	203 (M) 315 (NM)	PA/SA/EA/NE	EC (3 years 4 months to 8 years 5 months; mean 6 years 0 months)	FB (Y)	Unexpected content task	N/A
Curtis & Cicchetti (2011); USA	46 (M) 25 (NM)	PA/SA/NE	EC (42 months)	ER (Y)	Passive viewing of emotion photos	N/A
Dannlowski et al. (2012)	145 (CV)	PA/SA/EA/NE	AD (20 to 57 years)	ER (Y)	Matching emotion pairs	N/A
Dodge et al. (1990); USA	46 (M) 258 (NM)	PA	EC (4 years)	HAB (N)	Assigning intent to story characters	N/A
Dodge et al. (1995); USA	46 (M) 258 (NM)	PA	EC (4 years)	HAB (N)	Assigning intent to story characters	N/A
Downey & Walker (1989); USA	36 (M) 47 (NM)	PA/NE	MC (8 to 10 years mean)	HAB (N)	Assigning intent to story characters	N/A

*During & McMahon (1991); USA	23 (M) 23 (NM)	PA	EC (2 years 8 months to 9 years 7 months; mean 5 years 8 months)	ER (N)	Labelling emotions	-0.951 (.002)
*Edwards et al. (2005); USA	24 (M) 24 (NM)	NE	MC (5 to 12 years; mean 9 years 2 months)	EU (N)	EU interview: identifying emotions and understanding causes, expression and consequences	-2.902 (< .001)
Fishbein et al. (2009); USA	553 (CV)	PA/EA/NE	MC (10 to 12 years; mean)	ER (N)	Labelling emotions	N/A
Frodi & Smetana (1984); USA	40 (M) 20 (NM)	PA/NE	EC (3.2 years to 5 years)	EU ER (Y)	Labelling emotions, selecting emotion for story character	N/A
*Gapen (2010); USA	162 (CV)	PA/SA/EA/NE	AD (18 to 74 years)	ER (N)	Labelling emotions	0.242 (0.130)
Gibb et al. (2009); USA	47 (M) 170 (NM)	PA/SA/EA	AD (19 years mean)	ER (N)	Labelling morphed emotion photos	N/A
Henry et al. (2009); Canada	34 (M) NM not stated	PA/EA/NE	EC (6 years 8 months mean)	ER (Y)	Matching emotion pairs	N/A

Keil & Price (2009); USA	100 (M) 88 (NM)	PA/NE	EC (5 to 8 years; mean 6.5 years)	HAB (N)	Assigning intent to story characters	N/A
Lazaro & Lopez (2010); Spain	74 (M) 97 (NM)	PA/SA/EA/NE/"other form of maltreatment"	AD (13 to 18 years)	PT (N)	Self-report survey	N/A
*Leist & Dadds (2009); Australia	23 (CV)	PA/EA/NE	AD (16 to 18 years)	ER (N)	Labelling emotions	0.448 (.328)
Masten et al. (2008); USA	29 (M) 17 (NM)	PA/SA/EA/NE/DV	MC/AD (8 to 15 years; mean 11.7 years)	ER (Y)	Labelling morphed emotion photos	N/A
*Pajer et al. (2010); USA	41 (M) 24 (NM)	PA/SA/EA/NE	AD (16 to 18 years)	ER (N)	Labelling emotions	-0.449 (.084)
*Pears & Fisher (2005); USA	60 (M) 31 (NM)	PA/SA/EA/NE	EC (3 to 5 years)	EU ER FB (Y)	Labelling emotions, selecting photo for emotion label and emotion for story character, identifying story character's false belief	-0.937 (< .001)
Peled (1994); Canada	49 (M) 49 (NM)	PA/SA/NE/DV	MC/AD (7 to 12 years and 13 to 17 years)	PT (T)	Telling story from different perspectives	N/A

*Perlman et al. (2008, Study 2); USA	17 (M) 18 (NM)	PA	EC (5 to 6 years)	EU (N)	Rating plausibility of pairing of emotion and cause	-0.517 (.133)
Pollak & Kistler (2002); USA	23 (M) 17 (NM)	PA	MC (9 years 3 months mean)	ER (N)	Labelling morphed emotion photos	N/A
Pollak & Sinha (2002); USA	24 (M) 23 (NM)	PA	MC (8 years 6 months to 10 years 2 months)	ER (N)	Labelling scrambled emotion photos	N/A
*Pollak et al. (1997, Experiment 1); USA	23 (M) 21 (NM)	PA/EA/NE	MC (7.1 to 11.4 years)	ER (T)	Detecting target emotion face from display	-0.707 (.023)
Pollak et al. (2000); USA	60 (M) 26 (NM)	PA/NE	EC (3 to 5 years)	EU ER (Y)	Matching emotion pairs, selecting emotion for story character	N/A
*Pollak et al. (2001); USA	28 (M) 14 (NM)	PA/NE	MC (6.3 to 12.2 years; mean 8.8 years)	ER (N)	Detecting target emotion face from display	0.187 (.569)
Pollak et al. (2009); USA	49 (M) 46 (NM)	PA	MC (9.48 years mean)	ER (N)	Labelling changing emotion photos	N/A

Price & Glad (2003); USA	44 (M) 56 (NM)	PA/NE	EC (4 to 6 years)	HAB (N)	Assigning intent to story characters	N/A
Rogosch et al. (1995); USA	46 (M) 43 (NM)	PA/SA/EA/NE	EC (5.92 years mean)	EU (Y)	Selecting emotion for story character	N/A
*Shackman & Pollak (2005); USA	33 (M) 30 (NM)	PA	MC (7 to 12 years; mean 9.57 years)	ER (N)	Labelling emotions	-0.076 (.764)
*Shipman & Zeman (1999); USA	22 (M) 22 (NM)	PA	MC (6 to 12 years)	EU (T)	EU interview: identifying emotions and understanding causes, expression and consequences	-1.405 ($< .001$)
*Shipman et al. (2005); USA	24 (M) 24 (NM)	NE	MC (6 to 12 years; mean 9 years 3 months)	EU (T)	EU interview: identifying emotions and understanding causes, expression and consequences	-0.685 (.021)
*Smith & Walden (1999); USA	15 (M) 15 (NM)	PA/SA/NE/DV	EC (3 years 4 months to 6 years 0 months)	EU ER (Y)	Selecting similar emotion face to target and for story character	-0.863 (.024)

*Sullivan et al. (2008); USA	12 (M) 19 (NM)	NE (some PA)	EC (4 to 5 years)	EK (Y)	Labelling emotions, selecting photo for emotion label and emotion for story character	-1.171 (.003)
*Sullivan et al. (2010); USA	15 (M) 27 (NM)	NE	EC (4 years)	EK (Y)	Labelling emotions, selecting photo for emotion label and emotion for story character	-1.008 ($< .001$)
Tarullo et al. (2007); USA	120 (CV)	PA/NE (or > 2 placements before adoption, being in a discriminated minority)	EC (6 to 7 years; mean 6.86 years)	EU ER FB (N)	Selecting photo for emotion label, evaluating appropriateness of vignette-emotion pairing, unexpected transfer task	N/A
Taylor et al. (2006); USA	30 (CV)	PA/DV (or feeling unloved, living in disorganised home)	AD (18 to 36 years)	ER (N)	Labelling emotions	N/A

Teisl & Cicchetti (2008); USA	167 (M) 100 (NM)	PA/SA/EA/NE	MC (6 to 12 years; mean 8.35 years)	HAB (N)	Assigning intent to story characters	N/A
Walker & Downey (1990); USA	47 (M) 55 (NM)	PA/NE	MC (9 years)	ER PT (Y)	Selecting photo by emotion label, selecting best clues for imaginary partner to pass word task	N/A
Ward & Haskett (2008); USA	98 (M) 77 (NM)	PA	MC (5 to 10 years; mean 7.33 years)	HAB (N)	Assigning intent to story characters	N/A
Zimmerman et al. (1997); USA	42 (M) 42 (NM)	“All types of abuse and neglect”	MC (6 to 10 years; mean)	EU (Y)	EU interview: identifying emotions and understanding causes, expression and consequences	N/A

References preceded by an asterisk were included in the meta-analysis

^a M = maltreated sample; NM = nonmaltreated sample; CV = incidence or severity of maltreatment measured as a continuous variable

^b PA = physical abuse; SA = sexual abuse; EA = emotional abuse; NE = physical neglect; DV = witnessed domestic violence; VA = verbal aggression

^c EC = early childhood; MC = middle childhood; AD = adolescence and adulthood

^d EK = composite measure of emotion knowledge (understanding and recognition); EU = emotion understanding; ER = emotion recognition; PT = perspective-taking; FB = first-order false belief; HAB = hostile attribution bias

^e Y = yes; N = no; T = tested, but no differences found in results; M = groups matched on IQ prior to analysis

^f A negative effect size indicates poorer performance from maltreated children

(due to the large sample in Bowen & Nowicki, 2007) and the median was 44. All studies but one included both male and female participants (Pajer, Leininger, & Gardner, 2010, used only girls).

Three variables were noted from the studies as possible moderators for the meta-analysis. The first was the type of emotion skill measured: emotion recognition (ER) vs. emotion understanding (EU) vs. composite measures of emotion knowledge (EK). Given the range of ages included in the study samples, age group was also noted as a potential moderator. Studies were categorised according to three age groups: early childhood, covering the range of ages from 2 to 6 years old (EC) vs. middle childhood, age range 7 to 11 years old (MC) vs. adolescence and adulthood, ages 12 or over (AD). Where study samples included overlapping age ranges, they were categorised according to the age group within which most of the sample's age range fell (e.g., a sample range of 5 to 12 years was classed as middle childhood); where the sample's age range was equally spread between age groups, the mean sample age was used as the basis for categorisation (see Table 3 for details). We had also hoped to analyse maltreatment subtype (physical abuse vs. neglect) as a possible moderator. However, an inspection of the participant details in each paper revealed that the majority of studies employed samples which included a variety of maltreatment subtypes, but did not report separate results for each one. On this basis, we restricted our analysis to focus on emotion skill type and age group as potential moderating variables.

Computation and Analysis of Effect Sizes

Effect sizes were computed using Comprehensive Meta-Analysis Version 2 (CMA) software (Borenstein, Hedges, Higgins, & Rothstein, 2005). The program calculates effect sizes based on individual studies' means and standard deviations (SDs), Pearson's r correlations, or pre-calculated effect sizes. Results are weighted by

sample size to produce an overall effect size. When group means and SDs were not available, published F values and sample sizes were used to calculate Cohen's d using the Effect Size Determination Program for Microsoft Excel (Lipsey & Wilson, 2001; Wilson, 2001). Where studies reported means and SDs for more than one outcome (e.g., for both ER and EU, or for separate emotions), individual effect sizes were calculated and then averaged to produce an overall effect size for the sample. Finally, where results were provided before and after controlling for further variables (e.g., IQ), data obtained before the introduction of the covariate were used to ensure that effects were comparable between studies. The resulting Cohen's d values are reported here, with values lying between 0.20 and 0.50 conventionally assumed to indicate a small effect size, those between 0.50 and 0.80 indicating a medium effect, and values greater than 0.80 indicating a large effect (Cohen, 1988). The p values of the resultant Z scores are also reported here to indicate the significance of effect sizes. A random effects model was used in the analysis, as the samples of participants and outcome measures used in each study were not presumed to be equivalent (Alfieri, Brooks, Aldrich, & Tenenbaum, 2011).

2.4 Results

In the first section we present the results of our meta-analysis of research on the emotion skills (recognition, understanding, and composite measures of emotion knowledge) of maltreated children. In the second section we present a narrative account of the studies from our systematic review. This begins with a synthesis of the results on emotion skills, including a number of studies which were excluded from the meta-analysis. We then go on to present the results of studies on maltreated children's hostile attribution bias, perspective-taking, and understanding of first-order false belief.

Meta-analysis of Maltreatment and Emotion Skills

The effect sizes comparing emotion skills (understanding, recognition, and composite measures of emotion knowledge) in maltreated and non-maltreated children were analysed in a meta-analysis. Table 2.4(a) displays the overall results of the meta-analysis using a random effects model. Effect sizes were coded so that a negative effect size indicated poorer performance from maltreated children.

Sixteen of the 19 studies (84.2%) included in the meta-analysis showed effect sizes in the expected direction, where maltreatment status or severity was associated with poorer performance on emotion tasks. The 19 studies had a mean effect size of $d = -0.696$ ($SE = .148$), indicating a medium effect size ($Z = -4.714$, $p < .001$). The largest negative effect size was $d = -2.902$ and the largest positive effect size was 0.448 . The effects across studies were highly heterogeneous, $Q(18) = 131.331$, $p < .001$. Given the variety of samples and measures employed in the studies, heterogeneity of this kind is to be expected. To address the issue of publication bias, we calculated the fail-safe N using Rosenberg's (2005) N_+ approach. The results showed that in our random effects model, a further 32 unpublished studies with a mean effect of zero would need to be added to the analysis to make the results non-significant.

The meta-analysis also allowed us to examine the effect of potential moderators. We conducted two moderator analyses: one for type of emotion skill (EK vs. ER vs. EU), and another for age group (EC vs. MC vs. AD).

Table 2.4(b) displays the results of the moderator analysis for emotion skill type using a random effects model. Again, negative effect sizes indicate poorer performance from maltreated children; the three studies that produced positive effect sizes all measured emotion recognition. The type of outcome measured moderated the findings, $Q(2) = 13.001$, $p = .002$. Studies measuring emotion understanding ($d = -1.351$)

Table 2.4

Results of meta-analysis (a) overall; (b) moderation by outcome variable; (c) moderation by age group

Level of analysis	Moderator level	Cohen's <i>d</i>	95% CI	<i>Z</i>	<i>p</i> value (<i>Z</i>)	<i>Q</i>	<i>df</i> (<i>Q</i>)	<i>p</i> value (<i>Q</i>)
(a) Overall		-0.696	[-0.985, -0.406]	-4.714	< .001	131.331 (between studies)	18	< .001
(b) Moderated by outcome variable	EK	-0.972	[-1.258, -0.686]	-6.660	< .001	13.001 (between groups)	2	.002
	ER	-0.309	[-0.580, -0.039]	-2.239	.025			
	EU	-1.351	[-2.311, -0.392]	-2.760	.006			
(c) Moderated by age group	EC	-0.933	[-1.160, -0.706]	-8.065	< .001	11.320 (between groups)	2	.003
	MC	-0.776	[-1.315, -0.236]	-2.818	.005			
	AD	0.042	[-0.479, 0.563]	0.158	.875			

showed larger negative effect sizes than those measuring composite emotion knowledge ($d = -0.972$), which in turn were larger than those measuring emotion recognition ($d = -0.309$). Post-hoc comparisons revealed that the difference in effect sizes lay between studies measuring EK and ER, $Q(1) = 10.873$, $p = .001$, and between EU and ER, $Q(1) = 4.198$, $p = .040$. There was no significant difference between EU and EK, $Q(1) = 0.552$, $p = .457$.

Finally, Table 2.4(c) displays the results of the moderator analysis for age group using a random effects model. Age group moderated the findings of the meta-analysis, $Q(2) = 11.320$, $p = .003$. The results appeared to indicate a developmental trend: studies using samples from early childhood ($d = -0.933$) showed larger negative effect sizes than those using middle childhood samples ($d = -0.776$), which in turn were larger than those conducted with adolescents and adults ($d = 0.042$). Post-hoc comparisons revealed that the difference in effect sizes lay between studies using EC and AD samples, $Q(1) = 11.320$, $p = .001$, and between MC and AD samples, $Q(1) = 4.566$, $p = .033$. There was no significant difference between EC and MC samples, $Q(1) = 0.278$, $p = .598$.

Systematic Review of Maltreatment and Social Understanding

Only six of the 51 papers included in this review measured more than one aspect of social understanding in the same study. Three of these (Frodi & Smetana, 1984; Pears & Fisher, 2005; Smith & Walden, 1999) did not report the relations among the constructs they measured. The other three showed that in line with the findings of Cutting and Dunn (1999) and the evidence from neuroscience (e.g., Shamay-Tsoory, 2009), the different dimensions of social understanding tended to be only modestly inter-related; this was true for links between emotion understanding and recognition (Tarullo, Bruce, & Gunnar, 2007), between emotion recognition and perspective-taking

(Walker & Downey, 1990), and between all three (Barahal, Waterman, & Martin, 1981). Results are therefore grouped below according to the dimension of social understanding measured.

Emotion knowledge (composite). Emotion knowledge as conceptualised here represents children's performance across tasks of both emotion understanding and recognition. Just two of the studies in our meta-analysis provided only a composite score of emotion knowledge: those conducted by Sullivan and colleagues (2008, 2010). The authors of these papers assessed children's emotion labelling, recognition, and ability to match emotions to situations, but chose to report a composite emotion knowledge score as results across the tasks showed acceptable internal consistency (α between .59 and .75). Sullivan et al.'s (2008) sample of neglected and physically abused 4- to 5-year-olds showed poorer emotion knowledge than a sample of controls, even after controlling for IQ (this study used a task previously validated with nonabused nonminority children by Lewis & Michalson, 1983). These results were supported by a later study in which Sullivan et al. (2010) found that neglect in 4-year-olds predicted inferior emotion knowledge, independent of the contribution of IQ.

A number of other studies (some included in the meta-analysis, and others excluded for reasons detailed previously) provided separate results for emotion understanding and emotion recognition, and these are included in the relevant sections below.

Emotion understanding. Our meta-analysis included seven studies which investigated maltreated children's understanding of the causes and consequences of emotional displays, using vignettes or interviews about their own experiences; three of these studies examined emotion understanding as part of a wider battery of tasks. The

results of the meta-analysis showed a poorer overall performance in maltreated children on these variables.

In line with these results, maltreated children have been shown to be less able to explain how a situation might provoke a particular emotion, or appropriate reactions to emotional displays (Edwards et al., 2005, with neglected 5- to 12-year olds; Shipman & Zeman, 1999, with physically abused 6- to 12-year-olds; Shipman, Edwards, Brown, Swisher, & Jennings, 2005, with neglected 6- to 12-year-olds). Similarly, Perlman, Kalish, and Pollak's (2008) sample of physically abused 5- to 6-year-olds were equally likely to see positive, negative, and equivocal events as leading to negative emotions, unlike controls who differentiated between the three. Moreover, Pears and Fisher (2005) found that physically/sexually/emotionally abused or neglected 3- to 5-year-olds performed worse than controls when asked to select the correct emotion for a character in an emotion-provoking vignette; this difference remained even after controlling for age and intelligence. The difference was also evident in other measures of emotion understanding: the physically abused 6- to 10-year-olds in Zimmerman and colleagues' (1997) study gave more extreme and unique inappropriate responses when asked what others would do in response to their own negative emotions (sad, mad, and scared) than did controls.

Some researchers have found that the deficits in emotion understanding shown by maltreated children disappear when other variables related to general cognitive/verbal ability are taken into account. Frodi and Smetana (1984) compared a sample of physically abused or neglected 3- to 5-year-olds with nonmaltreated peers of higher IQ. They found that while the maltreated groups were worse than their peers at predicting story characters' emotions, this difference disappeared when they controlled for IQ. Elsewhere, Smith and Walden (1999) used line drawings and found poorer

selection of emotions for story characters in physically abused and neglected 3- to 5-year-olds in comparison with a sample of low-risk peers; however, this effect was no longer significant after controlling for receptive vocabulary. Barahal et al. (1981) used audio rather than visual stimuli, and found that although physically abused 6- to 8-year-olds were less skilled at describing the possible causes of emotions than controls, this difference was no longer significant after controlling for IQ.

Two studies in the review whose data were unavailable for meta-analysis suggested a more complex picture of emotion understanding difficulties in maltreated children, reflecting differentiated responses to the range of emotions under investigation. Rogosch, Cicchetti, and Aber (1995) found that physically/sexually/emotionally abused or neglected 5-year-olds were poorer at the appropriate selection of sadness or anger for story characters than their nonmaltreated peers, but there was less of a difference in the case of selecting fear and happiness. Examining the role of maltreatment subtype, Pollak, Cicchetti, Hornung, and Reed (2000; Experiment 1) found that neglected 3- to 5-year-olds were less likely to recognise anger-provoking scenarios than both physically abused peers and controls, while physically abused children were the poorest group at recognising situations that would provoke sadness. In addition, neglected children had the lowest standard for labelling the emotions of story characters as sadness, while physically abused children had the lowest standard for labelling as anger.

Only one study in the systematic review showed no difference in maltreated children's emotion understanding, in contrast to the results of the meta-analysis. Tarullo et al. (2007) found no relationship between a history of 'early risk' (including – but not exclusively – physical abuse and neglect) in internationally adopted 6- to 7-year-olds and children's ability to infer appropriate emotions in emotional vignettes.

Emotion recognition. As indicated by our moderator analysis, the difference between maltreated children and their peers was less pronounced in the area of emotion recognition, with seven out of ten studies showing a negative effect of maltreatment and the other three showing a positive effect. The results of a further 14 studies excluded from the meta-analysis add to this mixed pattern of findings.

A number of studies indicated poorer overall recognition by maltreated children of emotions in posed photographs. Three of these studies were conducted by Camras and colleagues with 3- to 7-year-old subjects (1983; 1988; 1990), using photographs of children posing emotional expressions as stimuli. In this set of studies physically abused (Camras et al., 1983; 1988) or neglected (Camras et al., 1990) children were poorer than their nonmaltreated peers at recognising emotions. In the two later studies, this effect was found to apply to both pure emotions (where posed facial expression matches the affect) and masked emotions (where models are told to simultaneously pose a negative facial expression and a smile). Similar overall weaknesses were observed by During and McMahon (1991) in a sample of physically abused 2- to 9-year-olds, using photographs posed by adults and children. Moreover, Pollak, Cicchetti, Klorman, and Brumaghim (1997) found that physically abused or neglected 7- to 11-year-olds were slower overall to recognise angry or happy faces in photographs of adults. A further study by Bowen and Nowicki (2007) showed that physically/sexually abused or neglected 7- to 10-year-olds were poorer at recognising high-intensity emotion expressions in children's photographs than their peers; the effect remained after controlling for IQ and language comprehension. While Bowen and Nowicki's study included the largest sample in our review, maltreatment status was based on maternal reports (as opposed to substantiated reports from Social Services), and mothers were

asked only about the first four years of the child's life. Moreover, children who had both experienced and witnessed abuse were excluded from the authors' analysis.

Similar deficits in maltreated children's emotion recognition were found by researchers using alternatives to photographs. Pears and Fisher (2005) found that physically/sexually/emotionally abused or neglected 3- to 5-year-olds were poorer at naming and recognising line drawings of emotional faces than controls. Barahal et al. (1981) used audio rather than visual stimuli, and found that physically abused 6- to 8-year-olds were poorer at recognising emotions and changes in emotion than nonmaltreated peers, even after controlling for IQ. Smith and Walden (1999) also used line drawings and found poorer emotion-matching skills in physically abused and neglected 3- to 5-year-olds in comparison with a sample of low-risk peers; however, in their study this effect was no longer significant after controlling for receptive vocabulary.

Specific patterns of deficits have also been observed dependent on the characteristics of the sample. In Henry, Nolin, and Ethier's (2009) study, boys aged 5 to 7 years who had been psychologically/physically abused or neglected performed below age group norms in matching photographs of emotions, while girls in the same group were at norm level (although no details were provided about the comparison group). Illustrating the importance of maltreatment subtype, Fishbein et al. (2009) found that physical or emotional neglect in 10- to 12-year-olds predicted poorer recognition of emotions in pictures but physical abuse did not. Examining the role of maltreatment subtype, Pollak et al. (2000; Experiment 2) found that neglected 3- to 5-year-olds saw less difference between angry expressions and sad or fearful expressions than both nonmaltreated and physically abused children.

In contrast to the general direction of results in the meta-analysis, several studies in the review showed no difference between maltreated children and controls in tasks of emotion recognition. Null findings were reported by Walker and Downey (1990), using adult photographs with neglected and some physically abused 9-year-olds; however, when assessing children from the same family the authors made no distinction between the child who was identified as the target of maltreatment and their participating siblings, claiming that “exposure...has the same effects...as direct abuse.” (p253) Elsewhere, Tarullo et al. (2007) found no relationship between a history of ‘early risk’ (including – but not exclusively – physical abuse and neglect) in internationally adopted 6- to 7-year-olds and children’s ability to select the correct photographs of adults for given emotion labels. Gapen (2010) also found no link between maltreatment experienced (physical/sexual/emotional abuse or neglect) in adults aged 18 to 74 and their recognition of high- and low-intensity emotion photographs. In examining specific maltreatment experiences separately, Gapen reported that while neglect had no link to emotion recognition performance, physical abuse predicted fewer errors for low-intensity faces. Moreover, Pajer et al’s (2010) sample of physically/sexually/emotionally abused or neglected 15- to 17-year-olds were no less accurate overall at choosing the emotion labels for posed photographs than their nonmaltreated peers, although they were poorer at labelling fear expressions. A further study using audio rather than visual emotion representations also failed to find any deficit in maltreated children’s emotion recognition. Frodi and Smetana (1984) compared a sample of physically abused or neglected 3- to 5-year-olds with nonmaltreated peers of higher IQ. They found that abused and neglected children were no worse than controls at recognising adults’ emotions in audio stimuli, even before controlling for IQ.

We must stress that null findings on behavioural measures did not necessarily indicate a lack of difference between maltreated and non-maltreated participants. In a study by Taylor and colleagues (2006), young adults from self-reported ‘risky families’ (including physical abuse and neglect, but also witnessing family violence, or living with a substance abuser or in a ‘poorly organised’ household) were just as quick and accurate at labelling angry and fearful faces as ‘low-risk’ controls. However, neuroscientific analyses showed an unusual pattern of results in relation to previous research. In nonmaltreated samples, passive observation of negative emotional stimuli (emotional experience) generally heightens activity in the amygdala, while having to respond to this type of stimuli (emotional control) usually involves a dampened response (Taylor et al., 2006). In contrast, the authors found a dampened amygdala response in those scoring high for ‘risky families’ during passive observation of negative emotions, and a positive (rather than the usual negative) correlation of amygdala and right ventrolateral prefrontal cortex activity during labelling, suggesting dysregulation of neural responses to emotions. Similarly, although Dannlowski et al. (2012) found no relationship between a history of abuse (physical/sexual/emotional) or neglect (physical/emotional) and adults’ speed and accuracy on a face-matching task for angry and fearful faces, they found that all forms of maltreatment were linked to greater responsiveness in the right amygdala. The results of both of these studies suggest that maltreatment is linked to heightened neural responses to threatening stimuli in the areas of the brain that are linked to emotion control, and dampened responses in those areas linked to the experience of emotion.

Benedetti et al. (2011) also studied brain activity in response to angry/fearful face-matching, testing adult patients with schizophrenia and healthy controls, and comparing across the sample on the basis of more versus less severe self-reported

‘adverse child experiences’ (including – but not exclusively – physical abuse and neglect). In contrast to the studies by Taylor et al. (2006) and Dannlowski et al. (2012), Benedetti and colleagues found that those with worse childhood experiences actually showed reduced activity in the amygdala.

Finally, and in line with the results of our meta-analysis, a number of studies failed to find any detrimental effect of maltreatment on emotion recognition, and in fact indicated that maltreated children were actually stronger than their peers at recognising particular emotions. In particular, some maltreated participants appeared to be more skilled than controls at detecting anger. This was evident in maltreated children’s greater accuracy at recognising anger posed by their own mothers (Shackman & Pollak, 2005, with physically abused 7- to 12-year-olds) and others (Pollak, Klorman, Thatcher, & Cicchetti, 2001, with physically abused or neglected 6- to 12-year-olds). It was also shown in measures of attentional bias towards anger (Gibb, Schofield, & Coles, 2009, with emotionally/physically/sexually abused undergraduates) and sensitivity to anger at low levels of intensity over other emotions in morphed photographs (Pollak & Kistler, 2002, with physically abused 9-year-olds; Pollak & Sinha, 2002, with physically abused 8- to 10-year-olds; and Pollak, Messner, Kistler, & Cohn, 2009, with physically abused 9-year-olds). In addition, Cicchetti and Curtis (2005) found that the ERP responses of physically/sexually abused or neglected 28- to 36-month-olds to angry faces did not differ substantially to those produced in response to happy faces by both the maltreated and control groups; in contrast, controls produced a different pattern of responses to angry faces, implying that these stimuli were somehow more novel. The authors suggest that these results might indicate greater familiarity with anger in the maltreated group. In support of this, Curtis and Cicchetti (2011) reported on a range of ERPs in

response to passive observation of angry and happy faces which suggest hyper-responsivity to anger in physically/sexually abused or neglected 3- to 4-year-olds.

In addition, Leist and Dadds (2009) found a positive correlation between physical/emotional abuse or neglect in their sample of 16- to 18-year olds and the recognition of fear and sadness in pictures of adults and children. Finally, Masten et al.'s (2008) sample of 8- to 15-year-olds subjected to physical/sexual abuse or neglect (or having witnessed domestic violence) recognised fearful faces faster than nonmaltreated peers when morphed at 50% with another expression. The study did not test responses to any other negatively valenced emotions.

Perspective-taking. Moving beyond the skills involved in emotion knowledge, three studies showed poorer perspective-taking skills in maltreated children than in peers when asked to retell stories from a different point of view (Barahal et al., 1981, with physically abused 6- to 8-year-olds and controlling for IQ; Burack et al., 2006, with physically/sexually abused or neglected 7- to 17-year-olds; Peled, 1994, with physically/sexually abused or neglected/witness to domestic violence 7- to 17-year-olds). In contrast, Walker and Downey (1990) tested perspective-taking in a group of neglected (including some physically abused) 9-year-olds using a task in which children had to choose the best puzzle clue for an imaginary partner, and found no difference in the performance of maltreated children and controls. Similarly, the 13- to 18-year-olds in Lazaro and Lopez's (2010) study – who had experienced physical/sexual/emotional/'other' abuse or neglect – were no different to controls on a self-report measure of perspective-taking as a subscale of empathy.

First-order false belief. Two studies showed poorer performance on false belief tasks from maltreated children compared with their peers. Cicchetti et al.'s

(2003) sample of physically/sexually/emotionally abused 4- to 8-year-olds were weaker at a false belief task than both middle- and low-SES nonmaltreated peers. Moreover, maltreatment predicted poorer performance even after controlling for chronological age and SES. The poorest performance in this sample was seen in physically abused children and those for whom maltreatment had begun in toddlerhood. Pears and Fisher (2005) also found poorer understanding of false beliefs in physically/sexually/emotionally abused or neglected 3- to 5-year-olds; this effect was also present after controlling for age and intelligence. In contrast, when Tarullo et al. (2007) included a measure of false belief understanding in their study of internationally adopted 6- to 7-year-olds, they found no relationship between a history of 'early risk' and the ability to pass an unexpected transfer task.

Hostile attribution bias. Three studies showed that maltreated children had a hostile attribution bias when asked to attribute intent for negative acts in response to ambiguous scenarios (Dodge, Bates, & Pettit, 1990, with 5-year-olds whose mothers reported 'physical harm' to the child; Dodge, Pettit, Bates, & Valente, 1995, with the same sample followed to 8-9 years; Price & Glad, 2003, with 4- to 6-year-old boys who had been physically abused or witnessed domestic violence, with no effect for girls). In addition to these three studies, Ayoub et al. (2006) found that physically/sexually/emotionally abused or neglected children aged between 40 and 73 months were as good as peers at retelling stories about mean social interactions, but poorer at retelling stories about nice interactions. The authors suggest that maltreated children's adaptive sensitivity to threat might make them divert attention from more positive social situations.

Only two studies showed no difference between maltreated children and peers on hostile attributions of intent in response to ambiguous vignettes. Downey and

Walker's (1989) sample of physically abused or neglected 7- to 14-year-olds were no different to controls, though the groups were unmatched on maternal education and single parenthood status. Meanwhile, Berlin, Appleyard, & Dodge (2011) acknowledge that self-report questions given to their sample of 12- to 41-year-olds were more subjective on the issue of neglect than on physical abuse, meaning that their control sample (which did not differ from the maltreated group on hostile attributions) might have inadvertently contained some participants with experience of maltreatment.

Providing a more complex picture of hostile attributions, two studies showed differing results dependent on the stimuli used, and a further two studies had findings which differed depending on the type of analysis. Keil and Price's (2009) sample of neglected and physically abused 5- to 8-year-olds showed more hostile attributions in comparison to peers in response to videotaped vignettes about peer provocation scenarios, but no difference between groups in response to peer group entry scenarios. Teisl and Cicchetti (2008) compared physically abused 6- to 12-year-olds with other maltreated or nonmaltreated children in their attribution of hostile intent to story characters whose actual intentions were ambiguous, and found no difference. They also measured errors in cue interpretation using the proportion of hostile attributions given for prosocial and accidental intentions, and in this case physical abuse predicted a higher proportion of errors (after controlling for age, gender and race/ethnicity). Furthermore, Calvete and Orue (2011) found no correlation between 'exposure to violence' at home (which included witnessing and experiencing violent acts at the hands of unspecified others, as well as verbal aggression) and the interpretation of intent in ambiguous vignettes; however, when also including exposure to violence at school and in the community in a structural equation model, the path from exposure to violence at home to hostile attributions became significant (if still weak). Finally, Ward and

Haskett's (2008) sample of physically abused 5- to 10-year-olds gave no more hostile attributions to ambiguous provocative vignettes than did controls when analysed using an ANOVA; however, a cluster analysis showed differences between subgroups, with a 'Hanging in There' group (little prosocial but little maladjusted behaviour) giving more hostile attributions than a 'Socially Well Adjusted' group (appropriate social behaviour, rarely rejected by peers).

2.5 Discussion

The findings from our systematic review clearly corroborate the hypothesis that there is a meaningful association between child maltreatment and poorer performance on a range of indicators of social understanding. First, the results of our meta-analysis showed a clear effect of maltreatment status on emotion skills, with 16 of the 19 included studies showing poorer performance in maltreated children. Moderator analyses indicated that differences were more pronounced in the skills of emotion understanding and composite tests of emotion knowledge in comparison with the more basic skill of emotion recognition. In addition, our hypothesised developmental effects were found, with poorer performance appearing in early and middle childhood samples, but not in adolescents and adults.

Our systematic review expanded on the results of the meta-analysis and showed a complex pattern of abilities in maltreated children, supporting our view of social understanding as a set of related but distinct skills. In line with the meta-analysis, composite measures of emotion knowledge showed poorer performance by maltreated children in comparison to controls in two studies. When broken down into its constituent skills, the review showed a general tendency for poorer emotion understanding in maltreated participants, with nine studies showing lower overall

understanding of the causes of emotions (though in three of these the effect disappeared after controlling for other factors) and two showing poorer understanding of sadness and anger in particular. Only one study showed outright that maltreated children were no worse than controls. Supporting the results of the meta-analysis, the picture for emotion recognition was more complex. Nine studies showed a poorer performance from maltreated participants, three found deficiencies only in subgroups of their samples, and three showed differences only in neurological responses. Meanwhile, five studies showed no effect of maltreatment and ten showed that maltreated participants were in fact more successful than controls at recognising anger or fear.

Turning next to perspective-taking, three studies showed poorer performance in maltreated children and two showed no difference. Our literature search also uncovered a limited amount of research on first-order false belief. Poorer performance from maltreated children might be expected on these tasks, given the results of the simpler perspective-taking studies; two studies showed this difference, but one did not. Finally, four studies showed a higher likelihood of hostile attribution bias in maltreated children's perceptions of social situations, two showed no difference, and four had mixed results dependent on the type of stimuli or analysis used.

Overall, studies in the review which reported null results tended to fall into one of four categories. In the first, study samples were predominantly made up of adolescents or adults (e.g., Gapen, 2010); this is reflected in the moderator analysis for age group in our meta-analysis which showed that differences were more evident in younger children. In the second, experiences of physical abuse or neglect were just part of a classification of 'risk' (e.g., Tarullo et al., 2007). The third type consisted of studies of emotion understanding or recognition which used audio or visual stimuli depicting the emotions of unfamiliar adults (e.g., Walker & Downey, 1990). Finally, a

number of studies of emotion understanding used audio taped conversations or line drawings rather than emotion vignettes (e.g., Smith & Walden, 1999).

Contextualising Social Understanding: A Differentiated Perspective

Our systematic analysis of the literature has revealed a complex and differentiated pattern of links between maltreatment status and children's difficulties with the constituent skills of social understanding, which cannot be readily inferred from any one individual paper. Specifically, the developmental sequelae of maltreatment *potentially* extend across a wide array of social understanding indices, but there are systematic and theoretically enlightening variations according to the particular aspect of social understanding under consideration, the age of the children, and the particular composition of the maltreated sample.

First, our analysis adds to a growing body of theoretical work and empirical evidence that situates children's social understanding within the family context. Complementing the rapidly mounting findings regarding the links between parenting and social understanding within the typically-developing population (Carpendale & Lewis, 2006; Hughes, 2011*b*), the studies reviewed here show that the maltreating family context poses a serious challenge to children's capacity to make developmental progress in a range of socio-cognitive skills. Our meta-analysis has shown overall significant effects of maltreatment on the skills of emotion recognition and understanding, and this link was also evident in our systematic review of research on perspective-taking, false belief understanding, and hostile attribution bias. Moreover, the majority of the studies discussed here were careful to match their maltreatment groups and control groups on other factors known to affect social understanding, such as age and socioeconomic status; some studies (e.g., Sullivan et al., 2008) also controlled for children's IQ. That effects often – though not always – persisted despite

these controls supports the general argument that children's parenting experiences play a key role in the development of social understanding. However, we must acknowledge that the specific interactions, practices, and events that are responsible for the observed maltreatment effects were not measured in the studies we have presented. Thus, while the results can be seen as broadly compatible with our theoretical arguments regarding the roles played by parental mind-mindedness, mutuality, use of internal state language, and emotion socialisation (e.g., Ensor & Hughes, 2008; Ensor et al., 2011; Meins et al., 2003; Shipman et al., 2007), there remain important unresolved questions about the precise mechanisms that underpin the developmental consequences of maltreatment.

Our analysis does, on the other hand, provide us with specific insights that help us move away from a monolithic and undifferentiated account of 'impaired social understanding' in maltreated children, and towards the kind of multidimensional view of potential strengths and difficulties suggested by neuroscientific evidence (e.g., Shamay-Tsoory, 2009). Examining various emotion skills, we found a stronger effect of maltreatment on the more advanced skill of emotion understanding (measured on its own or as part of a composite measure of emotion knowledge) than on emotion recognition. Developmental research has shown that children learn to recognise affective states before they begin to understand their causes, and development of the latter may be particularly susceptible to the deleterious effects of maltreatment experiences. Rieffe, Terwogt and Cowan (2005) have identified the link between more sophisticated emotion knowledge and theory of mind: "Knowing what has caused the emotion is important because it places the emotional experience within a socio-cultural context. For example, not knowing why your mother is angry can be frightening." (p. 260) Put simply, the results of our review suggest that maltreated participants might be

expected to have less difficulty in recognising their mother's anger, but would struggle to identify its cause.

Yet we should not draw from this the conclusion that emotion recognition is unaffected by maltreatment; on the contrary, our meta-analysis confirms that there is an overall negative effect of maltreatment here as well. But this in fact masks a much more complex – and theoretically fascinating – pattern of results. Indeed, differences in the extent of the effect of maltreatment can be understood not just in terms of the different emotion skill types, but also in terms of the specificity of family experience and the particular ways in which maltreated children come to process and interpret social information. One clear example of this is that while maltreated participants were poorer overall at recognising emotion, some studies showed superior performance in maltreated participants in the recognition of anger and fear (e.g., Shackman & Pollak, 2005). This is consistent with the evidence of a hostile attribution bias found among maltreated children when reasoning about specific social contexts (e.g., Dodge et al., 1995). In sum, the evidence does not just reflect a general deficiency of skills in maltreated children, but rather a *complex and differentiated socio-cognitive profile* arising from social experiences during development.

A major complication that arises in research work of this kind relates to the issue of heterogeneity within the population of maltreated children, and this obviously adds to the complexity of the picture emerging from the literature. Some of the variables involved can be identified fairly clearly. For example, the second moderator analysis in our meta-analysis, addressing the role played by age group, highlighted the strongest effects of maltreatment in the developmental window within which key social understanding skills are typically being mastered, namely early and middle childhood. Given the lack of longitudinal data in our review, it is difficult to say whether the

experience of maltreatment had left participants unable to develop the more advanced skills of social understanding, or whether the deficit represented a developmental delay. That we found more pronounced effects for those in early and middle childhood than for adolescents and adults might be taken as support for the latter explanation, but we should not be too hasty in drawing this conclusion for two reasons: the number of studies involving older samples was relatively small, and the empirical basis for capturing key dimensions of social understanding within older samples remains far less extensive in comparison with the heavily-researched period of early and middle childhood (Bernstein, Thornton, & Sommerville, 2011).

Besides the role played by age group, we can also speculate that heterogeneity in effect sizes across studies might also stem from the particular kinds of maltreatment experiences relevant to the different samples. Regrettably, we were unable to conduct a moderator analysis on maltreatment subtype: while the experiences associated with physical abuse and neglect might differ, their occurrence often overlaps (Trickett & McBride-Chang, 1995), and this was reflected in the study samples. Notwithstanding this overlap, individual differences in children's maltreatment experiences might account for our findings. More detailed accounts of children's maltreatment experiences are rarely reported, but would be useful in explaining inconsistent results on measured outcomes, which might be a reflection of differences in parenting experiences. For example, links can be made on the one hand between the lack of emotion socialisation by neglectful parents and the subsequent general deficits shown in emotion recognition, and on the other between physically abusive parenting and hyper-responsivity to angry expressions. This may be a matter of salience: additional ERP analysis in Pollak et al. (1997)'s study showed that the P300 amplitude in abused

children (sensitive to the personal meaning of stimuli) was, unusually, higher when children were asked to respond to angry rather than happy faces.

Manly, Kim, Rogosch, and Cicchetti (2001) list a number of dimensions along which children's experiences can vary, including the severity, onset, frequency, chronicity and perpetrator(s) of maltreatment. Each of these factors might influence children's developing social understanding skills in different ways, going some way to explaining the complexity of our findings. Moreover, individual parenting experiences might affect children's motivations for acquiring and employing these skills. Social understanding does not develop as a set of emotionally neutral abilities. Rather, Dunn (1988) argues that social understanding develops to serve a practical purpose, with children motivated to acquire these skills in order to have some effectiveness in their family relationships. Her findings were drawn from observations of children in their second and third years in conflict with siblings and mothers; children showed an understanding of social rules and others' feelings, but it was apparent that they employed the skills of social understanding more often when their own interests were threatened. Indeed, Dunn felt that the experience of distress and anger during conflicts might heighten children's vigilance to social cues. This would go some way to explaining our review findings, as children who are predominantly exposed to displays of anger (as in the case of physical abuse) could become hyper-vigilant to anger cues. The need to recognise expressions of anger at an early stage might be described as being motivated by self-preservation; particularly under conditions of threat to personal safety, this could be stronger than the motivation to recognise other affective states that are not linked to negative consequences for the self.

The notion of a social understanding driven by self-interest might go even further in explaining the individual differences revealed in our review. To illustrate

this, we can consider the evidence that maltreated children are perceived as being more prone to bullying and aggression (e.g., Luke & Banerjee, 2012 – see Paper 2; Teisl, Rogosch, Oshri, & Cicchetti, 2012). In their critique of the literature on bullying, Sutton, Smith, and Swettenham (1999a) counter the stereotypical view of the bully as lacking in theory of mind skills. They propose instead that bullies differ not in their perception or interpretation of social cues, but in their goals and response strategies. From this perspective, and in line with Dunn's (1988) theory, a proportion of individuals in our review samples might have developed the social insight required to manipulate others for self-serving purposes, while lacking the experiences of shared affect and interpersonally-aligned goals upon which prosocial behavioural responses are dependent.

An explanation for this atypical pattern of mentalising skills can be drawn from a study of children with conduct disorder (Happé & Frith, 1996). While they passed standard first-order false belief tasks, a measure of habitual behaviours showed that conduct disordered (CD) children were worse than controls at the kind of interactive behaviours requiring social insight, such as apologising for hurting another person's feelings and recognising embarrassment in others. The authors suggest that these findings might be explained by the development in CD children of a 'theory of nasty minds': the ability to employ social understanding when engaged in antisocial behaviour, perhaps prompted by the hostile attribution bias found in this group. That a similar bias was found in our review of maltreatment research suggests this explanation might also hold for our target population. If a 'nasty' theory of mind is a distinct ability from a 'nice' theory of mind (a possibility proposed by Ronald, Happé, Hughes, & Plomin, 2005), it is conceivable that maltreated children's parenting experiences might lead them to develop one but not the other.

As well as individual differences in parenting experiences, differences in children's experiences outside the maltreating home might also affect the results: for example, it is not possible to determine the effects of the unique experiences of children placed in care, such as number of placements, attachment to current caregivers, and relationship with siblings. Possible confounds may come because maltreated children are removed from the family home, often experience several short-term placements, are labelled, and may receive 'treatment', and each of these confounds may have positive or negative effects (Dodge et al., 1995).

In sum, our review challenges any theoretical formulation – and indeed any approach to intervention – which treats maltreated children as a homogeneous group, and their difficulties in social understanding as a single broad deficiency. Instead, the findings support an approach to research and assessment which recognises the individual strengths and difficulties of each maltreated child's social understanding, in light of his or her unique social experiences and personal goals for social interactions.

Limitations and Future Directions

Our review has revealed a number of methodological limitations with the research in this area. Several of these problems had previously been outlined in Lamphear's (1985) review of psychosocial adjustment outcomes in maltreated children. Firstly, authors in Lamphear's review differed in their definitions of 'child abuse'. While there has been some improvement in this area, with many researchers using the Maltreatment Classification System established by Barnett, Manly, and Cicchetti (1993), some of the studies included in our review continue to use their own systems of classification for subtypes of maltreatment, making comparisons difficult. Secondly, Lamphear noted that studies which did not include matched control groups might fail to account for the influence of uncontrolled variables. This has been addressed in our

review by including only studies in which direct comparisons are made with a control group or where maltreatment is included as a continuous variable (the latter accounts for only 9 out of 51 studies discussed here). Lamphear's third point was that longitudinal studies with this population were rare. Regrettably this is still the case: the majority of the studies included in this review involve cross-sectional designs. More longitudinal research is needed in this area to establish the temporal and causal sequences that would inform a true developmental theory of social understanding in maltreated children. The moderating effect of age group shown in our meta-analysis adds weight to this call for longitudinal work.

Further methodological problems are also noteworthy. Trickett and McBride-Chang (1995) point out that most studies in this area include no mention of whether assessors were blind to children's maltreatment status, and often by necessity involve relatively small sample sizes; both of these criticisms can be applied to the majority of studies in our review. There is also the issue of ecological validity: Dunn's (1988) work highlights the importance of emotional significance in assessing emotion understanding, but most studies reviewed here use photographs of strangers' faces or vignettes whose protagonists have no emotional salience for participants.

A final methodological limitation is that the individual differences we found in studies' results might also be a reflection of the test stimuli used. Contrary to expectations, maltreated participants' emotion recognition was generally no worse than that of controls when the stimuli presented adult facial or vocal emotions, but their performance was generally poorer when child photos were used. However, the lack of an overall negative effect in recognising adults' emotional expressions may be explained by maltreated children's superior performance in recognising anger and fear.

We also recognise that there are limitations with the scope of our review. In drawing up our search protocol we made the decision to exclude studies using particular samples and outcomes, and these might have influenced our findings. First, studies focussing solely on the victims of sexual abuse were excluded, because this type of abuse often comes with a distinctive set of developmental sequelae. Although our review did include studies with samples in which sexual abuse was experienced alongside physical abuse or neglect, there is a need to elucidate the unique effects of sexual abuse on social understanding in future research. We also chose to exclude samples who were the witnesses, rather than direct victims, of physical abuse (though again we included studies where this occurred alongside experienced maltreatment). While witnessing violence in the home can clearly affect children's emotional well-being (e.g., Bogat, DeJonghe, Levendosky, Davidson, & von Eye, 2006), research suggests that effects are more severe when abuse is experienced rather than witnessed (Kulkarni, Graham-Bermann, Rauch, & Seng, 2010). Our review also included only one study of internationally adopted children, where a pre-adoption maltreatment history was known (Tarullo et al., 2007). We excluded those studies where children's pre-adoption histories were not reported; we appreciate, however, that for some children the experience of institutional deprivation might have provided similar conditions for development to those seen in documented abuse and neglect. On the other hand, institutionalisation itself presents a unique social-experiential history that has been the subject of much study in its own right (e.g., the English and Romanian Adoptees study; Rutter, Sonuga-Barke, & Castle, 2010), and the connections with social understanding need separate attention in future work.

For our outcome measures we chose to preserve a focus on cognitive capabilities in recognising and understanding social and emotional stimuli, rather than assessing

affective or behavioural responses to others' emotions (e.g., Levenson & Ruef, 1992).

It is possible that we would also find effects of maltreatment on these aspects of empathy if the scope of our review were to be extended. Our previous discussion on the theory of nasty minds suggests that the individual differences we found in social information processing might extend further to maltreated children's emotional responses and choice of behaviours; anecdotal evidence from interviews with foster carers would appear to support this (Luke & Banerjee, 2012 – see Paper 2).

We have already noted that further work is needed to identify the particular social experiences that give rise to the observed maltreatment effects. Importantly, such work must address potential interactions with a range of other variables including gender, language ability, and executive function. Hughes, Deater-Deckard, and Cutting's (1999) study of preschoolers showed differential associations between parenting variables and theory of mind ability in boys and girls. Controlling for children's verbal IQ scores, the study showed that girls' theory of mind scores were linked to general parental warmth, while boys' scores were linked to more severe discipline. While it would be interesting to examine this potential interaction in the studies reviewed here, only a handful of those studies report separate results for male and female participants.

Interactions with cognitive factors are also theoretically plausible. Hughes and Ensor (2005) briefly review the debate about the chronology of theory of mind and language ability, and conclude that there is likely to be a cyclical relationship. Interestingly, however, while these variables were not controlled for in all studies, those which did control for IQ or verbal mental age in our review did not consistently find that this ameliorated any deficits in performance among maltreated participants.

Another skill which emerges developmentally and may also be influenced by parental

socialisation is executive functioning. Existing evidence links maltreatment with poorer levels of inhibitory control, a component of executive functioning, in 3- to 6-year-olds (Pears, Fisher, Bruce, Kim, & Yoerger, 2010). Interviews with foster carers about children's everyday experiences also suggest that even where children possess social understanding skills, in the immediacy and complexity of social situations they often lack the necessary control to employ them, instead opting for behaviours which proved adaptive in the maltreating context, such as aggression (Luke & Banerjee, 2012 – see Paper 2). In light of this, variations in results across studies might reflect individual differences in executive functioning skills.

Finally, we must reiterate the key point that the child's subjective experience of the maltreatment context as a whole may be just as important, if not more important, than the specific instances of maltreating behaviour. For example, Taft and colleagues' (2008) study showed that higher perceived parental rejection in men was related to higher PTSD symptomatology, which in turn was related to deficits in social information-processing. The authors suggest that the key factor emerging from perceived rejection may be the rise in hostile attribution bias and hyper-vigilance to threat associated with PTSD. This kind of formulation may be crucial for making sense of maltreated children's social understanding in terms of their internal working model (within attachment theory; e.g., Bowlby, 1973) or their schematic database of social experience (within social information processing theory; e.g., Crick & Dodge, 1994).

Conclusions

Notwithstanding the limitations identified above, the range of research presented in this review covers a wide variety of ages, geographical locations and measures, and as such might be said to represent the general picture of what we know about maltreated children's social understanding. With our overall results suggesting a distinctive yet

complex and differentiated profile of social understanding among maltreated children, what does this mean for their social and emotional well-being? It seems plausible that the observed impairments, biases, and distortions in social understanding skills could mediate the link between perceived parenting experiences and problematic peer relationships, self-perceptions, and other psychosocial adjustment outcomes (e.g., Lamphear, 1985; Kim & Cicchetti, 2010). Difficulties with the skills identified in this review might impair children's ability to predict and understand others' reactions to their behaviour (Tarullo et al., 2007). Moreover, problems with social understanding can influence the way children behave with their peers (Dekovic & Gerris, 1994): for example, a hostile attribution bias might make aggressive behaviour more likely (Crick & Dodge, 1994). In turn this behaviour relates to peer status outcomes (Anthonysamy & Zimmer-Gembeck, 2007) and self-perceptions (Bolger, Patterson, & Kupersmidt, 1998).

The complex patterns of findings in our review challenge any deterministic view of the effects of maltreatment. Instead, social understanding should be viewed as a set of dynamic skills which change in line with developmental experiences (Lansford, Malone, Dodge, Pettit, & Bates, 2010), and as such a major focus of work in this area should be on the durability or mutability of maltreatment effects. A crucial aim of future research, therefore, should be to provide the tools practitioners need to identify children who are struggling with their developing social understanding. Carefully-designed work on these skills – in individual, small-group, and universal contexts (e.g., CPPRG, 1999; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011) – could be used to improve the quality of children's social relationships to reduce the likelihood of negative feedback that can exacerbate impairments and biases in social understanding. The very fact that some of the studies reviewed here show normative performance

within maltreated samples, combined with a growing body of evidence regarding strategies to support children's social understanding in both home (Asen & Fonagy, 2011) and school (Durlak et al., 2011) contexts, give us cause to be optimistic about the prospects for enhancing provisions for tomorrow's most vulnerable youths.

**Chapter 3: Paper 2 – Maltreated Children’s Social
Understanding and Empathy: A Preliminary Exploration of
Foster Carers’ Perspectives**

3.1 Abstract

Previous research suggests that parental abuse and neglect can have adverse effects on children's peer relationships and self-perceptions. Emerging theoretical and empirical work suggests that children's social understanding and empathy could play a key role as mediators of these effects, but we have little knowledge about the viability of such a model in explaining the everyday experiences of children in care. Thus, in order to gain an in-depth insight into the potentiality of this conceptual model, a focus group and detailed semi-structured individual interviews were conducted with a total of 10 foster carers. First, a thematic analysis revealed that problematic self-perceptions and peer relationships were indeed commonplace. Crucially, in line with our theoretical model, carers readily identified children's difficulties with social understanding and empathy as relevant explanations for their socio-emotional problems. Carers reported using a variety of strategies to help children, but expressed a need for a clearer training package of practical strategies that could be used to encourage social understanding and empathy in children, with the aim of improving their social relationships.

3.2 Introduction

Foster carers are regularly faced with the challenge of looking after children with social and emotional difficulties. Research has shown that physically abused or neglected children are at greater risk of problematic peer relationships and negative self-perceptions than their nonmaltreated peers (e.g., Anthonysamy & Zimmer-Gembeck, 2007; Toth, Cicchetti, MacFie, & Emde, 1997). Understanding the mechanisms by which such socio-emotional problems may arise is crucial for informing the design of intervention strategies and support for foster carers.

Two inter-related constructs likely to play a role in the developmental trajectory of maltreated children are social understanding and empathy. Social understanding, incorporating what has been termed ‘theory of mind’, involves an appreciation of mental and affective states, including beliefs and desires, and the role that they play in social behaviour and interactions (Carpendale & Lewis, 2006). Empathy is defined in terms of emotional responses to another person’s affective state, specifically those in which the recognition of the other’s state produces a similar emotion in the observer (Eisenberg et al., 1996). Problems with social understanding and empathy may serve as mediators of maltreatment effects on socio-emotional functioning, because existing research suggests that they can influence the way children behave with their peers (Dekovic & Gerris, 1994), which in turn relates to peer status outcomes (Anthonysamy & Zimmer-Gembeck, 2007) and self-perceptions (Bolger, Pattison, & Kupersmidt, 1998).

Emerging research provides tentative support for the link between maltreatment and problems with social understanding and empathy. This is a relatively recent area of research, and the variables have not yet been fully explored; for instance, there exists little research on maltreated children’s empathic reactions, and none on more advanced

social understanding (e.g., knowing that one person can misunderstand a second person's beliefs). However, the small number of studies that have been conducted so far are consistent with the proposal that social understanding and empathy may act as mediating influences on maltreated children's socio-emotional well-being. Maltreated children perform worse than their peers on tasks measuring false belief understanding (Cicchetti, Rogosch, Maughan, Toth, & Bruce, 2003), and are more likely to attribute hostile intent to others in ambiguous situations (Price & Glad, 2003). Maltreated children also underachieve relative to peers on tests of emotion recognition (Fishbein et al., 2009), and their understanding of the causes and consequences of emotions is poor (Sullivan, Bennett, Carpenter, & Lewis, 2008). Furthermore, this lack of understanding may affect children's behavioural responses: Main and George (1985) found that maltreated children were less likely to show an empathic response to another's distress than their peers.

Notwithstanding the research described above, we know little about the role played by social understanding and empathy in maltreated children's socio-emotional outcomes. However, this hypothesis fits comfortably with the propositions of attachment theory, which represents a dominant theoretical perspective in practitioners' work with children (Kelly, 2000). The maltreated child's internal working model (IWM) of the self in relation to others is based on the quality of the relationship with the primary carer, and acts as a template shaping the child's expectations and interpretations of subsequent relationships. Maltreated children have often received poor or inconsistent information from caregivers about their thoughts, beliefs and feelings, impeding their ability to interpret these in other people (Pears & Fisher, 2005). Attachment theory can help us appreciate the role of social understanding and empathy

as part of the insecurely attached child's generalised representations of social relationships.

Moving beyond a simplistic view of negative attachment, social understanding and empathic awareness can be seen as skills which emerge in the context of social relationships, and whose development may be impaired in atypical rearing environments such as those provided by maltreating parents. In line with social learning theory (e.g., Bandura, 1973), children may view the high levels of narcissism and limited empathy seen in maltreating parents (Wiehe, 2003) as a model of acceptable behaviour.

However, children's interactions with their parents may provide a more powerful learning device than passive observations of behaviour. From a Vygotskian perspective, parent-child communications provide the context in which children are taught the tools for successful social exchanges, which are then internalised to become part of the child's intrapersonal repertoire of skills (Vygotsky, 1978). Viewed in this way, impoverished or distorted interactions with caregivers may jeopardise children's chances of developing a full complement of socio-emotional skills. As an example, maltreating mothers engage in less discussion about the internal states (IS) of self and others than non-maltreating mothers (Edwards, Shipman, & Brown, 2005), and maltreated toddlers' IS lexicons are consequently delayed and impoverished (Beeghly & Cicchetti, 1995). Moreover, abusive mothers' production of less recognisable facial expressions (in comparison with nonabusive mothers; Camras et al., 1988) may account for children's poor emotion recognition skills (Fishbein et al., 2009). Although repeated exposure to the displays of anger preceding harmful interactions may account for the superior recognition of this emotion in physically abused children (Pollak et al., 2009), inconsistent information about the antecedents of emotional displays may

explain why these children find it difficult to recognise the situations that provoke anger (Pollak, Cicchetti, Hornung, & Reed, 2000).

The present study builds on these theoretical considerations and emerging research findings to explore a proposed mediational model. Our review of the literature gives us reason to expect that interactions with parents in a maltreating context may compromise the development of children's skills of social understanding and empathy, and that this might impact negatively on their peer relationships and self-perceptions. We therefore propose that the relationship between negative parenting experiences and children's peer relationships and self-perceptions is likely to be mediated by children's social understanding and empathy. However, we know little about whether such a conceptual model provides a viable and plausible account of the everyday experiences of maltreated children in care.

In order to make an initial evaluation of the viability of this theoretical formulation, we used focus groups and individual interviews to explore foster carers' accounts of maltreated children's difficulties with social understanding and empathy, and how this related to peer relationships and self-perceptions. As an exploratory study, the choice of our methodology was based on two considerations. Firstly, we wanted to draw on the experience of those who had the most frequent and prolonged contact with children in the care system. We felt that foster carers could offer a unique perspective on the details of children's interpersonal skills and their impact on socio-emotional outcomes: it is only by listening to them that practitioners can discover how best to support them in looking after children. Secondly, we also wished to ascertain carers' current conceptualisation of the potential mediating role of social understanding and empathy. Gathering carers' current understanding of the importance of these skills

would also enable us to assess the need for training on ways to support children in developing social understanding and empathy.

We approached the current study with two research questions in mind: 1) Do carers' experiences with maltreated children support a model in which difficulties in social understanding and empathy mediate the relationship between maltreatment and problematic self-perceptions and peer relations? And 2) What is the current status of carers' knowledge about – and attitudes towards – ways of supporting the children who have difficulties with these skills in order to improve their socio-emotional well-being?

3.3 Method

Participants

The study consisted of two parts. In the first part, foster carers from the Local Authority's Intensive Placement Team (IPT) attending a regular meeting were asked to participate in a focus group discussion on the subject of social and emotional problems in the children they had fostered. The focus group sample consisted of six foster carers who were members of the IPT and two social workers. Five of the carers were female, as was one of the social workers. The age of participants was not requested. The focus group was recruited as a whole via their lead social worker. Group members gave written consent for the audio recording of the discussion.

For the second part of the study, we recruited four of the carers from the focus group and a further four carers from outside of the IPT. Two of these were approached by their social workers following an appeal to the social work team by the researcher. One carer was a student at the authors' university; she recruited a friend who was also a carer as the final interviewee. All of the carers participating in individual interviews were female

and lived in urban or suburban areas in the South East of England. As in the focus group, carers' ages were not requested.

One carer had been fostering for 2 years, five had been carers for 6 to 10 years, while two had been carers for 19 years. Of those able to calculate the number of placements they had experienced, two had looked after 1 or 2 children, three had cared for 7 to 10, and two counted between 30 and 45 children. The ages of the children and young people in these placements ranged from birth to young adulthood. Five of the carers discussed the length of their current placement: one was in its third year, three were currently at 5 to 7 years, and one carer had been looking after the same young person for 18 years. Only one of the carers did not have a current placement; her most recent placement lasted over 5 years, and ended several weeks before the interview.

Procedure

A provisional interview schedule was developed to explore the topics of socio-emotional well-being in maltreated children and the potential role of social understanding and empathy in influencing these outcomes (see Appendix A for the final version). The focus group was used as both a testing ground for our provisional interview questions, and as a source of data in its own right (Morgan, 1996). The discussion took around 75 minutes of a two-hour session, and was recorded using a digital voice recorder. At the beginning of the session, carers were asked to share their experiences of children who had difficulties getting on with their peers; this discussion accounted for most of the session. As participants warmed to the discussion they began questioning each other and less input was required from the researcher. However, when carers spontaneously mentioned children's difficulties with social understanding and empathy as potential contributors to problematic peer relations they were questioned about this further. The interview schedule was largely unchanged following this

session, although following an interesting avenue of discussion during the session a question was added about children's ability to practise their social understanding in emotionally overwhelming social situations.

Volunteers for individual interviews were contacted by telephone or email to arrange a convenient appointment. Interviews took place in private in participants' homes and were also audio recorded. The interview followed a semi-structured design, which permitted flexibility in the use of questions and probing of participants' responses (Burman, 1995). Interview length was determined by participants' responses, lasting from 45 to 74 minutes. All interviewees were made fully aware of the purposes of the interviews prior to commencement and gave written consent for their participation.

The interviews began with questions about the carers' length of experience and number of placements. Carers were then asked to provide examples of Looked After Children who had difficulties getting on with peers ("Does this child have difficulty getting on with other children?"), or who displayed a negative perception of themselves ("Does this child feel very bad about themselves?"). Carers were also asked to speculate what might have led to these difficulties ("Why do you think they might have had these difficulties?"). Next, a range of questions covered specific cognitive, emotional, and behavioural problems which might lead to difficulties in peer relationships; for example, "Have any of the children you mentioned had difficulties seeing things from someone else's point of view?"; "Have any of them had difficulties responding appropriately to someone else's emotions?" Our intention in asking these questions was not simply to establish if carers could recognise these difficulties, but to understand the extent to which carers could clearly identify specific and detailed examples of children fitting the descriptions. Finally, carers were asked about the sort

of strategies they might use to support children's social understanding and empathy ("How did you try to support them/work to improve their skills?"), and whether they felt they would benefit from training in these strategies ("Would you find this useful – for you? – for the foster child?"). See Appendix A for a copy of the full interview schedule.

Analytic Strategy

A thematic analysis (Braun & Clarke, 2006) was conducted to identify patterns in carers' experiences with the children they had looked after. Transcripts of the focus group and individual interviews were examined and re-examined for recurring themes as data were collected. Coding of the data was performed using NVivo, a qualitative analysis software package which allows for the organisation of themes in a hierarchical structure. In the present study, we started with a number of theoretically-derived *a priori* categories corresponding to our research questions. These categories are listed below:

- a. Self-perceptions – direct references to children's negative self-perceptions or behaviour implying negative self-perceptions
- b. Peer relations – references to difficulties in establishing or maintaining peer relationships, or behaviours that might lead to such difficulties
- c. Carers' explanations for outcomes – references to aspects of children's backgrounds or individual differences presumed to have led to difficulties with self-perceptions or peer relations
- d. Social understanding and empathy – references to children's specific difficulties with social understanding or empathic responding

- e. Foster carers' strategies to support children – references to specific or general support provided by carers or others, which might aid the development of children's social understanding and empathy

Within these broad categories, initial coding of the data from the focus group suggested a number of potential themes where a particular idea seemed to recur across participants' accounts. The themes were revised and refined as data collection and analysis progressed to ensure that the final list of themes incorporated the full range of experiences and beliefs referred to in participants' accounts. The full set of themes is shown in Figure 3.1.

3.4 Results

Results are presented here under the headings of the five major categories. In the interests of brevity, we provide a narrative summary of the themes relating to self-perceptions, peer relations, and carers' explanations for these outcomes. Then we turn to our core interest in themes pertaining to social understanding and empathy, with illustrative excerpts to help us to address our key research questions. Labels following the quotes indicate the contributions of foster carers (C1-C10). As an overall summary of the data set, Table 3.1 shows the number of individual interviews in which each theme was clearly identified as a relevant issue.

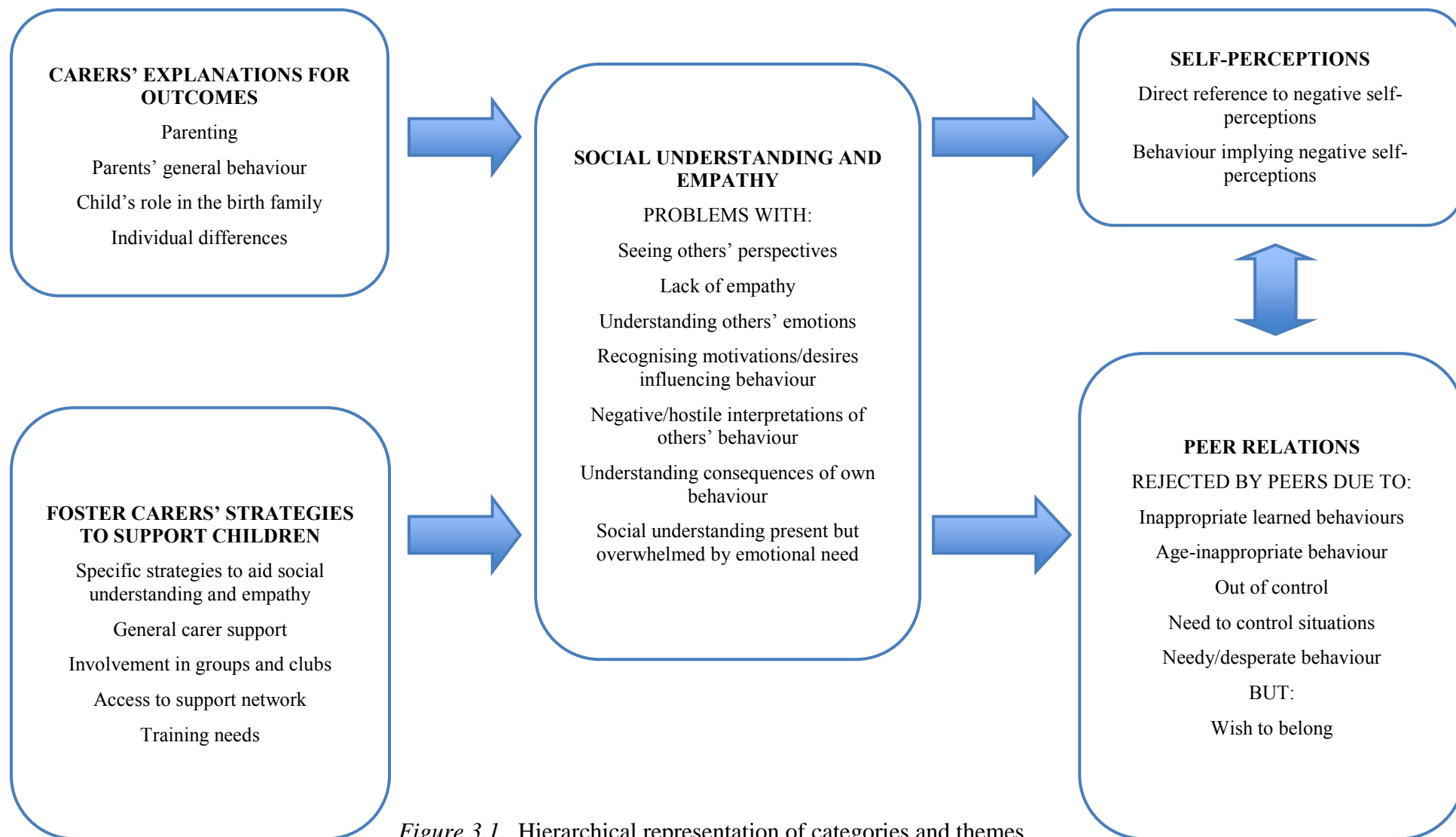


Figure 3.1. Hierarchical representation of categories and themes arising from foster carer focus group and interviews.

Table 3.1

Number of Interviews in which Each Theme was Mentioned

Category	Theme	Number of Interviews (Max. 8)	Mentioned in Focus Group (y/n)
<i>Self-perceptions</i>	Direct reference to negative self-perceptions	7	n
	Behaviour implying negative self-perceptions	8	y
<i>Peer Relationships</i>	Rejected by peers	7	y
	Inappropriate learned behaviours	6	y
	Age-inappropriate behaviour	6	y
	Out of control	8	y
	Need to control situations	7	y
	Needy/desperate behaviour	5	y
	Wish to belong	8	y
<i>Carers' Explanations</i>	Parenting	8	y
	Parents' general behaviour	3	y
	Child's role in the birth family	4	y
	Individual differences	4	y

<i>Social Understanding and Empathy</i>	Seeing others' perspectives	7	y
	Lack of empathy	5	y
	Understanding others' emotions	8	y
	Recognising motivations and desires influencing behaviour	6	n
	Negative and hostile interpretations of behaviour	6	y
	Understanding consequences of own behaviour	7	y
	Social understanding overwhelmed by emotional need	6	y
<i>Foster Carers' Strategies</i>	Specific strategies to aid social understanding and empathy	8	y
	General carer support	7	y
	Involvement in groups and clubs	4	y
	Access to support network	6	y
	Training needs	7	n

Self-perceptions

When asked whether they had looked after children who felt badly about themselves, almost all of the carers could provide examples of children who had expressed negative self-perceptions. However, children's low opinions of themselves were not always explicitly stated, and all carers spoke of some children whose general behaviour led them to draw inferences of negative self-perceptions.

Peer Relations

The common view amongst carers was that most of the children they had looked after had had difficulty getting on with their peers. Carers talked about children who had been actively rejected by peers, as demonstrated when no-one turned up to their birthday parties. The foster carers' responses clearly indicated a number of different behaviours which proved challenging for the formation and maintenance of friendships. Often children would display inappropriate learned behaviours, such as stealing food; these behaviours had helped them cope with a difficult home life, but now created problems in peer interactions. Most carers also had experience of children displaying age-inappropriate behaviour. This was seen as more of a problem with increasing age, when former friends would begin to grow up and grow away from them. All carers had looked after children whose behaviour or emotions were out of control, making it difficult for peers to feel comfortable around them. In contrast, some children's reaction to their background expressed itself in a need to control situations, which was not viewed kindly by peers. Other children were so desperate to have friends that they frightened peers off with their needy behaviour. Yet, importantly, in discussing the range of social difficulties for Looked After Children, carers expressed the belief that these children were not socially isolated by choice. There was a clear consensus that

the children were motivated to seek out social relationships with peers and families, revealing a fundamental wish to belong.

Carers' Explanations for Outcomes

When asked for their thoughts on why children expressed particular difficulties, carers referred to a range of possible influences. Perhaps unsurprisingly, much was made of the effects of good or bad parenting. However, carers also appreciated the influence of children's observation of parents' social behaviour. In half of the interviews carers also discussed how the child's role in the birth family might affect their self-perceptions or peer relationships. For example, one carer traced a child's attempts to dominate peer relationships back to the reversal of caring roles she had experienced with her suicidal mother. In addition, half of the interviewees expressed the belief that individual differences in children's temperaments and coping strategies might moderate the effect of parenting experiences.

Social Understanding and Empathy

Our key interests in the role played by social understanding and empathy were reflected in several questions to ascertain carers' experiences of children who had difficulties in this area, and to determine whether this might help to explain the relationship between children's backgrounds and their social and emotional problems. Overall, this seemed to be a widespread issue: all carers were able to provide several examples from current or previous placements. All but one had encountered general problems with seeing others' perspectives:

What he did wrong in that school is, he came home to me the second day and he said to me, 'I've told everybody that you're my Nan', and I said... 'I don't mind what you call me, but all the children from your

primary school, only six went to a different school, all the others went to your school and some of them were in your class, so they know I'm not your Nan, and I think you've dug a little bit of a hole for yourself'. And that's why they tease him, and he just can't handle it at school.

(C5)

More specific difficulties were also described. Examples where children showed a lack of empathy towards another person's emotional situation were given by over half of the interviewees. Carers explained this in terms of an inability to understand the other's emotions:

I lost my horse that I'd had for 20 years just before Christmas, and I can't tell you how devastated I was... And [girl] couldn't say anything comforting at all, she just kept really quiet, but couldn't wait to tell anyone that she knew that the horse had died [laughs] and how sad it was, but she didn't actually understand really. Although she got extremely upset when one of her chickens died, because that was more personal to her. So even though she'd felt those feelings herself, she couldn't give me any comfort at all. (C8)

The lack of empathic awareness was seen as playing a critical role in the children's social interactions:

[Boy] has got no compassion at all. That's why we bought him the cat, to look after, so that he could see that other things hurt. If he can't feel it, it doesn't hurt. He'll say things to people that are really unkind, but he can't see it... (C5)

As well as problems with understanding and responding to emotions, carers also cited cases where children struggled to recognise the underlying motivations and desires influencing others' behaviour. One girl failed to understand that a boy was only sending her text messages to persuade her to pass on the telephone numbers of her good-looking friends. For some children, however, the problem was not lack of understanding but misunderstanding. These were the children who displayed a negative or hostile bias in their interpretations of others' behaviour, which foster carers perceived to have emerged as a result of their maltreatment:

Well, she's got this thing of feeling that she's under attack, even when she isn't. It's a lot better than it used to be now, she used to hit out straight away if she thought that somebody said something that she felt was an attack on her. Or if somebody touched her when she wasn't expecting it and she thought she was being attacked, she'd hit out or kick. That's a lot better, but she still does the verbal reaction to stuff. I know it's a protective thing that she's learned, but she says really unkind things. (C2)

Many children discussed by carers also had problems understanding the consequences of their own behaviour, in terms of other people's reactions to what they had done:

Although they all want friends, they don't understand that if you shout and scream at someone they won't want to be your friend. But they don't want people to do it to them. I mean [boy] used to be terrified if anyone was aggressive towards him, although he could be aggressive really easy, be very very aggressive towards people. (C8)

There were plenty of examples, then, of children displaying difficulties with various dimensions of social understanding. However, foster carers also described some children who showed this understanding when interacting with their carers, but were unable to access it when socialising with peers. This was seen as a case of social understanding being present, but being overwhelmed by emotional need in stressful social situations:

You'd talk to her about personal space, and you'd ask her to explain it back to you and all that sort of thing she'd get it, but... I think again it's just that desperation of friendships and the thought processes going out, not even there when it's happening... I think she gets herself into such a state concentrating on them being her friend that any, those rules and regulations don't even come to the forefront sort of thing, they're just at the back of the mind rather than the front, so I think it doesn't even occur to her. But if you then spoke to her afterwards she would be able to tell you. (C10)

Foster Carers' Strategies to Support Children

Questions about the ways in which carers might tackle children's difficulties revealed a number of specific strategies used by carers to aid children's social understanding and empathy. For most, the principal strategy was to talk through social situations with the children, encouraging them to draw on their own experiences in order to understand others' points of view. This technique had been expanded by one carer to include everyday discussions about the possible thoughts and feelings of characters in television shows. Another carer had encouraged a child involved in a bullying incident to think about how their victim might be feeling and write them a letter of apology. Carers also made use of resources provided by practitioners,

including cartoon strips and story books to encourage emotion understanding and consequences of behaviour, pictures of faces to develop emotion recognition, and specialist board games to stimulate discussion of social cues. The strategies described had met with mixed success.

To close the interviews, carers were asked to identify any training needs around the areas discussed. Most were able to name courses they had attended which had touched on some aspects of social understanding or self-perceptions, but none could recall a course that had specifically covered strategies to encourage social understanding and empathy with the aim of improving peer relationships and self-perceptions. All but one agreed that such a course would be welcomed.

3.5 Discussion

Our interviews with foster carers allowed us to draw on their unique perspective on the day-to-day behaviour of Looked After Children, in order to address our research questions. A thematic analysis revealed that problematic self-perceptions and peer relationships were commonplace among the children discussed by these carers. The carers frequently attempted to interpret socio-emotional difficulties in the light of information about experiences within the birth family. Moreover, in line with our theoretical model, carers readily identified features of children's social understanding and empathy as relevant explanations for their socio-emotional difficulties. While some children were perceived to lack the understanding that might help them negotiate peer relationships, others had acquired this understanding but were unable to access it during stressful social interactions. There were also important differences in individual children's empathic responses to others' distress. Interestingly, carers reported using a variety of strategies to help children in these problem areas. This work was seen as a long, slow process, and success was not

guaranteed. Carers said they would welcome a training package of practical strategies that could be used to encourage social understanding and empathy in children, with the aim of improving their social relationships.

Our primary purpose in conducting this study was to determine whether carers' experiences with maltreated children would provide preliminary support for a model in which difficulties in social understanding and empathy mediate the relationship between maltreatment and problematic self-perceptions and peer relations. In fact, carers often supplied spontaneous examples of children's difficulties with these skills when asked about their socio-emotional well-being. Similarly, when specific questions were posed about social understanding and empathy, carers' accounts of children who had trouble with these skills also made reference to the socio-emotional effects of such problems. This gives added strength to our proposed mediational model as a framework for understanding the psychosocial adjustment of maltreated children in care.

First, carers had little trouble in providing examples of children displaying difficulties with what might be termed 'mind-reading' or 'mentalisation': the ability to take another's perspective and to recognise their motivations and desires. While developmental progress in these skills was not a focus of our investigation, age differences might be expected; however, carers' accounts included examples of difficulties with mentalisation skills across the full range of age groups looked after, from infants to young adults. These difficulties may develop in the context of the maltreating family where identifying with the caregiver's mental state can undermine the child's own mental state by making them feel worthless (Fonagy, Gergely, Jurist, & Target, 2002). This lack of understanding extended to affective as well as mental states. In line with previous research (Quinton, Rushton, Dance, & Mayes, 1998), carers also

gave accounts of children who had difficulties in understanding and responding to emotions in others.

For some of the children discussed, the problem was a misinterpretation of others' behaviour. Specifically, these children were perceived to display a hostile bias in the way they processed their interactions with others. Pollak, Cicchetti, and Klorman (1998) suggest that this may be because the traumatic experiences associated with particular emotional displays in maltreating families can guide children's interpretation of events and their choice of behavioural responses to produce a hostile bias.

That foster carers' accounts suggested that many maltreated children showed difficulties with social understanding and empathy was in line with our proposed model. However, while some children lacked the understanding that might help them negotiate peer relationships, others had acquired this understanding but were unable to access it during stressful social interactions. Even for children making good progress in foster care placements, stressful situations can prompt a return to the defensive strategies they developed to survive in times of maltreatment (Schofield & Beek, 2005*b*). It has been suggested that affect regulation is a precursor of mentalisation (Fonagy et al., 2002); our findings would suggest that even when mentalising abilities have developed, the regulation of affect and behaviour is a necessary requirement for children to put this ability into practice. This may prove more difficult for children in foster care, as maltreatment has been linked to inferior affect regulation (Robinson et al., 2009).

A key part of the foster carer role is to support children with such difficulties in the move towards more adaptive cognitions and behaviours (Stovall & Dozier, 1998). The results of our analysis indicate that one avenue for carers and practitioners to target in tackling maltreated children's socio-emotional problems is through enhancing their skills of social understanding and empathy. Our interviewees expressed a desire to

improve their knowledge of methods of support for children who have difficulty with developing or expressing these skills. The majority of our interviewees felt that they would benefit from specific training on ways to enhance children's skills, and that this could have a positive impact on social relationships and self-perceptions. Offering carers the training they need to support children can combat feelings of inadequacy, which can have a greater effect on carers' satisfaction and intention to continue fostering than even the perceived emotional and behavioural difficulties of children (Whenan, Oxlad, & Lushington, 2009). The carers' positive attitude to training in this area is therefore extremely encouraging.

Helping a socially isolated child to learn the skills necessary for successful social interactions may have a significant impact on their quality of life (Daniel, Wassell, & Gilligan, 1999). Children who lack these skills are not a lost cause, and the foster placement should be viewed as a key context in which change is possible (Wilson, 2006). Indeed, Schofield and Beek (2005a) identified that the promotion of children's capacity to *reflect* on self and others – precisely what may be lacking in many of the illustrative difficulties cited in the present investigation - is a key parenting dimension for foster carers, and one which predicted good progress in children's behaviour and relationships. Moreover, a review of the evidence has shown that in order for interventions for emotional and behavioural difficulties in Looked After Children to be effective, they must be administered directly by or in close liaison with foster carers (Rushton and Minnis, 2002). Given that attention to social and emotional well-being is part of the UK Government's statutory guidance for Looked After Children (DCSF, 2009), designing training to address the antecedents of children's difficulties with peer relations and self-perceptions is vital.

Conclusions

Our interviews with foster carers have provided support for the proposed model, in which difficulties with social understanding and empathy mediate the relationship between maltreatment and children's problematic peer relations and self-perceptions. Additional work is now required to explore the model further as a potential developmental explanation for maltreated children's socio-emotional difficulties. Clearly, we must recognise that the experiences related here are associated with a particular group of individuals and may not reflect the reality for all carers. Accordingly, it is crucial for further research to evaluate the model presented here with larger and more varied samples, and with full attention to the perspectives of the Looked After Children themselves. In addition, we propose a longitudinal test of the proposed model, in which the role of social understanding and empathy as predictors of maltreated children's self-perceptions and social relations is assessed over the course of Looked After Children's changing experiences.

Such work will benefit from the use of a battery of measures to produce a more detailed assessment of children's social understanding and empathy than is currently offered. The experiences related here by carers support the idea that maltreated children are not a homogeneous group, as it was apparent that individual children displayed varying strengths and difficulties in social understanding and empathy. This is only to be expected; for example, physically abused children might be hyper-sensitive to displays of anger and more likely to show a hostile bias (Keil and Price, 2009), while neglected children are likely to have had an impoverished education in all types of emotion (Pollak et al., 2000). Knowledge of these differences will help in the design of individualised support plans that can be delivered by foster carers to improve children's socio-emotional well-being.

**Chapter 4: Paper 3 – A Multidimensional Assessment of
Children's Empathy: Differentiated Links with Socio-
emotional Functioning**

4.1 Abstract

The ability to display empathy plays a key role in children's successful socio-emotional functioning, but research into individual differences has been constrained by definitions which fail to incorporate its multidimensional nature. The present study is the first to measure the relationships between the affective, cognitive, and motivational aspects of empathy and three distinct but related socio-emotional outcomes: peer reputations, self-perceived social acceptance, and loneliness. We describe the first British use of the new four-factor Empathy Questionnaire (Pouw, Rieffe, Oosterveld, & Stockmann, 2012), which was designed to tap into four distinct types of empathic response: emotion contagion, personal distress, emotion understanding, and prosocial responses. A sample of 156 8- to 11-year-olds completed the questionnaire, along with measures of self-perception, loneliness, and sociometric nominations. A confirmatory factor analysis supported the four-factor structure of the Empathy Questionnaire; moreover, this multidimensional conceptualisation was further supported by differentiated patterns of relationships between the four aspects of empathy and children's socio-emotional functioning. In particular, prosocial responding emerged as a key factor in predicting successful outcomes. The need for further work to identify the personal, social, and contextual factors that might predict particular kinds of empathic response as well as the translation of prosocial motivations into action are discussed.

4.2 Introduction

The capacity for empathic responding is a key determinant of successful social relationships. Reviews of the literature have shown positive relationships between empathy and prosocial, cooperative, and socially competent behaviour (Eisenberg & Miller, 1987*b*), and negative relationships between empathy and aggressive, externalising, and antisocial behaviour (Miller & Eisenberg, 1988). Moreover, studies have shown empathy deficits in children with developmental disorders such as autism and disruptive behavioural disorders (Charman et al., 1997; de Wied, Goudena & Matthys, 2005).

Although researchers generally recognise the importance of empathy for social relationships, the multidimensional nature of empathy has not been adequately captured in research on individual differences so far. This reflects differences in definitions, which pose problems for advancing our understanding of the links between empathy and socio-emotional outcomes. A large number of definitions propose that the defining feature of empathy is an affective response to another's emotional state, and one which is congruent with the stimulus: "Thus, empathy can include emotional matching and the vicarious experiencing of a range of emotions consistent with those of others."

(Eisenberg & Miller, 1987*b*, p. 91). Further, Lennon and Eisenberg (1987) note that affective responses to another person's situation may take one of three forms: emotional contagion, personal distress, or genuine concern for the other (also known as sympathy). Contagion may be seen as a matched emotional response, such as is seen when young infants respond to another's crying with tears of their own. Personal distress has been differentiated from sympathetic responses by Eisenberg and colleagues (e.g., Eisenberg & Fabes, 1990) in terms of focus: while distress involves a focus on the self, sympathetic reactions are other-oriented.

Yet empathy is not just about affective responses to another's situation.

Definitions of empathy which stress affective components are differentiated from those which focus on the cognitive aspect of empathy; in other words, the individual's emotion understanding (e.g., Borke, 1971). Emotion understanding involves more than the simple recognition of a specific affective state in the other; rather, it is the ability to understand the type of situations that can give rise to particular emotions (Sullivan, Bennett, Carpenter, & Lewis, 2008).

Moreover, a number of researchers use definitions of empathy which incorporate both affective and cognitive terms (e.g., de Wied, Goudena and Matthys, 2005). Some have attempted to outline the relationship between affective and cognitive factors; for instance, Feshbach (1975, p. 26) states that "...while empathy presupposes some degree of social understanding, the converse is not true. Understanding the feelings of another person does not necessarily lead to an empathic response." In contrast, Hoffman (1984) sees developments in affective and cognitive abilities interacting to produce an empathic response. He outlines a developmental sequence of affective responses to the other's emotional state, from primitive reactive crying in newborns to the complex ability to imagine how one would feel in the other's situation. These responses are in turn influenced by the development of cognitive abilities such as the separation of self and other to produce four levels of empathy: global empathy, in which infants confound distress cues in others with their own affective response; 'egocentric' empathy, in which children begin to recognise the victim as separate from the self but may still offer comfort in the form of something they themselves would find comforting; empathy for another's feelings, comprising a complex awareness of the other's affective state as arising from a different set of thoughts and desires; and empathy for another's general condition, in which empathic affect can be aroused by awareness of the other's general

condition outside of the specific situation. From this point of view, emotion understanding can mediate the child's affective response to another's situation, but is not a necessary prerequisite; moreover, this conception allows for the developmental emergence of emotion contagion and distress, as outlined above, as early forms of empathy.

Some researchers also recognise a third component of empathy: namely, the individual's altruistic or prosocial response to the other's situation. If empathy constitutes at least in part an affective reaction to another's state, then we must recognise empathy as a kind of emotion. As such, one of its components is an action tendency: the motivation to act in a particular way following an appraisal (conscious or unconscious) of the emotion-eliciting event (Scherer, 2000). One way of acting would be to respond prosocially, by offering help or comfort, yet most studies overlook this feature of empathy. It could be argued that the tendency towards prosocial behavior shows the individual's true acknowledgement of the other's state. Affective empathy shows that a person is feeling something, and cognitive empathy shows that they understand -- but the motivation towards prosocial behaviour shows that they are indeed affected in a way that means they want to help the other person. Indeed, Batson and colleagues (e.g., Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983) have argued that this is more characteristic of genuine empathic (i.e., concerned) responses rather than personal distress.

It is important to be able to measure individual ability across these different aspects of empathy; for example, the ability to assess specific empathy deficits would allow for more effective targeted treatment for those showing antisocial or offending behaviour (Jolliffe & Farrington, 2006a). The development of questionnaire measures is an especially powerful way of assessing individual differences across multiple

dimensions: questionnaires allow researchers to tap into the distinct domains of empathic responding in a way that picture and story tasks cannot (Eisenberg & Miller, 1987*a*). A number of scales have been developed to measure empathy (e.g., Davis, 1980; Jolliffe & Farrington, 2006*a*); however, none of these measures all of the aspects of empathy discussed here (affective, cognitive, and prosocial motivation). In addition, we do not yet have a robust evidence base regarding the value of the different facets of empathy for predicting variations in socio-emotional functioning.

Differentiated Links with Socio-emotional Functioning

Existing research has provided some illustration of the differentiated links between distinct aspects of empathy and young people's social behaviour and emotional awareness. First, there is evidence relating lower affective empathy in the style of emotion contagion to more frequent bullying behaviours in adolescence (Jolliffe & Farrington, 2006*b*), particularly amongst boys (Jolliffe & Farrington, 2011). The authors argued in the latter paper that those who could experience vicariously another's emotions were more likely to be prompted to alleviate their suffering, and so low affective empathy meant that bullies would experience no aversive vicarious emotions as a result of their actions. Alternatively, affective empathic responses may be self- rather than other-focussed, and this is related to particular difficulties with emotion awareness: Rieffe and Camodeca (2012) have shown that adolescents' inability to differentiate their own emotions and their causes and a tendency to over-emphasise the physical symptoms of emotions predicted empathic personal distress. This indicates that affective empathy of one kind (emotion contagion) is related to adaptive social functioning, while another kind (personal distress) has links with less adaptive emotional functioning.

Cognitive empathy has also been related to children's socio-emotional functioning. Rather than the affective link shown by Jolliffe and Farrington (2006*b*, 2011), Kokkinos and Kipritsi (2012) found a link between cognitive empathy and bullying behaviour. This may also be explained using Jolliffe and Farrington's (2011) argument: a greater ability to understand negative emotions in others should also predict a desire to alleviate suffering. Conversely, those with poorer emotion understanding would have no appreciation of the impact of their behaviour on others' feelings. However, it seems that there may be more than one profile of cognitive empathy in bullies, as Sutton, Smith, and Swettenham (1999*b*) found that instead of being worse at emotion understanding than their peers, ringleader bullies were actually better, painting a picture of the bully as a skilled manipulator of others' emotions. It seems that for some bullies at least, cognitive empathy is not a problem. Crick and Dodge (1996) suggested that proactively aggressive children may simply have a different set of goals, seeking to make instrumental rather than relational achievements. It is possible, then, that for the bullies who are not deficient in cognitive empathy what is lacking is the motivation to relate prosocially to others.

Evidence on the links between empathy and prosocial behaviour (e.g., Eisenberg & Miller, 1987*b*) might also mask individual differences in specific types of empathic response; for example, either personal distress or emotion understanding could lead separately to prosocial behaviour. Eisenberg and colleagues (1990) claim that in a situation where prosocial behaviour is hard to escape – such as a direct request for help – then helping behaviour can cut short the individual's exposure to the other's emotional state and thereby relieve any distress that might have initially risen. The authors conceptualise this as compliant prosocial behaviour, in contrast to the more altruistic prosocial behaviour that might arise from more sympathetic responses to the

other's state. These differentiated routes to prosocial behaviour show that the link with empathy is not always direct; moreover, it is not inevitable. Eisenberg and Strayer (1987) point out that other factors may be more salient, such as the personal cost of helping. The evidence on bullying and prosocial behaviour therefore indicates that it is important to have a measure of empathy that incorporates prosocial responses, which represent a motivation to help that stems from a desire for others to feel good – even if this motivation is not always translated into behaviour.

The Present Study

The present study is the first to measure the relationships between the affective, cognitive, and motivational aspects of empathy and three distinct but related socio-emotional outcomes: peer reputations, self-perceived social acceptance, and loneliness. We describe the first British use of the new four-factor Empathy Questionnaire (Pouw, Rieffe, Oosterveld, & Stockmann, 2012 – see Appendix B), which was designed to tap into four distinct types of empathic response: emotion contagion, personal distress, emotion understanding, and prosocial responses. The prosocial response subscale used in this measure represents a novel aspect of empathy measurement, lying somewhere between Eisenberg and Miller's (1987*a*, p. 292) definitions of sympathy ("feelings of sorrow or concern for another") and altruism ("intentional, voluntary behavior that benefits another and is not performed with the expectation of receiving external rewards or avoiding external punishments or aversive stimuli"). Prosocial responses as conceptualised here represent the motivational aspect of empathy, which bridges the gap between affective and behavioural responses to another's situation.

The initial aim of this study was to evaluate the multidimensional conceptualisation of empathy as an affective, cognitive, and motivational response to others' affective states. This was achieved by conducting a confirmatory factor analysis

of the four-factor structure of the Empathy Questionnaire using a British sample. The subsequent aim was to examine specific links between the distinct dimensions of empathy and children's socio-emotional outcomes, in terms of their peer reputations, self-perceived social acceptance, and loneliness. We focused on children aged 8-11 years, a period of middle childhood when achieving positive peer group relationships and social acceptance is recognised to be highly salient (e.g., Parker & Gottman, 1989).

Theory and empirical evidence were used to develop hypotheses about the Empathy Questionnaire and how it would relate to the other constructs measured in our study. First, while emotion contagion, personal distress, emotion understanding, and prosocial responses are distinct aspects of empathy, they all involve reactions to others' emotional states; as such, some overlap between the factors is to be expected. In addition, a number of studies have indicated a gender difference in levels of empathy, with girls scoring higher on previous empathy measures than boys (e.g., Garaigordobil, 2009). Lennon and Eisenberg's (1987) review of the literature showed that self-report measures of empathy, unlike picture/story tasks, facial/gestural records, or physiological measures, consistently favour females, which they suggest may either be due to genuine differences or to demand characteristics ensuring that boys and girls answer in line with traditional sex role stereotypes. Of interest for our study, Hoffman (1977) showed that the gender differences might be limited to affective rather than cognitive aspects of empathy. The present study builds on this work, providing a multidimensional examination of gender differences across affective, cognitive, and motivational dimensions of empathy.

With regard to links between the dimensions of empathy and children's socio-emotional functioning, there is evidence that cognitive empathy or emotion understanding is lower in rejected than in popular children (Dekovic & Gerris, 1994).

Research has also shown a positive link between prosocial behaviour and peer popularity (Caputi, Lecce, Pagnin, & Banerjee, 2012), which implies that the prosocial dimension of empathy may be especially important in predicting peer reputations. We expect to find that these aspects of empathy predict higher levels of positive peer reputation (i.e., more nominations for being most-liked and cooperative) and lower levels of negative peer reputation (i.e., fewer nominations for being least-liked, disruptive, and aggressive). In contrast, higher levels of personal *distress* in response to others' emotional states might be expected to inhibit positive peer approach behaviours, and thus should predict more peer nominations for shy behaviour.

Empathy should also be related to other aspects of children's socio-emotional functioning, namely, self-perceived social acceptance and loneliness. While there is less extant research on the links between distinct dimensions of empathy and children's self-perceived social acceptance and loneliness, we expect the findings for our self-reported socio-emotional variables to be broadly in line with those for peer nominations: namely, that children with higher empathy – in particular emotion understanding and prosocial responses – are expected to report greater self-perceived social acceptance and lower loneliness.

4.3 Method

Participants

Children were drawn from two urban primary schools situated in mainly working-class communities of primarily white ethnicity. The sample consisted of a total of 156 primary school children from three different year groups at school, specifically 56 aged 8-9 years (32 male, 24 female), 56 aged 9-10 years (29 male, 27

female), and 46 aged 10-11 years (28 male, 18 female). Local primary schools were recruited for the study by means of emails and telephone calls. Head teachers provided consent for the research to be conducted in their schools, and all parents and carers of children in the targeted age groups received information about the study and were given the opportunity to refuse participation. All data were collected during the course of one school term.

Materials

Empathy. To assess empathy, all pupils present on the day of data collection completed the Empathy Questionnaire (Pouw, Rieffe, Oosterveld, & Stockmann, 2012 – see Appendix B). The Empathy Questionnaire was developed in Dutch and translated to English by its author Carolien Rieffe, with the collaboration of Robin Banerjee. Items on this measure are answered on a three-point scale ranging from ‘not true’ (0) to ‘often true’ (2), and were designed to tap into four distinct aspects of empathy: emotion contagion (e.g., ‘Watching a sad movie makes me feel sad as well’), personal distress (e.g., ‘It scares me to see someone cry’), emotion understanding (e.g., ‘When one of my friends is angry, I usually understand why they’re feeling that way’), and prosocial responses (e.g., ‘When one of my friends is upset, I want to comfort him or her’).

Peer reputations. Children completed an online sociometric survey (Banerjee, 2010; adapted from descriptors given in Coie & Dodge, 1988 – see Appendix C). For this measure, children nominate up to three classmates who best fit a range of descriptors (e.g., ‘Please indicate three pupils who are kind and cooperative. They help other people, share, and take turns.’); the number of nominations each child receives from their classmates is counted for each descriptor and then standardised as *z*-scores within classroom. Scores above or below zero therefore indicate that the child received

either more or less than the average number of votes in the class for a descriptor, respectively. As our interest here was in the relationship between different aspects of empathy and children's positive and negative peer reputations, our analyses focus on the children's nominations as 'most liked', 'cooperative', 'least liked', 'disruptive', 'shy', and someone who 'starts fights'.

Social acceptance. To assess their self-perceived social acceptance, children completed a shortened form of Harter's (1985) Self-Perception Profile for children (see Appendix D). Questions cover six areas of children's self-perceptions; our analyses focus on the mean score received across three items measuring perceived social acceptance ($\alpha = .67$). The measure presents descriptions of two different types of children and asks participants to say which one sounds more like them, for example, 'Some children find it's quite hard to make friends BUT other children find it's quite easy to make friends'. Having chosen which option is more like them, children then indicate whether it sounds 'really like me' or 'quite like me'. Scores could range from 1 to 4, and higher scores indicate more positive self-perceptions.

Loneliness. Finally, children completed the Loneliness Scale (Asher & Wheeler, 1985 – see Appendix E). This measure includes 16 statements (as well as 8 filler items) relating to children's self-perceived social networks, social support and loneliness, for example, 'I don't have anyone to play with in school'. Responses are given using a five-point Likert scale which ranges from 'not true at all' to 'always true'. Children received a mean score for the overall scale ($\alpha = .88$), which could range from 1 to 5, with a higher score indicating greater loneliness.

Procedure

Researchers administered all surveys to each class of children, with class teachers and designated learning support assistants also present. Prior to beginning the surveys, pupils were assured that there were no right or wrong answers and were encouraged to answer honestly, with the assurance that they could skip over any questions they did not want to answer. Children could ask for assistance if required. Following completion of the surveys, there was an opportunity for pupils to ask any questions they might have. The sociometric survey was completed online using computers in the school's ICT room. Instructions were given verbally by a researcher and appeared onscreen. Children were provided with a printed list of names of their classmates, each with a two-digit number written next to it. Each question in the sociometric survey then appeared on a separate screen, with three boxes for children to enter the code numbers of the classmates whom they wished to nominate for the given descriptor. The Empathy Questionnaire, Loneliness survey, and Self-Perception Profile were administered in children's classrooms. All questions were read aloud by the researcher to ensure full understanding of the items.

4.4 Results

Factor Structure

We ran a confirmatory factor analysis (CFA) using structural equation modelling (SEM) through IBM's AMOS software to test the expectation that the empathy items would load onto the four factors identified by Pouw et al. (2012): emotion contagion (Contagion), personal distress (Distress), emotion understanding

(Understanding), and prosocial responses (Prosocial).² According to Kline (2005), the model fit indices were poor, $\chi^2(224) = 313.91, p < .001$, comparative fit index (CFI) = .86, root mean square error of approximation (RMSEA) = .05. However, there was some support for the four-factor structure, with items loading mostly as expected onto the Contagion, Distress, Understanding, or Prosocial factor. Inspection of factor loadings showed that four items ('I can understand why a classmate would feel ashamed after doing something wrong', 'When one of my friends is crying, I feel nothing at all', 'I can understand why a classmate would feel proud after doing something really well', 'When someone gets angry, I often do not understand why') had loadings lower than .3; these items were removed from the model. Moreover, item analyses indicated that two other items ('When one of my friends has a fight with someone, I try to help', 'It makes me laugh to see a friend having fun') had poor item-total correlations with their respective subscales, and these were subsequently removed from further analysis.

These changes improved both the fit of the model and the related measures of reliability. The model fit indices were good, $\chi^2(113) = 151.44, p < .01$, comparative fit index (CFI) = .93, root mean square error of approximation (RMSEA) = .05. This indicates that the four-factor structure was appropriate, with items loading exclusively onto the Contagion, Distress, Understanding, or Prosocial factor. Reliability of all four subscales was acceptable (Contagion: $\alpha = .70$; Distress: $\alpha = .69$; Understanding: $\alpha = .64$; Prosocial: $\alpha = .72$). Figure 4.1 shows the final model with the loading of items onto each factor.

² Prior to running the CFA, two items ('When one of my friends is crying, I feel like crying too' and 'When a member of my family is feeling sad, I feel terrible too') were moved from the Distress to the Contagion subscale; this decision was taken because of issues with the translation of terms from Dutch to English which resulted in the meaning of these two items being conceptually more similar to items in the Contagion rather than the Distress subscale.

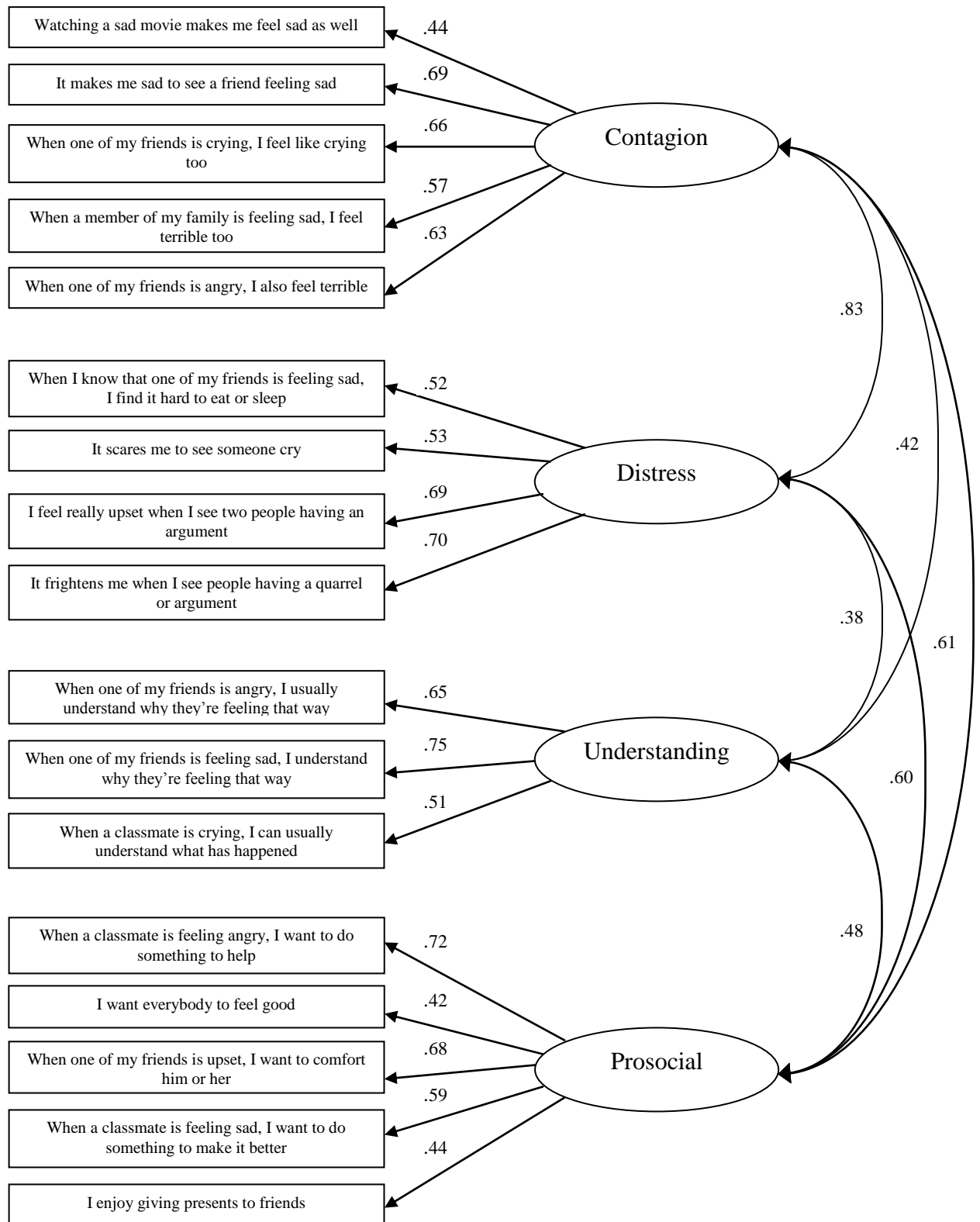


Figure 4.1. Standardised parameters of the Empathy Questionnaire: four factor final model results (CFI = .93; RMSEA = .05).

Gender Differences in Empathy

Our hypothesis on gender differences was partially supported. A series of *t*-tests indicated that females scored more highly than males on the Contagion, Distress, and Prosocial subscales of the Empathy Questionnaire ($ps < .01$). There was no difference between genders on the Understanding subscale. Means and *t*-values are shown in Table 4.1.

Links between the Empathy Questionnaire and Measures of Socio-emotional Functioning

Table 4.2 shows the correlations among the four subscales of empathy and our measures of children's socio-emotional functioning. We scrutinised all coefficients at $p \leq .10$, due to the preliminary nature of this study and the relatively small sample size. The multidimensional measure of empathy revealed a differentiated pattern of results. Emotion contagion had positive correlations with peer reputations for cooperation and shyness. Personal distress also had positive links with cooperation and shyness, but was additionally positively related to peer popularity. Emotion understanding showed no links with positive peer reputations, but was negatively correlated with peer reputations for being disruptive and starting fights. Finally, prosocial responses revealed the broadest pattern of links with socio-emotional outcomes: they were positively correlated with both measures of positive peer reputations, as well as shyness and self-perceived social acceptance. Prosocial responses had a negative link with peer rejection and a disruptive peer reputation, and were also negatively correlated with loneliness.

Table 4.1

Means (with Standard Deviations) on the Empathy Questionnaire Subscales, by Gender

Empathy Subscale	Girls <i>n</i> = 68	Boys <i>n</i> = 88	<i>t</i>
Emotion Contagion	1.19 (0.46)	0.94 (0.50)	3.24***
Personal Distress	0.94 (0.49)	0.71 (0.52)	2.86**
Emotion Understanding	1.48 (0.44)	1.43 (0.44)	0.71
Prosocial Response	1.84 (0.25)	1.64 (0.35)	4.19***

† $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$ (1-tailed)

Table 4.2

Correlations between Empathy and Socio-emotional Measures

Empathy Subscale	Positive Peer Reputation			Negative Peer Reputation			Self-perception	Loneliness
	Most liked	Cooperative	Least Liked	Disruptive	Starts Fights	Shy	Social Acceptance	Overall Loneliness
Emotion Contagion	.03	.14 [†]	-.06	-.12	-.08	.21 ^{**}	.00	.10
Personal Distress	.14 [†]	.14 [†]	-.04	-.11	-.03	.26 ^{***}	-.02	.09
Emotion Understanding	.01	-.08	-.04	-.14 [†]	-.14 [†]	.06	-.01	.05
Prosocial Response	.14 [†]	.19 [*]	-.17 [*]	-.20 [*]	-.12	.13 [†]	.16 [†]	-.14 [†]

[†] $p \leq .10$ ^{*} $p \leq .05$ ^{**} $p \leq .01$ ^{***} $p \leq .001$

To further investigate the predictive value of the empathy subscales, we ran a series of multiple regressions with each socio-emotional outcome as the outcome variable. As gender differences were found on three of the four empathy subscales, this was entered as a first step; the four empathy subscales were entered in a second step using forced entry as predictor variables. The results in Table 4.3 show that after controlling for gender and the other empathy subscales, emotion contagion did not predict any of our socio-emotional outcomes. Personal distress was no longer related to popularity or cooperative behaviour in the regressions, but maintained its positive relationship with shyness. Emotion understanding was not a unique predictor of negative peer reputations, but controlling for gender and other aspects of empathy revealed an unexpected negative relationship with a reputation for cooperative behaviour, with greater emotion understanding predicting fewer cooperative nominations. Finally, prosocial responses continued to predict peer rejection and self-reported social adjustment outcomes, even after controlling for the other empathy subscales. While the correlations between prosocial responses and behavioural reputations did not translate to unique predictive contributions once gender was controlled for, prosocial responses did approach significance as a predictor of fewer ‘least liked’ nominations, and also predicted significantly higher self-reported social acceptance and lower self-reported loneliness. Finally, it should be noted that further analyses including terms for the interaction between gender and the empathy subscales showed no evidence of improved predictive value (all $\Delta R^2 < .04$, $ps > .243$). Thus, we found no evidence of moderation by gender.

Table 4.3

Multiple Regression Analyses Predicting Socio-emotional Outcomes from Four Dimensions of Empathy

	Positive Peer Reputation			Negative Peer Reputation			Self-perception	Loneliness
	Most liked	Cooperative	Least Liked	Disruptive	Starts Fights	Shy	Social Acceptance	Overall Loneliness
	β	β	β	β	β	β	β	β
<i>Step 1</i>								
Gender	.08	.26***	-.17*	-.27***	-.22**	.31***	-.03	.02
<i>Step 2</i>								
Gender	.03	.20	-.14	-.24**	-.22*	.27***	-.08	.05
Emotion Contagion	-.09	.07	-.03	.02	.01	.04	.00	.09
Personal Distress	.13	.02	.09	-.01	.04	.19*	-.08	.11
Emotion Understanding	-.04	-.17*	.02	-.10	-.13	.01	-.07	.08
Prosocial Response	.13	.15	-.16 [†]	-.09	-.03	-.04	.23*	-.26**
<i>Total R²</i>	.03	.11	.05	.10	.07 [†]	.14	.04	.06

[†] $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

4.5 Discussion

Our initial aim in this study was to evaluate the multidimensional conceptualisation of empathy as an affective, cognitive, and motivational response to others' affective states. Our results support this conceptualisation: in a confirmatory factor analysis, the Empathy Questionnaire produced a similar four-factor structure in our sample of British children to that shown previously by Pouw et al. (2012) in a Dutch sample. Moreover, as expected, and further supporting our conceptualisation of distinct empathic dimensions, gender differences were apparent on our affective and motivational subscales, but not on our cognitive subscale.

Our subsequent aim was to examine specific links between the distinct dimensions of empathy and children's socio-emotional outcomes, in terms of their peer reputations, self-perceived social acceptance, and loneliness. In line with the multidimensional nature of empathy suggested by our factor analysis, we also found differentiated patterns of relationships between the individual aspects of empathy and children's socio-emotional outcomes. These patterns highlight the multifaceted nature of empathy and support the need for a conceptualisation of empathy that moves beyond simple affective or cognitive dimensions.

Multifaceted Nature of Empathy

Firstly, our results indicate that complexities in the affective empathic response can take the child in different directions. While emotion contagion was associated with a peer reputation for cooperative behaviour and shyness, these relationships disappeared when controlling for gender and the other dimensions of empathy. This suggests that emotion contagion in itself does not guarantee a particular pattern of socio-emotional functioning, either positive or negative. In contrast, personal distress retained a specific and unique association to socio-emotional outcomes, as it predicted a social withdrawal

response (indicated by the association with greater peer nominations for shyness). This finding builds on previous work conducted with younger children, which showed that behavioural inhibition in preschoolers is related to distress responses as measured by heart rate acceleration (Kagan, Reznick, & Gibbons, 1989) or parental report (Marysko, Finke, Wiebel, Resch, & Moehler, 2010).

Secondly, the cognitive empathic response (as assessed by our emotion understanding subscale) showed a negative link with peer reputations for externalising behaviours, which disappeared after controlling for gender and the other empathy subscales. Instead, emotion understanding predicted fewer cooperative nominations. The fact that this predictive link emerged only after controlling for other aspects of empathy suggests that in itself, emotion understanding is not linked to children's reputations for cooperative behaviour; a more likely explanation is that children who understand another person's affective situation but are not prompted to offer a prosocial response are seen as less cooperative. This is illustrative of the type of response seen in more extreme populations; for example, Sutton and colleagues' (1999*b*) work on bullying and social cognition indicates that bullies are often skilled social manipulators who excel at emotion understanding. What separates the bullies from those children who are less rejected by the peer group must then be attributable to factors other than a cognitive empathic response. One factor suggested by the present study is the prosocial empathic response.

Prosocial responses were the key factor in predicting children's socio-emotional outcomes in our study: even after controlling for gender and the other dimensions of empathy, prosocial responses predicted less peer rejection, higher self-perceived social acceptance, and lower loneliness. This finding offers an important and unique insight into the processes linking children's empathic responses to their socio-emotional

functioning, as the prosocial responses tapped into by the Empathy Questionnaire represent a motivational process that is a precursor to the prosocial behavioural responses more commonly investigated alongside empathy (e.g., Eisenberg & Miller, 1987*b*). What remains to be known is how this prosocial motivation is translated into action, and some of the factors that might interfere with this process.

Limitations and Future Directions

Our results have established the importance of children's prosocial responses for their socio-emotional functioning; future work now needs to focus on establishing the personal, social, and contextual factors that might serve both to promote these responses and influence whether they are acted on in the form of prosocial behaviour. First, an examination of the conditions needed for children to enact their prosocial motivations should include an investigation into the role of personal resources such as confidence, which might be expected to vary between individuals. The degree of confidence that children have in their ability to enact a particular behavioural response can be seen as a key part of the processing of social information that might influence children's response selection (Crick & Dodge, 1994). In contrast, our results showed that shyer children were unlikely to respond prosocially as their empathic responses were characterised by personal distress. Research suggests that distress responses might arise from individual differences in temperament in the form of behavioural inhibition (Kagan et al., 1989). Future research using the multidimensional Empathy Questionnaire should therefore attempt to establish the individual differences that might lead children to display these very different forms of empathic responding.

Secondly, work is needed to establish the social factors which might increase or diminish the likelihood of prosocial action, including specific parental socialisation practices. Parenting factors which have been linked to differences in prosocial

behaviour include inductive versus power-assertive discipline (e.g., Krevans & Gibbs, 1996), which may have their effect by providing models for the forms of behaviour that are acceptable in goal achievement (Hastings, Utendale, & Sullivan, 2007). Moreover, warm and sensitive parenting practices support the development of secure attachments, which have also been linked to prosocial behaviour (Thompson & Gullone, 2008); Hastings et al. (2007) argue that this link might be due to the increased likelihood of acting on others' behalf that accompanies secure internal working models, or the resulting achievement of emotion regulation that may lessen personal distress and increase the focus on the other. As with personal factors, while some parenting practices serve to promote prosocial responses, others might be expected to promote the pairing of shyness and personal distress seen in the present study. Research conducted with preschoolers suggests that those who are socially withdrawn are more likely to have parents who are behaviourally or psychologically controlling (Mills & Rubin, 1998). Our results suggest that parenting interventions which aim to promote children's socio-emotional well-being need to focus not simply on the practices that might reduce personal distress or increase emotion understanding, but crucially on the kind of warm parenting that is likely to encourage prosocial responding.

Finally, future research should examine the contextual conditions that might affect the move from prosocial motivation to prosocial behaviour. These are likely to include the cognitive weighing-up of the personal costs versus benefits of a helping response in the decision whether to avoid or enact prosocial behaviours (Eisenberg & Strayer, 1987). Moreover, there is scope for using the multidimensional Empathy Questionnaire to investigate Eisenberg et al.'s (1990) distinction between compliant (arising from self-focussed) and altruistic (from other-focussed) prosocial behaviours.

Further work is also needed to examine the temporal sequence of children's empathic responses and socio-emotional functioning. While our analyses were based on *a priori* hypotheses regarding the predictive links between empathy and children's peer reputations, self-perceptions, and loneliness, we acknowledge the possibility that causal relationships may also lie in the opposite direction: children who have more friendships and more positive self-concepts might as a result be more likely to develop advanced empathic responses. Finally, while our study included peer- and self-reports on children's socio-emotional functioning, we also acknowledge that our results would be strengthened by the incorporation of multiple informants (peers, parents, teachers) on children's empathic responding.

Conclusions

Notwithstanding the limitations outlined above, our study makes a unique contribution to the field of empathy research. Our translation of the Empathy Questionnaire into English has shown that this new measure can successfully identify children's empathic responses across four related but distinct dimensions. This multidimensional conceptualisation was further supported by the differentiated patterns of relationships between the four aspects of empathy and children's socio-emotional functioning. The emergence of prosocial responses as a key factor in predicting children's peer relations highlights the importance of this step in the move from cognitive and affective responding towards prosocial behaviour. With further work, we should come to understand how motivations of this type are translated into the kind of prosocial action that often underlies children's success in the social world.

**Chapter 5: Paper 4 – Socio-emotional Outcomes for
Maltreated Children: The Role of Empathy and Social
Understanding**

5.1 Abstract

Maltreated children's socio-emotional well-being is a key priority for practitioners and policy-makers alike; yet not enough is known about the developmental mechanisms that might link children's parenting experiences with their psychosocial adjustment. In a preliminary study, we found that a sample of 7- to 11-year-old maltreated children ($N = 13$) displayed more negative behavioural reputations than a sample of their nonmaltreated classmates matched for age and gender ($N = 65$). A second study comparing maltreated ($N = 20$) and matched nonmaltreated children ($N = 120$) showed a more negative pattern of self-perceptions and peer reputations in the maltreated sample. Measures of empathy, emotion comprehension, and a battery of theory of mind tasks were also administered to test our hypothesised mediational model. Results indicated both direct links from maltreatment status to self-perceptions and peer reputations, as well as indirect links via children's theory of mind skills and their prosocial responses to others' emotional states. The findings highlight the dual importance of parenting history and socio-emotional competence in understanding school-aged children's psychosocial difficulties.

5.2 Introduction

One of the core aims of policymakers and practitioners working in the area of foster care is to support the social and emotional development of children whose early life experiences have been marked by physical abuse or neglect (e.g., DCSF, 2009; Dolan, Smith, Casanueva, & Ringeisen, 2011). There is evidence that maltreated children are at greater risk of a number of socio-emotional problems; for example, previous research shows that they are more likely to experience peer rejection (Kim & Cicchetti, 2010) and lower self-esteem (Burack et al., 2006). Research is emerging which attempts to provide a more detailed profile of the specific behavioural reputations and associated self-perceptions that might follow from experiencing maltreatment (e.g., Anthonsysamy & Zimmer-Gembeck, 2007), but further evidence is needed to confirm how these might be interrelated. Moreover, there is a gap in knowledge about the antecedents of maltreated children's problematic socio-emotional functioning, especially in middle childhood, which is a period in children's development when achieving social acceptance is particularly salient (Parker & Gottman, 1989).

In examining maltreated children's socio-emotional outcomes there are a number of potential avenues for investigation, including social relationships with peers and family, internalising and externalising behaviours, and aspects of the self-concept. We focus here on children's peer reputations and their self-perceptions, for two key reasons. First, by examining these areas we can get a sense of how children's maltreatment experiences might colour their inter- and intra-personal functioning, as well as the interplay between the two. There is evidence from the nonmaltreated population that peer status can impact on children's self-perceptions (Boivin & Bégin, 1989), with even experimentally induced peer rejection leading to a decrease in self-esteem (Nesdale & Pelyhe, 2009); our investigations here should allow us to determine

whether similar links are evident for children from traumatic family backgrounds. Second, there is a solid evidence base that places problematic peer relationships and self-perceptions at the centre of a number of other socio-emotional difficulties; for example, peer rejection in middle childhood has been shown to mediate the link between problem behaviour and adolescent friendlessness, loneliness, and depression (Pedersen, Vitaro, Barker, & Borge, 2007), and in younger children it explains the links between anxiety, self-regulation, and solitary play (Spinrad et al., 2004). Similarly, our focus on the self reflects the fact that self-esteem has been shown to mediate relationships between anxious attachment and adolescents' internalising symptoms (Lee & Hankin, 2009).

There is also a need to highlight the potential for subtle differences in individuals' strengths and difficulties that might be masked by overarching terms such as 'peer relations' and 'self-perceptions'. It is necessary, for example, to differentiate between the specific positive and negative behavioural reputations that children can hold in the peer group, and how these relate to peer relationships. As Howe (2010) points out, a typically 'negative' behaviour such as aggression is not always linked to peer rejection; aggressive children can be popular too. Moreover, peer rejection might be the result of a number of different behaviours, which includes aggression but can also include withdrawal or unkindness. Research into behavioural outcomes for maltreated children has typically tended towards a more singular focus, measuring the presence of 'problem' factors including externalising (aggression; e.g., Dodge, Bates, & Pettit, 1990) and/or internalising behaviours (anxiety/depression; e.g., Kaplow & Widom, 2007), though research is now emerging which also assesses the absence of more 'positive' social factors such as cooperative and prosocial behaviour (e.g., Alink, Cicchetti, Kim, & Rogosch, 2012; Anthonysamy & Zimmer-Gembeck, 2007).

Individual differences in children's self-perceptions may similarly be disentangled; Harter (1982) outlined a number of distinct domains in which children can have differing self-concepts, such as social acceptance, behavioural competence, and physical appearance. Self-worth can be argued to represent a measure of the discrepancy between children's actual and ideal levels of competence in the domains which hold the greatest salience (Harter, 1986). Viewed from this perspective, differences in children's peer acceptance and rejection might be expected to relate to their self-perceived social acceptance; similarly, reputations for problematic behaviour might relate to self-perceived behavioural competence. To date, there is little research on these differentiated profiles of self-perceptions in maltreated children: a study by Burack et al. (2006) provides a recent exception, but in general the field has tended towards more global measures of self-esteem (e.g., Kim & Cicchetti, 2004).

As well as examining differentiated patterns of peer reputations and self-perceptions in maltreated children, research is needed to investigate potential mechanisms that might explain why they develop such positive or negative socio-emotional profiles. Of particular interest is the small but growing body of evidence linking parental maltreatment to children's maladaptive processing of social encounters. Deficits in 'social understanding' (the ability to understand other people's feelings, beliefs and desires and their role in determining behaviour; Carpendale & Lewis, 2006) have been observed in maltreated children (see meta-analysis and systematic review in Paper 1). By primary school age, maltreated children show distinct patterns of emotion recognition (Fishbein et al., 2009), and perform worse on understanding the causes and consequences of emotions (Edwards, Shipman, & Brown, 2005), and false belief understanding (Cicchetti, Rogosch, Maughan, Toth, & Bruce, 2003). Furthermore, differences have been observed in empathy (responses to another person's affective

state, specifically those in which the recognition of the other's state produces a similar emotion in the observer; Eisenberg & Miller, 1987*b*), with young maltreated children observed to show personal distress rather than empathic concern in response to playmates' displays of distress (Main & George, 1985).

Research with nonmaltreated samples indicates that maladaptive processing of social interactions can in turn affect children's socio-emotional well-being. Differences in social understanding and empathy can predict the kind of positive or negative social behaviours that mean the difference between peer acceptance and peer rejection (e.g., Banerjee, Watling, & Caputi, 2011; Eisenberg & Miller, 1987*a*). These findings were supported by a recent interview study we conducted with foster carers (Luke & Banerjee, 2012 – see Paper 2). In discussing their everyday experiences of living with maltreated children, carers commonly identified problematic social understanding and empathic responses as contributing to children's difficulties with peer relationships and self-perceptions. Notwithstanding the small body of work on this topic, the conclusion that social understanding, empathy, and peer reputations are related is as yet a tentative one, and Miller (2012) cautions that further exploration is particularly warranted into the link between higher-order reasoning and social success.

The present study represents an integration of these previously separate strands of research. We propose a mediational model whereby maladaptive patterns of social understanding and empathic responding mediate the links between maltreatment and children's problematic peer reputations and self-perceptions. Moreover, we assert that for any investigation of these variables to be of use to practitioners working with maltreated children, it must by necessity adopt a multidimensional conceptualisation of social understanding, empathy, peer reputations, and self-perceptions. Research has not yet fully explored these variables; for instance, there is only limited research on

maltreated children's empathic responses, and none on more advanced forms of social understanding such as second-order false beliefs.

Maltreatment, Social Understanding, and Empathy: A Conceptual Rationale

Why should we expect maltreated children to differ in their patterns of social understanding and empathic responding? We adopt the Vygotskian view that children construct their understanding of the world on the basis of tools acquired in the process of interpersonal exchanges. These 'tools for social success' include social understanding and empathy, and develop over time in the context of social interactions, beginning with early parent-child communications (Carpendale & Lewis, 2004). In 'normal' development these interactions take place with nurturing adults (Cicchetti & Lynch, 1995); in contrast, maltreating parents provide an atypical environment which can impair the development of social understanding and empathy. This environment often involves the kind of inconsistent parenting that can make it difficult for children to understand and predict their parents' behaviour (Cicchetti et al., 2003); for example, inconsistent emotional signals are common in abusive parents (Pollak & Sinha, 2002), making it difficult for the child to develop the mental representations of cause-and-effect that are central to emotion understanding.

Problematic parenting practices may themselves be due to poorer levels of other-awareness in the maltreating family. Wiehe (2003) found that abusive parents were less empathic and more narcissistic than a comparison sample of foster carers; both are characteristics which might be expected to affect key socialisation practices. One such practice, identified by Dunn (1988), is the way in which parents respond to parent-child and sibling-child conflicts. Typically, parents encourage their young children to consider the consequences of their actions for other people, and this raises an awareness of others' mental and emotional states. Dunn argued that this type of learning is likely

to be particularly effective when the dispute involves something of personal import to the child. Another key parenting practice implicated in the development of social understanding and empathy and termed by Meins and colleagues (e.g., 2002, 2003) as maternal ‘mind-mindedness’ – involving appropriate mind-related comments directed to infants – can predict children’s later theory of mind and stream of consciousness understanding. In addition, the more general use of internal state language (ISL) in the family setting has been shown by Dunn, Brown, and Beardsall (1991) to be a key predictor of children’s affective perspective-taking. Yet abusive and neglectful families are less likely to provide an environment in which mental states are discussed, with maltreating mothers shown to use less ISL than their peers (Edwards et al., 2005). In addition, abusive mothers are less likely than nonmaltreating mothers to provide validation for children’s discussion of their own negative emotions in the form of acceptance and suggestions for coping strategies (Shipman et al., 2007).

Placing these socialisation experiences in a theoretical context, Crick and Dodge’s (1994) model of social information-processing provides a useful formulation of the potential stages at which children’s maltreatment histories might interfere with their processing of social information. Central to the model is a stored ‘database’ of memories and social knowledge, which influences a series of ‘mental steps’ that occur when children are presented with information in a social situation. These steps include the perception of social stimuli in light of previous experience, as well as the selection and evaluation of behavioural responses. From this perspective, inconsistent and frightening parenting experiences can bias children towards maladaptive processing patterns. Indeed, children who experience harsh parental discipline have been shown to pay less attention to social cues and be biased towards selecting an aggressive response (Weiss, Dodge, Bates, & Pettit, 1992). Negative social feedback acquired as a

consequence of selecting aggressive responses may result in maltreated children's distorted processing patterns becoming more rigid, a pattern amplified by the lack of alternative positive role models in the maltreating family's reduced social circle (Sidebotham, Heron, & Golding, 2002).

These parental influences on social cognitive processing are also likely to colour children's empathic responses to others' affective states. Zahn-Waxler and Radke-Yarrow (1990) describe the family environment as a framework for the child's earliest experiences of distress and responses to distress in self and others. Within that environment, hostile or indifferent parents are unable to provide the nurturing experiences or the modelling of adaptive responses that children require for normative empathy development. Empathy has consistently been linked to security of attachment (e.g., Panfile & Laible, 2012), but the lack of nurturance provided by abusive and neglectful parents means that up to 80% of maltreated children are classified as Type D 'insecure/disorganised' (Howe et al., 1999). Maltreating parents are also more likely to be deficient in empathy (Wiehe, 2003), making modelling of empathic responses more difficult. Parents may be unable to model empathic responses for one of two reasons outlined by DePaul and Guibert (2008): they may be less likely to experience an empathic reaction in response to their children's signals of need, or they may be experiencing 'empathy avoidance', a cognitive mechanism which allows individuals to avoid the child in need when they perceive that helping behaviour will be costly to the self.

The atypical parenting environment outlined here provides a solid theoretical and empirical basis for our prediction that maltreated children will show deficits in social understanding and empathy. Further, work conducted with nonmaltreated children leads us to expect that these deficits will in turn be related to children's social

reputations and self-perceptions. We now consider the need for multidimensional measures of our key variables.

Multiple Dimensions of Social Understanding and Empathy

To be of use for the design of intervention strategies, assessment of maltreated children's strengths and difficulties in social understanding and empathic responding must be able to capture the subtleties of children's abilities across a range of related but distinct areas. The development of social understanding, for example, can be seen to involve acquiring a set of skills including emotion recognition and understanding, perspective-taking, and first- and second-order false belief understanding. While success in these skills might include some overlapping abilities, we follow Cutting and Dunn's (1999) suggestion that they represent distinct capacities. This distinction between abilities opens up the possibility that children might score highly on an assessment capturing one aspect of social understanding or empathy but struggle with another. Moreover, children do not acquire all of these skills at the same time and there is solid evidence to suggest that children progress from basic to complex modes of understanding; for example, to understand a second-order belief (e.g., 'he thinks that she thinks...') children must first understand a first-order belief ('he thinks that...'), but the additional level of mental representation adds a degree of difficulty which means that most children tend to pass assessments of first-order understanding well before second-order understanding emerges (Miller, 2012). Similarly, there is a developmental progression in emotion knowledge, beginning with the recognition of basic emotions and advancing to the understanding of complex causes of emotions and the ability for one person to have disparate feelings about the same situation (Pons, Lawson, Harris, & de Rosnay, 2003).

There is also a need for a useful conceptualisation of empathy which seeks to incorporate previously disparate definitions which focus on emotion contagion or distress (e.g., Lennon & Eisenberg, 1987), emotion understanding (e.g., Borke, 1971), and altruistic or prosocial responding (e.g., Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983). As with social understanding, empathic responses develop with the child's growing cognitive capability, from the early emotion contagion seen when babies cry in response to others' distress, through self-focussed personal distress responses, to become more other-focussed (Hoffman, 1984), with increasing evidence of prosocial responses as children grow up (Zahn-Waxler & Radke-Yarrow, 1990). An effective measurement of children's empathic responding would assess strengths and weaknesses in all of these aspects of empathy. We have recently tested the use of such a questionnaire with a general sample of primary aged children (see Paper 3), and found it capable of detecting meaningful individual differences in children's empathy across the four factors of emotion contagion, personal distress, emotion understanding, and prosocial responding.

The Present Research

The present research tests our proposed mediational model, whereby links between children's maltreatment experiences and their problematic peer reputations and self-perceptions are mediated by deficits in social understanding and empathy. In keeping with our multidimensional approach, we have chosen measures for our key variables which tap into a number of distinct but related domains in order to profile maltreated children's strengths and difficulties in specific areas. We will first describe introductory work conducted to identify links between children's peer reputations and self-perceptions and parental maltreatment. We then briefly discuss preliminary qualitative work conducted to evaluate the viability of our approach; in undertaking this

work we were keen to establish whether it was possible for a child to show strengths in one area (e.g., emotion recognition) while still showing subtle biases in another (e.g., failure to grasp the impact of their behaviour on others' responses to them). Finally, we move on to outline the main study, which tests our mediational model. For this we selected measures which cover a full range of abilities within the umbrella of social understanding, from Level 1 perspective-taking through to the understanding of second-order false belief and double-bluff (Pons & Harris, 2002), and in the realm of emotion comprehension from recognition of basic emotions to judgements of morality (Pons & Harris, 2000). Our selected measure of empathy also addresses a broad definition of the concept, with subscales tapping into emotion contagion, personal distress, emotion understanding, and prosocial responding (see Paper 3).

Our study incorporates a sample of children aged 7 to 11. The decision to focus on middle childhood was a deliberate one; not only does peer group acceptance achieve greater salience during this period (Parker & Gottman, 1989), but there have been calls for studies that operate beyond the preschool years in order to capture the subtle differences in children's social understanding which emerge as a result of individuals' social and cognitive development and increased social experiences (Miller, 2012).

Our work tests three hypotheses, which form the basis of our mediational model. First, we expect to find that maltreated children will have more negative and less positive peer relationships in the form of behavioural reputations and levels of peer acceptance and rejection, and more negative self-perceptions. Second, we hypothesise that our maltreated group will achieve lower scores than their nonmaltreated peers in tests of social understanding and empathy. Given findings from a recent systematic review and meta-analysis (see Paper 1), we also expect that these deficits will be more pronounced for more developmentally 'advanced' constituents of social understanding

and empathy, such as second-order false belief understanding and prosocial responses. Finally, we expect to find that children's scores in assessments of social understanding and empathy will mediate the relationship between maltreatment status and the socio-emotional outcomes of peer relationships and self-perceptions.

5.3 Study 1

This preliminary study served two purposes. First, there was a need for us to evaluate our chosen multidimensional measures to ensure that they would detect individual differences in children's behavioural reputations with peers, peer acceptance and rejection, and self-perceptions. Second, the study permitted us to test our basic expectation that maltreated children in our local population would display poorer socio-emotional well-being.

5.3.1 Method

Participants

Schools were recruited for the study on the basis of information about the distribution of maltreated children in foster care at local primary schools, provided by the local Fostering and Adoption team. Head teachers provided consent for the research to be conducted in their schools, and all parents and carers of children in targeted classes received information letters about the study which gave them the opportunity to withdraw their child from the study. In addition, all children themselves were given the opportunity to withdraw at any point during the data collection.

Children were drawn from six urban primary schools situated in mainly working-class communities of primarily white ethnicity. The sample consisted of 78

children, ranging in age from 7 to 11 years ($M = 9.15$, $SD = 1.36$; 24 girls). Twelve children placed in foster care due to physical abuse or neglect (3 girls and 9 boys), and one girl listed on the Child Protection Register, were identified by the Local Authority; this constituted the maltreated sample. A matched sample of their classmates was chosen such that there were 5 nonmaltreated children for every maltreated child, matched by age and gender. All data were collected during the course of one school year.

Ethical approval for this study was granted by Research Governance Committees at the University of Sussex and the Brighton and Hove Local Authority. We used an anonymised procedure in which all children were identified using code numbers instead of names. The researchers were unaware of which child in the class was in foster care, ensuring that no child was made to feel singled out by the procedure.

Materials

Peer reputations. To assess peer acceptance, peer rejection, and behavioural reputations within the peer group, all participating children and their classmates (a further 231 children) completed an online sociometric survey (Banerjee, 2010; adapted from descriptors given in Coie & Dodge, 1988 – see Appendix C). For this measure, children used numerical codes to nominate up to three classmates who best fit a range of descriptors; the number of nominations each child receives from their classmates was counted for each descriptor and then standardised as z -scores within classroom. Scores above or below zero therefore indicate that the child received either more or less than the average number of votes in the class for the given descriptor. In line with Coie and Dodge's longstanding work, we analysed each behavioural descriptor separately. Our analyses here focus firstly on two positive aspects of peer reputations: nominations for those 'you *most like* to spend time with' (i.e., peer acceptance) and those 'who are *kind*

and cooperative. They help other people, share, and take turns.’ We also focus on four negative aspects of reputations: nominations for those ‘you *least like* to spend time with’ (i.e., peer rejection), as well as those ‘who are *disruptive*. They are not very good at being in a group and they don’t listen to other people’, those ‘who *start fights*. They say mean things to other people, or push or hit them’, and those ‘who are *shy*. These pupils are really quiet and always seem to be on their own’.

Self-perceptions. To assess their self-perceptions, children completed a shortened version of Harter’s (1985) Self-Perception Profile for children (see Appendix D). Questions cover six areas of children’s self-perceptions, with three items for each. The measure presents descriptions of two different types of children and asks participants to say which one sounds more like them. As our conceptual focus was on socio-emotional outcomes, pupils received an average score for the perceived social acceptance (e.g., ‘Some children find it hard to make friends BUT other children find it’s quite easy to make friends’; subscale $\alpha = .66$), behavioural competence (e.g., ‘Some children usually get in trouble because of things they do BUT other children usually don’t do things that get them in trouble’; subscale $\alpha = .75$), and global self-worth (e.g., ‘Some children like the kind of person they are BUT other children often wish they were someone else’; subscale $\alpha = .62$) subscales. Having chosen which option is more like them, children then indicate whether it sounds ‘really like me’ or ‘quite like me’. Responses are scored on a scale from 1 to 4, with higher scores indicating more positive self-perceptions.

Procedure

Data for this study were collected by the first author, usually assisted by one or two undergraduate students. Where children had designated learning support assistants,

they were also present. Prior to beginning the surveys, pupils were assured that there were no right or wrong answers and were encouraged to answer honestly, with the understanding that they could skip over any questions they did not want to answer. Children could ask for assistance if required. Following completion of the surveys, there was an opportunity for pupils to ask any questions they might have. Pupils were then reminded of the normal procedures for seeking help if they are feeling bad or upset, and relevant staff who regularly worked with the pupils were made aware that the pupils had completed these surveys, to ensure that support was available for any vulnerable pupils.

The sociometric survey was presented on computers in the school's ICT room. Instructions were given verbally by a researcher and appeared onscreen. Children were provided with a printed list of names of their classmates; each name had a two-digit number written next to it. These code numbers were entered on all online and paper surveys in place of names. Each question in the survey then appeared on a separate screen, with boxes into which children could type the numbers in order to make their peer nominations. The Self-Perception Profile was completed by the children in groups of six to eight, in quiet rooms at their schools. All questions were read aloud by the researcher to ensure full understanding of the items.

5.3.2 Results

First, *t*-tests were conducted to assess differences between maltreated and nonmaltreated groups on measures of peer relationships and self-perceptions. Next, relationships between all outcome variables were established by means of Pearson's correlations.

Differences between Maltreated and Nonmaltreated Children

Table 5.1 shows the results of *t*-tests comparing maltreated and nonmaltreated children on all outcome variables. The mean scores show that in terms of peer reputations, maltreated children received fewer nominations for being cooperative than nonmaltreated children, $t(76) = 3.13, p = .002, d = .95$. They also received more nominations for being disruptive, $t(76) = 1.92, p = .030, d = .58$. Contrary to our predictions, there was no difference between maltreated and nonmaltreated children on any other behavioural reputations; neither was maltreatment status related to peer acceptance or rejection, or to any of the self-perception subscales. We calculated the power to detect effect sizes using Cohen's (1988) criteria for small ($d = .20$), medium ($d = .50$) and large effect sizes ($d = .80$), given our sample size and with alpha set at .05. The power to detect a small effect size was determined to be 0.16, for a medium effect size power was 0.49, and for a large effect size it was 0.83, critical $t(76) = 1.67$.

Relations between Socio-emotional Outcomes in Maltreated and Nonmaltreated Children

Table 5.2 displays the zero-order correlations between all our outcome variables. We were particularly interested in which variables correlated with peer nominations for cooperative and disruptive behaviour, given that these were the key areas of difference between our maltreated and nonmaltreated groups. In the sample as a whole, children's behavioural reputations, peer acceptance and rejection, and self-perceptions were clearly linked. Children who were seen as more cooperative received more 'most liked' nominations and fewer 'least liked' nominations. In contrast, those with reputations for disruptive behaviour were chosen more often as someone their classmates did not enjoy spending time with. Peer acceptance and rejection were also linked to self-perceptions: there was a trend for more well-liked children to view themselves as more socially

Table 5.1

Comparisons between Maltreated and Nonmaltreated Groups on Outcome Variables in Study 1

Measure	Number of Items	<i>M</i> and <i>SD</i>	
		Nonmaltreated	Maltreated
Peer Reputations			
Most Liked (z-score)	1	0.23 (1.03)	-0.14 (0.85)
Cooperative (z-score)	1	0.07 (0.92)	-0.44 (0.41)**
Least Liked (z-score)	1	-0.01 (1.03)	0.45 (1.00)
Disruptive (z-score)	1	0.05 (1.08)	0.67 (1.01)*
Starts Fights (z-score)	1	0.16 (1.16)	0.36 (1.26)
Shy (z-score)	1	-0.05 (0.95)	-0.22 (0.84)
Self-perceptions			
Social Acceptance (Range 1-4)	3	2.95 (0.76)	3.28 (0.96)
Behaviour (Range 1-4)	3	2.97 (0.82)	3.03 (0.94)
Global Self-worth (Range 1-4)	3	3.15 (0.76)	3.18 (0.69)

* $p \leq .05$ ** $p \leq .01$ (1-tailed)

Table 5.2

Correlations between Variables in Study 1

	1.	2.	3.	4.	5.	6.	7.	8.
1. Most Liked								
2. Cooperative	.24 [*]							
3. Least Liked	-.28 [*]	-.35 ^{**}						
4. Disruptive	-.23 [*]	-.46 ^{***}	.63 ^{***}					
5. Starts Fights	-.10	-.33 ^{**}	.51 ^{***}	.85 ^{***}				
6. Shy	-.27 [*]	.08	.21 [†]	-.09	-.18			
7. Social Acceptance	.20 [†]	-.10	-.30 ^{**}	-.16	-.19 [†]	-.16		
8. Behavioural Competence	-.11	.30 ^{**}	-.18	-.46 ^{***}	-.54 ^{***}	.15	.23 [*]	
9. Global Self-worth	.10	.20 [†]	-.02	-.07	-.12	-.08	.23 [*]	.33 ^{**}

[†] $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

accepted, while those who were least liked felt less accepted. The results also showed direct links between behavioural reputations and children's self-perceptions: children who were seen as more cooperative had a more positive sense of behavioural competence and higher global self-worth, while lower behavioural competence was linked to a reputation for disruptive behaviour.

We calculated the power to detect effect sizes using Cohen's (1988) criteria for small ($r = .10$), medium ($r = .30$) and large effect sizes ($r = .50$), given our sample size and with alpha set at .05. The power to detect a small effect size was determined to be 0.22, for a medium effect size power was 0.85, and for a large effect size it was 1.00, critical $r = 0.19$.

5.3.3 Discussion

Our preliminary study established key differences in the behavioural reputations of maltreated children and their classmates. As predicted, maltreated children's behaviour was seen as both less positive and more negative than that of their nonmaltreated peers. The expected links with peer acceptance and rejection and self-perceptions were not shown; however, our correlational analyses showed that these outcomes were linked to behavioural reputations in the sample as a whole. This led us to expect that by using the measures with a larger sample of maltreated children we might detect such relationships. Moreover, subsequent work could address the possible mechanisms that might explain the links between maltreatment and children's socio-emotional outcomes.

5.4 Study 2

Having tested our research design and multidimensional measures in our preliminary work, Study 2 was designed to evaluate potential mediational pathways that might explain why maltreated children are at risk of more negative peer reputations and self-perceptions. Specifically, the study included measures to assess the role of children's social understanding and empathy. In addition, given that previous studies with this population have shown that children's language ability can account for some of the variance in social understanding task performance (e.g., Bowen & Nowicki, 2007) we introduced a measure of children's receptive vocabulary that would allow us to control for this.

5.4.1 Preliminary Qualitative Work

In our previous interview study (Luke & Banerjee, 2012 – see Paper 2) we found that carers readily identified difficulties with social understanding and empathy in relation to maltreated children's problematic peer relationships and self-perceptions. In preparation for Study 2, we wanted to examine this in more depth to ascertain the likelihood that in using multidimensional measures, we might detect subtle differences *within* a sample of maltreated children in abilities across the various dimensions of social understanding and empathy; in other words, was it likely that a maltreated child could perform well at emotion understanding but not at understanding the consequences of their own behaviour? To examine this, we took an opportunity offered to us by the Local Authority to conduct preliminary qualitative work with a 9-year-old maltreated boy in foster care, who with the consent of his social worker and foster carer was willing to help out in our research project. A female researcher visited the boy at home with a selection of 14 A4-sized photo-cards from the Socio-Emotional Aspects of Learning package for primary schools (DfES, 2005). The photo-cards show a range of

children's social situations with peers, such as a group of friends playing, an injured child being helped by others, and a single child being laughed at by a group of children. We showed the photo-cards to the boy in pairs, with each pair depicting related situations (e.g., comforting another child at school and at home, or sharing toys vs. keeping all the toys). In the course of showing the photo-cards, we used a semi-structured interview format to assess the child's understanding of others' thoughts and emotions, his ability to generate prosocial responses, and his social experiences in terms of establishing and maintaining friendships (see Appendix F for the full interview schedule).

A pattern of specific strengths and weaknesses emerged during the course of the interview; some brief illustrative quotes are presented here. Our interviewee showed little difficulty in recognising the affective states represented in the photo-cards; he readily identified the depicted emotions of happiness, sadness, anger, and boredom. In addition, he was able to suggest plausible explanations for why the children in the photographs might be feeling a certain way, based on contextual cues. There was also some evidence that our interviewee could imagine ways of responding prosocially, but this seemed to be tied to his own recent family bereavement. He explained a photo-card in which one boy is comforting another as being likely to reflect a similar situation. When asked what kind of things the comforter might be saying, he replied:

He's saying, 'It's okay, some of my family have died too... You can tell me and ask me anything that you want, all you have to do is ask.'

This other-focussed response did not appear to generalise, however; shortly afterwards our interviewee told us about a boy in his class:

Boy: On Monday this boy tripped over and broke his collar bone.

Interviewer: So how did you feel when you saw him hurt?

Boy: [Pause] Just missed him quite a lot, because he's my new Maths partner now. The day he broke it was the day he turned my Maths partner.

Finally, our interviewee's responses to questions about friendships indicated that while he found it relatively easy to make friends, he had difficulty maintaining relationships. He was readily able to describe instances where groups of children had stopped being his friend, though he showed a lack of understanding as to why this had happened, despite displaying at other points in the interview a tendency towards aggressive reactions:

Interviewer: What else do you think you could do if you were a bit annoyed with someone?

Boy: I would... maybe I was playing, or actually beating them up.

[Laughs]

Interviewer: You would beat them up? Would that make things better?

Boy: Yeah!

In short, our interviewee displayed responses to socio-emotional stimuli that were in keeping with our hypothesised mediational model, describing a pattern of problematic peer relationships and displaying some maladaptive responses in terms of social understanding and empathy. Crucially, while he showed the ability to recognise particular emotions and the kind of situations that might give rise to them, he had difficulties in other areas of social understanding such as reasoning about why other children might not want to be his friend. The qualitative information gleaned from this preliminary work, alongside the findings from previous interviews with foster carers (Luke & Banerjee, 2012 – see Paper 2) and meta-analytic work (Paper 1) and our theoretical framework, therefore provided a basis for the investigation of a mediational

model incorporating multidimensional measures in a sample of maltreated children and their classmates.

5.4.2 Method

Participants

Schools were recruited for the study using the same method as in Study 1. Children were drawn from eight urban primary schools situated in mainly working-class communities of primarily white ethnicity. The sample consisted of 140 children, ranging in age from 7 to 11 years ($M = 8.85$, $SD = 1.02$; 56 girls). Twenty children placed in foster care due to physical abuse or neglect (8 girls and 12 boys) were identified by the Local Authority; this constituted the maltreated sample.³ A matched sample of their classmates was chosen such that there were 6 nonmaltreated children for every maltreated child, matched by age and gender. Owing to changes in schools or lack of availability on data collection dates, 38 of the children (including four maltreated children) were missing data on one or more of the measures; their partial data were retained for analysis. Data collection took place across a number of sessions. Wherever possible, all sessions were completed during the course of one school year (M length of time from first to last data collection = 152 days; $SD = 111.66$). In two schools, however, data collection was begun towards the end of one school year and completed in the subsequent year.

Materials

Measures of peer reputations and self-perceptions were administered as in Study

1. The sociometric measure was again administered to participating children and all of

³ A small number of children in this study had also been included in the sample for Study 1.

their classmates (a further 368 children). Reliability for this sample was again calculated for the perceived social acceptance ($\alpha = .61$), behavioural competence ($\alpha = .73$), and global self-worth ($\alpha = .60$) subscales of the Self-Perception Profile.

Empathy. To assess empathy, pupils completed the Empathy Questionnaire (Pouw, Rieffe, Oosterveld, & Stockmann, 2012 – see Appendix B). Items on this measure are answered on a three-point scale ranging from ‘not true’ to ‘often true’, and were designed to tap into four distinct aspects of empathy: emotion contagion ($\alpha = .74$), personal distress ($\alpha = .73$), emotion understanding ($\alpha = .59$), and empathic prosocial responses ($\alpha = .68$). The four-factor structure of the Empathy Questionnaire has previously been confirmed in a sample of British primary school children (see Paper 3). Responses on the questionnaire were scored between 1 and 3, with higher mean scores on the subscales indicating higher levels of empathic response.

Social understanding. Children completed two measures of social understanding. The first was the Theory of Mind Test (TMT; Pons & Harris, 2002 – see Appendix G). Ten components cover Level 1 perspective-taking, Level 2 perspective-taking, intentionality, ignorance, first-order false belief, appearance and reality, lies, jokes, second-order false belief, and double-bluff; tasks are presented in the form of two-dimensional cartoon pictures and stories in a booklet. Children are asked questions about the pictures, for instance to assess story characters’ beliefs, and offered a choice of two answers for each example; responses are given verbally. To avoid the effects of fatigue, only two of a possible three examples were used for each component, with the exception of the first-order false belief component, in which the three items were felt to be insufficiently similar and so were all used. Children receive a score of 1 if they answer all examples within a component correctly, and 0 if all answers are

incorrect; comparisons can then be made on individual correct components as well as the total number of components correctly answered.

The second measure of social cognition was the Test of Emotion Comprehension (TEC; Pons & Harris, 2000 – see Appendix H). The TEC assesses children's understanding of emotions and is scored in the same way as the TMT, with the total number of correct components in this case covering nine areas of emotion comprehension: recognition, external cause, desire, belief, reminder, regulation, hiding, mixed, and morality, with tasks again presented in a booklet of cartoons. Children must first identify one of four emotions (happy, sad, angry, and scared) and a neutral expression from a choice of four cartoon faces. Subsequently they are asked questions about cartoon stories of emotional situations, and asked to indicate their response by pointing at one of four alternatives from a number of different combinations of the four emotions and the neutral face.

Language. Finally, children's receptive vocabulary was assessed using the British Picture Vocabulary Scale - 2nd Edition (BPVS-II; Dunn, Dunn, Whetton, & Burley, 1997). Children were shown four illustrations and asked to choose the one that best illustrated the meaning of a word read out by the researcher. A higher raw score on this measure indicates more advanced receptive vocabulary.

Procedure

Data collection procedures for the sociometric survey and the Self-Perception Profile were the same as in Study 1. The Empathy Questionnaire was administered at the same time as the Self-Perception Profile, with children completing both of these in small groups. For the measures of social understanding and receptive vocabulary (TMT, TEC, and BPVS), children were taken individually from the classroom to work in a

quiet space in the school. To allow for any difficulties in sustaining attention across the tasks, children were seen twice: once to complete the TMT and BPVS, and again to complete the TEC. Thus, four sessions were completed for each child: the sociometric survey in one whole-class session, the self-report questionnaires in one small-group session, and the social understanding and receptive vocabulary measures in two individual sessions.

5.4.3 Results

First, *t*-tests were conducted to assess differences between maltreated and nonmaltreated groups on measures of peer reputations, self-perceptions, empathy, theory of mind, emotion comprehension, and receptive language. Next, relationships between all proposed mediating and outcome variables were established by means of Pearson's correlations. Finally, structural equation modelling was used to determine the key mediational pathways between maltreatment status and children's socio-emotional outcomes.

Differences between Maltreated and Nonmaltreated Children

Table 5.3 shows the results of *t*-tests comparing maltreated and nonmaltreated children on all proposed mediating and outcome variables. The mean scores show that in terms of empathy, maltreated children differed from their nonmaltreated peers only in prosocial responses, for which maltreated children scored lower than their classmates, $t(134) = 1.69, p = .047, d = .42$. On measures of social understanding, maltreated children scored fewer correct components in the Theory of Mind Test, $t(107) = 2.04, p = .022, d = .54$. Analysis of the individual components revealed that maltreated children were poorer at recognising the difference between appearance and reality, $\chi^2(1)$

= 16.52, $p < .001$. Whereas all of the nonmaltreated children got both examples of this task correct, only 82.4% of maltreated children did so. The other difference was on the tasks of second-order false belief understanding, $\chi^2(2) = 6.14$, $p = .046$. Only 17.6% of maltreated participants managed to get both examples of this task right, compared to 45.1% of their classmates. There was no difference between groups on the Test of Emotion Comprehension; there was also no difference on the BPVS as a measure of children's receptive language.

Maltreated children's behavioural reputations were both less positive and more negative than their peers': they received fewer nominations for cooperative behaviour, $t(138) = 2.11$, $p = .019$, $d = .51$; and were seen as more disruptive, $t(22.58) = 3.08$, $p = .003$, $d = .74$, and more likely to start fights, $t(21.90) = 2.40$, $p = .013$, $d = .58$. As predicted, with our larger sample size in this study we were also able to detect differences between the groups in peer rejection: maltreated children received more nominations as someone who is least liked, $t(138) = 2.32$, $p = .011$, $d = .56$. Moreover, our larger sample showed differences in self-perceptions: maltreated children had both lower self-perceived behavioural competence, $t(131) = 2.47$, $p = .008$, $d = .61$, and lower global self-worth, $t(133) = 2.62$, $p = .005$, $d = .65$, than their classmates.

We again calculated the power to detect effect sizes using Cohen's (1988) criteria for small ($d = .20$), medium ($d = .50$) and large effect sizes ($d = .80$), given our sample size and with alpha set at .05. The power to detect a small effect size was determined to be 0.21, for a medium effect size power was 0.66, and for a large effect size it was 0.95, critical $t(138) = 1.66$.

Table 5.3

Comparisons between Maltreated and Nonmaltreated Groups on Mediating and Outcome Variables in Study 2

Measure	Number of Items	<i>M</i> and <i>SD</i>	
		Nonmaltreated	Maltreated
Empathy			
Emotion Contagion (Range 1-3)	5	1.94 (0.52)	2.03 (0.41)
Personal Distress (Range 1-3)	4	1.65 (0.49)	1.87 (0.63)
Emotion Understanding (Range 1-3)	3	2.27 (0.50)	2.32 (0.56)
Prosocial Response (Range 1-3)	5	2.60 (0.39)	2.43 (0.45)*
Theory of Mind (Range 0-10)	21	8.17 (1.39)	7.41 (1.58)*
Emotion Comprehension (Range 0-9)	21	7.50 (1.38)	7.06 (2.44)
Receptive Language (Range 0-168)	Min. 12 Max. 168	92.52 (17.20)	85.88 (18.06)
Peer Reputations			
Most Liked (<i>z</i> -score)	1	0.19 (0.99)	-0.10 (0.94)
Cooperative (<i>z</i> -score)	1	0.21 (1.13)	-0.35 (0.76)*
Least Liked (<i>z</i> -score)	1	-0.07 (0.97)	0.48 (1.05)*
Disruptive (<i>z</i> -score)	1	-0.02 (1.01)	0.96 (1.37)**
Starts Fights (<i>z</i> -score)	1	0.01 (1.01)	0.85 (1.51)*
Shy (<i>z</i> -score)	1	-0.15 (0.81)	-0.25 (1.03)
Self-perceptions			
Social Acceptance (Range 1-4)	3	3.13 (0.77)	3.25 (0.78)
Behaviour (Range 1-4)	3	3.11 (0.81)	2.61 (0.89)**
Global Self-worth (Range 1-4)	3	3.33 (0.68)	2.88 (0.80)**

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$ (1-tailed)

Relations between Socio-emotional Outcomes

Table 5.4 shows the zero-order correlations between the measures of social understanding, empathy, and receptive language, and the peer reputation and self-perception variables. In general, the results indicate a relationship between children's self-reported empathy and their peer relationships and self-perceptions. The clearest links were evident for the more 'advanced' empathic factors of emotion understanding and prosocial responses, which had negative relationships with problematic peer reputations, peer rejection, and positive relationships with behavioural and global self-perceptions. Children's Theory of Mind Test performance was also linked to fewer negative behavioural nominations, while emotion comprehension was linked to positive behaviour. As predicted, children's behavioural reputations were also related to their peer acceptance and rejection and self-perceptions. The pattern of correlations was taken into account alongside our *a priori* hypotheses to guide our construction of a structural equation model with the purpose of testing the hypothesised mediational pathways in our model.

We again calculated the power to detect effect sizes using Cohen's (1988) criteria for small ($r = .10$), medium ($r = .30$) and large effect sizes ($r = .50$), given our sample size and with alpha set at .05. The power to detect a small effect size was determined to be 0.32, for a medium effect size power was 0.98, and for a large effect size it was 1.00, critical $r = 0.14$.

Mediational Pathways from Maltreatment Status to Socio-emotional Outcomes

We included in our model only those variables that were shown in the *t*-tests to be associated with maltreatment, so that the Test of Emotion Comprehension, the empathy subscales of emotion contagion, personal distress, and emotion understanding,

as well as peer acceptance, and social self-perceptions, were all excluded from the model. Missing data were handled by data regression imputation using maximum likelihood estimates. In this procedure, data from complete and partial cases of data are entered into a linear regression to predict the missing values for individual cases, using the information that is available for that case in the regression equation. Maximum likelihood estimates have been shown to be more efficient and less biased than alternative missing data methods such as listwise and pairwise deletion and similar response pattern imputation, where data are missing at random (Enders & Bandalos, 2001). Analyses using only complete data showed results virtually identical to those reported here using imputed values.

We began by building a model in which children's maltreatment status, Theory of Mind Test performance, and empathic prosocial responses were allowed to predict all behavioural reputations, peer rejection, and behavioural and global self-perceptions; behavioural reputations were also allowed to predict our peer rejection and self-perception outcomes. Given its correlation with our measures of social understanding, children's receptive vocabulary was included as a control variable, as was sex, which has previously been related to differences on the Empathy Questionnaire (see Paper 3); these two variables were allowed to predict all other variables in the model, with the exception of a link between sex and maltreatment (as groups were already matched on sex). We allowed the error terms for cooperative, disruptive, and fighting behavioural reputations to covary, due to the similar nature of the question format. According to Kline (2005), the model fit indices were good, $\chi^2(8) = 9.665$, $p = .289$, comparative fit index (CFI) = .996, root mean square error of approximation (RMSEA) = .039.

Table 5.4
Correlations between Variables in Study 2

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Emotion Contagion															
2. Personal Distress	.62***														
3. Emotion Understanding	.27***	.20*													
4. Prosocial Response	.44***	.29***	.44***												
5. Theory of Mind	-.01	-.10	.06	.08											
6. Emotion Comprehension	.07	-.24*	.05	.18 [†]	.33***										
7. Receptive Language	-.06	-.21*	-.11	-.02	.48***	.45***									
8. Most Liked	-.19*	-.23**	-.08	-.05	.16	.15	.02								
9. Cooperative	.17*	.00	.16 [†]	.32***	.03	.17 [†]	.01	.44***							
10. Least Liked	.04	.08	-.23**	-.26**	-.09	-.18 [†]	-.08	-.30***	-.34***						
11. Disruptive	-.08	-.02	-.17*	-.28***	-.16 [†]	-.09	-.03	-.23**	-.37***	.58***					
12. Starts Fights	-.14	-.08	-.17 [†]	-.26**	-.06	.00	.09	-.15 [†]	-.31***	.44***	.76***				
13. Shy	.12	.10	-.01	.02	-.20*	-.10	-.26**	-.12	.14	-.02	-.18*	-.23**			
14. Social Acceptance	-.09	-.08	.02	.06	.25*	.09	.14	.31***	.14	-.10	-.15 [†]	-.10	-.13		
15. Behavioural Competence	.13	.15 [†]	.29***	.42***	.09	-.04	-.18 [†]	-.04	.36***	-.23**	-.46***	-.50***	-.26*	.01	
16. Global Self-worth	.04	.06	.18*	.25**	.09	-.12	-.02	.11	.20*	-.13	-.24**	-.20*	.09	.34***	.37***

[†] $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

We then trimmed the model by deleting all non-significant paths (except for our control variables of sex and receptive language, whose paths to all other variables in the model were retained regardless of significance level). The resulting model was also a good fit, $\chi^2(26) = 27.978$, $p = .360$, CFI = .995, RMSEA = .023. Our trimmed model is illustrated in Figure 5.1, and its fit was not significantly different to that of our initial model, $\Delta\chi^2(18) = 18.313$, $p > .25$.

The model revealed the key paths along which maltreatment status was linked to children's socio-emotional outcomes. In view of the relatively small sample size and the *a priori* nature of our predictions, we report all findings here with $p \leq .10$. There were a number of mediated pathways between our variables; to get an accurate estimate of these indirect effects we restored the relevant direct paths (despite being non-significant) to the model for these calculations. The first significant mediation illustrated the importance of behavioural reputations for children's peer rejection. Maltreated children were more likely to have a reputation for disruptive behaviour, and in turn, this reputation predicted greater peer rejection (standardised indirect effect = .159, 95% CI [.074, .265], $p = .001$). A second mediated pathway which approached significance showed the key role of a particular type of empathic responding in predicting behavioural reputations: the pathway linked maltreatment status to a peer reputation for being less cooperative, via less empathic prosocial responses (standardised indirect effect = -.027, 95% CI [-.078, -.003], $p = .053$).

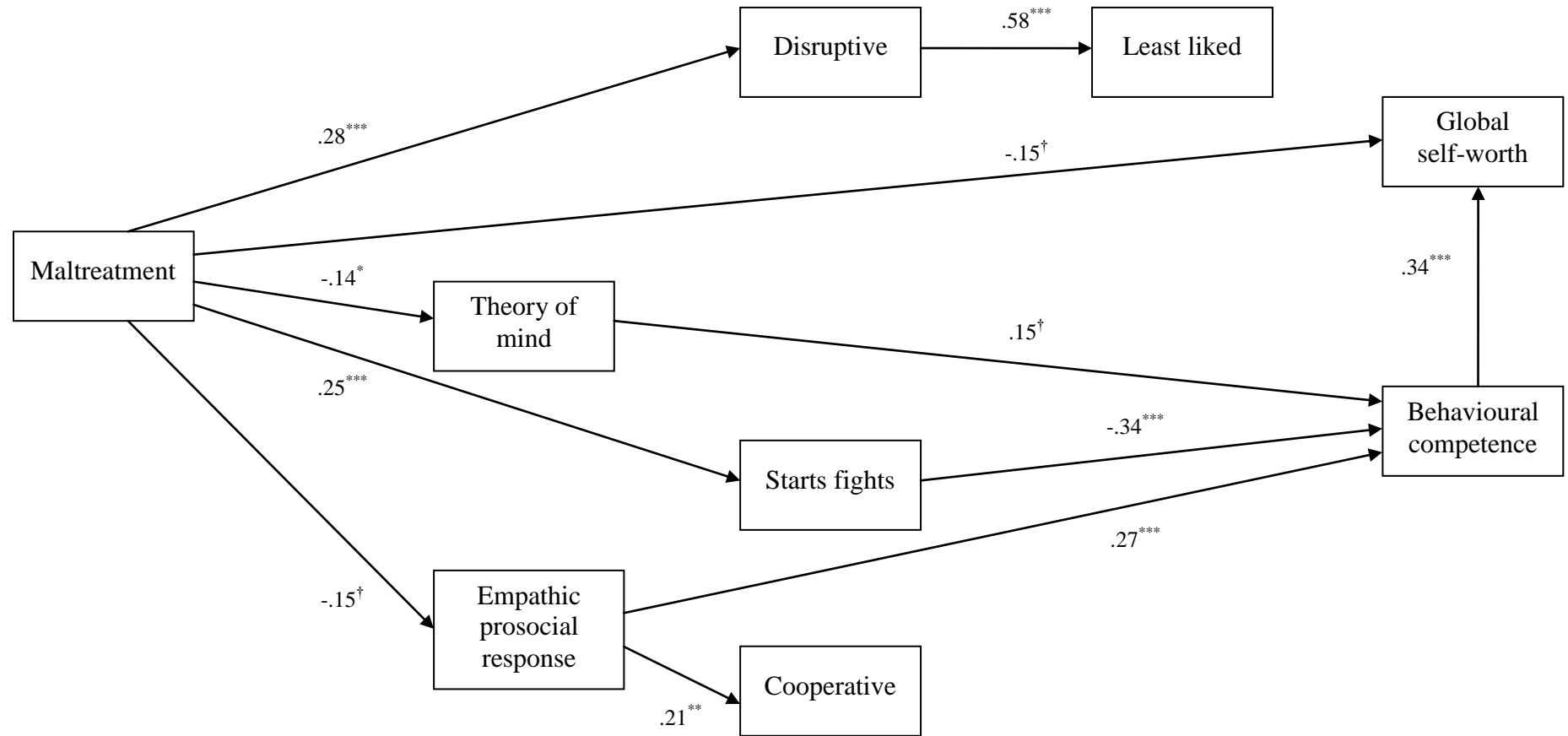


Figure 5.1. Structural equation model for our comparison of maltreated (1) vs. non-maltreated (0) children, $\chi^2(26) = 27.978$, $p = .360$, CFI = .995, RMSEA = .023. Figures given are standardised coefficients. Error terms for disruptive and cooperative behaviour and starting fights were allowed to covary. Sex and receptive language were allowed to predict all variables (maltreatment status already matched for sex).

† $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Neither a disruptive nor cooperative reputation, nor peer rejection itself was related to children's self-perceptions; instead, other pathways through our variables led from maltreatment to children's negative behavioural self-perceptions and lower global self-worth. One pathway from maltreatment status to behavioural self-perceptions was mediated by the reputation for starting fights (standardised indirect effect = $-.085$, 95% CI $[-.166, -.029]$, $p = .008$). In addition, and crucially for our hypothesised model, the data supported the predicted role of social understanding and empathy as mediators in the relationship between maltreatment status and socio-emotional outcomes. First, there was a significant mediated pathway linking maltreatment status to more negative behavioural self-perceptions, via poorer performance on the Theory of Mind Test (standardised indirect effect = $-.022$, 95% CI $[-.076, -.002]$, $p = .050$). There was also a second mediated pathway to negative behavioural self-perceptions, this time via less empathic prosocial responses (standardised indirect effect = $-.040$, 95% CI $[-.107, -.005]$, $p = .048$).

The model also revealed the pathways linking maltreatment to children's more general feelings of self-worth. First, there was a direct path, which approached significance, linking maltreatment status to lower global self-worth, $\beta = -.15$, $p = .055$. We have already seen above how social understanding, empathy, and behavioural reputations mediated the relationship between maltreatment and more negative behavioural self-perceptions; in turn, these self-perceptions predicted lower global self-worth, and again this mediated path was significant (standardised indirect effect = $-.049$, 95% CI $[-.099, -.017]$, $p = .001$).

5.4.4 Discussion

The preliminary work conducted for our second study provided qualitative support for our model, supplying a ‘real-life’ illustration of one child’s struggle with maintaining peer relationships. In addition, the pattern of strengths and difficulties in social reasoning and empathic responding shown by our interviewee supported the need for measures encapsulating the multidimensional nature of social understanding and empathy, as well as peer reputations and self-perceptions.

With our larger sample in Study 2 we showed that children’s maltreatment status was linked to peer rejection; maltreatment status also had links with particular behavioural reputations, namely being seen by other children as less cooperative, more disruptive, and more likely to start fights. We also found the hypothesised link between maltreatment and self-perceptions, specifically in terms of self-perceived behavioural competence and global self-worth. In testing our proposed mediators, our maltreated group also scored lower than their classmates on social understanding (specifically, the Theory of Mind Test) and the most ‘advanced’ form of empathy – prosocial empathic responding. Finally, structural equation modelling showed that as well as direct links from maltreatment to socio-emotional outcomes, there were also mediated pathways via children’s theory of mind scores and prosocial empathic responding.

5.5 General Discussion

Our key aim in this paper was to test a mediational model that could provide some explanation of maltreated children’s documented socio-emotional problems; a secondary aim was to provide a more detailed assessment of this group’s particular strengths and difficulties. The findings we have reported here lend partial support both to the hypothesised mediational links and to the need for a multidimensional approach to assessment. In line with our first hypothesis, Study 1 showed that maltreatment

status was linked to a problematic profile of behavioural reputations. While the expected links with levels of peer rejection and more negative self-perceptions were not shown in our preliminary study, with a larger sample in Study 2 these links were now revealed. In addition, the results from Study 2 confirmed the relationship between maltreatment and behavioural reputations shown in Study 1. In partial support of our second hypothesis, maltreated children underperformed at assessments of theory of mind and prosocial empathic responding, but not at the Test of Emotion Comprehension or any of our other empathy subscales. This pattern of results reflected the differentiated profile of strengths and difficulties from preliminary qualitative work that we conducted in preparation for Study 2. Finally, the structural equation modelling conducted in Study 2 lent partial support to our third hypothesis by showing that Theory of Mind Test scores and prosocial empathic responding acted as mediators in the links between maltreatment and both peer- and self-reports of behaviour.

Our analysis adds to an expanding body of work that highlights the importance of the family context in the development of children's social understanding and empathy. While research provides us with a solid basis for expecting a link between these socio-cognitive abilities and parenting experiences in the typically-developing population (Carpendale & Lewis, 2006; Dunn, 1988; Hughes, 2011*b*), our investigation shows the specific risks that can arise in the context of maltreatment experiences. We were careful to make our comparisons of the maltreatment and control groups after controlling for other factors known to affect social understanding and empathic responding, such as age and receptive language; that effects persisted despite these controls supports the general argument that children's parenting experiences play a key role in the development of children's socio-cognitive abilities.

Examining the pattern of relationships in our structural equation model in more detail, we find much that can illuminate our understanding of maltreated children's socio-emotional functioning, as well as prompting questions for further investigation. Our use of multidimensional assessment tools meant that subtle differences in children's strengths and difficulties were revealed, opening potential avenues for intervention work. First, we found that children who had experienced maltreatment were more likely to have negative behavioural reputations with their peers; specifically, and in line with the results of Alink et al. (2012), they were seen as starting more fights and being more disruptive. That maltreated children's peer reputations should be characterised by a profile of externalising behaviours substantiates Crick and Dodge's (1994) social information-processing model, and corresponds with the tendency towards aggressive and disruptive responses observed in maltreated children by Dodge et al. (1990). Children whose social experiences are marked by physical violence and/or a lack of positive adult role models may have little to draw on in their database of experiences outside of this maladaptive pattern of responding, and the social information-processing model would lead us to expect that negative feedback from their peers would serve only to solidify these response patterns. Interestingly, however, it was a reputation for disruptive – rather than aggressive – behaviour which predicted peer rejection in our maltreated sample. This may be a reflection of the age of our participants; in middle childhood, aggressive children can be seen as 'cool', particularly by peers who are also aggressive (Rodkin, Farmer, Pearl, & Van Acker, 2006). Disruptive behaviour in maltreated children may be functional in the family context. Cerezo and D'Ocon (1995) have shown that maltreating mothers' attention is indiscriminate following children's prosocial behaviour, but when children are disruptive they gain consistent and discriminate attention. Given the link shown here

between disruptive behaviour and peer rejection, extending our work to incorporate younger and older age groups would enable us to discover whether interventions should target the skills incorporated in this behavioural description – ‘being in a group’ and ‘listening to other people’ – in order to improve maltreated children’s chances of social acceptance.

Maltreated children were also less likely to be seen as cooperative than their nonmaltreated peers. The behavioural descriptors provided for this included being kind, sharing, and taking turns – the kind of prosocial acts they are unlikely to have learned in a maltreating context characterised by punitiveness or neglect. Studies indicate that prosocial behaviour is more likely where parenting is warm, while those who practise harsh parenting are more likely to have children who are aggressive (e.g., Laible, Carlo, Torquati, & Ontai, 2004). The behavioural reputations of our maltreated sample would certainly support these links. It may also be the case that maltreated children are less likely to be kind and cooperative because they cannot imagine this type of exchange; Ayoub et al. (2006) have shown that maltreated children find it difficult to generate positive problem solving strategies and are poorer than their peers at describing stories about ‘nice’ social interactions.

Our analyses also revealed the aspects of peer relationships in which our maltreated sample did *not* struggle. In contrast to previous research (e.g., Alink et al., 2012), maltreated children in our study were no more likely to be seen as shy than their nonmaltreated peers. This discrepancy is difficult to explain, though it makes sense that if maltreated children are seen as socially active in a negative way (by starting fights and being disruptive), it is unlikely that they will also be nominated as being socially withdrawn. Indeed, Bolger and Patterson (2001) also showed that the link between maltreatment and peer rejection was not accounted for by children’s social withdrawal.

Maltreated children in our study were also no worse off in terms of peer acceptance; they received a similar amount of nominations as someone others most like to spend their time with as did their classmates. While this certainly represents a degree of positivity in their socio-emotional outcomes, it must be remembered that even though maltreated children might gain some positive response from other children despite their aggressive behaviour, they were more actively rejected by the broader peer group.

In terms of self-perceptions, Study 2 showed that maltreated children had a poorer sense of global self-worth than their classmates; this reflects findings from a number of studies examining the links between maltreatment and self-esteem (e.g., Burack et al., 2006). The direct path in our model is compatible with the argument that experiences of abuse or neglect in themselves can damage a child's sense of self-worth, leaving them feeling unlovable (Schofield & Beek, 2005a). We were also interested in the salience of self-perceptions about behavioural competence and social acceptance, and how these would fit into our model. We found that behavioural self-perceptions were more negative in maltreated children, in line with their more negative behavioural reputations. Interestingly, maltreatment status did not predict children's self-perceived social acceptance; this would appear to support the finding in our case study here and the interviews conducted in the Luke and Banerjee (2012 – see Paper 2) interview study that maltreated children often have little difficulty in starting friendships, but lack the understanding of appropriate social behaviour that is necessary to maintain relationships.

Turning now to the mediators in our model, maltreated children scored lower on the Theory of Mind Test than their classmates, but this overall result reflected differences in ability on specific tasks. In contrast to the general direction of findings reported in the review reported in Paper 1, maltreated children were no less accurate in

tasks assessing more ‘basic’ forms of social understanding such as perspective-taking. Similarly, the ability to understand first-order false beliefs – which emerges around the age of four in typically developing children (Miller, 2012) – was unaffected in our middle childhood sample. Instead, our maltreated group performed worst on measures that appeared ‘later’ in the list of components of the Theory of Mind Test, such as second-order false beliefs. That we found normative performance on most of the theory of mind tasks gives room for optimism; it may be that the differences shown here represent a developmental delay rather than an inability to develop social understanding. A similar argument could be made for the lack of difference between groups in scores on the Test of Emotion Comprehension. This was in contrast to the results of a recent meta-analytic review (see Paper 1) which showed that maltreated children were poorer at tests of emotion recognition and emotion understanding than their peers. The meta-analysis also showed, however, that the difference between groups was narrower in middle childhood than in early childhood; it may be that the present study represents the state of maltreated children’s emotion comprehension after having ‘caught up’ on any developmental delays in acquiring this ability.

Our maltreated group also differed from their peers only on the most ‘advanced’ form of empathy – prosocial responding – with scores for emotion contagion, personal distress, and emotion understanding all in line with those of their classmates. The difference in prosocial motivation might go some way to explaining the evidence that maltreated children are more likely to be perceived as bullies (Teisl, Rogosch, Oshri, & Cicchetti, 2012). It has been argued that bullies do not lack an understanding of others’ minds, but instead have a different set of goals and response strategies (Sutton, Smith, & Swettenham, 1999a). It may be, then, that maltreated children have sufficient

empathy to appreciate the affective states of others but are not motivated to help alleviate their distress.

Our analysis highlighted the importance of children's empathic responding for their behavioural reputations, with the link from maltreatment status to a reputation for being less cooperative being mediated by less prosocial responses. This makes sense; while the empathy subscale measures children's motivation towards prosocial behaviour, the sociometric nominations measure their peer reputation as one who behaves in a prosocial manner. If prosocial behaviour is lacking in maltreated children because of less warm and harsher parenting experiences (Laible et al., 2004), then our results suggest that parenting can have a similar impact on the pre-behavioural motivation towards prosocial acts. The specific mediating role of prosocial empathic responding also lends support to the findings from the Luke and Banerjee (2012 – see Paper 2) interview study. Carers in that study related several tales of bereavement and injury in the family; the children they fostered knew that the family members were upset, but were unable to offer them any comfort. The case study we have presented here includes a further illustration of this inability to access helping solutions to others' distress. That prosocial responding was the crucial factor in determining maltreated children's positive reputations in Study 2 suggests that it is this motivational response – over and above any affective matching or cognitive understanding – that is key to successful social relationships.

The relationship between maltreatment and negative behavioural reputations was not mediated by social understanding or empathy; in effect, what this might indicate is that no matter how mature their social understanding in response to task vignettes or how other-focussed their empathic responding on a self-report scale, maltreated children were still seen by peers as the ones who are more likely to be

physically or verbally aggressive or to be incapable of working in a group. This might be a reflection of automatised behaviours; Schofield and Beek (2005*b*) caution that even when a child is making good progress in their foster care placement, the stress of social situations can trigger some of the defensive behaviours they developed to survive the maltreating family context. This argument is supported by the everyday experiences of foster carers in the Luke and Banerjee (2012 – see Paper 2) interview study, who commonly stated that even those children who displayed theory of mind abilities during dyadic skills training would immediately forget all they had learned in the stressful context of a social situation with peers and revert to more aggressive behavioural patterns. What may be holding maltreated children back from escaping these negative reputations is not an inability to consider their social partners' cognitive and affective situation, but the inability to inhibit ingrained antisocial behaviours. There is already some work to suggest that inhibitory control mediates the relationship between maltreatment status and preschoolers' teacher- and self-reported prosocial behaviour, emotion regulation, and behavioural regulation (Pears, Fisher, Bruce, Kim, & Yoerger, 2010); further work is now needed to establish the role of inhibitory control as a potential moderator of the effects of maltreated children's social understanding and empathy on their behavioural reputations. What our findings also suggest is that the effectiveness of methods used to develop the cognitive aspects of children's social understanding and empathy, such as encouraging the strategy of thinking about mental states as 'photos in the head' (e.g., Swettenham, Baron-Cohen, Gomez, & Walsh, 1996), would be enhanced for maltreated children if used alongside methods that would help them to practise more adaptive affective and behavioural responses to social situations.

Our statistical modelling also revealed the importance of peer reputations, social understanding, and empathy for children's self-perceptions. Maltreated children with a reputation for starting fights evidently felt that their reputation was well earned, as they rated themselves more poorly on behavioural competence. Socio-cognitive skills were also important, with both theory of mind ability and empathic prosocial responses mediating the link from maltreatment to behavioural self-perceptions. In other words, maltreated children were less likely to appreciate the complex relationships between others' mental states and were also less likely to be motivated towards prosocial behaviour, which in turn meant they saw themselves as more badly-behaved. That this link exists suggests that maltreated children held some awareness of how others might view their behaviour, lending further support to our previous discussion about maltreatment and bullying.

Finally, our model revealed a mediational pathway that incorporated children's socio-cognitive abilities, their behavioural reputations, and specific self-perceptions in explaining why they might feel more general negativity towards the self. Global self-worth was predicted not only by maltreatment status but also by the mediating effects of theory of mind, prosocial responding, starting fights, and behavioural self-perceptions. The key role played by each of the factors in this path adds further weight to the argument that targeted work is needed to develop maltreated children's socio-emotional skills; not only could this have an impact on their social success, it is also likely to bring benefits for the way they see themselves.

Limitations and Future Directions

Our results have established the importance of maltreatment, theory of mind, and prosocial empathic responding for children's socio-emotional functioning, yet maltreatment itself does not explain all of the variance in these outcomes; future work

now needs to focus on establishing the personal and social factors that might make some children more susceptible than others to difficulties in socio-cognitive skills. One such factor already discussed here may be individual differences in children's executive functioning, which can influence the decision making process and the inhibition of inappropriate responses. Executive functions may have less influence on the emergence of social understanding and empathy and more on their expression (Miller, 2012), but individual differences could nonetheless determine whether the child is able to practice the socio-cognitive skills that foster carers and practitioners attempt to teach them. A further personal resource that might have a bearing is the child's situational self-efficacy. In Crick and Dodge's (1994) model, the degree to which a child believes in their capability to enact a particular response to a social situation is a key part of the social information processing operation. This confidence in their own abilities can differ according to the participants involved in the interaction, with children reporting higher self-efficacy when faced with interactions with familiar peers as opposed to strangers (Hannesdóttir & Ollendick, 2007).

Social factors might also be expected to predict individual differences. A common issue in conducting research with maltreated children is the practice of treating them as a homogeneous group. Our sample included children with experiences of physical abuse and/or neglect, but unfortunately our sample size forbade any subdivision of analysis by maltreatment type without the complete loss of statistical power. However, the disparate parenting experiences associated with abuse and neglect and their potential for explaining specific socio-emotional pathways in children's development are worthy of further investigation. Further differences in children's maltreatment experiences include the severity, onset, frequency, chronicity, and perpetrator(s) of maltreatment (Manly, Kim, Rogosch, & Cicchetti, 2001), and it may be

that these too would influence their developing social understanding and empathy. It is not inconceivable that our results could be further differentiated in a larger sample by examining differences in children's post-maltreatment experiences, such as number of foster care placements, attachment to current caregivers, and relationship with siblings. A larger sample would also overcome the limitations imposed here on the statistical power to detect significant relationships between variables.

Besides objective measurements of children's parenting experiences, the individual's subjective experience of the maltreating context provides a further crucial basis for differences in socio-cognitive development. In Taft and colleagues' (2008) study, for example, greater perceived parental rejection in men predicted higher PTSD symptomatology, and this in turn was related to problems with social information processing. This consideration gives rise to another: namely, that the maltreating home represents the extreme of negative parenting, but that all children lie somewhere on the continuum of positive and negative parenting experiences. Further work is needed, then, to establish the key differences in children's perceived parenting experiences that can influence their developing social understanding and empathic responding, both within a maltreated sample and in the general population.

Finally, the results of the present study have shown that maltreated children experience particular difficulties with more 'advanced' socio-cognitive skills. The cross-sectional design employed here prompts the question whether maltreated children's capabilities in these areas are absent or merely delayed; further longitudinal work would enable us to address this question, and to establish the temporal and causal sequences involved in the development of maltreated children's social understanding and empathic responding. Longitudinal designs would also enable us to establish the

existence of any bidirectional associations between social understanding, empathy, self-perceptions, and peer reputations.

Conclusions

Notwithstanding the limitations outlined above, the studies we have presented here make a unique contribution to the literature on maltreated children's socio-emotional development. Our testing of a mediational model has brought together previously disparate strands of research, and established key paths by which parenting experiences are linked to children's social relationships and self-perceptions. Crucially, our adoption of multidimensional definitions and measures of our variables has enabled us to tap into the subtle differences that emerge in children's abilities during middle childhood. Our results have promising implications, suggesting that a focus on interventions that help maltreated children to practise more adaptive cognitive, affective, and motivational responses to social situations could pay dividends for their socio-emotional well-being.

**Chapter 6: Paper 5 – Social Understanding and Empathy as
Mediators of the Links between Perceived Parenting
Experiences and Children's Socio-emotional Well-being**

6.1 Abstract

There are important gaps in our knowledge of the mechanisms connecting parenting experiences with children's social and emotional functioning. In a preliminary study, we investigated the relationships between 103 7- to 11-year-old children's perceptions of parenting measured using the Parental Acceptance-Rejection Questionnaire (Rohner, 2005) and their self-perceptions and peer reputations. Perceived lack of parental warmth was found to be related to less positivity in children's socio-emotional outcomes. In a second study, 137 children completed additional measures of empathy, emotion comprehension, and a battery of theory of mind tasks. Results indicated direct links from perceived parental hostility/aggression and indifference/neglect to poorer self-perceptions, though it was a lack of parental warmth that had the most pervasive links. Relationships between parenting dimensions and self-perceptions were mediated by variations in children's empathic responding. The findings highlight the importance of perceived parenting experiences and socio-cognitive responding in understanding school-aged children's social and emotional difficulties.

6.2 Introduction

Negative parenting experiences are recognised as having an important role in children's socio-emotional development. For example, parenting experiences which are negative in character have been linked to problematic peer relationships and self-perceptions (e.g., Amato & Fowler, 2002; Travillion & Snyder, 1993). However, further evidence is needed to determine how specific types of negative parenting might be related to particular behavioural reputations and associated self-perceptions. At its extreme, negative parenting can be represented as an act of commission, as seen in cases of physical abuse, and/or of omission, as in physical neglect (Pollak, Cicchetti, Hornung, & Reed, 2000); but it is important to acknowledge that even children who do not experience abuse or neglect lie somewhere on the continuum of negative parenting experiences.

Parenting may be said to vary in its negativity across several dimensions, and each of these can plausibly be connected to children's socio-emotional development. One such dimension is hostile or aggressive parenting; often defined as 'punitive', it involves the use of harsh disciplinary strategies (Weiss, Dodge, Bates, & Pettit, 1992). Studies have shown that hostile parenting is linked to lower levels of acceptance and higher rejection by peers (e.g., Criss, Pettit, Bates, Dodge, & Lapp, 2002). Another act of commission is the parents' active rejection of the child, leaving them feeling unwanted and unloved; as might be expected, this type of negative parenting has been linked to lower self-esteem in children (Robertson & Simons, 1989). Parents may further influence their children's socio-emotional well-being by being overly controlling, a characteristic that has associations with children's peer exclusion (Miller, Tserakhava, & Miller, 2011). In contrast, parents may express indifference towards their children, a lack of interest which may or may not result in physical neglect and

which can also predict poor self-esteem in children (Rosenberg, 1963). An alternative act of omission that may be just as damaging is the lack of warmth; parental warmth represents the parent's expression of positive affect and affection for the child (Davidov & Grusec, 2006) and has been linked to socio-emotional well-being including higher self-esteem, even across different cultures (Farruggia, Chen, Greenberger, Dmitrieva, & Macek, 2004).

It is important to be able to assess individual differences across these disparate dimensions of negativity. Dunn (2010) has argued that rather than a 'broad brush-strokes' approach, there is a need to evaluate the key aspects of parenting and how these link to children's well-being. By doing this we can begin to determine the differentiated ways in which specific dimensions of negative parenting might be related to particular profiles of socio-emotional difficulties. A further crucial consideration is the way in which measurements of parenting experiences might be coloured by the role of the informant. A number of studies rely on parents' self-reports of their parenting practices (e.g., Criss et al., 2002), but this approach fails to take into account the importance of the child's own perceptions of their parenting experiences, which might be expected to be of particular significance in shaping their self-perceptions and social relationships. In addition, there is evidence of divergence between parental and child reports in less loving families (as defined by the children), which might reflect either a social desirability effect in parents' reports of their own behaviour or a genuine ignorance of the ways in which seemingly inconsequential acts can be perceived by their children (Rohner et al., 2005). One instrument that taps into a number of key parenting dimensions from the child's perspective is the Parental Acceptance-Rejection Questionnaire (PARQ; Rohner, 2005). The PARQ can be used to assess children's perceived experiences of warmth/affection, hostility/aggression, indifference/neglect,

undifferentiated rejection, and control, and has been shown to be a reliable measure for use in research and clinical contexts (Khaleque & Rohner, 2002). This measure forms the basis of our study of differentiated negative parenting experiences and their relationships with children's socio-emotional well-being.

With regard to well-being, our focus here rests on children's peer relationships and self-perceptions in middle childhood. Peer acceptance is a particularly salient goal at this point in children's development (Parker & Gottman, 1989); so much so that even experimentally induced peer rejection at this stage can bring about a decrease in self-esteem (Nesdale & Pelyhe, 2009). Moreover, problematic peer relationships and self-perceptions in middle childhood have been shown to predict a range of other socio-emotional difficulties in adolescence, including loneliness and depression (Pedersen, Vitaro, Barker, & Borge, 2007) and health-compromising behaviours such as problem eating and suicidal ideation (McGee & Williams, 2000). Yet here too there is a need to examine the subtle differences that might lie within conceptualisations of 'problematic' peer relationships and self-perceptions. Peer relationships may be viewed as 'successful' where levels of peer acceptance are high and rejection low, but behind these distinctions lie behavioural reputations which might explain why some children are more popular than others; for example, aggressive behaviour can make peer rejection more likely (Lansford, Malone, Dodge, Pettit, & Bates, 2010), whereas prosocial behaviour can increase peer acceptance (Caputi, Lecce, Pagnin, & Banerjee, 2012). In turn, self-perceptions may be broken down across the separate domains of children's lives to include, for example, perceptions about social acceptance, behavioural competence, and physical appearance (Harter, 1982). Measures assessing a global sense of self-worth might therefore actually reflect the extent to which

individuals view themselves as being competent in areas which are important to them (Harter, 1986).

Some links between negative parenting experiences and children's difficulties with peer relationships and self-perceptions have already been established, but all too often these studies have focused on one or two parenting dimensions or have presented only a limited consideration of peer relationships and self-perceptions. For example, there is a greater focus in the literature on the presence of hostility (e.g., Criss et al., 2002) or warmth (e.g., Farruggia et al., 2004) than on other aspects of negative parenting. In addition, few studies examining the effects of negative parenting move beyond the accepted vs. rejected dimensions of peer relationships (e.g., Miller et al., 2011) or a global conceptualisation of self-esteem (e.g., Robertson & Simons, 1989).

Besides the need for work to examine differentiated patterns of peer reputations and self-perceptions in children with differing parenting experiences, research is also needed to investigate potential mechanisms that might explain why they achieve such positive or negative socio-emotional profiles. A number of potential mediators have been proposed in the literature, but our focus here is on the ways in which particular negative parenting experiences might shape children's processing of social encounters. There is some evidence that negative parenting might influence children's 'social understanding' (the ability to understand the feelings, desires, and beliefs of others and their role in determining behaviour, frequently referred to as 'theory of mind'; Carpendale & Lewis, 2006), with punitive parenting predicting poorer social understanding (Pears & Moses, 2003). A second body of research indicates a link between parenting and children's empathy (the individual's response to another person's affective state, especially where the recognition of emotion produces a similar

emotion in the observer; Eisenberg & Miller, 1987*b*), as a lack of parental warmth is related to lower empathy (Zhou et al., 2002).

There is also evidence to indicate that the way in which children process social experiences can in turn affect the positivity or negativity of their peer relationships and self-perceptions. Children's levels of social understanding and empathy can prompt them to behave in certain ways, which might result in peer acceptance or rejection (Caputi et al., 2012). For example, misreading of social cues can lead children to act aggressively (Crick & Dodge, 1994) and aggressive behaviour can predict peer rejection (Little & Garber, 1995). In turn, peer rejection can lead to decreased self-worth (Boivin & Bégin, 1989). The relationships between children's social understanding, empathy, and socio-emotional well-being warrant further investigation, particularly into the links between more advanced socio-cognitive functioning and social success (Miller, 2012).

The present study represents an integration of these bodies of work, and builds on emerging evidence from Ensor, Spencer, and Hughes (2011) which indicates that one aspect of social understanding – the understanding of links between situations and emotions – can mediate the relationship between parenting practices and children's prosocial behaviour. We extend this approach to test a mediational model whereby maladaptive patterns of social understanding and empathic responding mediate the links between perceived negative parenting experiences and children's problematic peer reputations and self-perceptions.

Social Understanding and Empathy as Mediators of Parenting: A Conceptual Rationale

There are sound theoretical and empirical reasons for expecting that differences in children's parenting experiences might be linked to difficulties with social

understanding and empathic responding. Hughes and Dunn (2000) argue that any attempt to comprehend children's understanding of others' minds and emotions must address not only the child's level of cognitive development, but also their internalisation of family norms. From a Vygotskian perspective, the parent-child relationship is the setting of the child's earliest social interactions in which the 'tools' of social understanding and empathy are first encountered and then internalised (Carpendale & Lewis, 2004). Parents scaffold children's development by adopting contingent responses to their behaviour, ensuring that their children are supported and challenged. Research has shown, however, that this kind of contingent responding is greater where parenting is warm and less frequent where parenting is harsh (Carr & Pike, 2012). Negative parenting experiences might, then, make it more difficult for children to learn adaptive socio-cognitive responses; the support needed to guide them to the next level of development is reduced or perhaps even entirely absent.

Indeed, evidence from the literature on maltreated children indicates that extremes of hostile or indifferent parenting are related to children's difficulties with aspects of social understanding including emotion recognition (Fishbein et al., 2009) and false belief understanding (Cicchetti, Rogosch, Maughan, Toth, & Bruce, 2003). In addition, Hughes and Dunn (2000) have shown that a highly critical parenting style can predict 6-year-olds' inability to generate empathic justifications for their attributions of emotions to story characters, though there was no relationship with maternal warmth. These results mean that further examination of the links between specific dimensions of parenting and children's social understanding in middle childhood for the general population is needed. On the other hand, empathic responding has been clearly linked to more 'typical' negative parenting experiences, including lower warmth (Strayer & Roberts, 2004) and greater use of physical punishment (Cornell & Frick, 2007).

A number of mechanisms have been proposed by which these relationships might be enacted. Initial findings that social understanding task performance was related to children's attachment security (Fonagy, Redfern, & Charman, 1997) have since been supplemented by Meins and colleagues' (e.g., 2002, 2003) concept of 'mind-mindedness' – caregivers' use of appropriate mind-related comments directed towards their infants. Higher levels of maternal mind-mindedness in infancy have been shown to predict preschoolers' theory of mind (Meins et al., 2003). It is argued that by being mind-minded, mothers enable children to acquire a representational theory of mind. A similar argument may be made about the more general use of internal state language (ISL) in the family. By talking more about internal states (thoughts, feelings, and beliefs), families can encourage greater perspective-taking skills in their children (Dunn, Brown, & Beardsall, 1991). This might be particularly important in the context of negative parenting; Laible and Song (2006) found that more frequent parental discourse about negative emotions predicted children's emotion understanding when the emotional quality of parent-child discourse was itself less positive. In addition, the use of ISL as a socialising agent may be especially powerful when used as part of explicit instructions by parents to reflect on the links between behaviour and affective consequences. Ruffman, Perner, and Parkin (1999) found that mothers who encouraged their children to consider the victim's feelings as a disciplinary strategy had children whose understanding of false beliefs was more advanced than those whose mothers used reprimands or more general discussions in their discipline.

As well as discussions about internal states, parents' responses to children's affective displays can also impact on their developing social understanding. Denham, Zoller, and Couchod (1994) examined the role of emotion responsiveness, finding that by responding positively, parents can encourage children to express positive emotions

and reduce negative emotions; in contrast, negative responses can serve to amplify children's negative affect. These responses, it is argued, can help children learn to understand how different emotions operate. In support of this, Denham et al. (1994) found that preschoolers' emotion understanding was predicted by more positive and less negative emotion responsiveness from parents. Ensor, Spencer, and Hughes (2011) added a further dimension to the study of responsiveness by examining the role of mutuality in mother-child interactions. Their focus was on the *mutual* responsiveness of parent and child, as well as reciprocity and cooperation in completing a task together. The authors found that this kind of mutuality when children were aged 2 predicted greater emotion understanding 2 years later.

Another explanation for the role of parenting in children's developing social understanding lies in the model of social information-processing put forward by Crick and Dodge (1994). According to this model, children's responses to social situations are shaped by a continually evolving 'database' of stored memories and social knowledge. Negative parenting experiences can lead children to interpret social information in a biased way or to be biased towards selecting particular responses; for example, harsh parenting has been linked to both a hostile attribution bias (Dodge, Bates, & Pettit, 1990) and a bias towards selecting aggressive responses (Weiss, Dodge, Bates, & Pettit, 1992).

The differences in parenting environments outlined here provide a solid theoretical and empirical basis for our prediction that children with more negative parenting experiences will show deficits in social understanding and empathy. Further, as noted earlier, research leads us to expect that these deficits will in turn be related to children's social reputations and self-perceptions. We now consider the need for multidimensional measures of our proposed mediating variables.

Multiple Dimensions of Social Understanding and Empathy

In line with the previous discussion on parenting experiences and socio-emotional well-being, we also adopt a multidimensional conceptualisation of social understanding and empathic responding. ‘Social understanding’ is used here as an umbrella term that encapsulates children’s abilities across a range of areas, including emotion recognition and understanding, perspective-taking, and first- and second-order false belief. While related conceptually, some studies show that these skills do not overlap substantially when age and language ability are accounted for (Cutting & Dunn, 1999); moreover, there is a developmental progression of success in social understanding tasks, from those assessing more basic skills such as visual perspective-taking to more complex tasks such as second-order false beliefs (Miller, 2012). We therefore treat the various dimensions of social understanding as distinct capabilities.

Similarly, empathic responding can be seen to differ across a number of dimensions. While the definition of what constitutes empathy has prompted debate on the inclusion of components of emotion contagion or distress (e.g. Lennon & Eisenberg, 1987), emotion understanding (e.g., Borke, 1971), and prosocial responding (e.g., Batson, O’Quin, Fultz, Vanderplas, & Isen, 1983), for the present study we adopt a definition that encompasses all of these components. By doing so we can assess the links between specific types of negative parenting experiences and more self-focussed (emotion contagion, personal distress) versus other-focussed (emotion understanding, prosocial responding) reactions. The move from self- to other-focus is seen as a developmental progression in theories of empathy (Hoffman, 1984), and so parenting experiences that predict self-focussed responses might indicate children’s difficulties in developing beyond a basic form of empathy.

The Present Research

The present research tests our proposed mediational model, whereby links between children's perceived negative parenting experiences and their problematic peer reputations and self-perceptions are mediated by deficits in social understanding and empathy. Our investigation uses measures which tap into a number of distinct but related domains; this allows us to delineate specific links between particular types of parenting experiences, socio-cognitive abilities, and socio-emotional well-being. We will first describe introductory work conducted to identify links between children's peer reputations and self-perceptions and their perceived parenting experiences. We then move on to outline the main study, which tests our mediational model. Our measures in this study cover a range of social understanding abilities, from Level 1 perspective-taking through to the understanding of second-order false belief and double-bluff (Pons & Harris, 2002), and in emotion comprehension from recognition of basic emotions to judgements of morality (Pons & Harris, 2000). We also employ a measure of empathy which is in keeping with a multidimensional definition of the concept, with subscales tapping into emotion contagion, personal distress, emotion understanding, and prosocial responding (see Paper 3).

Our work tests three hypotheses, which form the basis of our mediational model. These relate to the broad idea of mediation that we have derived from the literature; however, by including multidimensional measures of each of our variables our intention is to explore the existence of differentiated pathways and thereby inform future theory development. First, we expect to find that children with more negative perceived parenting experiences will have more negative and less positive peer relationships (in terms of behavioural reputations and levels of peer acceptance and rejection), and more negative self-perceptions. Second, we hypothesise that negative parenting will be

linked to lower scores in tests of social understanding and empathy. Third, we expect to find that children's scores in assessments of social understanding and empathy will mediate the relationship between negative parenting and socio-emotional well-being as represented by peer relationships and self-perceptions. Moreover, it is likely that different dimensions of perceived negative parenting will show differentiated paths through our model.

6.3 Study 1

This preliminary study served two purposes. First, there was a need for us to evaluate our chosen multidimensional measures to ensure that they would detect individual differences in children's behavioural reputations with peers, peer acceptance and rejection, and self-perceptions. Second, the study permitted us to test our basic expectation that more negative perceived parenting experiences would be linked to poorer socio-emotional well-being; should differentiated links be shown with children's peer reputations and self-perceptions, this would support our approach to investigating how the subtleties of children's social experiences can predict differing aspects of socio-emotional well-being.

6.3.1 Method

Participants

Local primary schools were recruited for the study by means of emails and telephone calls. Head teachers provided consent for the research to be conducted in their schools, and all parents and carers of children in the participating classes received information letters about the study which gave them the opportunity to withdraw their

child from the study. In addition, all children themselves were given the opportunity to withdraw at any point during the data collection.

Children were drawn from six urban primary schools situated in mainly working-class communities of primarily white ethnicity. The sample consisted of a total of 103 primary school children, ranging in age from 7 to 11 years ($M = 9.22$, $SD = 1.33$; 61 girls).⁴ Owing to changes in schools or lack of availability on data collection dates, three of the children were missing data on one or more of the measures; their partial data were retained for analysis. All data were collected during the course of one school year. Ethical approval for this study was granted by the Research Governance Committee at the University of Sussex. We used an anonymised procedure in which all children were identified using code numbers instead of names. No child was made to feel singled out by the procedure.

Materials

Peer reputations. To assess peer acceptance, peer rejection, and behavioural reputations within the peer group, all participating children and their classmates (a further 206 children) completed an online sociometric survey (Banerjee, 2010; adapted from descriptors given in Coie & Dodge, 1988 – see Appendix C). For this measure, children used numerical codes to nominate up to three classmates who best fit a range of descriptors; the number of nominations each child receives from their classmates is counted for each descriptor and then standardised as z -scores within classroom. Scores above or below zero therefore indicate that the child received either more or less than the average number of votes in the class for the given descriptor. In line with Coie and

⁴ Data on socio-emotional functioning from some of these children were included in a paper where they formed a matched comparison group for a study of maltreated children (see Paper 4).

Dodge's longstanding work, we analysed each behavioural descriptor separately. Our analyses here focus firstly on two positive aspects of peer reputations: nominations for those 'you *most like* to spend time with' (i.e., peer acceptance) and those 'who are *kind and cooperative*. They help other people, share, and take turns.' We also focus on four negative aspects of reputations: nominations for those 'you *least like* to spend time with' (i.e., peer rejection), as well as those 'who are *disruptive*. They are not very good at being in a group and they don't listen to other people', those 'who *start fights*. They say mean things to other people, or push or hit them', and those 'who are *shy*. These pupils are really quiet and always seem to be on their own'.

Self-perceptions. To assess their self-perceptions, children completed a shortened version of Harter's (1985) Self-Perception Profile for children (see Appendix D). Questions cover six areas of children's self-perceptions, with three items for each. The measure presents descriptions of two different types of children and asks participants to say which one sounds more like them. As our conceptual focus was on socio-emotional well-being, pupils received an average score for the perceived social acceptance (e.g., 'Some children find it's quite hard to make friends BUT other children find it's quite easy to make friends'; subscale $\alpha = .60$), behavioural competence (e.g., 'Some children usually get in trouble because of things they do BUT other children usually don't do things that get them in trouble'; subscale $\alpha = .77$), and global self-worth (e.g., 'Some children like the kind of person they are BUT other children often wish they were someone else'; subscale $\alpha = .65$) subscales. Having chosen which option is more like them, children then indicate whether it sounds 'really like me' or 'quite like me'. Responses are scored on a scale from 1 to 4, with higher scores indicating more positive self-perceptions.

Parenting experiences. To assess their perceived parenting experiences, children also completed the Parental Acceptance-Rejection Questionnaire (PARQ; Rohner, 2005 – see Appendix I). This 29-item survey presents descriptions of parenting experiences and asks participants to say how true each is for their own experience; in appreciation of the fact that some children are cared for by adults other than their parents, all items begin: ‘My parents/the adults I live with...’ The questionnaire covers five areas of perceived parenting experiences: warmth/affection (e.g., ‘let me know that they love me’; subscale $\alpha = .83$), hostility/aggression (e.g., ‘punish me when they are angry’; subscale $\alpha = .77$), indifference/neglect (e.g., ‘ignore me when I ask for help’; subscale $\alpha = .76$), undifferentiated rejection (e.g., ‘act like they don’t like me’; subscale $\alpha = .78$, and control (e.g., ‘are always telling me how I should behave’; subscale $\alpha = .41$). Questions are answered on a four-point scale ranging from ‘not at all true’ to ‘very true’, with a higher mean subscale score indicating more negative parenting experiences (so for the first subscale, a high score indicates *lack of warmth/affection*). Given the low Cronbach’s alpha for the ‘control’ subscale, this was omitted from our statistical analyses.

Procedure

Data for this study were collected by the first author, usually assisted by one or two undergraduate students. Where children had designated learning support assistants, they were also present. Prior to beginning the surveys, pupils were assured that there were no right or wrong answers and were encouraged to answer honestly, with the understanding that they could skip over any questions they did not want to answer. Children could ask for assistance if required. Following completion of the surveys, there was an opportunity for pupils to ask any questions they might have. Pupils were then reminded of the normal procedures for seeking help if they are feeling bad or

upset, and relevant staff who regularly worked with the pupils were made aware that the pupils had completed these surveys, to ensure that support was available for any vulnerable pupils.

The sociometric survey was presented on computers in the school's ICT room. Instructions were given verbally by a researcher and appeared onscreen. Children were provided with a printed list of names of their classmates; each name had a two-digit number written next to it. These code numbers were entered on all online and paper surveys in place of names. Each question in the survey then appeared on a separate screen, with boxes into which children could type the numbers in order to make their peer nominations. The Self-Perception Profile and the PARQ were completed by the children in groups of six to eight, in quiet rooms at their schools. All questions were read aloud by the researcher to ensure full understanding of the items.

6.3.2 Results

First, relationships between all variables were established by means of Pearson's correlations. Second, structural equation modelling was used to determine the key pathways between perceived parenting dimensions and children's socio-emotional well-being.

Relations between Parenting and Socio-emotional Variables

Table 6.1 displays the zero-order correlations between the subscales on our parenting questionnaire and all socio-emotional variables. In general, the correlations show a relationship between children's self-reported parenting experiences and their peer reputations and self-perceptions. The most pervasive links were evident for the

Table 6.1

Study 1 Correlations Between Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Lack of Warmth												
2. Hostility/Aggression	.40***											
3. Neglect/Indifference	.52***	.67***										
4. Undifferentiated Rejection	.45***	.73***	.67***									
5. Most Liked	-.09	-.16	-.02	-.02								
6. Cooperative	-.25*	-.19 [†]	-.15	-.13	.48***							
7. Least Liked	.16	.14	.01	-.01	-.36***	-.34***						
8. Disruptive	.09	.10	-.08	-.05	-.19 [†]	-.42***	.54***					
9. Starts Fights	.08	.12	-.01	.05	-.03	-.29**	.34***	.81***				
10. Shy	.08	.06	-.05	.02	-.16	.02	.21*	.01	-.13			
11. Social Acceptance	-.11	-.17 [†]	-.04	-.10	.32***	.23*	-.32***	-.21*	-.12	-.25*		
12. Behavioural Competence	-.37***	-.27**	-.24*	-.20*	.11	.41***	-.32***	-.37***	-.50***	.03	.17 [†]	
13. Global Self-worth	-.19 [†]	-.11	-.07	-.17 [†]	.33***	.42***	-.19 [†]	-.16	-.11	-.18 [†]	.22*	.44***

[†] $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

perception of parenting as lacking in warmth or being overtly hostile or aggressive; these aspects of perceived parenting were related to a peer reputation for being less cooperative and to generally negative self-perceptions. Higher scores for perceived neglect/indifference and undifferentiated rejection also showed a negative link with self-perceptions, but were unrelated to peer reputations. The pattern of correlations shown in Table 6.1 was taken into account alongside our *a priori* hypotheses to guide our construction of a structural equation model with the purpose of testing the hypothesised mediational pathways in our model.

We calculated the power to detect effect sizes using Cohen's (1988) criteria for small ($r = .10$), medium ($r = .30$) and large effect sizes ($r = .50$), given our sample size and with alpha set at .05. The power to detect a small effect size was determined to be 0.26, for a medium effect size power was 0.93, and for a large effect size it was 1.00, critical $r = 0.16$.

Mediational Pathways from Key Parenting Dimensions to Socio-emotional Well-being

We included in our model only those variables that were shown in the correlations to be associated with dimensions of perceived parenting experiences, so that peer nominations for being most liked, least liked, disruptive, shy, and starting fights, were all excluded from the model. Missing data were handled by data regression imputation using maximum likelihood estimates. In this procedure, data from complete and partial cases of data are entered into a linear regression to predict the missing values for individual cases, using the information that is available for that case in the regression equation. Maximum likelihood estimates have been shown to be more efficient and less biased than alternative missing data methods such as listwise and pairwise deletion and similar response pattern imputation, where data are missing at random (Enders & Bandalos, 2001). Analyses using only complete data showed results virtually identical to those reported here using imputed values.

We began by building a model in which children's perceived parenting experiences were allowed to predict cooperative behavioural reputations and behavioural, social, and

global self-perceptions; cooperative reputations were also allowed to predict our self-perception variables. Given previous research showing that boys and girls can differ in their behavioural reputations (e.g., boys are seen as more overtly aggressive; Orue & Calvete, 2011), children's sex was included as a control variable and allowed to predict all other variables in the model. According to Kline (2005), the model fit indices were good, $\chi^2(1) = 0.048$, $p = .827$, comparative fit index (CFI) = 1.000, root mean square error of approximation (RMSEA) < .001.

We then removed any variables that were non-significant predictors of children's socio-emotional well-being (except for our control variable of sex, whose paths to all other variables in the model were retained regardless of significance level); this led to the removal of parental hostility/aggression, neglect/indifference, and undifferentiated rejection from the model. We also trimmed the model by deleting all non-significant paths; this led to the removal of social self-perceptions. The resulting model is illustrated in Figure 6.1; the model was more parsimonious and still represented a good fit with the data, $\chi^2(1) = 0.143$, $p = .706$, CFI = 1.000, RMSEA < .001.

The model revealed the key paths along which perceived parental warmth was linked to children's socio-emotional well-being. In view of the relatively small sample size and given the *a priori* nature of our predictions, we report all findings here with $p \leq .10$. There were a number of mediated pathways between our variables; to get an accurate estimate of these indirect effects we restored the relevant direct paths (despite being non-significant) to the model for these calculations. First, there was a link between a lack of parental warmth and poorer behavioural self-perceptions that was both direct, $\beta = -.17$, $p = .048$, and mediated by a less cooperative reputation (standardised indirect effect = $-.046$, 95% CI $[-.105, -.010]$, $p = .028$). There were also a number of pathways linking a lack of parental warmth to lower global self-worth. Having fewer nominations for cooperative behaviour mediated the link

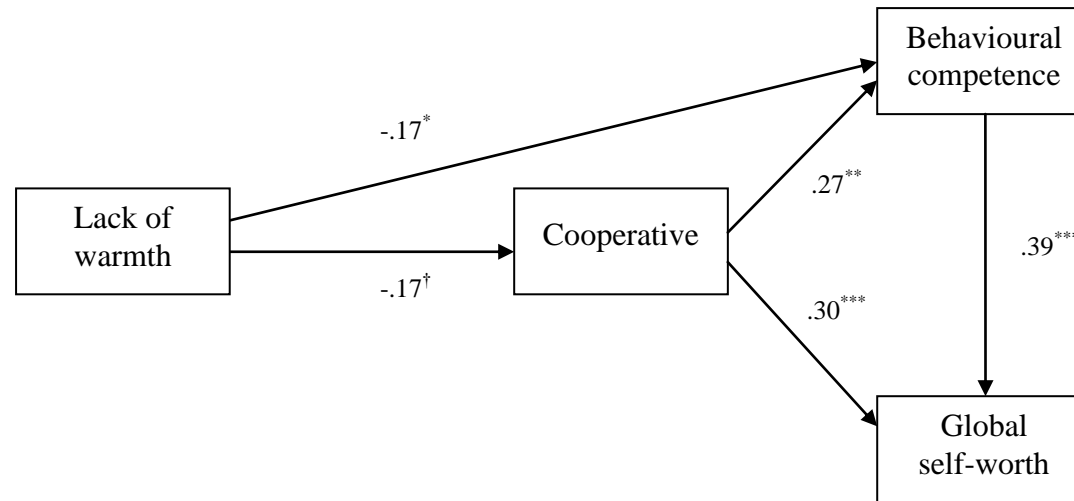


Figure 6.1. Structural equation model for the links between perceived parenting experiences, peer reputations, and self-perceptions, $\chi^2(1) = 0.143, p = .706$, CFI = 1.000, RMSEA < .001. Figures given are standardised coefficients. Sex was allowed to predict all variables.

† $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

between a lack of warmth and lower self-worth (standardised indirect effect = $-.054$, 95% CI $[-.124, -.016]$, $p = .020$). There was also a non-significant trend for poorer behavioural self-perceptions to mediate the link between lack of warmth and self-worth, (standardised indirect effect = $-.065$, 95% CI $[-.148, .000]$, $p = .099$). Finally, there was a significant mediated pathway by which a greater lack of warmth predicted fewer cooperative nominations, which predicted poorer behavioural self-perceptions, predicting in turn lower global self-worth (standardised indirect effect = $-.071$, 95% CI $[-.150, -.016]$, $p = .033$).

6.3.3 Discussion

Our preliminary study established some key links between perceived parenting experiences and children's behavioural reputations and self-perceptions. As predicted, a less positive parenting experience was linked to less positive behavioural reputations and more negative self-perceptions, both in terms of behavioural competence and global self-worth. The expected links between more negative aspects of parenting and negative behavioural reputations were not shown; however, by using the measures with a larger sample of children we might detect such relationships. Moreover, subsequent work could address the possible mechanisms that might explain the links between perceived parenting experiences and children's socio-emotional well-being.

6.4 Study 2

Having tested our research design and multidimensional measures in our preliminary work, Study 2 was designed to evaluate potential mediational pathways that might explain why less positive and/or more negative parenting experiences place

children at greater risk of negative peer reputations and self-perceptions. Specifically, the study included measures to assess the role of children's social understanding and empathy. In addition, given that previous studies have shown that children's language ability can account for some of the variance in social understanding task performance (e.g., Bowen & Nowicki, 2007) we introduced a measure of children's receptive vocabulary that would allow us to control for this.

6.4.1 Method

Participants

Schools were recruited for the study using the same method as in Study 1. Children were drawn from eight urban primary schools situated in mainly working-class communities of primarily white ethnicity. The sample consisted of a total of 137 primary school children, ranging in age from 7 to 11 years ($M = 9.03$, $SD = 1.16$; 69 girls).⁵ Owing to changes in schools or lack of availability on data collection dates, 21 of the children were missing data on one or more of the measures; their partial data were retained for analysis. Data collection took place across a number of sessions. Wherever possible, all sessions were completed during the course of one school year (M length of time from first to last data collection = 161 days; $SD = 115.91$). In two schools, however, data collection was begun towards the end of one school year and completed in the subsequent year.

⁵ As with Study 1, data on socio-emotional functioning from some of the children in Study 2 were included in a paper where they formed a matched comparison group for a study of maltreated children (see Paper 4). A small number of children in this study had also been included in the sample for Study 1, conducted in the previous year (new data were collected for Study 2 on all measures).

Materials

Measures of peer reputations, self-perceptions, and perceived parenting experiences were administered as in Study 1. The sociometric measure was again administered to participating children and all of their classmates (a further 371 children). Reliability for this study was again calculated for the perceived social acceptance ($\alpha = .52$), behavioural competence ($\alpha = .73$), and global self-worth ($\alpha = .60$) subscales of the Self Perception Profile, and for the warmth/affection ($\alpha = .83$), hostility/aggression ($\alpha = .79$), indifference/neglect ($\alpha = .77$), and undifferentiated rejection ($\alpha = .79$) subscales of the PARQ.

Empathy. To assess empathy, pupils completed the Empathy Questionnaire (Pouw, Rieffe, Oosterveld, & Stockmann, 2012 – see Appendix B). Items on this measure are answered on a three-point scale ranging from ‘not true’ to ‘often true’, and were designed to tap into four distinct aspects of empathy: emotion contagion ($\alpha = .79$), personal distress ($\alpha = .74$), emotion understanding ($\alpha = .60$), and prosocial responses ($\alpha = .74$). The four-factor structure of the Empathy Questionnaire has previously been confirmed in a sample of British primary school children (see Paper 3). Responses on the questionnaire were scored between 1 and 3, with higher mean scores on the subscales indicating higher levels of empathic response.

Social understanding. Children completed two measures of social understanding. The first was the Theory of Mind Test (TMT; Pons & Harris, 2002 – see Appendix G). Ten components cover Level 1 perspective-taking, Level 2 perspective-taking, intentionality, ignorance, first-order false belief, appearance and reality, lies, jokes, second-order false belief, and double-bluff; tasks are presented in the form of two-dimensional cartoon pictures and stories in a booklet. Children are asked

questions about the pictures, for instance to assess story characters' beliefs, and offered a choice of two answers for each example; responses are given verbally. To avoid the effects of fatigue, only two of a possible three examples were used for each component, with the exception of the first-order false belief component, in which the three items were felt to be insufficiently similar and so were all used. Children receive a score of 1 if they answer all examples within a component correctly, and 0 if all answers are incorrect; comparisons can then be made on individual correct components as well as the total number of components correctly answered.

The second measure of social cognition was the Test of Emotion Comprehension (TEC; Pons & Harris, 2000 – see Appendix H). The TEC assesses children's understanding of emotions and is also scored as the total number of correct components, across nine areas of emotion comprehension: recognition, external cause, desire, belief, reminder, regulation, hiding, mixed, and morality, with tasks again presented in a booklet of cartoons. Children must first identify one of four emotions (happy, sad, angry, and scared) and a neutral expression from a choice of four cartoon faces. Subsequently they are asked questions about cartoon stories of emotional situations, and asked to indicate their response by pointing at one of four alternatives from a number of different combinations of the four emotions and the neutral face.

Language. Finally, children's receptive vocabulary was assessed using the British Picture Vocabulary Scale - 2nd Edition (BPVS-II; Dunn, Dunn, Whetton, & Burley, 1997). Children were shown four illustrations and asked to choose the one that best illustrated the meaning of a word read out by the researcher. A higher raw score on this measure indicates more advanced receptive vocabulary.

Procedure

Data collection procedures for the sociometric survey, the Self-Perception Profile, and the PARQ were the same as in Study 1. The Empathy Questionnaire was administered at the same time as the Self Perception Profile and the PARQ, with children completing all of these in small groups. For the measures of social understanding and receptive vocabulary (TMT, TEC, and BPVS), children were taken individually from the classroom to work in a quiet space in the school. To allow for any difficulties in sustaining attention across the tasks, children were seen twice: once to complete the TMT and BPVS, and again to complete the TEC. Thus, four sessions were completed for each child: the sociometric survey in one whole-class session, the self-report questionnaires in one small-group session, and the social understanding and receptive vocabulary measures in two individual sessions.

6.4.2 Results

First, relationships between all variables were evaluated by means of Pearson's correlations. Second, structural equation modelling was used to determine the key pathways between perceived parenting dimensions and children's socio-emotional well-being, with social understanding and empathy as potential mediators.

Correlations Between Variables

Table 6.2 displays the zero-order correlations among the subscales on our parenting questionnaire, the measures of social understanding, empathy, and receptive language, and the peer reputation and self-perception variables. The results indicate a relationship between children's self-reported parenting experiences and their empathic responding; this link was clearest when children reported a lack of parental warmth.

Table 6.2

Correlations between Variables in Study 2

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
1. Lack of Warmth																			
2. Hostility	.55***																		
3. Neglect	.53***	.79***																	
4. Rejection	.57***	.73***	.75***																
5. Emotion Contagion	-.20*	-.06	-.04	-.01															
6. Personal Distress	-.02	.15 [†]	.14	.16 [†]	.70***														
7. Emotion Understanding	-.34***	-.13	-.07	-.13	.24**	.23**													
8. Prosocial Response	-.35***	-.13	-.08	-.15 [†]	.57***	.50***	.38***												
9. Theory of Mind	.00	.01	-.09	-.03	.01	.01	.16 [†]	-.03											
10. Emotion Comprehension	-.11	-.18*	-.14	-.12	.11	-.06	.24**	.17 [†]	.16 [†]										
11. Receptive Language	-.06	-.17 [†]	-.23**	-.12	.01	-.04	.01	.04	.41***	.41***									
12. Most Liked	.08	-.06	-.01	.04	-.19*	-.20*	-.05	-.17*	.10	.09	-.01								
13. Cooperative	-.15 [†]	-.20*	-.21*	-.19*	.19*	.01	.13	.21*	.07	.25**	.10	.35***							
14. Least Liked	.13	.08	.09	.10	.08	.10	-.23**	-.11	-.05	-.31***	-.12	-.25**	-.26**						
15. Disruptive	.07	.04	-.01	.01	-.15 [†]	-.18*	-.15 [†]	-.22*	-.05	-.14	-.04	-.09	-.32***	.53***					
16. Starts Fights	.15 [†]	.12	.09	.14	-.21*	-.20*	-.12	-.29***	.02	.03	.05	.02	-.26**	.37***	.75***				
17. Shy	.06	-.03	.01	-.01	.00	-.09	-.28***	-.12	-.31***	-.07	-.26**	-.09	.07	.02	-.16 [†]	-.23**			
18. Social Acceptance	-.07	-.14	-.19*	-.09	-.04	-.02	.16 [†]	-.02	.21*	.08	.19*	.24**	.11	-.18*	-.12	.06	-.18*		
19. Behavioural Competence	-.29***	-.12	-.09	-.22*	.16*	.16 [†]	.20*	.37***	-.04	-.01	-.10	-.15 [†]	.23**	-.23**	-.37***	-.52***	.24**	-.02	
20. Global Self-worth	-.21*	-.28***	-.22*	-.27**	.05	-.03	.15 [†]	.15 [†]	.02	-.07	.07	.11	.10	-.01	-.06	-.03	.02	.31***	.24**

[†] $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

There was no relationship between perceived parenting experiences and Theory of Mind Test scores, but more hostile parenting was linked to lower scores on the Test of Emotion Comprehension. Scores on the parenting subscales were unrelated to children's levels of peer acceptance or rejection, but all four subscales were linked to less positive behavioural reputations and more negative self-perceptions.

The correlations also show how our proposed mediating variables are linked to children's socio-emotional well-being. Scores on the empathy subscales were generally linked to more positive and less negative behavioural reputations, but there were differences in the relationships between empathy and peer acceptance and rejection: more 'basic' forms of empathy were related to less peer acceptance, whereas more 'advanced' forms were linked to less peer rejection. There were also links between empathic responding and more positive self-perceptions. Children's theory of mind performance had fewer links with socio-emotional well-being, showing only relationships with a reputation for being less shy and greater self-perceived social acceptance. Meanwhile, better performance on the Test of Emotion Comprehension was linked to lower peer rejection and a reputation for more cooperative behaviour.

Finally, as predicted, children's behavioural reputations were also related to their levels of peer acceptance and rejection and their self-perceptions. The pattern of correlations was taken into account alongside our *a priori* hypotheses to guide our construction of a structural equation model with the purpose of testing the hypothesised mediational pathways.

We again calculated the power to detect effect sizes using Cohen's (1988) criteria for small ($r = .10$), medium ($r = .30$) and large effect sizes ($r = .50$), given our sample size and with alpha set at .05. The power to detect a small effect size was

determined to be 0.32, for a medium effect size power was 0.97, and for a large effect size it was 1.00, critical $r = 0.14$.

Mediational Pathways from Key Parenting Dimensions to Socio-emotional Well-being

We included in our model only those variables that were shown in the correlations to be associated with dimensions of perceived parenting experiences, so that theory of mind and peer nominations for being most liked, least liked, disruptive, and shy were all excluded from the model. Missing data were handled using the same method of data imputation as reported in Study 1. Again, analyses using only complete data showed results virtually identical to those reported here using imputed values.

We began by building a model in which children's perceived parenting experiences, Test of Emotion Comprehension performance, and the four dimensions of empathic responses were allowed to predict all behavioural reputations for cooperation and starting fights, and social, behavioural and global self-perceptions; behavioural reputations were also allowed to predict our self-perception variables. Children's receptive vocabulary was included as a control variable, as was sex, which has previously been related to differences on the Empathy Questionnaire (see Paper 3); these two variables were allowed to predict all other variables in the model. We allowed the error terms for our parenting dimensions to covary, due to the similar nature of the question format; for the same reason, we also allowed the error terms for cooperative and fighting behavioural reputations to covary. According to Kline (2005), the model fit indices were not adequate, $\chi^2(6) = 18.109$, $p = .006$, comparative fit index (CFI) = .983, root mean square error of approximation (RMSEA) = .122.

We then trimmed the model by deleting all non-significant paths (with the exception of those connected to our control variables of sex and receptive language,

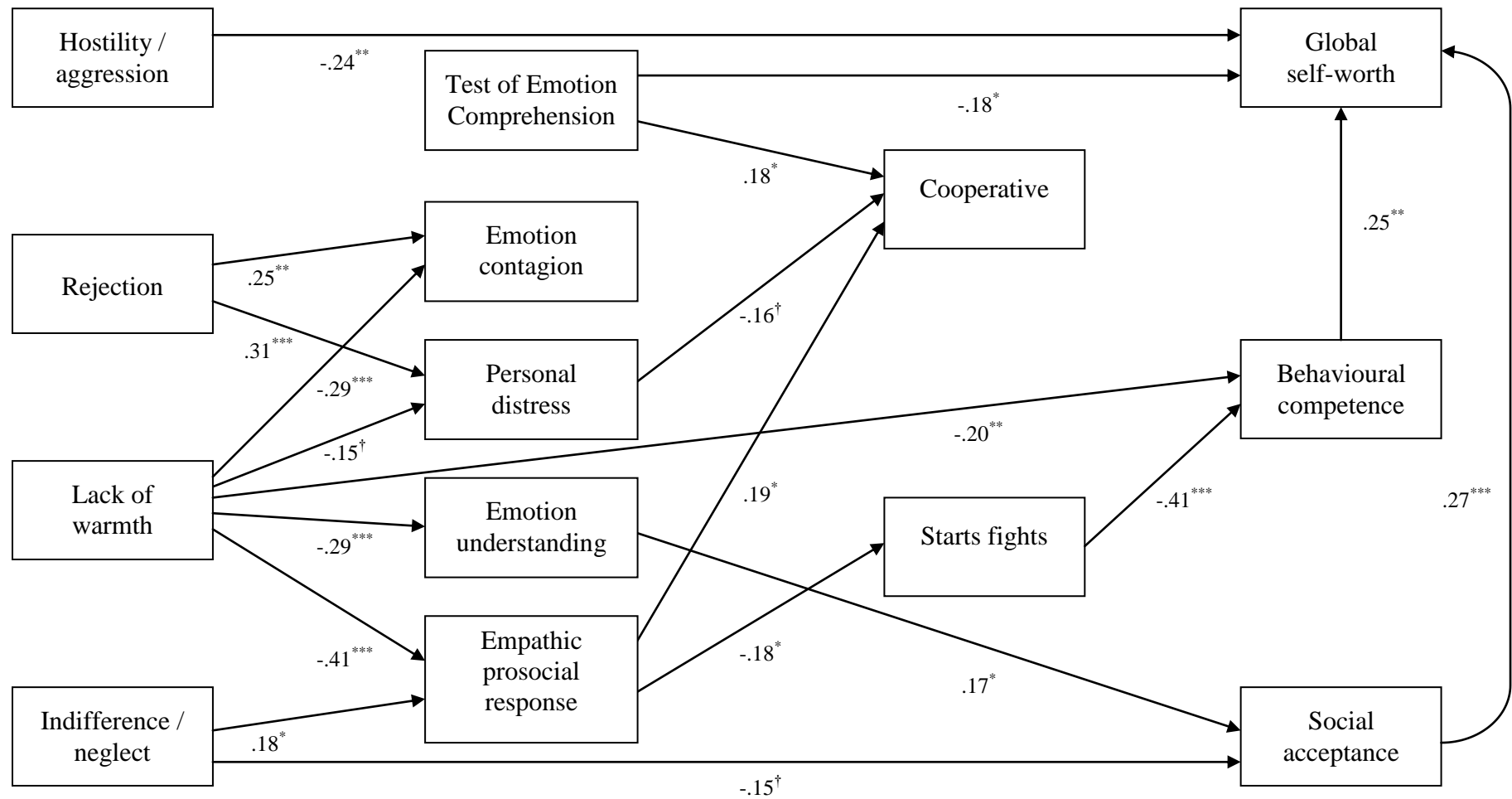


Figure 6.2. Structural equation model for the links between perceived parenting experiences, social understanding, empathic responding, peer reputations, and self-perceptions, $\chi^2(59) = 51.485$, $p = .746$, CFI = 1.000, RMSEA < .001. Figures given are standardised coefficients. Sex and receptive language were allowed to predict all variables.

$^\dagger p \leq .10$ $^* p \leq .05$ $^{**} p \leq .01$ $^{***} p \leq .001$

which were retained regardless of significance level). The resulting model was a good fit, $\chi^2(59) = 51.485$, $p = .746$, CFI = 1.000, RMSEA < .001. Our trimmed model is illustrated in Figure 6.2; its fit was not significantly different to that of our initial model, $\Delta\chi^2(53) = 33.376$, $p > .25$.

The model revealed the key paths along which perceived parenting experiences were linked to children's socio-emotional well-being. As with Study 1, we report all findings here with $p \leq .10$. First, there were direct links between the various dimensions of parenting and children's self-perceptions. A higher score on the lack of warmth subscale was linked to lower perceptions of behavioural competence, $\beta = -.20$, $p = .004$. In addition, there was a trend for greater parental indifference/neglect to predict poorer self-perceived social acceptance, $\beta = -.15$, $p = .075$. Finally, higher scores for parental hostility/aggression were linked to lower global self-worth, $\beta = -.24$, $p = .002$.

There were also a number of mediated pathways between our variables; to get an accurate estimate of indirect effects we restored the relevant direct paths (despite being non-significant) to the model for these calculations. Most of the significant pathways in our model revealed the importance of warmth as a perceived parenting experience.

There was a trend for children who perceived their relationship with parents as more lacking in warmth to receive more nominations from peers as being someone who starts fights; this relationship was mediated by lower prosocial empathic responding (standardised indirect effect = .066, 95% CI [.002, .147], $p = .086$). In turn, this pathway led to poorer self-perceived behavioural competence (from lack of warmth to behavioural self-perceptions, standardised indirect effect = -.038, 95% CI [-.089, -.005], $p = .051$). The pathway then ended with lower global self-worth (from lack of warmth to global self-worth, standardised indirect effect = -.051, 95% CI [-.110, -.010], $p = .049$). Prosocial responding was not the only important aspect of empathy in explaining

children's self-perceptions. There was a second significant pathway from greater lack of warmth to lower global self-worth, which was mediated by poorer empathic emotion understanding and lower self-perceived social acceptance (from lack of warmth to global self-worth, standardised indirect effect = $-.056$, 95% CI $[-.118, -.014]$, $p = .040$). Finally, there was a trend for perceived parental indifference/neglect to predict lower global self-worth, and this was mediated by lower self-perceived social acceptance (standardised indirect effect = $-.061$, 95% CI $[-.133, -.001]$, $p = .094$). No other indirect effects were found to be significant. Emotion comprehension did not play a mediating effect in our model as none of our parenting dimensions was uniquely related to it after controlling for the other dimensions, sex, and receptive language. Moreover, none of the indirect pathways in our model from parenting experiences to a reputation for cooperative behaviour (via personal distress or prosocial responding) was significant, and neither was the pathway from indifference/neglect to starting fewer fights via more prosocial responding.

6.4.3 Discussion

Children's perceptions of negative parenting experiences were correlated with less positive and more negative peer reputations, and with poorer self-perceptions. More negative parenting was also related to lower empathy and higher personal distress, as well as poorer emotion comprehension. In testing our proposed mediators, structural equation modelling showed that the links between perceived parenting and a reputation for less cooperative behaviour were mediated by less prosocial and more distressed empathic responding; however, cooperative behaviour had no further links with children's self-perceptions. Moreover, after controlling for other factors, emotion comprehension was no longer linked to our parenting variables. In contrast, there were

clear mediated pathways from both a lack of parental warmth and parental indifference/neglect to lower global self-worth which were explained by less prosocial empathic responding, a reputation for starting fights, and more negative behavioural self-perceptions.

6.5 General Discussion

Our key aim in this paper was to test a mediational model that could explain links between negative parenting experiences and children's socio-emotional difficulties. In doing this we also aimed to uncover the differentiated pathways by which particular dimensions of negative parenting might link to specific patterns of strengths and difficulties. The findings we have reported here lend partial support both to the hypothesised mediational links and the need for a multidimensional approach to assessment. In Study 1, we showed that a greater lack of warmth was linked to a less positive behavioural reputation, which in turn predicted more negative self-perceptions. While this offered partial support for our first hypothesis, the relatively small sample size meant that the predicted links between other aspects of negative parenting and negative behavioural reputations were not shown. Study 2 supported the relationship between more negative parenting and negative self-perceptions shown in Study 1, but the inclusion of mediating variables and the larger sample size revealed a different set of pathways. In partial support of our second hypothesis, negative parenting experiences were generally predictive of lower empathy, though they were not related to theory of mind or to emotion comprehension. The structural equation modelling conducted in Study 2 also lent partial support to our third hypothesis by showing that personal distress, empathic emotion understanding, and prosocial responding acted as mediators in the links between negative parenting experiences and children's

problematic peer reputations and self-perceptions. Finally, our use of multidimensional measures revealed a truly differentiated pattern of socio-emotional well-being dependent on the specific type of parenting experience encountered.

Our analysis adds to the growing body of research that links children's parenting experiences with their socio-emotional well-being. While the basic idea of such a link is widely accepted, our investigation has highlighted the specific patterns of difficulties that might arise in the context of particular negative parenting experiences. Moreover, by focusing on subjective perceptions of parenting experiences rather than parental self-reports or objective observations, we have shown the specific acts of commission and omission that might be most salient for children's socio-cognitive development.

The Importance of Parental Warmth

Examining the pattern of relationships in our structural equation model in more detail reveals the intricacies of the links between parenting, social understanding and empathy, peer reputations, and self-perceptions. One conspicuous finding was the importance of children's perceptions of parental warmth for their empathic responding and socio-emotional well-being. First, a direct path in the model showed that children who felt that their parenting experiences lacked warmth were more likely to see themselves as badly-behaved. Given that warmth involves the expression of positive affect and affection (Davidov & Grusec, 2006), this finding implies that poor behavioural self-perceptions could at least in part be predicted by a *lack of positive* feedback – not simply the *presence of negative* feedback. In addition, a perceived lack of parental warmth was linked with lower self-perceived social acceptance via children's difficulties with empathic emotion understanding. In turn, self-perceptions of both behavioural competence and social acceptance were positively linked to global

self-worth, and this reflects the importance of peer group acceptance in this age group (Parker & Gottman, 1989).

A perceived lack of parental warmth also had important links with children's empathic responding. In fact, lack of warmth was the only parenting dimension that predicted lower scores for all four types of empathic response, suggesting a particularly strong link between a warm parenting environment and children's empathy. We have already mentioned that this was the case for empathic emotion understanding; the same was also true for emotion contagion and personal distress responses. Empathic prosocial responses were also less likely when children perceived a greater lack of parental warmth, and this finding on the connection between warmth and the motivation towards prosocial behaviour complements work that has shown a link with the behaviour itself (e.g., Krevans & Gibbs, 1996). The links between perceived parenting and empathy shown here build on those reported by Strayer and Roberts (2004), in which an empathy measure incorporating children's emotion contagion and emotion understanding was positively related to parental warmth. Moreover, our work shows that this also holds for empathic responses characterised by personal distress and prosocial motivation. This supports the notion that empathic responding is learned in the context of warm and supportive interactions with parents, so that where this is absent children fail to fully develop even the most basic types of empathic response.

Although our zero-order correlations indicated an association between higher parental hostility/aggression and lower scores on the Test of Emotion Comprehension, neither warmth nor any of our other parenting dimensions were uniquely related to children's theory of mind or emotion comprehension scores. We suggest some explanations for this; for example, we may be observing the difference between more 'extreme' and 'typical' negative parenting experiences. Indeed, the evidence for a

relationship between negative parenting experiences and deficits in social understanding – particularly emotion comprehension – is more established in the literature on maltreatment than in more general parenting research (for a review see Paper 1). Alternatively, it may be that our child-report measure of perceived parenting experiences does not get at the parent-child interaction experiences that more proximally relate to social understanding; for example, parent-reported or objectively-observed general negativity might be more effective at capturing specific parenting practices that are relevant, such as scaffolding techniques or mind-minded responsiveness. Further research involving multiple informants on parental negativity would address this possibility. Interestingly, we did find links between a lack of parental warmth and children's empathic emotion understanding, despite some overlap in content between this type of empathic response and the tasks in our measure of emotion comprehension. This discrepancy is difficult to explain, but it may be a reflection of the differences in the content of these two measures. The Test of Emotion Comprehension measures children's responses to story characters about imaginary characters, while the Empathy Questionnaire asks them to respond to hypothetical scenarios involving family, friends, and classmates. It may be the case that children's responses to the Empathy Questionnaire were simply more emotionally salient than to the TEC, making their scores on this measure more ecologically valid (Dunn, 1988). Of course, it is also possible that the very children who struggle with social understanding and empathy are unable to identify the negativity in their parenting experiences, either because they do not recognise them as atypical, or because they are unable to access the mental state understanding required in answering items such as 'they think that other children are better than me'. Again, multi-informant research could be used to assess whether this is indeed the case.

A further unexpected finding was that while children's scores on the Test of Emotion Comprehension were a positive predictor of a reputation for cooperative behaviour, they also showed a *negative* link with global self-worth. Though unexpected, this finding might be explained with reference to recent work by Cahill, Deater-Deckard, Pike, and Hughes (2007). They showed that maternal warmth was a moderator of the link between preschool children's theory of mind and their feelings of self-worth; where warmth was high, the relationship was positive, yet where it was low, the relationship was negative. The results of the present study may reflect a similar situation but in relation to a different dimension of parenting. When controlling for other aspects of negative parenting, greater hostility/aggression predicted poorer self-worth; moreover, our zero-order correlations indicated that hostility/aggression was linked to poorer performance on the TEC. Although a direct test of moderation is needed to verify this possibility, this suggests that children who are more aware of their parents' anger may have a more damaged sense of self-worth.

Self- versus Other-focus in Empathic Responding

Hoffman (1984) conceptualises the development of empathy as a move from self- to other-focussed responses. In the present study, we found that both of these aspects of empathy were predicted by parenting experiences, but in different ways. The self-focussed responses of emotion contagion and personal distress were linked to parental rejection and a lack of warmth; but while rejection predicted higher scores on these dimensions of empathy, lack of warmth predicted lower scores. This finding suggests that children's perceived parental rejection is associated with a bias towards a less mature form of empathic responding, while a lack of warmth is linked to lower empathic responding across the board. Riley, Adams, and Nielsen (1984) have shown that perceived parental rejection predicts heightened self-consciousness in adolescents,

and argued that rejection undermines the security that is needed for children to move away from a focus on the self. On the other hand, learning about ways to respond to social situations occurs in the context of interactions with parents, and where this is less warm, parents are less likely to scaffold children's development (Carr & Pike, 2012). A lack of warmth might therefore mean that children do not experience the opportunities to develop the emotion awareness that is needed to register an empathic reaction. This would suggest that different intervention strategies might be appropriate to improve the empathic abilities of children with specific negative parenting experiences.

The other-focussed responses of emotion understanding and prosocial motivation both had negative links with a perceived lack of parental warmth. In contrast, children reporting higher levels of indifference/neglect from their parents were *more* likely to see themselves responding prosocially. This finding was unexpected, but arose as a result of controlling for other types of negative parenting experiences. While indifferent parenting might be expected to provide fewer opportunities for the socialisation of prosocial responding, there is emerging evidence from the research on maltreatment that the moral development of neglected and abused children may differ, with neglect predicting higher guilt and more donation behaviours in girls than abuse (Koenig, Cicchetti, & Rogosh, 2004). Moreover, given the negative link between indifferent parenting and self-perceived social acceptance, there is a possibility that children who feel neglected are more likely to put effort into social behaviours that might improve their chances of gaining the social acceptance they feel is lacking. The finding is certainly worthy of further exploration.

Not all of these dimensions of empathic responding related to peer reputations, however; in fact, only personal distress and prosocial empathic responding were linked to behavioural reputations. It may be argued that this is because distress and prosocial

responding represent the most ‘extreme’ conceptions of the self- vs. other-focussed empathic response. A reputation for cooperative behaviour was less likely where children described personal distress responses to others’ affective situations, and more likely when their responding was prosocial. This finding reflects Hoffman’s (1984) conceptualisation of prosocial responding as a more ‘mature’ form of empathy, which would be in keeping with a positive self-image in our sample’s age group. In contrast, a negative behavioural reputation for starting fights was related only to a lower likelihood of prosocial empathic responding. This also makes sense; while successful cooperation is likely to require both the activation of an other-focussed response and the inhibition of personal distress, emotional distress can alternatively make starting fights more likely (Tschann, Flores, Pasch, & Marin, 2005) or prompt the individual to escape from the emotive situation (Eisenberg & Strayer, 1987).

In turn, a reputation for starting fights was clearly related to poorer self-perceived behavioural competence, which in turn predicted lower global self-worth. In contrast, there was no relationship between a cooperative behavioural reputation and children’s self-perceptions in any of the domains measured. If social feedback influences self-perceptions (e.g., Kamins & Dweck, 1999), then these differences in well-being might suggest that antisocial behaviour is more likely to prompt a critical peer response than prosocial behaviour is to prompt praise.

Limitations and Future Directions

Our results have established the importance of negative parenting and empathic responding in predicting children’s peer reputations and self-perceptions, as well as the differentiated patterns by which these variables are connected. An examination of our structural equation model shows, however, that there is still a substantial proportion of the variance in our social understanding, empathy, and well-being variables to be

explained; future work should aim to establish the factors besides differences in parental negativity which predict children's maladaptive patterns of empathic responding.

Likely candidates include executive functioning, and in particular the ability to inhibit distress responses in social situations, which may play a role over and above the ability to exercise effortful control over behaviour (Fox & Calkins, 2003). Another is situational self-efficacy, by which children differ in their confidence in being able to behave in certain ways in social interactions (Crick & Dodge, 1994).

It is also important at this point to acknowledge that our results are based on correlational data, and so no conclusions can be made about causality. Our model represented the integration of separate bodies of work that have examined the links between negative parenting and children's social understanding and empathy (e.g., Strayer & Roberts, 2004), and between these aspects of socio-cognitive functioning and children's peer relationships and self-perceptions (e.g., Caputi et al., 2012). It was based on theoretical considerations about the likely sequences of events, as well as emerging evidence for a potential mediating relationship in younger children (Ensor et al., 2011). It is possible, however, that the relationships between our variables could be modelled in different ways. First, it is conceivable that specific types of parenting behaviour might arise in response to children's behaviour (Dunn, 2010). In the same way that children's understanding of intention can colour their responses to social stimuli, so too can parents' attributions of hostile intent in their children's behaviour make them more likely to respond with harsh punishment (Nix et al., 1999). Though we did not find direct links between specific behavioural reputations and any of our parenting dimensions, the relationship between a perceived lack of parental warmth and poorer behavioural self-perceptions might therefore be indicative of a negative parental response to children's 'bad' behaviour. Alternatively, as both of these involved the use

of self-report measures, it may also be that those who feel more negatively about themselves are also likely to rate their parenting experiences as more negative. Moreover, it is likely that the links we have drawn from social understanding and empathy to children's peer relationships are also bidirectional; there is evidence to show that children who are rejected by their peers aged 7 have poorer understanding of complex social situations (specifically, *faux pas* situations involving unintentional insults) aged 8, while 10-year-olds' lower *faux pas* understanding predicts greater peer rejection at age 11 (Banerjee, Watling, & Caputi, 2011). Further work incorporating our broader range of parenting, socio-cognitive, and socio-emotional well-being variables should move beyond our cross-sectional design to adopt a longitudinal programme of research, in order to establish the temporal and causal sequences by which negative parenting experiences might be related to problematic social understanding and empathic responding.

We have already discussed potential limitations of our measures and the need for further multi-informant work. What should also be made central to future investigations of the variables in our model is the need to incorporate a larger sample of children; a larger sample would help to overcome the limitations on statistical power that is needed in structural equation modelling to detect significant relationships between variables, and it is entirely conceivable that new relationships would emerge given a large enough sample.

Conclusions

Notwithstanding the limitations outlined above, the studies we have presented here make a unique contribution to the field of research on the links between negative parenting experiences and children's socio-emotional development. By testing a mediational model incorporating previously disparate strands of research, we have

established key paths by which parenting experiences are linked to children's social relationships and self-perceptions. Crucially, our use of multidimensional measures and a focus on children's own perceptions of their parenting experiences have enabled us to tap into the subtle differences in children's skills and abilities that emerge during middle childhood. Although longitudinal work is needed to establish the causal connections between the variables measured here, our results have implications for intervention work with families and in the peer group setting, suggesting that the encouragement of parental warmth and the development of mature forms of empathic responding may be crucial for improving children's socio-emotional well-being.

Chapter 7: General Discussion

7.1 *General Discussion*

The thesis presented five papers on the role of social understanding and empathy as potential mediators of the links between children's parenting experiences and their peer reputations and self-perceptions. This final section will provide a summary of the overall findings, and a discussion of their theoretical and practical implications. It will include a consideration of the limitations of the current programme of research, as well as directions for future work.

7.2 *Summary of Findings*

Links between Parenting, Peer Reputations, and Self-perceptions

Our first aim was to examine the multidimensional nature of children's peer reputations and self-perceptions in relation to their negative parenting experiences. We investigated this in children who had experienced physical abuse and neglect, as well as samples of their classmates who had experienced more typical forms of negative parenting. First, the research presented in Paper 4 showed that there was a clear link between maltreatment status and problematic socio-emotional well-being. There was a trend for maltreated children to have lower self-worth; they were also seen by their peers as more disruptive and more likely to start fights, and experienced higher levels of peer rejection. This reputation was reflected in their self-perceptions: they saw themselves as being more badly behaved than did their peers, and this was related to a lower sense of self-worth independently of the direct effect of maltreatment status. However, there was some indication that the relative scarcity of positive features was

also important, as maltreated children were less likely than their peers to have a reputation for cooperative behaviour.

In contrast with previous research (e.g., Boivin & Bégin, 1989), we did not find any link between a higher level of peer rejection and general self-worth. This discrepancy may be due to maltreated children's greater familiarity with rejection as a characteristic of the 'typical' relationship embodied in their internal working models. Alternatively, it could be argued that difficulties with social understanding might make maltreated children less able to appreciate when they are being rejected. Indeed, our maltreated group did not feel that they were any less socially accepted. This replicates the finding of Barnett, Vondra, and Shonk (1996) with 8- to 11-year-olds, and also reflects our finding that maltreated children were no lower on peer-nominated social acceptance than their classmates. In addition, while their reputation for starting fights was linked to poorer behavioural self-perceptions, being seen as less cooperative did not consistently relate to self-perceptions. A potential explanation for this set of findings is that children are made more aware of their negative social behaviours than positive ones thanks to the disciplinary and peer feedback they receive as a consequence of their actions. According to Crick and Dodge (1994), this kind of negative feedback would add to the evolving database of stored memories that would influence children's information-processing in future interactions, making antisocial responses more automatic.

These general patterns of results from our quantitative work were supported by the in-depth accounts from our qualitative study with foster carers, reported in Paper 2. Carers provided numerous examples of children's negative self-perceptions and their active rejection by peers. They also related something which was a key theme in Paper 4, namely that a number of maltreated children have little difficulty in making friends

(as reflected in the self-perceived social acceptance scores), but that problems arise in maintaining friendships due to their inappropriate behaviour.

Turning next to Paper 5, the multidimensional parenting scale used here revealed a number of interesting links that extend our understanding of the results from our maltreatment study. First, perceived parental hostility/aggression had a direct link to lower global self-worth, mirroring the direct link from maltreatment to self-worth in Paper 4. This supports the suggestion that harsh parenting can lead the child to develop an IWM of the self as someone who is essentially unlovable (Thompson, 2008), and this could explain the similar direct effect shown in our maltreatment sample. Second, there was a direct link from a perceived lack of parental warmth to poorer self-perceptions of behavioural competence. Harter, Marold, and Whitesell (1992) have previously investigated the concept of ‘conditional support’, wherein children feel that their parents’ support is dependent on their meeting a set of behavioural criteria that are pleasing to the parents. Harter et al. (1992) argued that higher levels of conditional support could undermine children’s self-worth. It may be that the link we have observed is a reflection of this phenomenon, with the children of less warm parents feeling that they have failed to live up to their parents’ expectations of good behaviour. Third, more typical experiences of parental indifference/neglect were linked directly to lower self-perceived social acceptance. We did not find this link in our sample of abused and/or neglected children in Paper 4, but the results in Paper 5 suggest that less extreme experiences as reflected in perceived parental indifference/neglect may still provide fewer opportunities for socialisation experiences, making it more difficult for these children to make friends. Our zero-order correlations also suggested links between all four parenting dimensions and a reputation for less cooperative behaviour, and between a lack of warmth and a reputation for starting fights; we will outline below

how these links were affected by the addition of social understanding and empathy to our model. Finally, our measures of negative parenting within the general population were not related to children's levels of acceptance or rejection in the classroom.

Links between Parenting, Social Understanding, and Empathy

Our second aim was to examine the particular parenting experiences by which individual differences in children's social understanding and empathy might arise. First, the meta-analysis and systematic review of the existing research with maltreated children and adults reported in Paper 1 indicated that overall, maltreated children do experience difficulties with social understanding, at least in terms of emotion knowledge, perspective-taking, first-order false belief, and hostile attribution biases. Moderation analyses of emotion skills showed that the more advanced skill of emotion understanding was more substantially affected by maltreatment than was emotion recognition; moreover, younger age groups were more affected than adolescents and adults. In interpreting the latter finding, we need to consider that studies in which adolescents and adults report retrospectively on their experiences of maltreatment might have produced different results had these experiences been recorded objectively by a third party or even by the parents themselves, as was more common in the younger age groups. In retrospective designs participants might have a poorer memory of any maltreatment experiences or may not recognise them as excessively harsh or neglectful; moreover, older groups are more likely to have had support to develop their skills in the intervening years (for example, from foster carers) or to have developed compensatory strategies for any early dysfunction. In support of the overall results of the systematic review, the accounts of foster carers reported in Paper 2 included a number of stories about children who had problems understanding others' emotions and intentions, and who had difficulty appreciating the reactions that might ensue from their own

behaviour. They were also often described as being unable to respond prosocially to others' distress.

The systematic review in Paper 1 revealed that this overall difficulty masked a complex profile of strengths and difficulties. Examination of these subtle differences was assisted by the use of multidimensional measures including the Empathy Questionnaire described in Paper 3, which usefully revealed that a key aspect differentiating positive and negative peer reputations was prosocial empathic responding. Similarly, our maltreatment study in Paper 4 indicated that maltreated children were less likely to say that they would have a prosocial empathic response. Maltreated children were also poorer at the Theory of Mind Test (specifically, at differentiating between appearance and reality and at understanding second-order false beliefs), and although performance on this test was linked to children's receptive language, there was no difference in the language abilities of our two groups. Our analyses indicated that in middle childhood at least, the strongest links with maltreatment were seen for more mature socio-cognitive functioning.

The results of the parenting study in Paper 5 add a further dimension to the examination of our model, suggesting that in less extreme family circumstances it is the absence of positives that has more widespread connections with children's social understanding and empathy than the presence of negatives. A perceived lack of warmth was linked to lower empathic responding across all subscales, but its strongest link was with less prosocial responding. This reflects a similar relationship shown with this subscale in our maltreated sample, so it appears as though at its extreme a lack of parental warmth could have its strongest link with more mature forms of empathic responding. In contrast, perceived parental rejection predicted the least mature forms of empathic responding (emotion contagion and personal distress), which were not a

particular issue for our maltreated sample. This was an unexpected discrepancy, but again reflects the key theme that the most salient links were with more mature forms of responding, as indicated throughout our work. Finally, perceived parental indifference/neglect was actually shown to be a positive predictor of prosocial responding after controlling for other types of negative parenting, although in our zero-order correlations the relationship was negative. This indicates that less extreme experiences of parental indifference need not always be negatively linked to children's socio-cognitive competence, as long as they are not accompanied by other negative parenting experiences. Interestingly, the negative link between indifference/neglect and self-perceived social acceptance suggests that these children are prepared to act more prosocially when given the opportunity, but still find it hard to make friends. This is supported by the accounts of the foster carers in Paper 2, who were keen to point out that the children in their care had a real desire to belong but simply lacked the social skills that would help them to be accepted in their peer group.

Links between Social Understanding, Empathy, Peer Reputations, and Self-perceptions

Our third aim was to ascertain the differentiated links between specific aspects of children's social understanding and empathic responding and particular behavioural reputations and self-perceptions. The key message on this question from Paper 4 was that those socio-cognitive responses which were lacking in our maltreated group were linked to their socio-emotional well-being. Both Theory of Mind Test scores and prosocial empathic responding predicted higher self-perceived behavioural competence, but our maltreated sample scored lower than their peers on each of these variables. Prosocial responding was also predicting variable for our broader sample in Paper 5, though for them the link with behavioural self-perceptions was mediated by a reputation

for starting fights. In addition, the key aspect of social understanding for this nonmaltreated group was not the Theory of Mind Test, but the Test of Emotion Comprehension, and rather than predicting behavioural self-perceptions this variable had a direct link with global self-worth. Similarly, their empathic emotion understanding was linked to global self-worth via self-perceived social acceptance. We have already argued, in line with Cutting and Dunn (1999), that emotion understanding and false belief understanding are related but distinct aspects of social understanding, and the differences in results between our two samples would appear to support this. It seems that for our nonmaltreated group, understanding how other people are feeling and why they might be feeling that way was an important predictor not only for positive peer reputations, but also for feeling good about oneself. In contrast, for our maltreated group the issue was not with understanding the *emotions* of others, but instead their *perceptions, thoughts, and beliefs*; and while these difficulties did not relate to their actual behavioural reputations, they did predict a more negative self-perception of behavioural competence. Having less mature social understanding did not predict a greater likelihood of starting fights, but each of these separately predicted poorer behavioural self-perceptions. This lends further support to the argument made above that maltreated children's poorer behavioural self-perceptions may be an automatic response to the negative feedback they receive, reinforcing their negative internal working models of the self, and that this process can occur without necessarily involving any deeper understanding of how their behaviour is affecting the thoughts and opinions of other people.

Papers 4 and 5 showed that for our broader sample, being seen as cooperative was linked to both the inhibition of personal distress and the presence of prosocial responding, whereas for our maltreated group only the latter was important. Moreover,

it was only in our broader sample that prosocial empathic responding predicted a lower likelihood of being seen as someone who starts fights: maltreated children were seen as fighters regardless of any prosocial responding. It may be that it is for this type of negative reputation, rather than a more positive cooperative reputation, that inhibitory control comes into play for those who lie at the extremes of negative parenting experiences. Maltreated children have been shown to have lower inhibitory control (Pears, Fisher, Bruce, Kim, & Yoerger, 2010), and according to Crick and Dodge's (1994) model their aggressive behaviours will have become automatised, so it is possible that no amount of prosocial responding in this group can compensate for the inability to inhibit aggressive behaviour.

Testing our Mediational Model

Our final aim was to test our mediational model by investigating the role of individual differences in social understanding and empathy as mediators of the relationship between negative parenting experiences and problematic peer reputations and self-perceptions. Support for our model was found in Paper 4, where poorer performance on the Theory of Mind Test and less prosocial empathic responding mediated the links between maltreatment and socio-emotional outcomes, specifically in terms of peer reputations for less cooperative behaviour and poorer behavioural self-perceptions. Similarly, the foster carers we interviewed for Paper 2 readily identified children's difficulties with social understanding and empathy as relevant explanations for their socio-emotional problems. Moreover, the parenting work in Paper 5 showed that even in less extreme cases, empathic distress and prosocial responding mediated the links between parenting experiences (rejection, lack of warmth, and indifference/neglect) and children's behavioural reputations. Finally, although this indirect pathway did not achieve statistical significance, the unexpected positive link

between perceived parental indifference/neglect and behavioural self-perceptions – which operated via greater prosocial empathic responding and fewer nominations for starting fights – also suggested one way in which an indirect pathway might play a role in counteracting a more general negative trend regarding neglected children’s self-perceptions.

7.3 Theoretical Implications

Our work has a number of important implications for theoretical conceptualisations of the links between extreme negative parenting experiences, social understanding and empathy, and peer reputations and self-perceptions. These support our decision to adopt a Vygotskian approach, following Astington (1996) and Fernyhough (2008), and placing individual differences in children’s parenting experiences at the heart of variations in their socio-cognitive functioning and socio-emotional well-being. Below we outline some of the key theoretical implications arising from our programme of research and explain how they advance our understanding of the development of social understanding and empathy.

Typical and Atypical Parenting Experiences

By adopting a two-pronged approach we have shown how particular dimensions of parenting are linked to children’s socio-cognitive functioning and socio-emotional well-being, and we argue that these links can help us to better understand some of the specific experiences at play in the maltreating context. The bulk of the previous literature on maltreatment has emphasised the presence or absence of observable acts of commission or omission, and indeed our own adoption of this approach in Paper 4 illustrates some of the outcomes that can result from these. However, Paper 5 shows

that children's perceptions about parental acts also play an important role, even where they are less extreme. First, our work has added to the literature on the importance of warmth for children's socio-cognitive development. The items in the warmth subscale of our parenting questionnaire tapped into parents' expression of positive affect and affection towards the child, in line with Davidov and Grusec's (2006) definition of the concept, and the pathways shown in Paper 5 from a lack of warmth to more negative behavioural reputations and self-perceptions were generally in line with previous research (Buschgens et al., 2010; Laible et al., 2004; Stocker, 1994). Yet warmth was not the only parenting dimension related to children's socio-emotional success, and both hostility/aggression and indifference/neglect showed direct links to more negative self-perceptions. We have already suggested that the direct path shown from greater perceived hostility/aggression to lower global self-worth in Paper 5 might provide some explanation of a similar relationship in Paper 4, by way of the relationship between harsh parenting and children's internal working models. We can also draw on previous work to explain the link from indifference/neglect to lower self-perceived social acceptance, as more neglectful families often provide a smaller social circle and therefore fewer opportunities for adaptive socialisation experiences (Sidebotham, Herring, & Golding, 2002; but see below for an alternative explanation). Taken together, the results of Papers 4 and 5 suggest that while the more obvious manifestations of negative parenting (hostility/aggression and indifference/neglect) that are usually implicated in child protection cases have an important role to play in children's socio-emotional well-being, attention should also be paid to the less observable factor that is the child's perception of a lack of parental warmth, which can have pervasive connections with children's peer reputations and self-perceptions by way of more problematic social understanding and self-perceptions.

A further point of comparison is the difference between documented child neglect and children's perceptions of parental neglect or indifference. While our sample size in Paper 4 meant that we were unable to perform analyses by maltreatment subtype, our largely neglected sample of maltreated children showed less empathic prosocial responses than their peers. Similarly, the zero-order correlations in Paper 5 showed that perceived parental indifference/neglect had a (non-significant) negative relationship with prosocial responding. Crucially, however, when other aspects of negative parenting were controlled, the relationship became positive. This suggests that as long as the child does not perceive the indifference/neglect to have arisen out of hostility, rejection, or a lack of warmth, then it need not be negatively related to their socio-cognitive competence.

Knutson et al. (2004) distinguished between the kind of supervisory neglect tapped into by our perceived parenting questionnaire and what they termed 'care neglect' (inadequate hygiene, food, and clothing, etc.); documented child neglect cases usually involve a combination of these two factors. Knutson et al. (2004) discovered that along with harsh discipline, care neglect (but *not* supervisory neglect) directly predicted children's aggression. The authors argued that poor hygiene as a result of care neglect could result in peer rejection and enforced solitary play, restricting children's socialisation opportunities. They added that any effect of supervisory neglect on aggressive behaviour came via care neglect. What our work has shown in support of this model is that in less extreme cases (Paper 5), supervisory indifference/neglect was not related to reputations for antisocial behaviour, but when the indifference was extreme enough to also incorporate documented care neglect (Paper 4), this directly predicted a reputation for starting fights. Yet children whose perceived parenting experiences were characterised by supervisory indifference/neglect still saw themselves

as having difficulties with social relationships, which were not reflected in any negative peer reputations. We can contrast this with the unproblematic social self-perceptions of our maltreated sample and offer an explanation that fits within our mediational framework. We would argue that the difference between our two samples is in their *awareness* of parental indifference and neglect. Our maltreated sample was poorer at the Theory of Mind Test, which would compromise their ability to appreciate their parents' indifference. In contrast, our nonmaltreated sample showed no difficulties with the test, making them fully aware of any indifference, and this explain the negative link with their self-perceptions.

Mature Responding in Middle Childhood

The narrower range of variables implicated in our mediational model in Paper 4 as compared with Paper 5 suggests that as parenting experiences progress along a continuum of negativity, it is the more mature kinds of socio-cognitive responding that become most salient. In other words, while more basic forms of social understanding and empathy might be important mediators of the relationship between parenting experiences, peer reputations, and self-perceptions in early childhood (the focus of most previous research on this topic, due to the greater prevalence of work on first-order false belief understanding), by middle childhood it is the relationship between parenting and children's ability to understand second-order reasoning and to have an empathic prosocial response that has the strongest links with their socio-emotional well-being. This finding points to limitations in the theory-theory approach (e.g., Perner, 1995; Wellman, 1990), which largely fails to capture the influence of individual differences in parenting experiences in producing variations in the child's developing social understanding, and also fails to account for the importance of prosocial motivations in enacting this understanding. Our results are also problematic for simulation accounts

(e.g., Harris, 1992), as the ability to put oneself in another person's shoes should extend to both cognitive and affective perspective-taking; yet while our maltreated sample had difficulties with the former, they performed at the same level as their peers on the latter. A similar argument could also be levelled at modularity approaches (e.g., Frith, Morton, & Leslie, 1991), whose emphasis on a single modular region of the brain dedicated to social understanding cannot explain our differentiated pattern of results.

In terms of development, our results suggest two possibilities for maltreated children: their extreme parenting experiences could either lead to a developmental delay in acquiring all forms of social understanding and empathy, or an inability to develop certain skills. The results of our meta-analysis in Paper 1 suggest that the former is a more likely explanation, as maltreated children appear to 'catch up' or at least develop compensatory strategies by adolescence and adulthood. In addition, the maltreated children whose data we report in Paper 4 were no different from their peers on less mature forms of social understanding and empathy. However, our cross-sectional design leaves us unable to rule out the possibility of more durable difficulties, and no previous studies to our knowledge have measured second-order false belief or prosocial empathic responding in maltreated children. It may be that in time, maltreated children are able to develop the cognitive capability to understand others in social situations, but that they continue to lack the motivational response to support others in times of distress. Knowing whether prosocial responding in particular remains unavailable to older maltreated children or whether its acquisition is simply delayed is important, given its associations with social and emotional outcomes. Banerjee (2002) has already cautioned that we need to consider motivational concerns alongside socio-cognitive abilities in explaining children's social behaviour, and it may be that the lack of a prosocial motivation even when social understanding has caught up to the level of peers

could explain why maltreated children are so often perceived as bullies (Teisl, Rogosch, Oshri, & Cicchetti, 2012).

Are Social Understanding and Empathy Always Adaptive?

In fact, although having more advanced social understanding and empathy has generally been linked to greater socio-emotional well-being, this is not always the case. Hughes and Leekam (2004) point out that the implications for social relations are not always positive: instead, they can be neutral or even negative. In addition, Dunn (1995) and Cutting and Dunn (2002) have shown that false belief understanding can be related to greater sensitivity to teacher criticism and lower self-esteem. Similarly, children with more advanced social understanding whose parenting experiences are less warm and responsive have poorer self-worth (Cahill et al., 2007). It appears that understanding other people's beliefs and intentions can potentially be detrimental to children's socio-emotional well-being when those mental states represent negativity towards the child. From this perspective, it could be argued that less mature forms of social understanding and empathic responding may, in some circumstances, actually be adaptive in the maltreating home. The literature suggests that the maltreating environment exposes children to certain atypical parenting experiences such as less frequent use of internal state language and a tendency to focus on self instead of other (Edwards et al., 2005; Wiehe, 2003), which can impair the development of social understanding and empathy. Yet by middle childhood these children have gained a wealth of social experience outside of the home, particularly through interactions with teachers and peers. It appears that maltreated children are initially not granted the kind of parenting environment that would encourage the development of social understanding and empathy, but that despite exposure to other socialising agents they continue to have

difficulties – and this may be because it is adaptive for them not to understand the maltreating parents' attitudes towards them.

This issue of adaptivity can be further related to our general finding that maltreated children can have differentiated profiles of strengths and difficulties regarding social understanding and empathy. We have already outlined the problematic aspects in some detail, but our systematic review in Paper 1 indicated that in many cases maltreated children can actually be superior to their peers in recognising expressions of anger and fear (e.g., Shackman & Pollak, 2005), while having difficulty in understanding the cause of such emotions (e.g., Perlman et al., 2008). This profile of strengths and difficulties can be related to children's maltreatment experiences in which some skills may be more functional or adaptive than others. Carpendale and Lewis (2006) suggest that social understanding develops first as a purposeful activity in social interactions, but we can add the important point that this purpose can differ according to what is most adaptive in the particular parenting situation. In the case of maltreatment and in particular physical abuse, we would argue that more frequent exposure to angry and fearful faces in the home makes recognition of such affective states more important for these children than for their nonmaltreated peers; and indeed, we saw in Paper 1 that this was reflected in comparisons of neurophysiological responses to angry and happy facial expressions (Cicchetti & Curtis, 2005). In contrast, inconsistent pairings of situation and emotion expression can make it difficult for maltreated children to develop the more mature cause-and-effect reasoning that characterises emotion understanding (Cicchetti et al., 2003; Pollak & Sinha, 2002). In light of these differences, we take Dunn's (1988) conception of social understanding developing in the context of self-interest, and apply it to the example of maltreated children. From this perspective, it is a more important skill in the maltreating home for a child to recognise the expression of

anger that would generally immediately precede an abusive act, rather than to understand *why* the anger has arisen in the first place. Particular types of information-processing are thus strengthened by concerns about self-preservation.

Self-interest may also explain why particular aspects of empathic responding were linked to children's parenting experiences. In Paper 5, we found that a perceived lack of parental warmth was linked to lower scores on all dimensions of empathy. It may be that children who view their relationship with parents in this way are to some extent disinclined to respond to others' affective situations as their experiences have taught them that any such efforts are unlikely to be rewarded by any positive social feedback. At the more extreme end of the parenting continuum, the results in Paper 4 showed that maltreatment was only related to less prosocial empathic responding. This suggests that the maltreated child may still experience internal affective and cognitive responses to the other's situation, but that their aversive experiences may make it maladaptive for them to feel the need to offer help to parents whose responses are generally unpredictable and may include further violence. On the other hand, where children perceive their parents to be indifferent or neglectful (Paper 5), empathic prosocial responding is more likely. This motivation to reach out to others may be a compensatory mechanism for the lack of attention they have received, perhaps even serving to counter the poorer self-perceived social acceptance reported in Paper 5. Given that higher prosocial responding was linked to lower loneliness and higher self-perceived social acceptance in Paper 3, this may be a good strategy.

7.4 Practical Applications

The practical applications of our work to children's social situations extend to both home and school environments. The tests of our mediational model in Papers 4

and 5 have provided important information on the most salient aspects of social understanding and empathy for maltreated and nonmaltreated children, which can have implications for their peer reputations and self-perceptions. In addition, the assessment of children's perceived parenting experiences in Paper 5 has shown the key parenting dimensions that could contribute to children's socio-cognitive functioning as well as their socio-emotional well-being.

Notwithstanding the need for further longitudinal work, our findings suggest a number of potential avenues for support and training that might be undertaken in the home and school settings in order to maximise children's potential for positive socio-emotional well-being. First, the results of Paper 5 have shown that even those negative parenting experiences that are not at the extreme ends of the continuum can predict children's peer reputations and self-perceptions. Specifically, our results indicate that parenting interventions which aim to reduce the levels of hostility/aggression and indifference/neglect might have implications for the way a child feels about themselves, both in terms of social acceptance and more general self-worth. Crucially, our results also showed the importance of perceived parental warmth for children's socio-emotional well-being. Parenting interventions for vulnerable children should therefore aim to achieve both a decrease in negative practices and an increase in positive practices. Programmes such as Incredible Years (Webster-Stratton, 1998) and the 'Triple P' (Positive Parenting Program; Sanders, 1999) can teach parents strategies for developing positive and involved relationships with their children, by showing them adaptive ways of playing together and communicating. In the context of maltreatment, what our findings also suggest is the need for foster care to provide not only the physical removal from the explicit aversive experiences of abuse or neglect, but also the (re)introduction of caregiver warmth.

Second, the results of Papers 4 and 5 showed the importance of more mature forms of social understanding and empathy for children's social success and positive self-perceptions. These findings have implications for the use of universal and targeted work with children to improve their functioning in these areas. That empathic prosocial responding in particular emerged as a key predictor of socio-emotional well-being, both in our maltreated sample and a broader sample of typically-developing children, suggests that this topic is worthy of some focus in intervention work. The role of understanding others' thoughts, beliefs, and feelings as represented by the Theory of Mind Test (Paper 4) and the Test of Emotion Comprehension (Paper 5) in predicting our socio-emotional variables also suggests a place is warranted for the teaching of these skills. This can potentially be achieved by the adoption of school-based strategies focussed on 'social and emotional learning', such as that of Durlak, Weissberg, Dymnicki, Taylor, and Schellinger (2011). The universal adoption of such programmes would help to maximise the chances of children's adaptive functioning in the social setting.

Besides universal work, our results also suggest that there may be a need for more intensive targeted work with particular groups of children whose socialisation experiences might have left them at a disadvantage. We have shown that maltreated children represent one such group, and that despite all of those in our maltreated sample being situated in foster care having been removed from the maltreating home prior to our data collection, they still experienced a number of difficulties that were linked to their maltreatment status. Targeted interventions to promote social understanding and prosocial empathic responding may be of particular benefit to this group, and would be in line with Government policies which highlight concerns about the social and emotional well-being of children in foster care (e.g., DCSF, 2009). For example,

software such as ‘Bubble Dialogue’, in which children are encouraged to reflect on the external vocalisations and internal thought processes of story characters, might help with the awareness of multiple perspectives (Jones, Price, & Selby, 1998). Moreover, empathy training programmes currently being targeted at bullies (e.g., Şahin, 2012) could bring similar reductions of antisocial behaviour in maltreated children, who are often over-represented in terms of perceived bullying behaviours (Teisl, Rogosch, Oshri, & Cicchetti, 2012). Similar programmes such as ‘Roots of Empathy’ – which has been linked to a decline in antisocial behaviour and a rise in prosocial behaviour (Schonert-Reichl, Smith, Zaldman-Zait, & Hertzman, 2012) – could also have benefits for maltreated children.

We recognise that training children to override ingrained patterns of responses is a long process. Moreover, the stories revealed by foster carers in Paper 2 indicate that this type of training may be forgotten in the heat of a stressful peer situation. We therefore suggest that children with documented or self-perceived negative parenting experiences may also benefit from parallel attempts to reduce the aggressive and violent behaviour that can earn them a more negative peer reputation. These interventions are likely to target the inhibitory response needed for children to ignore the ‘default’ setting of aggression that was adaptive in the maltreating home but which proves dysfunctional in more typical social situations. Children can be encouraged to make behavioural choices based on an appraisal of the consequences for self and others. Viewed from within the framework of Crick and Dodge’s (1994) social information-processing model, interventions that could improve children’s capacity for prosocial rather than antisocial behaviour should lead to more positive social feedback, breaking the cycle of violence and providing children with social experiences which challenge the overall

negative valence of their ‘database’. The value of training social information-processing competence has already been demonstrated by Fraser et al. (2005).

Fraser et al. (2005) raise the important point that such targeted work needs to address both home and school settings. The introduction of consistent messages from adults is especially important for maltreated children, whose parenting experiences have previously been characterised by inconsistency (Cicchetti, Rogosch, Maughan, Toth, & Bruce, 2003). Interventions in school should therefore be supported by work with foster carers. The carers in our study (Paper 2) indicated that they would welcome more specific training on supporting children’s developing social understanding and empathy, and given the results of our work with children in Paper 4 we might expect that this would have implications for maltreated children’s peer reputations and self-perceptions. There is already evidence that training conducted with foster carers can have direct benefits for children’s self-esteem (e.g., Minnis & Devine, 2001), so there is reason to hope that targeting the mediating variables in our model could bring similar gains for this vulnerable population.

7.5 Limitations and Future Directions

Our programme of research was subject to a number of limitations in terms of the methodologies and measures used, as well as the specification of relationships between variables in our model. We have argued that the mix of quantitative and qualitative methods employed in this thesis permitted an examination of the broad links between variables, supported by an in-depth investigation of how these translate to children’s everyday experiences; yet there are some important considerations to be made in evaluating these methods. First, the qualitative work we conducted with foster carers and social workers was based on a set of *a priori* research questions about

children's socio-emotional well-being and socio-cognitive functioning. By including questions that focussed on social understanding and empathy as potential mediators of maltreated children's difficulties with peer relationships and self-perceptions we could be accused of ignoring other potential explanatory factors.

Indeed, an examination of our model in light of our overall findings reveals several candidates that might be included in future work on this topic. Previous research suggests that both language and children's executive functions play key roles in the development of social understanding and empathic responding (e.g., Hughes, 1998; Milligan et al., 2007). Moreover, tests of more advanced social understanding are commonly highly verbal (Miller, 2012), and ours were no exception. While we controlled for children's receptive language in Papers 4 and 5 using the BPVS, it may be argued that measurements of children's *expressive* language are also needed, particularly given the early role of developments in children's use of internal state language (Bartsch & Wellman, 1995). Moreover, measurements of children's syntactic ability may be important as they allow children to express the embedded sentences ("X thinks that Y") that are characteristic of false belief understanding (Astington & Jenkins, 1999; Ruffman, Slade, Rowlandson, Rumsey, & Garnham, 2003). Notwithstanding this criticism, we did find correlations between children's scores on the BPVS and their performance on the Theory of Mind Test and the Test of Emotion Comprehension in Papers 4 and 5, which would suggest that we were right to control for this variable.

However, we did not include a measure of executive functioning, and several findings from our programme of research support the notion that this could play an important role in our model. First, our interviews with foster carers in Paper 2 indicated that maltreated children could sometimes pass tests of social understanding in the calm

and controlled context of a one-to-one interaction, but this did not always mean that they would use it in a social situation with peers. Instead, stressful situations could prompt a return to the kind of defensive strategies used in the maltreating context (Schofield & Beek, 2005*b*). In addition, Papers 4 and 5 showed that disruptive behaviour mediated the link between maltreatment and higher levels of peer rejection, while a reputation for starting fights explained the relationship between negative parenting experiences (including maltreatment) and poorer behavioural self-perceptions. Eisenberg, Cumberland, and Spinrad (1998, p. 244) have argued that "...social and emotional competence is partially based on individuals' abilities to regulate emotion and the behavior associated with emotional arousal." Moreover, a review by Hughes (2011*a*) has stressed the importance of environmental influences on children's executive functioning, which may mean that the development of inhibitory control is different in children with atypical parenting experiences. Given that physically abused children in particular are subject to higher than average states of physiological arousal (Schoore, 2001) and show poorer emotion regulation (Shonk & Cicchetti, 2001; Teisl & Cicchetti, 2008), it seems likely that executive functions could explain some of the variance we found in children's socio-cognitive functioning as well as its relationship to socio-emotional well-being.

There is also room in our model for the influence of other socialising agents. Dunn (2004) in particular has argued for the importance of peers and siblings in helping children to develop an understanding of the thoughts and emotions of others. Dunn claims that children's relationships with other children might bring their own particular contexts in which social understanding and empathy can develop, such as the role-taking involved in pretend play. Moreover, the emotional quality of children's peer relationships means they may place more value on learning to understand a friend's

mind in order to maintain the friendship, rather than understanding the minds of family members who were not personally chosen for social interactions. Since maltreated children have been shown to hold atypical views about the quality of their friendships (Salzinger, Feldman, Hammer, & Rosario, 1993), further research is needed to determine the role of friends in the development of social understanding and empathy for this group.

This relates to a further methodological consideration with important implications for our model, namely that our work employed solely cross-sectional designs. It is difficult to discuss the relationships in our model in terms of cause and effect when the data are cross-sectional, but the models we have tested here were based on theoretical considerations and previous empirical work. Nonetheless, longitudinal work employing each of our measures at different time points is necessary in order to outline a truly explanatory developmental account of the links between parenting experiences, social understanding and empathy, and peer reputations and self-perceptions. Longitudinal work would also allow us to examine some of the considerations outlined by Dunn (2010), including the possibility of bidirectionality (e.g., parents might respond more negatively to less empathic children, low self-worth might prompt antisocial behaviours, and peer rejection might colour perceptions of parenting experiences), and the idea that the importance of particular parenting dimensions might change over the course of children's development. Furthermore, investigation of developmental trajectories over time could be enhanced by a consideration of mental health and emotional adjustment outcomes such as anxiety and depression, for which social difficulties and poor self-perceptions are known to have important implications (e.g., Lee & Hankin, 2009; Pedersen, Vitaro, Barker, & Borge, 2007).

The specific measures employed in Papers 4 and 5 also bring with them a number of issues. For example, the majority of the measures we have employed in Studies 3, 4, and 5 relied on self- and peer-reports, which rely on self-awareness for children to be able to comment on their own responses to social situations. Moreover, children may give what they consider to be the most socially desirable responses. A related issue is the personal relevance of the target about whom the child is asked to reason. This is especially salient given that the measures of social understanding used fictional characters, while the Empathy Questionnaire and sociometric measure asked children to consider their real-life peers. Miller (2012) points out that we do not yet know whether the understanding shown by children in reasoning about story characters generalises to reasoning about the real people in their lives. These issues could be addressed by including parent- and teacher-reports on children's empathic responding and peer relationships. Parent/carer and teacher responses would offer the perspective of adults who may be more capable than the children being studied of taking a step back and viewing the cause-and-effect links between specific types of empathic responses, social behaviours, and peer reputations. Alternatively, rigorous observational methods such as those used by Dunn (1988) and by Main and George (1985) could be employed in order to examine how children's behaviour in social situations might indicate differences in their social understanding and empathic responding. Peer observations need not be intrusive and can still yield results: Alink, Cicchetti, Kim, & Rogosch (2012) have built on a successful observational paradigm in Cicchetti's research group which is conducted within a day camp setting, indicating that even in groups of children who were previously unknown to each other, adult observations of social interactions can reveal distinct patterns of behaviour in maltreated children which show some degree of fit with our results in Paper 4.

Observing children's interactions might also answer the question of whether or not children appreciate individual differences in the targets of their reason: in other words, does their task performance display person-general or person-specific reasoning? Dunn and Hughes (1998), for example, point out that children's understanding of emotions can vary across relationships; nonmaltreated children are more likely to have seen displays of happiness or anger in interactions with their mothers than fear or sadness, whereas all of these might be displayed in peers. There is also the fundamental issue of whether children are being asked to reason about someone else's mental states. This is a particularly important question for Paper 5, as several of the questions in our parenting measure rely on an awareness of parents' thoughts and feelings that may not be present in the very children whose social understanding and empathy have been affected by their parenting experiences.

Moreover, the scope of our investigations was limited in examining documented maltreatment and perceived parenting experiences, rather than the specific interactions, practices, and events that might act as mechanisms underpinning the developmental consequences of such experiences. Thus, it may be that an expansion of our model could determine whether our argument about the likelihood of parental mind-mindedness (Meins et al., 2003) being lower in maltreating families due to an increased focus on the self is indeed in evidence. Similarly, research is needed to determine the role of specific profiles of parent-child mutuality, use of internal state language, and emotion socialisation in relation to particular types of negative parenting.

This brings us to a further complication: the definition of 'maltreatment'. We have chosen to focus in our writing on the experiences of children who have been physically abused and/or neglected, but this decision in itself raises a number of issues. The first is whether or not these experiences can be separated both from each other and

from other types of parental maltreatment, but many reported cases include a degree of overlap between maltreatment subtypes (Trickett & McBride-Chang, 1995). This was addressed in our maltreatment study reported in Paper 4 by targeting only those children who had documented experiences of physical abuse or neglect, but this did not negate the possibility that some children had experienced both subtypes. Moreover, although we reported in Paper 1 the difficulties inherent in treating all maltreated children as a homogeneous group, we were forced in our own analysis to do so because of our small sample sizes. We were also reliant on these experiences having been reported and documented in child protection cases in order for children to be classed as maltreated, but it is entirely possible that our comparison sample also included some children whose abusive or neglectful experiences had not yet come to the attention of the authorities. We would argue, however, that this issue was addressed by our inclusion of a study in Paper 5 which looked specifically at the role of parenting dimensions for children who had not been previously identified as maltreated.

Ethical considerations meant that we were limited to administering our perceived parenting questionnaire to a nonmaltreated sample, and this meant that we could only infer how less extreme forms of negativity might relate to the experience of maltreatment. Similar ethical issues have previously prevented researchers from establishing maltreated children's perceptions of their parenting experiences. A rare exception comes from Herzberger, Potts, and Dillon (1981), who interviewed physically abused boys residing in a home for children with emotional and behavioural difficulties. They found that abused boys described their parents more negatively than did controls from the same residential home, in terms of emotional neglect and abuse. They were also more likely to explain fathers' physical punishment as being prompted by meanness, and felt that they had been hit more often than other children. This pattern of

negativity was not uniform, however, and a number of children said that they felt loved and wanted. The results of this study provide both a form of support and a criticism of our work: they underline the importance of asking all children about their perceptions of parenting experiences rather than relying on documented cases of maltreatment, but they also show that maltreated children's individual conceptions of their experiences can differ to an extent that makes treating them as a homogeneous group problematic. Regrettably, our sample sizes in Paper 4 and the lack of data reported by maltreatment subtype in Paper 1 have led us to do just that. But individual differences in maltreated children's experiences might moderate our pattern of results, including the severity, onset, frequency, chronicity and perpetrator(s) of maltreatment (Manly et al., 2001). Further moderation might be found by including measures of children's experiences outside the maltreating home, including the number of foster placements, attachment to current caregivers, and relationship with siblings, interactions with whom can also contribute to the development of social understanding and empathy (Dunn, 1988; Ruffman, Perner, Naito, Parkin, & Clements, 1998).

We must also consider the role of other potential moderating variables in our model. Given the previous research on gender differences in empathy and peer reputations (Garaigordobil, 2009; Hatzichristou & Hopf, 1996), we were careful to investigate the role of gender in Paper 3, but found no interaction effects. However, work with larger samples could evaluate the possibility of pathways in our mediation models being moderated by gender. For example, Hughes, Deater-Deckard, and Cutting's (1999) finding that preschool girls' theory of mind scores were linked to general parental warmth, while boys' scores were linked to more severe discipline, suggests that some types of parenting might be more important than others dependent on gender. Moreover, while we asked the children in Paper 5 to comment on their

perceived experiences with ‘parents or the adults you live with’, LaBounty, Wellman, Olson, Lagattuta, and Liu’s (2008) finding that mothers’ and fathers’ use of emotion state words with three-year-olds predicted different aspects of children’s social understanding suggests that our results may have been different had we specified which parents children should focus on. In addition, while we took the precaution of selecting our comparison sample from the same school classes as our sample of maltreated children (Paper 4), there remains the possibility that our groups could have been more closely matched in terms of socioeconomic status, a factor that has previously been shown to predict problematic social understanding (Cicchetti et al., 2003).

In summary, future longitudinal work is needed to examine the links between parenting experiences and children’s social understanding, empathic responding, peer reputations, and self-perceptions, in order to move further towards a truly explanatory model of children’s development. It should also aim to explore the personal and contextual factors that might contribute to children’s deployment of their developing socio-cognitive abilities. In addition, future tests of our model should incorporate some of the potential moderating and mediating variables outlined here. Finally, while our work has included a number of informants (carer, peers, self-report, assessments of ability), the triangulation of informants across variables would permit a more robust examination of our model.

7.6 Conclusions

Overall, the work presented in this thesis has shown support for our mediational model. Children’s negative parenting experiences, both in the typical spectrum and at the extremes represented by maltreatment, were shown to be related to problematic profiles of peer reputations and self-perceptions, and these links were mediated by

difficulties with social understanding and empathy, particularly in their most mature forms. Far from being a clear-cut picture of negativity, however, our work has revealed a complex pattern of strengths and difficulties related to particular parenting experiences. Our findings support a Vygotskian approach to the development of social understanding and empathic responding, with individual differences related to variations in early social interactions with parents. Finally, we have also presented evidence to suggest that apparent deficits in children's capabilities might in some cases be functionally adaptive in the face of particular types of parenting. Our mediational model has provided a foundation for future work, which can build on the links we have investigated to examine the many developmental trajectories along which negative parenting might give rise to the differentiated profiles we have reported here.

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Appendices

Appendix A: Foster Carer Interview Schedule

Background

How long have you been a foster carer?

How many children have you looked after?

What age range do you foster?

Tell me a bit about your current placement.

Self-perceptions and peer relationships

Thinking about this child/these children, do they...

...have difficulty getting on with other children?

...feel very bad about themselves?

What kind of reputation do they have? – How do other children respond to them?

Teachers? Other adults?

Have you also seen this with any children you've fostered previously?

In your experience, how common are these difficulties in foster children?

Why do you think they might have had these difficulties?

What is it that makes you think that?

Social understanding and empathy

Have any of the children you mentioned had difficulties...

...seeing things from someone else's point of view?

...understanding someone else's emotions?

...understanding why someone else has done something?

...responding appropriately to someone else's behaviour?

...responding appropriately to someone else's emotions (e.g., when you are sad they become happy/angry/frustrated)?

...controlling their own behaviour? [If yes:] Do you think that's because they don't understand what is appropriate behaviour, or do they understand but can't control it?

Support and training

How did you try to support them/work to improve their skills?

Why did you choose to do it that way?

What effect did it have, if any?

Can you think of a child you've fostered who...

...got on well with other children?

...felt good about themselves?

Why do you think these children didn't have the same difficulties as the others?

What is it that makes you think that?

Have you received any training on...

...why children's parenting backgrounds might lead to these difficulties? (If yes, what and how much?)

...ways of supporting children in these areas/working to improve their skills? (If yes, what and how much?)

If no, would you find this useful – for you? – for the foster child?

What sort of effect might it have?

Appendix B: Empathy Questionnaire (Pouw, Rieffe, Oosterveld, & Stockmann, 2012)

If someone else is upset...what would you do, how would you feel?

Please read each sentence carefully and mark to what extent it is true for you.

Mark the box that fits you best. There are no right or wrong answers.

	Not true	Sometimes true	Often true
1. When I know that one of my friends is feeling sad, I find it hard to eat or sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I can understand why a classmate would feel ashamed after doing something wrong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. When one of my friends is angry, I usually understand why they're feeling that way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. When a classmate is feeling angry, I want to do something to help	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. When one of my friends is crying, I feel nothing at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. When one of my friends is feeling sad, I understand why they're feeling that way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Watching a sad movie makes me feel sad as well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. It scares me to see someone cry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. It makes me sad to see a friend feeling sad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I can understand why a classmate would feel proud after doing something really well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. When one of my friends has a fight with someone, I try to help	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I want everybody to feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. When one of my friends is upset, I want to comfort him or her	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. It makes me laugh to see a friend having fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I feel really upset when I see two people having an argument	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. When someone gets angry, I often do not understand why	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. When a classmate is feeling sad, I want to do something to make it better	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. It frightens me when I see people having a quarrel or argument	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. When one of my friends is crying, I feel like crying too	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. When a classmate is crying, I can usually understand what has happened	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. When a member of my family is feeling sad, I feel terrible too	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I enjoy giving presents to friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. When one of my friends is angry, I also feel terrible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix C: Sociometric Survey (Banerjee, 2010)

In this questionnaire, you are going to be asked about the pupils in your class.

In each question, you are going to be asked to choose three pupils who fit a particular description. You should use the code numbers on your class list to indicate your choices.

1. First of all, please indicate the three pupils who you **MOST** like to spend free time with.

--	--	--

2. Next, please indicate the three pupils who you **LEAST** like to spend free time with.

--	--	--

3. Next, please indicate three pupils who are **kind and cooperative**. They help other people, share, and take turns.

--	--	--

4. Next, please indicate three pupils who are **disruptive**. They are not very good at being in a group.

--	--	--

5. Next, please indicate three pupils who are **shy**. These pupils are really quiet and always seem to be on their own.

--	--	--

6. Next, please indicate three pupils who **start fights**. They say mean things to other people, or push or hit them.

--	--	--

7. Finally, please indicate three pupils who are **leaders**. These pupils often seem to be in charge of things.

--	--	--

Appendix D: Self-Perception Profile (Harter, 1985)

For each question, decide whether the children on the left side or the children on the right side are most like you. Then, once you have decided which kind of children are most like you, fill in the circle next to **Really like me** or **Quite like me** to show how similar they are to you. You must fill in **ONLY ONE** circle for each question.

EX. Some children would rather play outdoors in their spare time	BUT	Other children would rather watch TV.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
<hr/>		
1. Some children feel they are very good at their school work	BUT	Other children worry about whether they can do their school work.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
<hr/>		
2. Some children find it hard to make friends	BUT	Other children find it's quite easy to make friends.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
<hr/>		
3. Some children do very well at all kinds of sports	BUT	Other children don't feel they are very good when it comes to sports.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
<hr/>		
4. Some children are happy with the way they look	BUT	Other children are not happy with the way they look.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
<hr/>		
5. Some children are often unhappy with themselves	BUT	Other children are quite pleased with themselves.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
<hr/>		
6. Some children wish they could be a lot better at sports	BUT	Other children feel they are good enough at sports.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
<hr/>		
7. Some children wish their body was different	BUT	Other children like their body the way it is.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
<hr/>		
8. Some children usually act the way they know they're supposed to	BUT	Other children often don't act the way they're supposed to.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
<hr/>		
9. Some children are happy with their height and weight	BUT	Other children wish their height or weight were different.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me

10. Some children are slow in finishing their school work	BUT	Other children can do their school work quickly.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
11. Some children are always doing things with a lot of other children	BUT	Other children usually do things by themselves.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
12. Some children usually get in trouble because of things they do	BUT	Other children usually don't do things that get them in trouble.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
13. Some children like the kind of person they are	BUT	Other children often wish they were someone else.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
14. Some children do very well at their classwork	BUT	Other children don't do very well at their classwork.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
15. Some children have a lot of friends	BUT	Other children don't have very many friends.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
16. Some children usually do the right thing	BUT	Other children often don't do the right thing.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
17. Some children feel they are better than others their age at sports	BUT	Other children don't feel they can play as well as others.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me
18. Some children are happy with the way they are	BUT	Other children wish they were different.
<input type="radio"/> Really like me <input type="radio"/> Quite like me		<input type="radio"/> Quite like me <input type="radio"/> Really like me

Appendix E: Loneliness Questionnaire (Asher & Wheeler, 1985)

Put a circle around the number that shows HOW MUCH YOU FEEL something is true for you:

1 = Not true at all 2 = Hardly ever true 3 = Sometimes true 4 = Mostly true 5 = Always true

	Not true at all	Hardly ever true	Some- times true	Mostly true	Always true
EX. I have toast for breakfast.	1	2	3	4	5
1. It's easy for me to make new friends at school.	1	2	3	4	5
2. I like to read.	1	2	3	4	5
3. I have nobody to talk to in class.	1	2	3	4	5
4. I'm good at working with other pupils in my class.	1	2	3	4	5
5. I watch television a lot.	1	2	3	4	5
6. It's hard for me to make friends at school.	1	2	3	4	5
7. I like school.	1	2	3	4	5
8. I have lots of friends in my class.	1	2	3	4	5
9. I feel alone at school.	1	2	3	4	5
10. I can find a friend in my class when I need one.	1	2	3	4	5
11. I play sports a lot.	1	2	3	4	5
12. It's hard to get pupils in school to like me.	1	2	3	4	5
13. I like science.	1	2	3	4	5
14. I don't have anyone to play with at school.	1	2	3	4	5
15. I like music.	1	2	3	4	5
16. I get along with my classmates.	1	2	3	4	5
17. I feel left out of things at school.	1	2	3	4	5
18. There are no other pupils I can go to when I need help in school.	1	2	3	4	5
19. I like to paint and draw.	1	2	3	4	5
20. I don't get along with other pupils in school.	1	2	3	4	5
21. I am lonely at school.	1	2	3	4	5
22. I am well liked by the other pupils in my class.	1	2	3	4	5
23. I like playing board games a lot.	1	2	3	4	5
24. I don't have any friends in class.	1	2	3	4	5

Appendix F: Foster Child Interview Schedule

1. What do you think is happening in this photograph?
2. What do you think this person is feeling like?
3. How would it make you feel to see someone in that situation?
4. (For negative emotions) What would you do?
5. Have you ever been in a situation like this?

If yes to 5:

- How did it make you feel?
- Was there anything you did that made you feel better?

(If no: What could you have done that would have made you feel better?)

- Did anyone else (friends, teachers, carers) do anything that made you feel better?

(If no: What could someone else have done that would have made you feel better?)

If no to 5:

- How do you think it would make you feel?
- If you were in a situation like this, what could you do that would make you feel better?
- What could someone else do that would make you feel better?

(For photos 13 -14)

6. Why are friends important? Why does a person need a good friend?
7. Which is better to be with – one close friend or a group of regular friends? Why?
8. Is it easy or hard to make a good friend?
9. How would you try to make friends with someone?
10. What kind of person makes a good friend?
11. What kind of person would you not want as a friend?
12. What kinds of things do friends sometimes fight or argue about?
13. If friends have an argument, how can they work things out so they stay good friends?

Appendix G: Theory of Mind Test (Pons & Harris, 2002)

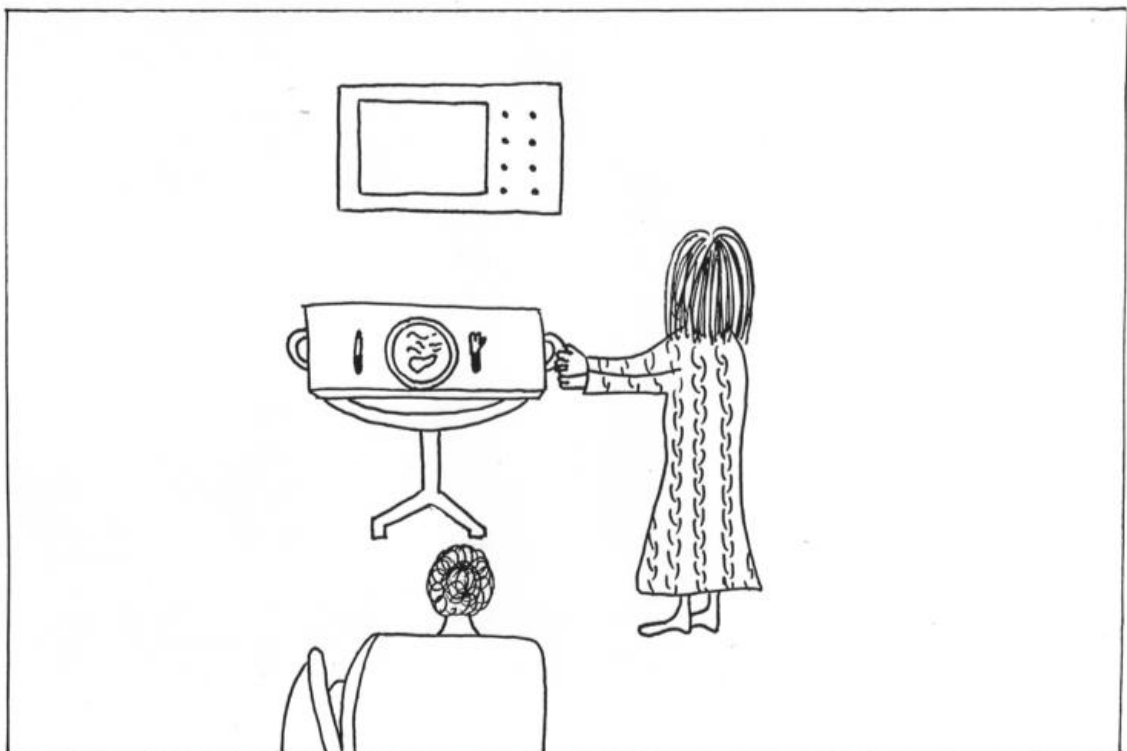
Example question (Component 8: Comprehension of Jokes)

Say:

This child is busy watching television. His mother has made his favourite meal: pizza! She puts the pizza on a plate in front of him. The child says nothing. The mother says to the child: "You're polite, aren't you?"

Ask (Experimental question):

Does the mother *really* think the child is polite or is she only joking?



Appendix H: Test of Emotion Comprehension (Pons & Harris, 2000)

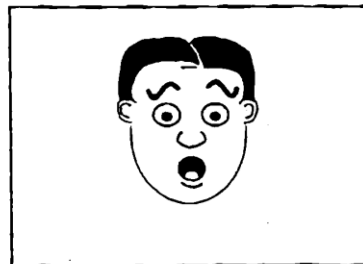
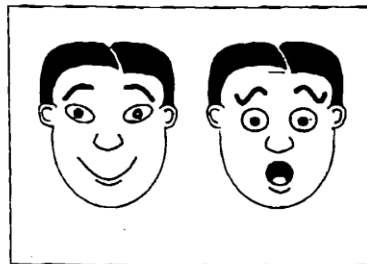
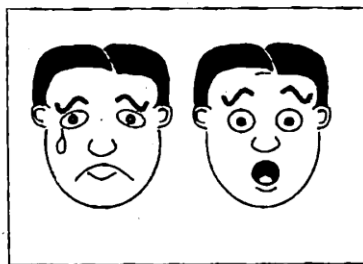
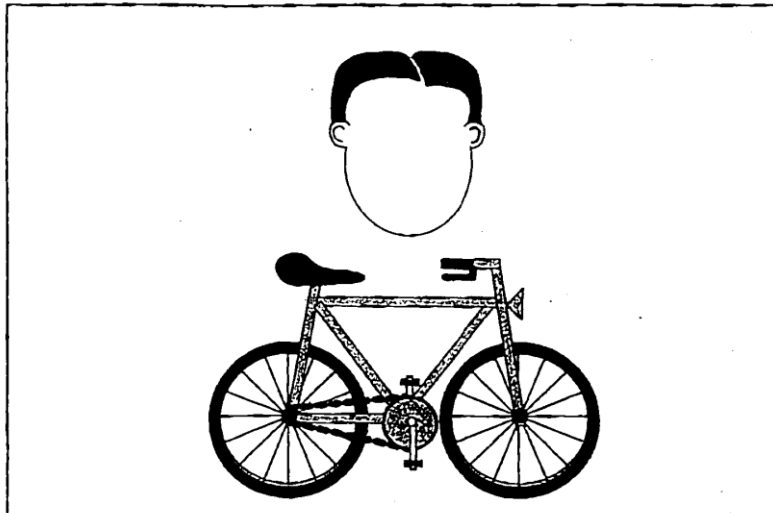
Example question (Component 8: Mixed Emotions)

Say:

Tom (Sarah) is looking at a new bicycle that he (she) just got for his (her) birthday. But at the same time, Tom (Sarah) thinks he (she) might fall off and hurt himself (herself) because he (she) has never ridden a bicycle before.

Ask (Experimental question):

So, how is Tom (Sarah) feeling? Is he (she) happy, sad and scared, happy and scared or scared?



Appendix I: Parental Acceptance-Rejection Questionnaire (Rohner, 2005)

Think about the adults you live with (parents or other carers). Please answer the questions below to describe what they are like.

Circle ONLY ONE answer for each question:

1 = Not at all true **2** = A little true **3** = Quite true **4** = Very true

My parents/the adults I live with:

	Not at all true	A little true	Quite true	Very true
1. say nice things about me	1	2	3	4
2. ignore me	1	2	3	4
3. make sure that I know exactly what I'm allowed to do and what I'm not allowed to do	1	2	3	4
4. make it easy for me to tell them things that are important to me	1	2	3	4
5. get really cross with me, even when I don't deserve it	1	2	3	4
6. think that I am a big nuisance	1	2	3	4
7. are always telling me how I should behave	1	2	3	4
8. punish me when they are angry	1	2	3	4
9. are too busy to answer my questions	1	2	3	4
10. act like they don't like me	1	2	3	4
11. are really interested in what I do	1	2	3	4
12. say nasty or unkind things to me	1	2	3	4
13. ignore me when I ask for help	1	2	3	4

Circle ONLY ONE answer for each question:

1 = Not at all true **2** = A little true **3** = Quite true **4** = Very true

My parents/the adults I live with:

	Not at all true	A little true	Quite true	Very true
14. tell me that I have to do exactly as I am told	1	2	3	4
15. make me feel like they want to be with me	1	2	3	4
16. pay a lot of attention to me	1	2	3	4
17. try to upset me on purpose	1	2	3	4
18. forget important things that I want them to remember	1	2	3	4
19. make me feel like they don't love me if I behave badly	1	2	3	4
20. let me do anything I want to do	1	2	3	4
21. make me feel like what I do is important	1	2	3	4
22. make me scared of doing something wrong	1	2	3	4
23. care about what I think, and like me to talk about it	1	2	3	4
24. think that other children are better than me	1	2	3	4
25. make me feel like they don't want to be with me	1	2	3	4
26. want to control everything I do	1	2	3	4
27. let me know that they love me	1	2	3	4
28. ignore me, as long as I'm not bothering them	1	2	3	4
29. treat me gently and with kindness	1	2	3	4