ABSTRACT

Title of Thesis: PARENTAL RESPONSES TO CHILDREN'S NEGATIVE EMOTIONS: RELATIONS WITH DIVERSE FORMS OF PROSOCIAL BEHAVIOR IN HEAD START PRESCHOOLERS

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An important predictor of prosocial behavior in childhood is parental response to child distress (PRD). Often, researchers have investigated the link between PRD and broad indices of prosociality. Recent research, however, suggests children's prosocial behavior is multidimensional, with few studies finding correlations between specific behaviors. The goal of the present study was to investigate links between PRD and children's specific prosocial behaviors, in addition to examining these links among a rarely studied population. Predominantly African American preschoolers enrolled in Head Start (n=141) responded to an experimenter simulating needs; their helping, sharing, and comforting behaviors were recorded, and mothers reported on their PRD. Contrary to hypotheses, PRD did not predict any prosocial behaviors; also unexpectedly, the specific behaviors were correlated. These findings are inconsistent with previous studies, suggesting the multidimensional nature of prosociality, or the hypothesized role of PRD, may not apply to African American children from low-income families.

PARENTAL RESPONSES TO CHILDREN'S NEGATIVE EMOTIONS: RELATIONS WITH DIVERSE FORMS OF PROSOCIAL BEHAVIOR IN HEAD START PRESCHOOLERS

by

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Chapter 1: Introduction

A hallmark of successful social development is prosocial behavior (e.g., helping, sharing, cooperating, comforting). Prosocial behavior, defined as voluntary action intended to benefit another person (Grusec, Hastings, & Almas, 2011), is often considered the basis of human relationships. Prosocial children enjoy a host of positive outcomes relative to their less prosocial peers: They are more popular and well-liked (Rose-Krasnor & Denham, 2009; Chen, Chung, Lechcier-Kimel, & French, 2011), are less likely to be aggressive in later years (Grusec et al., 2011, p. 560), are more well-adjusted (Clark & Ladd, 2000), perform better in school (Chen et al., 2011), and have more positive relationships and interactions with peers (see Eisenberg, Fabes, & Spinrad, 2006 for a review).

Given the importance of prosociality as a skill for developing children, researchers have focused on understanding its environmental precursors with an eye toward intervention. Particularly, the ways in which the parent-child relationship contributes to prosocial behavior have been extensively studied by investigators. For example, socialization practices such as elaborative discourse, explicit teaching about moral behavior, inductive reasoning, and an authoritative parenting style have all been linked to children's prosocial behavior (Grusec et al., 2011; Rose-Krasnor & Denham, 2009).

One notable precursor of prosociality that has received considerable attention in past decades is parental response to child distress (PRD). The goal of the proposed study is to investigate the relations between PRD and prosocial behavior in preschool children. In the remainder of this introduction, I will first provide a background of PRD as a construct, summarizing how it has been shown to influence child development, including children's prosocial behavior. Then I will propose potential mediators explaining the influence of PRD on prosocial behavior. I will then describe an important gap in the extant literature that prevents researchers from making strong claims about the role of PRD in predicting prosocial behavior, and describe the present study, which is designed to address the lack of understanding in this area. Finally, I will outline the study hypotheses.

Parental Response to Distress

Parental response to distress (PRD) reflects the ways parents respond to their children's negative emotions, such as sadness, fear, anger, and frustration, and has been shown to affect social and emotional development. From a young age, children use negative emotions to communicate their needs and desires with caregivers. In turn, caregivers may respond in various ways, including problem-focused responses (attempts to help the child solve the source of the problem), emotion-focused responses (attempts to help the child feel better using comforting or distracting), and expressive encouragement (acceptance of the negative emotion). If parents view negative emotions as harmful to the child, reflective of poor character, or manipulative, they may be motivated to respond with controlling strategies designed to minimize or punish the negative emotional display. Because negative emotions in others are often experienced as personally aversive, parents may also respond with their own displays of negative emotion. In general, researchers of this topic consider supportive responses to be those that are emotion- or problem-focused, as well as those that encourage emotional expression. Unsupportive responses include those that punish or minimize children's displays of negative emotion, and parental distress responses (Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002).

Perspectives on the ways in which PRD comes to influence child social and emotional development differ from those of traditional accounts of child socialization. Traditionally, models of parental influence tend to focus on behavior socialization practices, including discipline, conditioning, explicit instruction, modeling, and parenting styles (Maccoby, 1992). These models have in common their emphasis on parents' deliberate shaping of children's behavior as important to encouraging socially approved behavior. Although these perspectives on socialization have been fruitful for the study of child development, including prosocial development, they cannot account for all variation in children's social outcomes, or all variation in children's prosocial tendencies. Theory and evidence suggest that children's social competence can also emerge naturally from an environment of sensitive care, without extensive training, discipline, or concerted efforts to shape behavior. For example, Ainsworth, Bell, and Stayton (1974) found that securely attached children were more compliant to maternal requests than insecurely

attached children, and hypothesized that this was not because secure children had been conditioned or taught differently than insecure children, but because repeated sensitive interactions with their caregiver fostered an internal working model of relationships as being reciprocally responsive. They advocated for the notion that children are inherently social, and that the motivation to engage in "good behavior" emerges naturally through positive and sensitive interactions with important others. Sensitivity has been defined in many ways, often including warmth, positive affect, lack of intrusiveness, and prompt, supportive response to distress. In her pioneering work on precursors to attachment security, Ainsworth's (1969) original parenting sensitivity scale did not include measures of warmth or positive affect, because she observed that mothers in Uganda were not typically warm or affectionate, and yet most of the infants were securely attached. Rather, according to Ainsworth, the essential ingredient for the type of sensitive parenting that resulted in secure attachment (and thus in the resulting socially desirable behaviors) was parental response to distress. Since Ainsworth's original studies on sensitivity, evidence from the attachment literature has shown that parental response in specifically distressing contexts predicts infant attachment security (del Carmen, Pedersen, Huffman, & Bryan, 1993; Leerkes, Parade, & Gudmundson, 2011) and childhood attachment security (George, Cummings, & Davies, 2010), beyond and more strongly than other indices of sensitivity (although see Bernier, Matte-Gagne, Belanger, & Whipple, 2014, for evidence that maternal autonomy support predicts toddler attachment security with a magnitude equal to that of maternal response to distress).

Thus, PRD is a unique element of sensitive care that influences important aspects of child development in ways that possibly differ from the influences of other parenting practices. Over the last several decades, a large body of research has revealed the scope of PRD's influence on various aspects of child social and emotional functioning. For example, supportive PRD has been linked to children's effective coping strategies when faced with their own negative affect, such as instrumental problem-solving, seeking instrumental or emotional support, and cognitive restructuring (Chan, 2011; Gentzler, Contreras-Grau, Kerns, & Weimer, 2005; Smith et al., 2006). Because children use negative emotions as communicative tools, the responses of parents provide valuable opportunities for learning about which

emotions are acceptable and how to cope with one's own and others' emotions. Sensitive parental responses have also been linked to children's empathy and perspective-taking in the face of others' negative affect (Bryant, 1987; Taylor, Eisenberg, Spinrad, Eggum, & Sulik, 2013), as well as emotional expression and emotion understanding (Fabes et al., 2002; Perlman, Camras, & Pelphrey, 2008). Effective emotion regulation is another benefit of supportive PRD (Davidov & Grusec, 2006; Eisenberg & Fabes, 1994; Perry, Calkins, Nelson, Leerkes, & Marcovitch, 2012; Yagmurlu & Altan, 2010), as children may learn strategies for dealing with their emotions via modeling that they cannot learn during non-distressing situations. Children whose parents respond with comforting or problem-solving strategies during emotional situations may also come to view these situations as less threatening because they know they will soon feel better. In contrast, Buck (1984) hypothesized that children who are punished for displays of negative emotion learn to conceal them, and eventually express them in inappropriately intense or dysregulated ways, leading to a maladaptive pattern of stored and subsequently released emotions. In support of this hypothesis, Fabes, Leonard, Kupanoff, and Martin (2001) found that children whose parents reported they punished or minimized their children's negative emotional displays repressed their negative emotions in the classroom, but when they did express negativity, it was more intense and disruptive. A study of ethnically and demographically diverse families found that mothers' insensitive reactions to their school-aged children's negative emotions were positively related to children's increased emotion dysregulation (Shaffer, Suveg, Thomassin, & Bradbury, 2012). In another study, maternal discouragement of child negative emotions predicted poorer understanding of emotional situations (Garner, Jones, & Miner, 1994). As previously mentioned, PRD can also affect the quality of the parent-child attachment relationship, as sensitive responding to signals of fear or sadness build experience-based expectations of caregiver availability during times of need, the foundation of secure attachment (Bowlby, 1973).

Situations involving negative emotional expression provide a unique context in which to study the impact of parenting on social competence, because children's ability to regulate their emotions and understand the meaning of their own and others' emotions plays a large role in successful social

interaction. Accordingly, several studies have found links between supportive PRD and child social competence (e.g., Eisenberg et al., 1991; Fabes et al., 2001; Jones, Eisenberg, Fabes, & MacKinnon, 2002; Roberts & Strayer, 1987). In one such study, mothers' and fathers' supportive reactions to their children's negative emotions predicted better friendship quality (McElwain, Halberstadt, & Volling, 2007). In another study, PRD moderated the effect of preschoolers' approach behaviors on their group play 3 years later, such that approach behaviors predicted more successful group play with unfamiliar peers when mothers reported highly supportive responding (Root & Stifter, 2010). In other studies, parents' punitive and/or minimizing reactions to child negative emotions were associated with: increased externalizing behavior in school-aged children (Eisenberg et al., 1999a); increased internalizing behavior among toddler boys (Engle & McElwain, 2011) and toddler girls and boys longitudinally across one year (Luebbe, Kiel, & Buss, 2011); and poorer understanding of emotional situations, which in turn predicted lower social competence in preschoolers (Garner et al., 1994). Spinrad et al. (2007) found that maternal supportive parenting, which includes measures of PRD, was concurrently related to toddlers' effortful control, a form of emotion regulation reflecting the more voluntary aspects of emotional control, defined as "the efficiency of executive attention, including the ability to inhibit a dominant response and/or to activate a subdominant response, to plan, and to detect errors" (Rothbart & Bates, 2006, p. 129, as cited in Spinrad et al., 2007). Children's effortful control predicted social competence 12 months later, and mediated the relation between supportive parenting and social competence. Other studies using direct measures of PRD have also found links between parental response to distress and child effortful control (Swanson, Valiente, Lemery-Chalfant, Bradley, & Eggum-Wilkens, 2014; Valiente, Lemery-Chalfant, & Swanson, 2009), and some evidence suggests that effortful control mediates the relation between PRD and child behavior problems and academic competence (Valiente, Lemery-Chalfant, & Reiser, 2007; Valiente et al., 2009; Swanson et al., 2014). A study investigating the relations among shyness, physiological dysregulation, and PRD found that shy kindergarteners with poor regulation or with mothers who reported more unsupportive responding engaged in more maladaptive play behaviors, whereas shy kindergartners with better regulation or with mothers who reported more supportive

responding engaged in more adaptive play behaviors (Davis & Buss, 2012). In general, it appears as though PRD affects many aspects of children's developing social and emotional competence.

Mediators of the Association between PRD and Child Prosocial Behavior

Given the many associations between PRD and indices of children's social and emotional competence, it is not surprising that PRD has been implicated in children's developing prosocial behavior as well (e.g., Chan, 2011; Davidov & Grusec, 2006; Denham, 1997; Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Garner, 2006; Eisenberg et al., 1993; Eisenberg, Fabes, & Murphy, 1996; Taylor et al., 2013; Zahn-Waxler, Radke-Yarrow, & King, 1979). In fact, mirroring the findings of PRD's effect on attachment security, PRD predicts child prosociality above and beyond, and more strongly than, the effects of other sensitive parenting constructs, such as warmth (Davidov & Grusec, 2006).

In theory, many of the same outcomes of PRD listed above (such as attachment quality, emotion regulation, and use of coping strategies) may serve as mediators explaining how supportive (or unsupportive) responding to child distress may translate into increased (or decreased) prosocial behavior from the child. A parent who responds to her child's distress in supportive ways fosters a secure attachment relationship, and secure children tend to be more prosocial and empathic (Kestenbaum, Farber, & Sroufe, 1989; Murphy & Laible, 2013; van der Mark, van IJzendoorn, & Bakermans-Kranenburg, 2002; Waters, Wippman, & Sroufe, 1979). A parent who responds to her child's distress in supportive ways also fosters healthy emotion regulation, and when the child later encounters another person in distress, he or she is able to feel empathy without becoming personally distressed, and can instead focus on prosocial action. In support of this theoretical mediation model, Panfile & Laible (2012) found that more secure children were rated as more empathic, a connection that was mediated by emotion regulation, and more empathic children were observed to be more prosocial. Another study found that parent-reported PRD predicted observed prosocial responding, which was mediated by child negative affect regulation (Davidov & Grusec, 2006). Using structural equation modeling, Chan (2011) found support for a model whereby school-aged children's effective emotion-coping strategies mediated the

effects of maternal supportive responses on teacher-reported prosocial behavior, and prosocial behavior mediated the effects of emotion-coping strategies on peer acceptance. Related to reactive emotion regulation, a parent who responds supportively to distress also promotes the development of effortful control (e.g., Valiente et al., 2009), characterized by the ability to focus and shift attention, inhibit and initiate behaviors, and other processes involved in emotion regulation. Increases in effortful control support the development of skills that are integral to prosocial behavior (Fabes, Eisenberg, Karbon, Troyer, & Switzer, 1994), such as compliance, turn-taking, and empathy (Mintz, Hamre, & Hatfield, 2011; Myers & Morris, 2009; Rothbart, Ahadi, & Hershey, 1994; Spinrad et al., 2007), as well as coping behaviors (Eisenberg & Fabes, 1995: Valiente et al., 2009), and sympathy (Eisenberg et al., 2007; Valiente et al., 2004). In addition, a parent who responds to her child's distress in supportive ways fosters emotion understanding and social cognitive development (Perlman et al., 2008; Thompson, 2008; Weinfield, Sroufe, Egeland, & Carlson, 2008), which facilitates the child's understanding of when and how to respond in social settings when another person needs assistance. A parent who responds to her child's distress in supportive ways also fosters a parent-child "mutually responsive orientation," which motivates children to cooperate with parents' explicit requests regarding prosociality (Kochanska, 2002; Rose-Krasnor & Denham, 2009, p. 17; Richters & Waters, 1991). In general, sensitive parenting may enhance children's receptivity to parental influence because children attend more and are more positively oriented to sensitive parents (Eisenberg et al., 2006). Finally, a parent who responds to her child's distress in supportive ways models prosociality directly via empathy, sympathy, comforting, problem-solving, distraction, and other helpful responses (Grusec et al., 2011). In summary, there are a number of pathways through which parental response to distress may influence the development of children's prosocial behavior.

Gap in the Existing Literature on Parental Response to Distress and Child Prosocial Behavior

Despite the promising advances of recent studies concerning the role of PRD in child prosocial development, a notable gap in this literature prevents researchers from making strong claims about the precise nature of this connection. More recent evidence from the social cognitive development literature

is increasingly supportive of the notion that prosocial behavior is a multifaceted construct (e.g., Brownell, Svetlova, Anderson, Nichols, & Drummond, 2013; Dunfield & Kuhlemeier, 2013; Pettygrove, Hammond, Karahuta, Waugh, & Brownell, 2013), yet few studies measure more than a single facet of prosocial behavior within the same study, even though doing so can have serious explanatory limitations for understanding the causes and correlates of prosocial responding in children (K. Dunfield, personal communication, April 10, 2014). The literature on parental response to distress has continued to focus on a single facet of child prosocial behavior (i.e., comforting), making inappropriate generalizations about the influence of PRD on all forms of prosocial behavior as a result. Because specific parenting practices can differentially influence specific aspects of child functioning (e.g., Carlo, McGinley, Hayes, Batenhorst, & Wilkinson, 2007), it is important to be precise with both the form of parenting and the form of child functioning being studied. Just as it is important to specify parenting in the context of child distress, rather than general parental warmth or parenting style, it is also important to specify the type of prosocial behavior being measured. In the following section, I will examine whether and how different forms of prosocial behavior may be considered developmentally distinct, outlining various ways they have been shown to differ, including the cognitive and affective demands they place on children and their developmental trajectories, neural correlates, and parenting precursors and correlates.

Prosocial behavior as a multi-faceted construct. As noted above, prosocial behavior is defined as any voluntary action that is intended to benefit another person (Grusec, Hastings, & Almas, 2011). More specifically, prosocial behavior can take many forms, including helping, sharing, comforting, defending, rescuing, and informing. Despite the diversity of behaviors, researchers have tended to examine only one form of prosociality and then apply the findings to prosociality as a whole, assuming that each behavior is simply a different outward expression of the same underlying personality trait. It has been suggested, however, that this lack of differentiation has resulted in the many inconsistencies within the literature on prosocial development, such as its developmental trends, correlates, and moderators (Hay & Cook, 2007). Growing evidence supports this suggestion. Various studies have revealed few correlations between children's tendency to engage in different forms of prosocial behavior, both cross-sectionally (Dunfield,

Kuhlmeier, O'Connell, & Kelley, 2011; Dunfield & Kuhlemeier, 2013; Pettygrove et al., 2013) and longitudinally (Eisenberg et al., 1999b; Persson, 2005, as cited in Paulus, 2013). For example, unlike the consistency with which young children ages 2 to 4 responded to tasks measuring the same form of prosocial behavior, there were no correlations among tasks measuring different forms of prosocial behavior (Dunfield & Kuhlmeier, 2013), suggesting that the lack of association is due to the different forms of behavior and not to children's inconsistent behavior in general. A study with preschoolers interacting in experimental settings with an adult experimenter and with peers in naturalistic settings found that comforting and sharing behaviors were correlated with each other, but not with helping (Yarrow et al., 1976). Other studies have found that comforting and helping behaviors are negatively related (Paulus, Kühn-Popp, Licata, Sodian, Meinhardt, 2013; Richman, Berry, Bittle, & Himan, 1988).

In light of these findings, there have been a number of attempts to categorize the distinct forms of prosocial behavior (e.g., Hay & Cook, 2007; Warneken & Tomasello, 2009a). In an attempt to unify the categories into a single framework, Dunfield & Kuhlmeier (2013) propose that within the domain of prosocial behavior, children develop the ability to recognize and respond to three distinct social cues: the need for instrumental help, the need for emotional comfort, and the need for a material object. Each of these needs calls for different behavioral responses from the child in order to be prosocial: *helping* is an action intended to alleviate the instrumental need to complete a goal-directed action, *comforting* is any action intended to alleviate the emotional need to reduce an unpleasant affective state, and *sharing* is any action intended to alleviate the material need to acquire a desired resource. The ability to recognize and respond effectively to each type of need cue requires certain socio-cognitive and regulatory skills that differ across cues.

Differences in cognitive and affective demands. The ability to respond to others' *instrumental needs* depends primarily on an early emerging set of social-cognitive factors, that is, the ability to interpret goal-directed behavior, differentiate intentional from accidental actions, and predict action-effect outcomes in observable behavior (Dunfield & Kuhlemeier, 2013; Svetlova, Nichols, & Brownell, 2010). These basic and nearly universal social-cognitive abilities emerge even before children are fully able to

represent others as independent agents with internal states that are different from their own (Hoffman, 2007). There is also evidence that individual differences in perspective-taking abilities are related to young children's helping behaviors (Zahn-Waxler, Radke-Yarrow, & Brady-Smith, 1977). Regarding affect regulatory capacities, the ability to respond to an instrumental need should not, in theory, require emotion regulation because instances involving instrumental needs are usually emotionally neutral (e.g., reaching for a dropped item), with perhaps some mild frustration. Responding to this type of cue may, however, require effortful control. Instrumental helping in real-world settings, such as a classroom, often (but not always) requires children to shift attention away from their own play, which may be engaging and fun, and onto another person's situation. Then, children must disengage from play and physically approach the other person, possibly navigating physical or social obstacles along the way.

The ability to respond to others' *emotional needs* requires a different set of socio-cognitive and regulatory skills. This type of response is often, but not always, motivated by empathy (Eisenberg et al., 1989; Eisenberg et al., 1990; Eisenberg et al., 1993; Holmgren, Eisenberg, & Fabes, 1998; Zahn-Waxler, Cole, Welsh, & Fox, 1995), which is an internal, affective state of resonance with another person's emotions, as well as a cognitive understanding of the other's experience. Therefore, response to emotional needs require that children are able to separate their own internal state from that of other people (self-other differentiation), take the perspective of others, and identify the emotion being expressed (emotion understanding). Perspective-taking is an important component of empathy (Davis, 1980) in which children place themselves in the position of another person and infer what they are feeling and needing, and true empathic concern requires that children can distinguish their own distress from that of another person (Batson, 1987; Kartner, Keller, & Chaudhary, 2010), a skill built upon the foundation of self-other differentiation. If they cannot separate their own emotions from those of the other person, children are more likely to feel personally distressed (a self-focused reaction) than to comfort (an other-focused reaction). From a developmental perspective, personal distress is a reaction to others' distress most common during the first and second years of life, and is considered to be the early roots of empathy (Eisenberg et al., 2006); however, during the second year of life, personal distress transforms into

empathic concern alongside the development of self-awareness and self-other differentiation (Hoffman, 1982; see Hutman & Dapretto, 2009, for a review). By their third year, children's personal distress reactions are increasingly replaced with other-oriented, constructive, prosocial action (Zahn-Waxler et al., 1992). Whereas personal distress is motivated by an egoistic desire to reduce one's own aversive arousal, empathic concern is motivated by an altruistic desire to reduce another person's negative state (Batson, Fultz, & Schoenrade, 1987), and more often results in prosocial action. In a recent study, almost all toddlers who could recognize themselves in a mirror (a classic self-awareness task) empathized with a distressed peer and offered compassionate help (i.e., comforting), whereas none of the non-recognizers were empathic or helpful (Bischof-Köhler, 2012). In a classic study on the development of concern for others, Zahn-Waxler and colleagues found that self-recognition in a series of five mirror tasks was significantly related to prosocial behavior and marginally related to empathic concern in 24-month-old toddlers (Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). Response to others' emotional needs often, but not always, occurs in the context of overt emotion. Vaish, Carpenter, and Tomasello (2009) examined whether 18- and 25-month-olds were able to sympathize with someone who had been harmed, but did not express negative emotion. They found that toddlers showed more concern looks and prosocial action toward the non-emotional victim compared to someone who had not been harmed, possibly as the result of affective perspective-taking. Regarding regulatory abilities, responding to another's emotional need also requires that children have adequate emotional regulatory capacities and sufficient effortful control (see Eisenberg, 2010, for a review), with individual differences in effortful control continuing to influence prosocial action into adolescence and young adulthood (Alessandri et al., 2014; Kanacri, Pastorelli, Eisenberg, Zuffiano, & Caprara, 2013).

The ability of children to respond to others' *material needs* requires the capacity to understand equality and inequality and the self-regulatory skills to give away a valued resource. Socio-cognitively, spontaneous sharing (much like comforting) requires self-other differentiation, perspective-taking, and the ability to understand and act on others' internal states and desires (Svetlova et al., 2010). If the context in which the cue for a material need is expressed involves emotional expression, which is frequently the case

in real-world settings where children encounter mildly or moderately distressed peers who want something, the subsequent response may be motivated by empathy, which would require sufficient emotion understanding. In support of this notion, one study examining toddlers' responses to all three types of need cues found that maternal elicitation of emotion talk (which teaches emotion understanding) uniquely predicted more frequent and quicker sharing with an adult experimenter (Brownell et al., 2013). In addition, sharing within an emotional context would require a minimum degree of emotion regulatory capacities, depending on the level of emotion involved.

In summary, Dunfield and Kuhlmeier (2013) posit that the forms of prosocial behavior are differentiated based not on the physical action, but on the specific need to which the child is responding. In general, however, the recognition of an *instrumental need* will result in helping, the recognition of an *emotional need* will result in comforting, and the recognition of a *material need* will result in sharing. In an earlier study (Dunfield et al., 2011), the authors had demonstrated that infants as young as 18 months were more likely to respond to an instrumental need and a material need with helping and sharing (respectively) than in matched control conditions in which the need cue was absent.[1] The evidence and theory presented above support this taxonomy, because the ability to recognize and respond effectively to each social cue relies on a distinct set of underlying socio-cognitive and regulatory abilities, which may explain why instances of helping, sharing, and comforting are typically not correlated. It may also explain why these three forms of prosocial responding show different developmental trajectories, neural correlates, and parenting precursors and correlates.

Differences in developmental trajectories. Helping, sharing, and comforting show unique developmental trajectories. Instrumental helping emerges as early as 14 months (Warneken & Tomasello, 2007), and by their 2nd birthday, almost all children help (e.g., Warneken & Tomasello, 2006 reported that 92% of 18-month-old infants provided help in at least one simple situation, and nearly all did so almost immediately). In analyzing age-related differences in the tendency to help, share, and comfort, Dunfield and Kuhlmeier (2013) found that 2-, 3-, and 4-year-old children were more likely to respond to another person's instrumental need than to another's material or emotional need because nearly all

children in each age group instrumentally helped, and there were no age-related increases in the tendency to help. Sharing emerges in its earliest form at approximately 8 months of age (Hay & Rheingold, 1983, as cited in Eisenberg et al., 2006), continues to increase in frequency over the next year, with some evidence that it declines from 18 to 36 months (Hay, Castle, Davies, Demetriou, & Stimson, 1999, as cited in Eisenberg et al., 2006), and remains stable (and relatively infrequent compared to helping and comforting) from ages 2 to 4 (Dunfield & Kuhlmeier, 2013), then increases steadily beyond the preschool years (Handlon & Gross, 1959). Comforting emerges somewhat later in development, with an increase between 18 and 24 months of age in the form of physical soothing and verbal reassurance with mothers, siblings, peers, and strangers, although it remains relatively rare in children under 3 (Eisenberg et al., 2006). In a study examining all three forms of responding and using multiple tasks for each form, comforting behaviors were significantly more frequent for 3- and 4-year-olds, who did not differ from each other, than for 2-year-olds (Dunfield & Kuhlmeier, 2013), and were unlike helping and sharing which remained stable from 2 to 4 years. Even among 4- to 7-year-old children, helping remains more common than both sharing and comforting (Grusec, 1991). As further evidence of the differing developmental trajectories, a meta-analysis by Eisenberg & Fabes (1998) showed that the magnitude of age-related changes was relatively constant for comforting and sharing, but when the type of behavior examined was instrumental helping, the age-related effect size varied more among older children.

Differences in neural correlates. Findings from a recent study suggest that distinct neurophysiological correlates predict the emergence of helping & comforting (Paulus et al., 2013). EEG analyses showed that greater left frontal cortical activation at 14 months was associated with observations of infants' empathic responding to their mother's distress at 24 months. In contrast, greater right temporal activation was associated with observations of infants' instrumental helping of an adult experimenter at 18 months.

Differences in parenting precursors and correlates. There are few studies examining multiple forms of prosocial behavior within a single study, and even fewer that have also examined differential relations to parenting. The handful of existing studies suggest that parenting influences operate differently

in the development of each form. For example, comforting in preschoolers was related to mothers' dependency on their children for emotional support and to being from a smaller family, whereas helping was related to the number of chores children were expected to do (Rehberg & Richman, 1989). A recent study of 18- to 30-month-old toddlers found that maternal elicitation of emotional talk during a book read task uniquely contributed to more frequent and quicker sharing and empathic helping (i.e., comforting), but did not contribute to instrumental helping (Brownell et al., 2013). Another recent study of the same age group examined the relations of child prosocial behavior (helping, sharing, and comforting) with several specific parenting socialization practices, including directives (commands or requests for a particular action to be carried out), reasoning (explanations of the situation and the need for assistance), character attribution (comments on the child's characteristics, such as "you really like to help"), scaffolding, praise, and negotiation. Among 18-month-olds, parental directives were positively associated with instrumental helping, whereas parental reasoning was negatively associated with spontaneous sharing (no other associations were found). Among 30-month-olds, parental scaffolding was positively associated with comforting (Pettygrove et al., 2013). Given that parenting has been highlighted in the prosocial literature as a major environmental contributor to individual differences in prosocial development (Grusec et al., 2011), it is surprising that so few studies have investigated parenting links to multiple facets of prosocial behavior. In general, these studies suggest that parenting differentially influences the diverse forms of prosocial responding in children, and they underscore the need for more studies examining environmental precursors of helping, sharing, and comforting.

In summary, given the distinct developmental trajectories and neural, cognitive, and parenting correlates, it seems unlikely that prosocial behavior as a whole represents one unified category, and researchers of this topic have highlighted the need to study them as separate constructs.

Studies linking PRD to comforting, helping, and sharing. To date, no existing studies have included multiple indices of prosociality and examined their associations with PRD. Perhaps the effects of parental sensitivity on prosocial development are driven solely by the effects on children's ability to, for example, comfort others, and are weakened by the inclusion of instrumental helping measures. If this

were the case, knowledge of the specific behaviors to target would better inform intervention efforts to improve specific or global aspects of children's prosocial interactions with peers, siblings, parents, or authority figures. Yet the existing studies have measured either a composite of multiple behaviors or comforting only, precluding the ability to make specific conclusions. In this section, I will review the empirical evidence for the link between PRD and prosocial behavior, beginning with studies that do not distinguish helping, sharing, and comforting behaviors, and then detailing what is known about the link between PRD and each form independently.

PRD and global measures of prosocial behavior. The majority of evidence comes from studies using global measures of prosocial behavior, such as teacher-reported questionnaires, which typically assess a wide range of prosocial and cooperative behaviors in the classroom (e.g., sharing with playmates, assisting others, helping distressed peers). For example, the Expressive Encouragement subscale of the Coping with Toddler's Negative Emotions Scale (CTNES; Spinrad, Eisenberg, Kupfer, Gaertner, & Michalik, 2004) when children were 18 months old predicted mother-reported child empathy, which then predicted teacher-reported prosocial behavior on the Child Behavior Scale (CBS; Ladd & Profilet, 1996) when children were 72 and 84 months old (Taylor et al., 2013). Other global, teacher-reported measures of prosocial behavior are the Teacher Checklist on Children's Social Behavior (Coie, Terry, Underwood, & Dodge, 1990), the Preschool Behavior Q-Sort (Baumrind, 1968), and the Olson Preschool Competence Questionnaire (Olson, 1984, 1989). Using the Teacher Checklist, Chan (2011) found that mother-reported responses to the distress of their 6- to 8-year-old children showed positive indirect relations to child prosocial behavior (through child constructive coping strategies). The Preschool Behavior Q-Sort was found to relate to PRD in interesting ways. That is, boys' prosocial behavior was predicted by maternal self-reports of comforting and non-punitive responses to child distress, whereas no clear pattern of relations emerged for girls' behavior (Roberts, 1999). The Olson Questionnaire also related to PRD in interesting ways. Four- and five-year-old children were encouraged to identify themselves with a doll, and then were presented with vignettes of the doll interacting with parental figures, in order to assess the children's conceptions of parental responses to their emotions. The responses which showed significant

associations with the Olson Questionnaire were: mentions of parental comforting, discussion of emotions, and matching of positive emotions in the child. Responses which did not show associations were: mentions of parental directives and discipline, pragmatic action, and matching of negative emotions in the child (Denham, 1997). Another study collected teacher reports of preschoolers' social competence, including positive peer relations, empathy, cooperativeness, sharing, taking turns, resolving conflicts, responsiveness to peers' distress, offering help to a distressed peer, affection, laughing at humor, and several others. These reports were associated with home observations of parents' positive reinforcement of child emotions (Denham et al., 1997).

Beyond teacher-reported global measures, some studies used observational measures of prosocial behavior, which captured individual actions (helping, sharing, and comforting), but which combined the specifically noted behaviors into one composite. Garner (2006) observed African American preschoolers in their Head Start classrooms and coded helping, sharing, and comforting of peers. The composite prosocial behavior score was positively associated with home observations of parents' comforting responses to the children's negative emotions during a clean-up and snack task. Davidov and Grusec (2006) used a factor score consisting of 6- to 8-year-olds' reactions to an experimenter's simulated pain, vignette interviews assessing empathy, mother-reported child prosocial behavior, and the teacher-reported PBQ, to measure prosocial behavior, and found relations with mother-reported PRD.

In sum, all studies measuring global prosocial behavior found some evidence for a link with PRD. However, although the results of these studies are consistently in favor of a positive predictive link, they cannot make predictions about specific behaviors.

PRD and individual measures of prosocial behavior. The few studies distinguishing specific behaviors have only measured comforting. No studies have isolated and assessed PRD in relation to children's helping or sharing.

The studies measuring children's comforting all reported at least some positive associations with supportive PRD. Zahn-Waxler, Radke-Yarrow, and King (1979) trained mothers to record daily instances of their toddlers' prosocial interventions in naturalistic settings (with peers, strangers, and others), as well

as to simulate their own distress in the home and record the toddlers' prosocial reactions. The children's reactions to both settings were combined into a composite of comforting, and then were compared to observer ratings of mothers' supportive PRD in the home. Results indicated that mothers high in supportive PRD had children who were more comforting, both concurrently and 4 months later. The investigators also noted that comforting behaviors among children of highly sensitive mothers were more frequently accompanied by "concerned emotional expressions" than those among children of lesser sensitive mothers. Eisenberg and colleagues (1993) found that parent-reported supportive PRD was related to the amount of time their kindergartners or 3rd graders spent talking to a crying baby through a monitor, but not to their children's concerned facial reactions to the baby cry, and only among girls. Using the same measure of prosocial responding in 3rd through 6th graders, Eisenberg, Fabes, and Murphy (1996) reported that mother- and father-reported PRD also related in different ways to boys' and girls' behavior. Among girls, no linear relations were revealed with either mothers or fathers (except for one, which the authors believed was a chance finding). An interesting pattern of *quadratic* relations, however, was revealed for girls: Moderate levels of maternal encouragement of emotional expression (a form of supportive PRD) were related to high quantity and quality of comforting, and low to moderate levels of paternal encouragement of emotional expression were related to high quality comforting. This quadratic pattern did not emerge for boys. Among boys, however, various mother-reported reactions to child negative emotions (e.g., offering problem-focused solutions, encouragement of emotional expression) were linearly related to boys' quality and quantity of comforting. Father-reported reactions were unrelated. Finally, Denham and colleagues (1997) found relations between classroom observations of preschoolers' empathic helping of distressed peers and home observations of mothers' and fathers' reactions to their children's emotions, such that parents' supportive responding predicted child comforting, but only among older preschoolers.

Overall, the existing evidence supports a positive association between supportive PRD and children's comforting and global prosocial behaviors, using diverse measures of both constructs and examining a broad range of developmental periods. Despite the definitional variability of prosocial

behavior in these studies, their ability to draw conclusions about relations to each form independently is limited. No study to my knowledge has examined the association between parental response to distress and children's helping or sharing behaviors. This lack of specificity in linking PRD to helping, sharing, and comforting, independently of each other and within the same study, is problematic. In the search for environmental precursors to prosocial behavior, a deeper understanding of the complexities of this construct is required.

The Proposed Study

The proposed study was designed to address the lack of research examining the associations between PRD and each form of prosocial behavior, by including observational measures of comforting, sharing, and helping within a single study. Caregivers self-reported on the ways in which they typically respond to their child's distress using the widely-used Coping with Toddler's Negative Emotions Scale (CTNES; Spinrad et al., 2004), and children interacted with an adult experimenter who expressed the need for comfort, material objects, and instrumental help over the course of the visit. Children's responses to these three need cues were videotaped and later coded for the presence and quality of comforting, sharing, and helping.

In addition, the present study aimed to extend the findings of existing studies on this topic to a rarely studied population. All but one of the studies described above examined children from middle-income families, mostly White, limiting the generalizability of their findings (for the single exception, see Garner, 2006). Considering mixed evidence on the differential impacts of parenting practices among African American and European American families, with some studies supporting the idea that non-supportive parenting is harmful regardless of race (e.g., Gershoff, Lansford, Sexton, Davis-Kean, & Sameroff, 2012), and others supporting the idea that provision of emotional support (Christie-Mizell, Pryor, & Grossman, 2008), verbal punishment (Berlin et al., 2009), and warmth (Lau, Litrownik, Newton, Black, & Everson, 2006) interact with race to predict child outcomes, it is important to replicate these findings using a low-income, primarily African American sample. Additionally, some studies show that patterns of prosocial behavior and the tendency to *mentalize* (i.e., think about others' thoughts and

feelings), which is linked to compassion for others (Decety & Svetlova, 2012), differ among families from low socioeconomic backgrounds compared to those from middle or high socioeconomic backgrounds (e.g., Garner, 2006; Piff, Kraus, Côté, Cheng, & Keltner, 2010; Stellar, Manzo, Kraus, & Keltner, 2012; Muscatell et al., 2012). Finally, it is noteworthy that parents' responses to the CCNES and related questionnaires about their young children are moderated by race, with African American mothers reporting fewer supportive responses to children's negative emotions than White mothers (Nelson, Leerkes, O'Brien, Calkins, & Marcovitch, 2012; Nelson et al., 2013).

Hypotheses. In the following section I will present the theoretical and empirical rationale for each of my study hypotheses.

Comforting tasks: Comforting and concerned attention. Empirically, although comforting is the only type of prosocial behavior that has been examined in association with PRD, there are few studies and they all included primarily White, middle-income families. Theoretically, however, there are several reasons that comforting would be associated with PRD. The aforementioned mediators of the link between PRD and prosocial behavior in general (e.g., secure attachment, emotion regulation, empathy, modeling) can all be applied to comforting specifically, as well. For example, parents responding to their children's distress often directly model comforting behaviors (such as physical or verbal soothing or statements of sympathy). Parents responding sensitively also promote their children's emotion regulatory capacities (Eisenberg & Fabes, 1994; Garner et al., 1994; Davidov & Grusec, 2006), which aid children in regulating their own distress in the face of others' distress, a skill that is specifically helpful in relation to comforting others. PRD is the foundation of a child's secure attachment, and secure attachment has been shown to predict comforting in infants and toddlers (Panfile & Laible, 2012), children (e.g., Kestenbaum et al., 1989), and adolescents (Diamond, Fagundes, & Butterworth, 2011) (see Shaver, Mikulincer, Gross, Stern, & Cassidy, in press, for a review). Further, many of these proposed mediators are the same as, or help to foster, the socio-cognitive and regulatory skills required for children to respond effectively to the emotional needs of another person (i.e., to comfort), which may not apply to children's ability to respond to the material or instrumental needs of others (i.e., to share and to help, respectively). For example, a

parent who responds sensitively fosters emotion understanding (Perlman et al., 2008), a socio-cognitive skill applicable to responding uniquely to emotional needs. In fact, children's comforting behaviors have been defined here and in the literature (Dunfield & Kuhlemeier, 2013) as a prosocial response to another person's emotional need, regardless of the actual behavior; as a result, the socio-cognitive and regulatory skills that support competent behaviors in emotional contexts (such as effortful control, emotion regulation, and empathy) would also support children's comforting behaviors. Therefore, based on existing evidence and theory, I predicted that supportive responding to child distress would positively relate to children's observed comforting behavior (Hypothesis 1), and that unsupportive responding to child distress would negatively relate to comforting behavior (Hypothesis 2; see Table 1 for chart of all hypotheses and hypothesized directions of relations).

A noteworthy caveat is that behaviorally inhibited children may possess the motivation and ability to comfort, but are too shy to approach or speak to the person in need, particularly if the person is an unfamiliar adult. Their desire to comfort would instead be reflected in their concerned attention for the experimenter. *Concerned attention*, which is a facial reaction indicative of empathy or concern for another in distress, and which has been linked to prosocial behavior (Eisenberg et al., 1989; Eisenberg, Fabes, Miller, & Shell, 1990; Eisenberg & Fabes, 1990; Hepach, Vaish, & Tomasello, 2015; Holmgren et al., 1998; Zahn-Waxler et al., 1995) should also positively relate to supportive responding (Hypothesis 3) and negatively relate to unsupportive responding (Hypothesis 4), as it has in past studies (Eisenberg et al., 1992; Eisenberg, Fabes, et al., 1991; Spinrad & Stifter, 2006; van der Mark et al., 2002).

Comforting tasks: Personal distress, ignoring distress, and antisocial responses. In the face of another person's distress, children can also display reactions that are non-comforting, yet are relevant to the study of PRD, such as personal distress or active ignoring. They can also display reactions that are distinctly antisocial, such as teasing, laughing, and insulting the person. How should PRD relate to these types of reactions?

Whereas empathic concern is motivated by an altruistic desire to reduce another person's negative state, *personal distress* is motivated by an egoistic desire to reduce one's own aversive arousal (Batson et

al., 1987), and less often results in prosocial action (Eisenberg et al., 1989; Eisenberg et al., 1990). As previously mentioned, supportive PRD fosters healthy emotion regulation, which allows children to feel empathy without becoming overwhelmed with personal emotions. Similarly, lack of supportive responding has been linked to increased personal distress in children (e.g., Eisenberg et al., 1991; Spinrad & Stifter, 2006), which in turn has been inversely related to children's comforting behaviors (Eisenberg et al., 1993). Therefore, I predicted that supportive responding to child distress would negatively relate to child personal distress reactions (Hypothesis 5). I predicted that unsupportive responding to child distress would be positively related to child personal distress reactions (Hypothesis 6).

With regard to *ignoring others' distress*, few past studies of PRD and prosocial behavior have explicitly examined children's ignoring. Most studies have defined ignoring as a lack of any response, and specifically a lack of prosocial response. This lack of prosociality likely captures the tendency of children to ignore others' distress, because ignoring is a low-cost, default response that does not require active responding. Ignoring may be a strategy used by children who find the situation aversive to shut out the distressing social information, or it may reflect a lack of knowledge for what to do when someone else is upset. Theoretically, ignoring indicates a lack of empathy, as the child is unable or unwilling to acknowledge the negative emotions in another person, which can partly be the result of unsupportive responding to the child's own distress. Also, if the child's ignoring response is the result of modeling, and reflects the tendency of his or her mother to similarly ignore the child's distress, then unsupportive PRD (i.e., minimizing) would relate positively to ignoring behaviors. Therefore, I predicted that ignoring would negatively relate to supportive responding to child distress (Hypothesis 7) and positively relate to unsupportive responding to child distress (Hypothesis 8).

Antisocial responses, such as teasing, laughing, and insulting, are relatively rare (Zahn-Waxler et al., 1992). Few studies have investigated how PRD is associated with these types of responses to another person's distress; however, one study found links between child attachment quality and antisocial responses to another's distress (i.e., Denham, 1994, found that preschoolers rated as less securely attached by their mothers displayed more anger, enjoyment, ignoring, and personal distress in response to their

mother's negative emotions). In theory, however, the same mechanisms linking supportive PRD to prosocial behavior, such as modeling, emotion understanding, and empathy, could link unsupportive PRD to antisocial responses. In the case of modeling, punitive responses to another's distress (e.g., yelling, scolding, controlling) would reflect children's modeled learning of parental punitive responses to negative emotions. Inappropriate responses to another's distress, such as laughing, could result from a lack of emotion understanding, such as what it means to be hurt or sad. Any of these antisocial responses, including callous responses like teasing or insulting, could reflect a lack of empathy for the plight of another. I predicted that supportive responding to child distress would negatively relate to children's antisocial (i.e., negative) responses in the context of another's distress (Hypothesis 9) and that unsupportive responding to child distress would positively relate to children's antisocial responding (Hypothesis 10).

Helping tasks. As previously mentioned, there has been no previous examination of the link between PRD and helping (in the absence of comforting). A few theoretical reasons would suggest, however, that there would be no association between helping and PRD. First, because helping is simply an easier task for children, evidenced by the plateau in age-related increases by 24 months, a strong possibility exists that there will be little variation in helping behavior to be explained by environmental influences. The socio-cognitive and regulatory skills underlying children's capacity to instrumentally help emerge early in development and are nearly universally present, raising the possibility that few individual differences in the processing of instrumental goals exist (Johnson, Dunfield, & Dweck, 2013). Second, some of the purported mediators of the link between PRD and prosociality, such as emotion understanding, empathy, and emotion regulation, apply only within a context of emotional distress. By definition, instrumental helping involves recognizing others' instrumental, non-emotional needs, and inferring their instrumental goals (Dunfield et al., 2011). Our instrumental helping tasks, therefore, occur within non-emotional contexts, involving minimal expressions of frustration. Because our helping tasks place negligible affective demands on the children, individual differences in emotion understanding, empathy, and emotion regulation should not predict individual differences in the ability or willingness to

instrumentally help. Based on these theoretical reasons, I predicted that neither supportive nor unsupportive PRD would relate to children's helping behaviors (Hypotheses 11 and 12, respectively).

Sharing tasks. As with helping, no studies have examined links between PRD and sharing (in the absence of comforting). Unlike helping, however, a few theoretical reasons would suggest that PRD should predict sharing behaviors. The socio-cognitive skills underlying sharing are similar to those underlying comforting and, compared to those underlying helping, emerge later in development, are considered to be more complex, and are subject to individual differences based on socialization (Brownell et al., 2013). Second, our sharing tasks involve a moderate degree of emotion in which the experimenter expresses disappointment in losing her valued possessions and then sadness at their loss, mirroring the naturalistic contexts in which children are often faced with the opportunity to share with a moderately distressed peer. The ability to empathize with the experimenter, as well as identify and understand her emotions, are likely integral to children's altruistic sharing in this context. PRD may relate to variations in sharing via empathy, perspective-taking, secure attachment, and emotion understanding. Sharing in this context may also require some emotion regulation in order to focus on the experimenter's needs rather than the child's own. Finally, sharing may be related to PRD because of the effortful control required of children to relinquish a valued resource. Based on these theoretical reasons, I predicted that supportive PRD would positively, and unsupportive PRD would negatively, relate to children's sharing behaviors (Hypotheses 13 and 14, respectively).

Chapter 2: Method

Participants

Participants were part of a randomized controlled trial (RCT) of an attachment-based intervention called Circle of Security-Parenting; all participants in the RCT are included in the present study. The University of Maryland Institutional Review Board approved this project prior to recruitment (see Appendix A for the approval letter). Participants are caregiver-child dyads (n = 168) recruited from participating Head Start agencies in Baltimore, MD. To be eligible for the study, dyads had to meet the following inclusionary criteria: female primary caregivers and their eldest preschool child between 3 and 5 years of age currently enrolled in the participating Head Start. Exclusionary criteria included: children with major developmental disorders (e.g., Autism, Down's Syndrome) or severe illness requiring specialized medical care, caregivers under 18 years of age, non-English speaking caregivers, and caregivers with a severe, untreated mental illness such as schizophrenia or psychosis.

All eligible dyads at the participating Head Starts were given the opportunity to enroll. We recruited families using flyers posted at the centers and announcements made during parent meetings. Once eligibility was determined, we described the program to the caregivers and obtained informed consent. Initially, 168 dyads were enrolled, but 27 dropped out for various reasons throughout the duration of the study (e.g., were found to be ineligible, moved residences, refused to attend the assessment, were unreachable), for a final sample size of 141 dyads in the present study.

The racial/ethnic distribution of the caregivers and children was representative of the population of families with children enrolled in Head Starts in Baltimore, Maryland. Among the final sample of caregivers, 76% were African American, 12% Caucasian, 1% Hispanic or Latino, 1% Asian American, and 10% other. The distribution for children (56% female) was 87% African American, 4% Caucasian, 2% Hispanic or Latino, 1% Asian American, and 6% other. In approximately 84% of the dyads, the child's race matched that of the caregiver. Caregivers ranged in age from 18 to 48 years (M=29.7,

SD=6.4), and children ranged in age from 36 to 62 months (M=44.7, SD=7.1). Seventy-nine percent of caregivers had completed high school or had received a GED certification, and 4% had completed college.

Procedure

RCT procedure. All participants were recruited as part of a larger RCT testing the effectiveness of the Circle of Security - Parenting (COS-P) intervention, a group-based therapeutic parenting intervention designed to promote secure attachment in young children (see Powell, Cooper, Hoffman, & Marvin, 2014). Data for the present study were collected as part of the outcome assessment for this RCT, which I will describe in more detail in the following section. After providing written informed consent (see Appendix B for a copy of the consent form), caregivers completed a series of baseline questionnaires assessing a variety of personal characteristics, including adult attachment style, parenting stress, loneliness, anxiety, depressive symptoms, response to child distress, and parenting efficacy; family characteristics, including demographics and frequency of spanking in the household; and child characteristics, including internalizing/externalizing behavior. Research staff and Head Start personnel administered the baseline questionnaires to caregivers at a Head Start center. The questionnaires took approximately two hours to complete and participants received $25 in cash upon completion.

After participants completed baseline measures, they were randomly assigned to either receive the COS-P intervention immediately (intervention group) or placed on the waitlist to receive the COS-P after the outcome assessment (control group). Then, participants randomly assigned to the intervention group attended one 90-minute COS-P group meeting per week for the next 10 weeks at the Head Start center. They received $30 after the second session for attending the first two sessions and $15 after each session attended thereafter. Once the 10-week intervention was completed, all participants were contacted to take part in the outcome assessment, which is the focus of the present study. Once all participants completed the outcome assessment, the control group attended their intervention sessions and received the same monetary compensation as the intervention group.

Outcome assessment procedure. Dyads were individually scheduled for a two-hour assessment held at a local clinic. Upon arrival, they were reminded of the procedures and taken to the playroom where they first completed a version of the Strange Situation Procedure modified for preschoolers (Cassidy & Marvin, 1992). Then, the caregiver was taken to another room to complete a series of questionnaires similar to the ones done during the baseline assessment (e.g., those assessing adult attachment style, parenting stress, loneliness, anxiety, depressive symptoms, response to child distress, parenting efficacy), as well as a short video task assessing response to infant crying. While the caregiver filled out questionnaires, the child remained in the playroom with an adult experimenter for a series of tasks measuring prosocial behavior, effortful control, and attribution biases. The measures relevant to the present study are described in the Measures section. Portions of the outcome assessment were videotaped for coding purposes. Upon completion, participants were paid $50 and thanked for their time.

Measures

Parental response to distress. Response to child distress was measured using the Coping with Toddlers' Negative Emotions Scale (CTNES; Spinrad et al., 2004; see Appendix D), an 82-item questionnaire in which caregivers rate the likelihood of possible responses to their own child's negative emotions in 12 hypothetical scenarios. The scenarios depict situations in which the child gets upset, angry, or distressed (e.g., "If my child becomes upset and cries because he is left alone in his bedroom to go to sleep, I would:"), and the responses include seven types of response to the emotion: (a) Distress Reactions (e.g., "Become upset myself"), (b) Punitive Reactions (e.g., "Tell my child that if he doesn't stop crying, we won't get to do something fun when he wakes up"), (c) Minimizing Reactions (e.g., "Tell him that there is nothing to be afraid of"), (d) Expressive Encouragement (e.g., "Tell my child it's okay to cry when he is sad"), (e) Emotion-Focused Reactions (e.g., "Soothe my child with a hug or kiss"), (f) Problem-Focused Reactions (e.g., "Help my child find ways to deal with my absence"), and (g) Granting the Child's Wish (e.g., "Stay with my child or take him out of the bedroom to be with me until he falls asleep"). For each scenario, caregivers rate each possible response from 1 (*Very Likely*) to 7 (*Very Unlikely*). The CTNES has been used in multiple previous studies (e.g., Eisenberg et al., 2010; Engle &

McElwain, 2011; Gudmundson & Leerkes, 2012; Leerkes et al., 2011; Luebbe et al., 2011). Spinrad et al. (2007) reported test-retest reliability estimates ranging from .65 to .81 over a 2- to 4-month period and internal consistency reliability coefficients ranging from .75 to .93 for six of the seven subscales (Granting the Child's Wish was excluded from the Spinrad study and from the present study).

Following Gudmundson and Leerkes' (2012) adaptation of the method from Spinrad et al. (2007), I averaged items from the Expressive Encouragement (α = .91), Emotion-Focused (α = .75), and Problem-Focused (α = .88) subscales to create a measure of Supportive PRD (36 items) and items from the Punitive (α = .82), Minimizing Reactions (α = .80), and Distress Reactions (α = .74) subscales to create a measure of Unsupportive PRD (36 items). Granting the Child's Wish was excluded due to its lower internal consistency and lack of fit with either composite in previous studies. Spinrad et al. (2007) conducted a principal components factor analysis using the seven subscales and found that Granting the Child's Wish and Distress Reactions did not factor with any of the other scales. However, Gudmundson and Leerkes (2012) included Distress Reactions with the unsupportive responses and found good internal consistency (α=.84), and I share their view that Distress Reactions fits conceptually with unsupportive responses to child distress.

Child prosocial behavior. Prosocial behavior was assessed with a battery of 10 tasks (presented in one of two counterbalanced orders) in the playroom with an adult female experimenter while the caregiver was in an adjacent room. Previous studies have found that toddlers and preschool children readily display prosocial behavior toward an unfamiliar adult in experimental settings, albeit at lower rates than they display toward caregivers (Spinrad & Stifter, 2006; Radke Yarrow, Waxler, Barrett, Darby, King, Pickett, & Smith, 1976; Dunfield et al., 2011). Following the methods of Dunfield et al. (2011), three tasks each measured instrumental helping, sharing, and comforting, with different amounts of emotion/distress expressed by the experimenter in each type of task: instrumental helping tasks involved mild frustration, sharing tasks involved a moderate amount of emotional expression (e.g., sighing, looking sad), and comforting tasks involved a considerable amount of emotion (e.g., moaning). One task reflected sharing without any emotional expression toward an absent other child. The specific

tasks used differed from Dunfield et al. (2011) and will be described in more detail below. After a 5-minute warm-up period of playing with the experimenter, the child was seated at a table across from the experimenter. Over the course of approximately 90 minutes, the experimenter engaged the child in a variety of activities, such as playing in a sandtable, drawing a picture, reading books, and doing puzzles. Built into the activities were the 10 tasks, which appeared to the child as unexpected incidents. To increase the likelihood that children left the playroom in a fair mood, every task ended with the incident being resolved and the experimenter returning to a happier mood. All tasks were videotaped and later coded (see Appendix C for the Prosocial Behavior Coding Manual).

Instrumental helping. Each of the three helping tasks lasted a maximum of 30 seconds. They included tasks in which the experimenter: (a) stood on a chair to hang a poster, dropped her tape on the floor, said, "oh my tape!", and then reached for the tape with an outstretched hand while grunting and struggling with the poster; (b) tried to open the door while holding a stack of large boxes, said, "oh, the door!", and struggled to turn the knob while holding onto the boxes; and (c) spilled her marbles across the floor during a game, said, "oh, my marbles!", and kneeled down to pick them up. These tasks were not identical to those used by Dunfield et al. (2011), but were adapted for use with older children to be more challenging and age-appropriate. However, the division of each task into segments with increasingly explicit cues is similar to the methods used by Dunfield et al. (2011). To increase the difficulty of the instrumental helping tasks, the child was introduced shortly beforehand to an engaging toy or activity; therefore, the prosocial response required delaying the child's current goals (Thompson & Newton, 2013). The tasks with the poster and the boxes occurred while the child was playing with the sandtable; therefore, to help, he or she had to stop playing, stand up, and move around the table. The task with the marbles occurred while the child was walking across the room in order to put his or her own marbles into an exciting "pling machine" which made the sound of marbles running down a xylophone; therefore, to help, he or she had to turn around and go back to pick up the experimenter's marbles.

Each task began once the experimenter voiced the initial statement introducing the situation (e.g., "oh, my marbles!"). During the first 10 seconds of each task, the experimenter demonstrated the problem

non-verbally (i.e., attempting to accomplish the goal while grunting or sighing) and did not make eye contact with the child. During the next 10 seconds of each task, the experimenter explained the problem in two separate statements without making eye contact with the child (e.g., "I can't open the door") while continuing to attempt to accomplish the frustrated goal. During the final 10 seconds, the experimenter explained the problem in two separate statements while making periodic eye contact with the child and continuing to attempt the goal. The task ended once the child completed the target helping response (i.e., handed the tape, opened the door, or picked up a marble) or after 30 seconds; therefore, if the child never helped, each task lasted 30 seconds. If the child helped, the experimenter said, "thanks" in a neutral voice in order to ensure the tasks seemed natural and realistic to the child while minimizing verbal praise which may reinforce helping behavior (Dunfield et al., 2011). If the child never helped, the experimenter ended the task by completing the goal on her own.

Coding of instrumental helping tasks. In previous studies of young children's helping behavior, helping was measured in various ways. Most often, children are simply given a single score for helping versus not helping (e.g., Dunfield & Kuhlmeier, 2013). In some studies, children are given an extended period of time in which the experimenter gives increasingly explicit cues (e.g., reaching silently, stating the problem, looking directly at the child while stating the problem), and the helping score reflects the spontaneity with which the children helped (e.g., Brownell et al., 2013; Pettygrove et al., 2013). Higher scores indicate faster, more skilled responding requiring less support from an adult to initiate the prosocial response. A third method for coding helpfulness is a global helping score (e.g., Hastings, Rubin, & DeRose, 2005), which considers the overall reaction of the child during the helping task. The proposed study measured children's helping behaviors in all three of these ways (i.e., *presence of helping,* *spontaneity of helping,* and *global helping*).

For *presence of helping*, children received one point if they helped at any point during the 30-second task, and the scores were averaged across tasks to create the final score (a proportion ranging from 0.00 to 1.00). Scores were averaged instead of summed to account for some missing data (i.e., 3% of children were only administered one or two tasks, and so their final score will be comparable to the final

score of children who completed all three tasks). For each of the helping tasks, *spontaneity of helping* was coded as: 3 = child helped within the first 10 seconds, before the experimenter voiced the problem, 2 = child helped within the second 10 seconds, before the experimenter made eye contact, 1 = child helped within the third 10 seconds, before the task ended, and 0 = child never helped (scores were averaged across tasks to create the final score ranging from 0.00 to 3.00). *Global helping* was coded on an ordinal scale from 1 to 6: 1 = did not help, offer to help, offer advice, or acknowledge the situation verbally, 2 = did not help or offer to help or offer advice, but did acknowledge the situation verbally while not showing negativity or distress (e.g., asking what happened), 3 = did not help or offer to help, but did offer advice about how to fix the situation without offering his/her own services (e.g., "set the boxes down"), 4 = offered to help but did not actually help (e.g., "want me to get it?"), 5 = helped, but only after the problem had been stated at least once (i.e., within the second or third 10-second interval), and 6 = helped immediately (i.e., within the first 10-second interval). Children received a global helping score for each of the three tasks, which were averaged together to create the final global helping score with a possible range of 1 to 6 (see Table 2 for chart of all outcome variables and their possible ranges).

Sharing. Each of the three sharing tasks lasted a maximum of 45 seconds in order to give children more time to complete these more difficult tasks (Dunfield & Kuhlmeier, 2013). They included tasks in which the experimenter: (a) introduced snack time, poured four cookies for the child, discovered there were no more cookies left for herself and said, "oh, there's no more cookies left," then looked sadly at her bowl while sighing; (b) gave two inflated balloons to the child and one to herself, then noticed that her balloon was deflating quickly, said, "oh no, my balloon had a hole in it...and that was the last one!", and then looked sadly at her deflated balloon while sighing; and (c) introduced four stickers for the child and four stickers for herself, discovered her own stickers had already been used, said, "oh no, all my stickers were already peeled off...," and then looked sadly at her stickers while sighing. Again, these tasks were not identical to those of Dunfield et al. (2011), because they were adapted for use with older children, but they were similar in terms of timing and segmentation.

Each task began once the experimenter voiced the initial statement introducing the situation (e.g., "oh, there's no more cookies left"). During the first 15 seconds of each task, the experimenter expressed moderate sadness without using words or looking at the child. During the next 15 seconds of each task, the experimenter explained the problem in two separate statements without making eye contact with the child (e.g., "I wish I had some snack too") while continuing to express moderate sadness. During the final 15 seconds, the experimenter explained the problem in two separate statements while making periodic eye contact with the child and continuing to express sadness. If the child shared, the experimenter said "thanks" in a neutral voice and waited an additional five seconds before ending the task. If the child shared again during the five seconds, these steps were repeated (i.e., thanking the child and waiting) until the child had shared all available resources. If the child did not share again, or once all resources had been shared, the task ended. If the child never shared, the task ended after 45 seconds, and the experimenter resolved the situation by saying "that's okay, I can get some more cookies/stickers/balloons tomorrow," and returning to a happier mood.

In addition to the three sharing tasks with the experimenter, children also participated in a task in which they were given the opportunity to share with another (absent) child. We modified a version of the classic “dictator game” (Kahneman, Knetsch, & Thaler, 1986) that has previously been used with young children (e.g., Blake & Rand, 2010; Gummerum, Hanoch, Keller, Parsons, & Hummel, 2010). In the version used in the present study, the child discovered a hidden treasure chest while playing in the sandtable. The experimenter explained that whatever was in the chest belonged to the child and he or she would be able to take it home. After opening the chest to reveal 20 nickels inside, the experimenter said:

> All of these nickels belong to you and you get to keep them and take them home with you! But I have something else to tell you. There is another little girl/boy [sex matched child's] who is coming here later today and we don't have any more nickels for her/him. So it's up to you to decide if he/she gets any nickels or not. Any nickels you want to give to the other girl/boy, you put them in this box [experimenter set a box in front of child with a colored sticker on it]; this is her/his box. Any nickels you want to keep and take home with you go into this box [experimenter

sets an identical box in front of the child, with a different colored sticker on it]; this is your box. Then when you're finished putting the nickels away, close the lids and I won't peek inside. I'll be over there doing work, and I won't look.

The experimenter then asked questions to verify the child's understanding of the task (e.g., "Where do you put the nickels you want to keep?") and corrected the child if necessary. If the child did not answer the questions correctly, the experimenter asked one more time and corrected again if needed. Then, she asked the child to put the nickels away and to let her know when he or she finished, and stood with her back to the child on the other side of the room pretending to do work. Once the child finished, the experimenter again verified which box belonged to the child, and put the "other child's" box back into the treasure chest.

Coding of sharing tasks. Previous studies of young children's sharing behavior used both the total amount and the spontaneity of children's sharing as indices of the tendency to share (e.g., Brownell et al., 2013; Pettygrove et al., 2013). Other studies measured a single score reflecting sharing something versus not sharing anything (e.g., Dunfield & Kuhlemeier, 2013). As in the helping tasks, spontaneity refers to the level of cue required from the person in need before a child shares (e.g., looking at the desired object, glancing from the object to the child, stating the desire for the object, stating the desire for the object while looking directly at the child). In a previous study using sharing tasks similar to the ones used in the present study, older children (30 months) did not share *more* than younger children (18 months), but they did share more spontaneously, with fewer cues from the experimenter, and spontaneity of sharing was related to maternal socialization, whereas amount of sharing was not (Pettygrove et al., 2013). Spontaneity is arguably a more sensitive measure of children's sharing behaviors, because once the cues of material need become sufficiently explicit enough to be considered (implicit) direct requests (e.g., looking at the child while stating the need for the object), subsequent sharing behaviors are no longer spontaneous and are instead compliant behaviors. Unlike spontaneous sharing, compliant sharing may not reflect a truly prosocial response, as it generally does not predict sympathy at older ages, and may be a strategy to avoid unpleasant social interactions rather than to alleviate the material need of the other

person (Eisenberg et al., 2006). Whereas spontaneous sharing in preschool has been prospectively linked to a childhood prosocial disposition as reported by friends, compliant sharing has not been similarly linked to these positive outcomes (Eisenberg et al., 1999b). Finally, sharing can be measured globally, as it was with helping, in order to capture the overall behavior of the child. The proposed study measured sharing in all four ways: *presence of sharing*, *amount of sharing*, *spontaneity of sharing*, and *global sharing*.

Child prosocial responses toward the experimenter (sharing cookies, balloons, or stickers) were considered separately from child prosocial responses toward the "other child" during the dictator game, because of the many methodological differences between these two types of tasks. For *presence of sharing (toward experimenter)*, children received one point if they shared anything during the 45-second task, and the scores were averaged across tasks to create the final score (a proportion ranging from 0.00 to 1.00). *Amount of sharing (toward experimenter)* was coded in each task as the proportion of the child's total materials shared with the experimenter. For example, if a child shared 1 of her 4 cookies, *amount of sharing* equaled .25 for that task. Proportions were used instead of the total number of items in order to account for some missing data (i.e., 1% of children had fewer or more items to share than other children due to experimenter error). The proportions were averaged across all sharing tasks to create an *amount of sharing* proportion score ranging from 0.00 to 1.00. *Spontaneity of sharing* was coded as: 3 = child shared within the first 15 seconds, before the experimenter voiced the problem, 2 = child shared within the second 15 seconds, before the experimenter made eye contact, 1 = child shared within the third 15 seconds, before the task ended, or within 5 seconds of the task ending, and 0 = child never shared (scores were averaged across tasks to create a final score ranging from 0.00 to 3.00). *Global sharing* was coded as: 1 = did not share, offer to share, offer advice, or acknowledge the situation verbally, 2 = did not share or offer to share or offer advice, but did acknowledge the situation verbally while not showing negativity or distress (e.g., asking what happened), 3 = did not share or offer to share, but did offer advice about how to fix the situation without offering his/her own items in the room (e.g., "you could go to the store to get some"), 4 = offered to share but did not actually share (e.g., "I could give you some of mine"), 5 = shared

1 item, but only after the problem had been stated at least once (i.e., within the second or third 10-second interval), 6 = either shared 1 item immediately (i.e., within the first 10-second interval) or shared more than 1 item, but both were given within the second or third 10-second intervals, and 7 = shared more than 1 item and at least 1 of those items was given immediately. Children received a global sharing score for each of the three tasks with the experimenter, which were averaged together to create the final global sharing score with a possible range of 1 to 7.

Child prosocial responses toward the "other child" (sharing nickels) were coded in two ways: *presence of sharing (toward child)* and *amount of sharing (toward child)*, coded in the same way as described above. Spontaneity of sharing and global sharing were not coded for this task, because the dictator game was not timed.

Comforting. Each of the three comforting tasks lasted a maximum of two minutes, as children may require more time to respond to cues eliciting comfort than to cues eliciting instrumental help or material resources (K. Dunfield, personal communication, April 28, 2015). These included tasks in which the experimenter: (a) bumped her knee on the sandtable while standing up, said, "ow, my knee!," and clutched her knee while gasping and moaning; (b) dropped her phone while sending a text message, picked it up and said, "oh no, the screen broke!," showed it to the child, and then expressed sadness with moaning and sighing; and (c) introduced a drawing she had been working on for awhile, sat down with the child to finish coloring it while the child colored his or her own picture, then accidentally spilled a cup of water on her drawing, said, "oh no, my drawing!," and expressed sadness with moaning and sighing. The comforting task used by Dunfield and colleagues also involved the experimenter "bumping her knee" and simulating distress with increasingly explicit cues, but their tasks were shorter.

Each task began once the experimenter voiced the initial statement introducing the situation (e.g., "ow, my knee!"). During the first 30 seconds of each task, the experimenter expressed considerable sadness without using words or looking at the child. During the next 30 seconds of each task, the experimenter explained the problem in three separate statements without making eye contact with the child (e.g., "I'm so sad about my phone," "I hit my knee really hard on the table") while continuing to

express considerable sadness. During the next 30 seconds, the experimenter explained the problem in three separate statements while making periodic eye contact with the child and continuing to express sadness. During the final 30 seconds, the experimenter asked, "is there anything you can do to make me feel better?," stated the problem once more, and then asked, "is there anything else you can do?" If the child answered yes, the experimenter asked, "what?" If the child asked the experimenter a question or engaged her in conversation during this task, the experimenter answered as briefly and naturally as possible while remaining sad. For example, if the child asked, "are you okay?," the experimenter said, "no." After two minutes, the task ended and the experimenter resolved the situation (e.g., "that's ok, I can make another drawing tomorrow, and it'll be just as pretty"), gradually returning to a happier mood.

Coding of behaviors during the comforting tasks. Coders categorized child responses during these tasks into five categories: *comforting behaviors*, *concerned attention*, *antisocial (negative) responses*, *personal distress*, and *ignoring the experimenter's distress*. All categories were mutually exclusive and exhaustive, such that every behavior was classified into a single category. In some cases, children exhibited concerned attention while also engaging in a comforting behavior, but the presence of comforting behavior always took precedence over concerned attention. If the child's actions (or lack thereof) could not be classified as *comforting behaviors*, *concerned attention*, *antisocial (negative) responses*, or *personal distress*, they were classified as *ignoring the experimenter's distress* by default.

Comforting behaviors included both emotion-focused and problem-focused responses to the experimenter's need. Emotion-focused responses are those oriented towards the experimenter's feelings, emotions, or mood, with the goal of improving them. Examples include: physical soothing (e.g., hugging, patting), verbal soothing (e.g., "it's ok"), physically giving or offering to give or share an object in order to help the experimenter feel better, and attempts to distract the experimenter from her distress by introducing a new toy or activity with the intention of cheering her up. Problem-focused responses are those oriented towards solving or taking action to fix the underlying problem. Examples include: verbal helping (e.g., "you could try to clean it up"), physical helping (e.g., wiping water off the ruined drawing), and attempts to get help from another adult (e.g., "my mommy can help").

Concerned attention was coded if children did not exhibit any of the comforting behaviors described above, but showed signs of empathy or concern for the experimenter's distress. To receive a *concerned attention* code, children must be oriented toward the scene with a neutral or concerned expression (not distressed or happy), show signs of reduced play, and not be talking for at least 3 continuous seconds. *Concerned attention* could also be expressed through verbal statements of concern that could not be classified as comforting (e.g., "what happened?", "ohh, your picture got wet").

Antisocial (negative) responses were coded when the child showed any of the following behaviors: teasing, taunting, mocking, laughing, callous statements (e.g., "that's what you get!"), or controlling or demanding statements ("stop doing that!").

Personal distress responses were coded when the child began crying, whining, or whimpering in response to the experimenter's distress. It also included obvious facial distress, physical self-soothing attempts (e.g., sucking thumb, wringing hands), verbal statements of personal distress (e.g., "I want to go home"), and speaking in a distressed-sounding tone of voice.

Ignoring the experimenter's distress was a default category that captured the lack of any other type of response. It does not reflect complete ignoring of the experimenter or of the entire situation, but only of the experimenter's obvious distress. Examples of *ignoring the experimenter's distress* include: keeping attention focused on an activity, making irrelevant conversation, smiling at the experimenter, staring at the floor, statements about the child's own property not being damaged (e.g., "*my* drawing isn't wet"), statements about a toy or activity that are not meant to improve the experimenter's mood (e.g., "I want to keep playing dinosaurs"), and any statement or action that cannot be classified. If the child was not being comforting, not increasing or maintaining proximity to the experimenter, and not showing concerned attention, personal distress, or antisocial behaviors, he or she was considered to be ignoring the experimenter's distress by default.

In previous studies of young children's reactions to others' distress, behavior was measured in various ways. Most often, a single global measure capturing the quality and quantity of comforting was used (e.g., Newton, Goodman, & Thompson, 2014; Vaish et al., 2009). In some studies, children were

given an extended period of time in which the experimenter gave increasingly explicit cues (e.g., remaining silent and looking sad, stating the problem and associated feelings, looking directly at the child while stating the problem), and the comforting score reflected the spontaneity with which the children responded prosocially (e.g., Brownell et al., 2013; Pettygrove et al., 2013). Finally, other studies measured the frequency of attempts (e.g., Eisenberg et al., 1996; Zahn-Waxler et al., 1979). The present study measured behavior during these tasks using all three methods.

First, the *global score* reflected an overall impression of the child's prosocial behavior toward the experimenter, taking into account the quality and quantity of behavior and concerned attention, as well as the presence of other behaviors such as antisocial (negative) behaviors and personal distress. For each task, the *global score* ranges from 1 to 5 and reflects the overall behavior toward the experimenter. It was be coded as: 1 = child largely ignored the experimenter or offered minimal attempts to comfort with very little concerned attention, 2 = child ignored much of the time with one or two attempts to comfort, or child showed concerned attention for much of the time with no attempt to comfort, 3 = child offered three or four mid-quality attempts to comfort, with some concerned attention, or at least two high quality attempts to comfort, with little concerned attention, 4 = child offered several mid-quality solutions or attempts to comfort, with a good amount of concerned attention, 5 = child immediately physically comforted (e.g., hug) or attempted multiple high-quality ways to comfort. The presence of any significant, prolonged, or obvious antisocial (negative) behaviors or personal distress resulted in a one-point reduction in score. The *global scores* were averaged across tasks to create the final global score (ranging from 1 to 5).

Specific comforting behaviors were coded in two ways: *frequency of comforting,* and *spontaneity of comforting*. *Frequency of comforting* was coded for each task as the proportion of 10-second intervals in which the child comforted at least once. For example, if a child was comforting within 5 of the 15 total intervals, *frequency of comforting* = .33 for that task. The proportions were averaged across all comforting tasks to create a *frequency of comforting* proportion score ranging from 0.00 to 1.00. *Spontaneity of comforting* was coded as: 4 = child comforted within the first 30 seconds, before the

experimenter voiced the problem, 3 = child shared within the second 30 seconds, before the experimenter made eye contact, 2 = child comforted within the third 30 seconds, before the experimenter asked for help, 1 = child comforted within the final 30 seconds, before the task ended, and 0 = child never comforted (scores were averaged across tasks to create a final *spontaneity of comforting* score ranging from 0.00 to 4.00).

Concerned attention was measured using frequency only, because spontaneity of concerned attention will likely have no variance, as almost all children initially attended to the situation for at least a few seconds, possibly out of curiosity or surprise. *Frequency of concerned attention* was coded for each task as the proportion of 10-second intervals in which the child showed concern at least once. The proportions were averaged across all comforting tasks to create a *frequency of concerned attention* proportion score ranging from 0.00 to 1.00.

Antisocial (negative) responses were measured as both *frequency of* and *spontaneity of negativity*, coded in the same way as *frequency of* and *spontaneity of comforting.* In addition, because negative responses were expected to be rare (69% of children did not exhibit even a single instance of antisocial responding across all tasks), they were measured in a third way (i.e., *presence of negativity)*, in which a single score was given for each task based on whether the child ever showed this behavior. Children received one point if they exhibited any negative responses during the two-minute task, and the scores were averaged across tasks to create the final score (a proportion ranging from 0.00 to 1.00).

Personal distress was coded in these three ways as well, because they were also expected to be rare (81% of children did not exhibit even a single instance of personal distress across all tasks). Again, *frequency of* and *spontaneity of personal distress* were coded in the same way as *frequency of* and *spontaneity of comforting. Presence of personal distress* was coded in the same way as *presence of negativity*.

Ignoring was coded in a single way: *frequency of ignoring*. Spontaneity of ignoring was not measured because *ignoring* is a default category. Presence of ignoring was not measured because almost all children showed at least some ignoring (i.e., less than 4% of children never ignored).

Coding procedures and reliability. Coders were undergraduate and graduate research assistants, all blind to additional information about the child or mother. There were three undergraduate coders, two graduate coding supervisors, and one graduate student serving as a back-up coder in case a primary coder was unable to complete her coding. The back-up coder attended all weekly meetings and coded a randomly selected sample of videos each week in order to practice and stay reliable, but these codes were discarded because no primary coder dropped out.

Training procedures. A random selection of recorded videos served as the training videos. The first three videos were coded together in a group, led by the coding supervisors, with detailed explanations and examples. The remaining training videos were assigned in sets of three or four each week, to be coded in private and independently. Each individual's codes were then compared to the consensus codes obtained by the two graduate supervisors, and any discrepancies were discussed during a weekly meeting. Disagreements between the two graduate supervisors were resolved by a third expert coder (J. Cassidy). Before beginning official coding, all coders achieved inter-coder reliability with the graduate supervisors (with ICC values of at least .70 for all averaged, cross-task scores). At the end of the training period, all data from the training videos were discarded. These videos were randomly inserted into the coders' weekly assigned videos throughout the coding process. Doing so ensured that clarifications to the coding rules that occurred during the training period were equally applied to all videos.

Coding procedures. Seventy-one percent of the 141 videos were coded by at least two of the trained coders. Coders were assigned approximately 4 to 6 videos to code each week, all of which overlapped with at least one of the other coders' assigned videos for that week. Overlapping codes were compared each week, and identical scores were retained as final data, whereas discrepant scores were discussed during a weekly meeting in order to determine the score to be used as data. Discrepant scores were defined as: more than two points difference for raw, pre-proportioned frequency scores (for each individual task, not the average value), any difference for spontaneity scores (per individual task), any difference for global scores (per individual task) and any difference for presence and raw, pre-

proportioned amount scores (also per individual task). Scores that were neither identical nor discrepant (e.g., frequency scores with one point difference) were averaged, and the average was retained as the final data.

The purpose of the weekly meetings was to prevent coder drift by identifying and discussing continuing bias, to review inter-coder reliability based on the overlapping codes, and to resolve discrepancies. One or two videos per week were also be coded by one or both of the coding supervisors (two graduate students who participated in the development of the coding system) in order to assess the degree of weekly consistency with each of the coders. The inter-coder reliability never fell below .70.

Reliability. Inter-coder reliability was calculated using the 71% of double-coded videos. Reliability of all variables was calculated using an SPSS macro called KALPHA, which uses Krippendorff's alpha (Hayes & Krippendorff, 2007), an estimate of reliability for subjective judgments made at any level of measurement, with any number of judges, and with or without missing data. Reliability greater than or equal to .70, otherwise with a percent agreement greater than 90%, is considered sufficiently reliable for newly developed coding schemes (Lombard, Snyder-Duch, & Bracken, 2002). Of all 20 outcome variables, only two had alpha values below .70 (i.e., *presence of negativity* and *frequency of personal distress*). Both of these variables, however, had alpha values above .65and had percent agreements above 90 (91% and 94%, respectively). Most variables were reliable above .80. (see Table 3 for all variables' inter-coder reliability values using Krippendorff's alpha).

Chapter 3: Data Analysis Plan

General Analytic Considerations

Data were analyzed as outlined in the study proposal, with a few exceptions: 1) The assumptions of multiple regression were not tested due to the extreme non-normality of the outcome variables. Instead, maximum likelihood estimation with robust estimators was used to compare multiple models for each variable, in order to select the distribution best fitting the data; 2) Rather than collapsing data across child sex, race, and age if no correlations emerged with predictor or outcome variables, I used the model comparison technique to compare the basic model (including just main predictors and applicable control variables) to one with moderation (including child age, sex, and race, and their interaction terms) for every outcome. For each outcome, I selected the final model based on which was a better fit for the data: Sometimes, a demographic variable was not correlated with an outcome at the bivariate level, but it was ultimately included in the final model because including it improved model fit; 3) In order to address the fact that approximately half of the caregivers had received the COS-P intervention, which may moderate the influence of parenting on child outcomes, I also compared models with Intervention Status as a moderator to all other models for each outcome variable. In no cases, however, did Intervention Status significantly interact with PRD to predict any child outcome; and 4) I also used model comparison to examine three-way interactions between PRD and child demographics. There were a few other minor changes to the data analysis plan, which are noted in the relevant sections (e.g., I examined the difference between Black and non-Black children, rather than between White and non-White children).

The data analysis plan is divided into two sections. First, I will present the plan for calculating descriptive statistics for all study variables, including means, standard deviations, and ranges, along with the bivariate associations among all variables. Demographic variables that are potentially associated with predictor or outcome variables, such as sex, race, and age, will also be examined. Then, I will outline my plan to conduct a series of multiple regression analyses in order to examine the unique contributions of

mother-reported supportive and unsupportive responses to child distress to each of the prosocial behavior measurements. The prosocial behaviors (outcome variables) include the three helping variables, six sharing variables, and eleven variables measuring various behaviors during the comforting tasks (e.g., comforting, concerned attention, personal distress), described in the coding section (see Table 2 for a chart of all outcome variables).

An a-priori analysis of power revealed that a minimum sample size of 134 would be required to detect an effect (f^2) at the level of .10 with a power level of .80, assuming that alpha equals .05 and there are up to five predictors in the model (i.e., supportive parental responses, unsupportive parental responses, relevant demographic or control variables, and an interaction term if needed). Given our full sample size of 141, there should be adequate power to detect a medium effect size (Cohen, 1988).

Descriptive Statistics and Bivariate Associations

I planned to present descriptive statistics for all study variables, demographic variables, and control variables, including means, standard deviations, and ranges. In addition, I planned to calculate the bivariate correlations among all the predictor and outcome variables (using the Pearson product moment correlation coefficient), and examine the expected associations to provide a basis for conducting subsequent multiple regression analyses.

I also planned to examine whether there were significant sex, age, or race effects in terms of each of the predictor and outcome variables. Using independent samples t-tests or Wilcoxon-Mann-Whitney tests (depending on the normality and nature of the outcome or predictor variable), I planned to determine whether there were mean differences between girls and boys, or between minority and non-minority (i.e., White) children. Due to the large majority of Black children (87%), I instead compared all Black children to all non-Black children, in order to increase the sample size of the minority group and therefore increase power. Using Pearson product moment correlations, I planned to determine whether age was correlated with any of the study variables.

If there were any associations with race, I planned to include race as a potential moderator in the multiple regression analyses by entering it in Step 1 of the analysis and including an interaction term in

Step 3. As noted previously, however, I examined race as a potential moderator for all outcomes, regardless of bivariate associations, and retained the interactive model only if it best fit the data. I had no specific hypotheses regarding moderation by race, because race differences were not examined in the reviewed studies of the relations between PRD and prosocial behavior.

If there were associations with age, I planned to employ the same procedure as I would with race, examining it as a potential moderator in Step 1 and as an interaction term in Step 3 of the multiple regression model. I also had no specific hypotheses regarding moderation by age, because all but one of the reviewed studies that examined age-related differences did not find evidence of interactive effects of PRD with age on prosocial behavior (e.g., Eisenberg et al., 1996). The single exception found that observed supportive PRD in the home predicted observed child comforting toward peers in the classroom, but only among older preschoolers (Denham et al., 1997). Other studies show that there are no age-related differences across the preschool period in observed helping, sharing, or comforting (measured independently of each other; Dunfield & Kuhlmeier, 2013; Garner, 2006; Handlon & Gross, 1958; Radke-Yarrow et al., 1979).

If there were associations with sex, I planned also to examine it as a potential moderator. Unlike race and age, there was a strong possibility that sex may interact with the predictor variables to predict at least some of the outcome variables; however, I had no specific hypotheses regarding the nature of these interactions. Studies of early prosocial behavior often observe sex differences and interactions with sex, but the direction of effects has been inconsistent. For example, various studies find that supportive PRD relates to children's comforting behaviors, but only among girls (Eisenberg et al., 1993), that supportive and unsupportive PRD relate to sympathy and empathy, but only among boys (Eisenberg et al., 1991), that supportive PRD has a linear link with comforting among boys, but a quadratic link with comforting among girls (Eisenberg et al., 1996), that supportive PRD is positively associated with social competence among boys, but negatively associated with social competence among girls, and that unsupportive PRD is negatively associated with social competence, but only among girls (Jones et al., 2002), and that supportive and unsupportive PRD relate to prosocial behavior among boys, but that the pattern of

relations is less clear and inconsistent among girls (Roberts, 1999). Additionally, some studies find no evidence of sex moderating the association between PRD and prosocial behavior at all (Denham et al., 1997; Taylor et al., 2013). In sum, moderating influences of sex were a possibility in the present study, but I had no specific hypotheses regarding them.

Multiple Regression Analyses

Once the final set of included variables had been determined, I planned to conduct a series of multiple regression analyses to investigate the effect of PRD on each of the prosocial behavior outcome variables. This was expected to involve 18 models covering each of the helping, sharing, and comforting behavior variables, but two additional outcome variables were added since the proposal (i.e., global helping and global sharing; see Table 2 for chart of all outcome variables), so the final number of models was 20.

The first step of a given analysis was planned to contain any demographic or control variables that were found to be associated with the outcome or one of the predictors (e.g., counterbalanced order, race). The second step of every analysis was planned to contain both Supportive and Unsupportive PRD, centered around their mean values. If one of the demographic variables was found to be associated with the outcome or one of the predictors in a given model, a third step would be added to that analysis, including a term describing the interaction of the demographic variable and the predictor (or predictors). As previously mentioned, this strategy was replaced with a model comparison technique, in which the best fitting model was selected as the final, reported model. In addition, sets of variables were not divided into steps; instead, I tested the hypothesis that the population parameters of all variables in a given set were simultaneously equal to zero using the Wald Test of Parameter Constraints.

I planned to report all standardized coefficients, standard errors, p-values, F-values, and R^2 values. Due to the large number of null findings, key results were highlighted in the Results section, and further details regarding null findings were reported in Appendix E (Supplemental Results).

Chapter 4: Results

The results are organized into 4 sections: data reduction, descriptive statistics, zero-order correlations, and principal analyses. The principal analyses are subdivided into sections based on each hypothesis.

Data Reduction

To create scale scores from the CTNES, I averaged the Emotion-Focused, Problem-Focused, and Expressive Encouragement subscales together to create the Supportive PRD scale ($\alpha = .58$), and averaged the Punitive, Minimizing, and Distress subscales to create the Unsupportive PRD scale ($\alpha = .61$). To verify that these scales reflect the underlying structure of the data, I ran a principal components analysis (PCA) with varimax rotation using the six individual subscales. Consistent with the created scales and with previous literature (Gudmundson & Leerkes, 2012), two factors with Eigenvalues greater than 1 emerged, and a scree plot also indicated a 2-factor solution. The first factor included the three Supportive PRD subscales (Emotion-focused loading = .86, Problem-focused loading = .86, Expressive Encouragement loading = .57), and the second factor included the 3 Unsupportive PRD subscales (Punitive loading = .81, Distress loading = .57, Minimizing loading = .79).

Descriptive Statistics

Means and standard deviations of continuous outcome variables are presented in Table 4. Of the two predictor variables, Supportive PRD had a mean of 5.73 (*SD*=.77) and Unsupportive PRD had a mean of 3.42 (*SD*=.83), both with possible ranges from 1 to 7.

Of the 20 outcome variables, the only dichotomous variable was *Presence of sharing (with child)*: Out of 137 children (4 had missing data), 93 shared at least one of their nickels (67.9%), and 44 did not share any nickels (32.1%). Most prosocial (outcome) variables were highly skewed and/or kurtotic, and attempts to correct this (e.g., square root and log transformations) were unsuccessful. Due to the non-normality of most outcome variables, the other assumptions of multiple regression were not tested.

Instead, I used maximum likelihood estimation with robust estimators and model comparison to select the best fitting distribution for each outcome variable (e.g., linear, poisson, negative binomial, zero-inflated poisson).

Zero-order Correlations

Using Pearson correlation coefficients (and confirming results with non-parametric correlation coefficients), all 3 helping variables were strongly correlated with each other (all $r > .89$, $p < .001$), all 4 sharing (with experimenter) variables were strongly correlated with each other (all $r > .87$, $p < .001$), both sharing (with "other child") variables were strongly correlated, $r = .85$, $p < .001$, all 3 comforting variables were strongly correlated (all $r > .68$, $p < .001$), all 3 antisocial responding variables were strongly correlated (all $r > .82$, $p < .001$), and all 3 personal distress variables were strongly correlated (all $r > .86$, $p < .001$).

The two predictor variables (Supportive PRD and Unsupportive PRD) are not correlated with each other, nor with any of the other variables (see Tables 5 and 6 for correlation matrices of predictors with outcome variables). The various types of prosocial behaviors, however, were commonly interrelated. All comforting, concerned attention, helping, and sharing variables were positively correlated with each other (all $r > .20$, $p < .05$), and they were each negatively correlated with ignoring (all $r < -.28$, $p < .001$). Antisocial Responding (Negativity) variables were negatively correlated with concerned attention (all $r < -.18$, $p < .05$), except for *frequency of negativity* which was marginally correlated ($r = -.16$, $p = -.068$). On the other hand, variables measuring sharing with the other child and personal distress were not correlated with any of the other behaviors (however, using non-parametric correlation tests, personal distress was negatively correlated with comforting).

In addition to the main predictors and outcome variables, I also examined bivariate relations with child race, sex, and age, as well as Intervention Status (whether the child's mother attended the Circle of Security - Parenting intervention). None of the study variables were correlated with child age (measured in months) using Pearson correlation coefficients. Due to the categorical nature of sex and race, and the extreme non-normality of many of the variables, I used non-parametric tests (i.e., Wilcoxon-Mann-

Whitney), and confirmed results with Pearson correlation coefficients and non-parametric correlation coefficients, in order to determine whether girls and boys differed from each other, and whether Black children differed from children of other races (e.g., White, Asian, Native American). Girls did not differ from boys on any of the predictor or outcome variables. On the other hand, Black children were more helpful on all 3 measures of helping: *presence of helping*, $r = .24$, $p = .004$, *spontaneity of helping*, $r = .22$, $p = .009$, and *global helping*, $r = .28$, $p = .001$. They also showed less personal distress on all 3 measures: *frequency of personal distress*, $r = -.25$, $p = .003$, *presence of personal distress*, $r = -.27$, $p = .001$, and *spontaneity of personal distress*, $r = -.27$, $p = .001$. Intervention Status was negatively related to Unsupportive PRD using Pearson correlation coefficients, $r = -.17$, $p = .040$, but only marginally related using non-parametric tests, $p = .06$. It was also negatively related to *amount of sharing (with child)*, $r = -.17$, $p = .05$, which was confirmed with non-parametric tests. Similarly, it was negatively related to *spontaneity of sharing (with experimenter)* using non-parametric tests, $r = -.17$, $p = .040$, although only marginally related using Pearson correlation, $p = .08$.

Finally, I assessed whether there were any counterbalanced order, experimenter, wave, site, or procedural error effects using both non-parametric tests (i.e., Kruskal Wallis or Wilcoxon-Mann-Whitney tests) and Pearson correlation coefficients or one-way ANOVA. If one of these was associated with an outcome variable, and not with the predictor variables, then I included it as a covariate in the principal analyses in order to increase power.

Principal Analyses

All principal analyses were run using Mplus statistical software Version 6.12 (Muthén & Muthén, 1998-2011). First, a final list of covariates was compiled for each outcome variable, including any variables measuring demographics, intervention status, wave, site, experimenter, counterbalanced order, or procedural errors, that were related to the outcome variable but not to the predictor(s). Then, the first set of principal analyses tested for main effects of Supportive and Unsupportive PRD on each outcome. This was done by comparing all possible regression models and selecting the best fit for the data based on which had the lowest Akaike Information Criterion (AIC). The second set of analyses tested for

moderation of these main effects by intervention status, child age, child sex, and child race, using the best fitting model. To do this, both predictor variables (Supportive and Unsupportive PRD) were crossed with each demographic variable (sex, race, and age) to create 6 total interaction terms, which were added to the model. In order to decide whether there were significant interactions, I examined the significance of the beta coefficients for each interaction term and identified those with *p*-values of less than .05. However, because so many interactions were tested at once, there is the possibility that collinearity between them could obscure the true significance of any single term; therefore, I tested the hypothesis that all terms were simultaneously equal to zero using the Wald Test of Parameter Constraints. If the Wald Test was significant ($p<.05$) and the AIC value of the interaction model was lower than that of the main effects model (indicating better fit for the data), then I report the results of the interactions. The third set of analyses tested for three-way interactions. This process was similar to that of the two-way interactions, in which I added the interaction terms to the model, evaluated the significance of them, and reported results if the AIC value indicated better fit than the main effects and two-way interaction models. The demographic variable race was removed from these analyses because 87% of the sample was African American, and so there was not enough variance to do three-way interactions. Intervention status did not interact with any of the predictors to predict any outcomes; therefore, I collapsed all analyses across the control and intervention groups, and only used intervention status as a control variable where needed.

Hypotheses 1 and 2: Supportive PRD will positively (and Unsupportive PRD will negatively) relate to observed comforting. There were 3 variables measuring comforting: *frequency of*, *spontaneity of*, and *global comforting*. None of the 3 variables correlated with any control or covariate variables, and so Supportive and Unsupportive PRD were the only predictors in all analyses.

Main effects. The best fitting model for all 3 comforting variables was multiple linear regression. Each of the multiple linear regressions to predict these 3 outcomes from Supportive and Unsupportive PRD revealed no main effects for either Supportive or Unsupportive PRD (all $\beta < .10$, all $p > .17$). Their linear combinations also did not explain a significant proportion of variance in any regression (all $R^2 \leq .01$, all $p > .48$).

Interactions. None of the interaction terms, nor the main effects for the demographic variables, were significantly related to the outcomes, and so the main effects models were retained.

Hypotheses 3 and 4: Supportive PRD will positively (and Unsupportive PRD will negatively) relate to concerned attention. There was 1 variable measuring concerned attention: *frequency of concerned attention*. It was correlated with Site (i.e., the Head Start attended by the child), which was included in the model as a control variable.

Main effects. The best fitting model was multiple linear regression, which revealed no main effects for either Supportive, $\beta = -.04$, $t(132) = -.38$, $p = .705$ or Unsupportive, $\beta = -.02$, $t(132) = -.22$, $p = .829$ PRD. Their linear combination also did not explain a significant proportion of variance, $R^2 = .07$, $F(3, 133) = 1.68$, $p = .093$.

Interactions. None of the interaction terms, nor the main effects for the demographic variables, were significantly related to the outcome, and so the main effects model was retained.

Hypotheses 5 and 6: Supportive PRD will negatively (and Unsupportive PRD will positively) relate to child personal distress. There were 3 variables measuring personal distress: *frequency of, spontaneity of, and presence of distress*. Each had different models.

Main effects. The best fitting model for *frequency of distress* was negative binomial in which Supportive PRD and Unsupportive PRD were separated into different models, both with site and race as control variables. The best fitting model for *spontaneity of distress* was linear regression with race as a covariate. The best fitting model for *presence of distress* (whether the child ever showed distress at any point during the 3 comforting tasks) was logistic regression without any control variables. None of these 3 regressions revealed any main effects of Supportive or Unsupportive PRD on distress (all $\beta < .19$, all $p > .22$). Two of the three regressions, however, did reveal significant main effects (and the other one revealed a marginally significant main effect) for race on distress, in which African American children exhibited less personal distress than non-American American children (all $\beta < -.48$, all $p < .071$).

Interactions. No two-way interactions were significant for any of the distress variables according to the Wald Tests, and so the main effects models were retained. However, a three-way interaction was

revealed in which Unsupportive PRD was moderated by age and sex to predict *frequency of distress*, β = -.18, $t(135)$ = -2.29, p = .022. In this model, race continued to be a significant predictor of distress, β = -1.81, $t(135)$ = -2.74, p = .006. In order to interpret the interaction, I used the Dawson and Richter (2006) test for differences between slopes, following the recommendation of Dawson (2014). The test revealed significant slope differences between that of older girls and those of younger girls (t= -3.91, p<.001), older boys (t=-5.19, p<.001), and younger boys (t= -4.08, p<.001) (whose slopes did not differ from each other). For the latter 3 groups, the slopes indicate that greater Unsupportive PRD is associated with more frequent distress (see Figure 1). For the former group, older girls, the opposite pattern emerges in which greater Unsupportive PRD is associated with less frequent distress.

Hypotheses 7 and 8: Supportive PRD will negatively (and Unsupportive PRD will positively) relate to Ignoring. There was 1 variable measuring ignoring: *frequency of ignoring*. No control variables were included in its models.

Main effects. The best fitting model was linear regression, which revealed no main effects for Supportive β = -.01, $t(136)$ = -.40, p = .687 or Unsupportive, β < .01, $t(136)$ = .21, p = .832, PRD in predicting ignoring. Their linear combination also did not explain a significant proportion of variance, R^2 <.01, $F(1, 137)$ = .23, p = .816.

Interactions. None of the interaction terms were significantly related to the outcome, and so the main effects model was retained.

Hypotheses 9 and 10: Supportive PRD will negatively (and Unsupportive PRD will positively) relate to negative responses. Three variables measured children's negativity toward the experimenter: *frequency of, spontaneity of,* and *presence of negativity*, and each used a different model.

Main effects. The best fitting model for *frequency of negativity* was negative binomial with race and experimenter as control variables. The best fitting model for *spontaneity of negativity* was linear regression with race and experimenter as control variables. The best fitting model for *presence of negativity* was a logistic regression with no control variables. None of these 3 regressions revealed any main effects of Supportive or Unsupportive PRD on Negativity (all β < .34, all p > .19). However, both

frequency of and *spontaneity of negativity* were predicted significantly by race, such that African American children showed more negative responses than non-African American children (all $\beta > .43$, all $p < .009$). Although no main effects emerged to predict *presence of negativity*, its main effects model was qualified by significant interactions (described below). In addition, the linear combination of all predictors significantly predicted *spontaneity of negativity*, $R^2 = .06$, $F(4, 133) = 1.97$, $p = .049$.

Interactions. None of the interactions were significant when predicting *frequency of* and *spontaneity of negativity*. When predicting *presence of negativity*, however, a model including child age and sex as moderators was a better fit for the data, according to the AIC value and the Wald Test of Parameter Constraints. Supportive PRD interacted with child age, $\beta = .09$, $t(126) = 2.03$, $p = .042$, to predict the likelihood of directing any negative responding to the experimenter. In order to interpret this interaction, I plotted the data using procedures by Aiken and West (1991), as recommended by Dawson (2014). Greater Supportive PRD predicted a lower likelihood of exhibiting negativity, but only among younger children; among older children, greater Supportive PRD predicted a higher likelihood of negativity (see Figure 2). In addition, Unsupportive PRD interacted with child sex, $\beta = 1.20$, $t(126) = 2.34$, $p = .020$. The same procedures for plotting interactions (Dawson, 2014) revealed a positive link between Unsupportive PRD and negativity for girls (i.e., more unsupportive responses relates to higher likelihood of showing negative reactions to the experimenter's distress), and a negative link between Unsupportive PRD and negativity for boys (see Figure 3). Overall, the combination of these variables within the interaction model explained a significant amount of variance in likelihood of showing negative responding, $R^2 = .20$, $F(7, 127) = 2.27$, $p = .023$. There were no significant three-way interactions.

Hypotheses 11 and 12: Neither Supportive PRD nor Unsupportive PRD will relate to helping behaviors. There were 3 variables measuring helping: *presence of helping*, *spontaneity of helping*, and *global helping*.

Main effects. The best fitting model for *presence of helping* was a linear regression containing race, site, and experimenter as control variables. The best fitting model for *spontaneity of helping* was a linear regression containing race, age, sex, site, and experimenter as control variables. The best fitting

model for *global helping* was a linear regression model containing race, site, experimenter, and wave as control variables. All 3 helping variables had the same pattern of results: neither Supportive nor Unsupportive PRD were significant predictors (all $\beta > -.10$, all $p > .13$), but race was a significant positive predictor. African American children were more likely to help ($\beta = .184$, $t(133) = 2.30$, $p = .022$), helped more spontaneously ($\beta = .54$, $t(131) = 2.07$, $p = .038$), and had higher global helping scores than non-African American children ($\beta = .80$, $t(131) = 2.10$, $p = .036$). The linear combination of all variables did not explain a significant portion of the variance for *presence of helping*, $R^2 = .08$, $F(4, 134) = 1.56$, $p = .119$, or for *global helping*, $R^2 = .10$, $F(5, 133) = 1.58$, $p = .115$, but it explained a marginal amount of the total variance for *spontaneity of helping*, $R^2 = .10$, $F(6, 132) = 1.68$, $p = .094$.

Interactions. None of the interaction terms were significantly related to any of the outcomes, and so the main effects models were retained.

Hypotheses 13 and 14: Supportive PRD will positively (and Unsupportive PRD will negatively) relate to observed sharing behaviors. Sharing was measured with two types of variables: sharing with another child [including *presence of sharing (with child)* and *amount of sharing (with child)*] and sharing with the experimenter (including *presence of sharing*, *spontaneity of sharing*, *amount of sharing*, and *global sharing*).

Main effects. Presence of sharing (with child) was examined using logistic regression, controlling for counterbalanced order, in order to predict the likelihood of sharing at least one nickel with the "other" child in the Dictator game. *Amount of sharing (with child)* was examined using a zero-inflated poisson model, controlling for intervention status. For neither of these variables did Supportive or Unsupportive PRD emerge as a significant predictor (all $\beta < .29$, all $p > .32$); however, the relation of Supportive PRD to *amount of sharing (with child)* was qualified by a significant three-way interaction with child age and sex (described below). In addition, there was a significant effect of intervention status on amount shared, $\beta = -.17$, $t(131) = -2.34$, $p = .019$, such that children whose parents attended the Circle of Security-Parenting intervention shared *fewer* nickels with another child.

All 4 variables measuring sharing with the experimenter were examined using linear regression, and none of these models revealed significant relations with Supportive or Unsupportive PRD (all $\beta < .05$, all $p > .68$). The links with Supportive PRD in all 4 main effects models were, however, qualified by significant three-way interactions with age and sex (described below). In addition, girls were more likely to share than boys, $\beta = .12$, $t(129) = 1.98$, $p = .048$, and they shared more spontaneously, $\beta = .38$, $t(128) = 2.06$, $p = .039$. In fact, the overall linear combinations of variables explained a significant amount of variance in *presence of sharing (with experimenter)*, $R^2 = .10$, $F(6, 130) = 1.98$, $p = .048$, and *spontaneity of sharing*, $R^2 = .14$, $F(6, 130) = 2.55$, $p = .011$, the variables for which sex was a significant predictor. The overall linear combinations did not explain a significant amount of variance for *amount of sharing (with experimenter)*, $R^2 = .05$, $F(3, 133) = 1.41$, $p = .159$, or for *global sharing*, $R^2 = .06$, $F(3, 133) = 1.53$, $p = .126$, for which sex was not a significant predictor. Finally, it is also worth noting that intervention status was related to *spontaneity of sharing*: Children whose parents received the intervention shared *less* spontaneously with the experimenter, $\beta = -.39$, $t(128) = -2.18$, $p = .030$.

Interactions. There were no two-way interactions between PRD and the demographic variables in predicting any of the sharing outcomes. However, a pattern emerged for three-way interactions in which Supportive PRD interacted with child age and sex to predict all the sharing outcome variables [except for *presence of sharing (with child)*]. In all cases, there was a significant beta coefficient and significant Wald Test ($p<.05$), and in most cases, the three-way interaction model had a lower AIC value, indicating better model fit than the main effects model. In the final paragraphs of this section, I describe these three-way interactions.

For *amount of sharing (with child)*, there was a significant main effect of Supportive PRD, $\beta = .155$, $t(126) = 2.106$, $p = .035$, in which Supportive PRD was positively related to more sharing with the other child. There was also the significant three-way interaction, $\beta = .032$, $t(126) = 2.38$, $p = .017$. I attempted to interpret the interaction using the test for differences between slopes (Dawson & Richter, 2006), but the outcome was not interpretable: None of the slopes were significantly different from each other. According to Dawson (2014), this may happen if the variable being used as the moderator should

instead be used as the main predictor, and the main predictor should be used as a moderator; however, this may not make conceptual sense. In this case, I do not think it makes conceptual sense to examine how supportive PRD and child age moderate the effect of child sex on sharing (and this was not a research question of interest).

The three-way interactions for each of the 4 sharing (with the experimenter) variables reveal a consistent pattern. In general, supportive PRD was associated with sharing among boys (and not so much among girls). Specifically, older boys shared more when their mothers reported greater supportive PRD, but younger boys shared *less* when their mothers reported greater supportive PRD. Among girls, the slopes of PRD on sharing were flatter (indicating a weaker relation), and the slopes for older and younger girls were more similar to each other (indicating fewer age-related differences; see Figures 4 through 7). See Appendix E for more detailed information on standardized beta weights, p-values, R^2 values, and slope difference test statistics for these three-way interactions among Supportive PRD, child age, and child sex, in predicting sharing (with the experimenter) variables.

Summary

In summary, the hypotheses were mostly not supported. Supportive and unsupportive PRD had only complex relations with the outcome variables (involving two- or three-way interactions with demographic variables). Specifically, comforting, concerned attention, and ignoring were not predicted by anything, including interactions or demographic variables. African American children were less distressed, more helpful, and more negative (antisocial) than non-African American children. *Frequency of personal distress* was predicted by an interaction between unsupportive PRD, age, and sex: More unsupportive mothers had children who displayed more frequent personal distress (*except* when the children were older girls, in which case the pattern of relations was reversed). *Presence of negativity* was also predicted by a two-way interaction between supportive PRD and child age (among younger children, greater supportive PRD was related to less negativity, and among older children, the opposite was true), and between unsupportive PRD and child sex (among girls, greater unsupportive PRD was related to more negativity, and among boys, the opposite was true). Girls were more likely to share with the

experimenter, and shared more spontaneously, than boys. Children of mothers in the intervention group shared less spontaneously with the experimenter and shared fewer nickels with the "other child" than children of mothers in the control group. Finally, 5 of the 6 sharing variables were predicted by a three-way interaction between supportive PRD, child age, and child sex: Plots of all the interactions revealed that the effect of supportive PRD on sharing changed over time for boys (but not so much for girls). Younger boys shared less, but older boys shared more, when their mothers reported greater supportive PRD. In general, the slopes of younger and older girls were more similar to each other (and much flatter than the slopes for boys, indicating that supportive PRD had less of a relation with sharing for girls).

Chapter 5: Discussion

This study sought to investigate whether parents' responses to their preschoolers' negative emotions were related to the preschoolers' prosocial (and related) behaviors. The sample included families, primarily African American, from a low socioeconomic background - a population that has rarely been studied with regard to PRD and child prosocial behavior. In the following sections, I will discuss some of the findings in more detail, including demographic differences in child prosocial behavior. Then I will discuss differences between these findings and the findings of previous studies on this topic, considering possible reasons for the inconsistencies. Finally, I will consider some of the limitations of the present study and, in light of these limitations, I will propose directions for future research on PRD and child prosocial behavior.

Summary of Findings

First, as they have been in past studies, supportive and unsupportive responses on the CTNES were unrelated, suggesting that these positive and negative dimensions of parenting are orthogonal. The strength of correlations between subscales within each dimension, however, was moderate to high, indicating that the choice to analyze results using the global scales (supportive and unsupportive) rather than the specific subscales (e.g., emotion-focused, problem-focused, punitive) was warranted[2].

In general, the study hypotheses were rejected because PRD did not relate to any of the outcomes in a consistent, simple way. It did, however, relate to prosocial behavior in complex ways involving two- and three-way interactions[3]. These interactions indicate that the association between parenting and child behavior was moderated by child age, child sex, or both. In past studies, no three-way interactions were observed or reported, and the reported two-way interactions revealed no consistent pattern. For example, in one study, supportive PRD predicted comforting, but only among girls (Eisenberg et al., 1993), and in another study, supportive and unsupportive PRD predicted sympathy and empathy, but only among boys (Eisenberg et al., 1991). In other studies, the interactions with child age and sex were reported to be non-

significant (e.g., Taylor et al., 2013). Due to the lack of a theoretical foundation upon which to interpret the present study's complex interactions, as well as the lack of consistent evidence in previous studies, these findings are not of particular conceptual interest. Moreover, they could likely be the chance result of a large number of analyses performed on 20 outcome variables, four covariates, and two predictors. For these reasons, the complex interactions are not discussed further.

Beyond the main analyses testing the study hypotheses, some interesting findings emerged in which child demographics were significantly related to certain behaviors. Specifically, African American children were more helpful, less personally distressed, and displayed more antisocial (negative) behavior during the prosocial tasks than non-African American children. The findings related to helping are consistent with previous studies examining race differences in preschoolers' helping behavior. Specifically, Black male preschoolers were found to be more helpful than White males, White females, or Black females, toward a peer confederate who dropped his or her blocks (Richman, Berry, Bittle, & Himan, 1988; Richman, Berry, Hritzo, Myers, & Vick, 1984), despite the fact that Black males had significantly lower social desirability scores. From these two studies, the researchers concluded that Black males helped more than White children because they were more likely to be from father-absent homes, and they helped more than Black females because mothers relied more heavily on their sons to help with chores when the father was absent.[4] In the present study, race did not interact with child sex to predict helping; this could be due to the fact that there were so few non-African American children in this sample. Race-related differences in instrumental helping have not been extensively studied, and thus provide an interesting avenue for future research.

The findings relating to antisocial (negative) behaviors and to personal distress have no precedent in past studies, but they also provide interesting directions for future research. Why might Black children demonstrate more negativity but less personal distress (compared to non-Black children) in response to an experimenter's distress? These results could be due to chance, given the large number of analyses. They could also, however, reflect the different emotion socialization practices and beliefs about negative emotions among African American mothers, which have been noted in past studies (Nelson et al., 2012;

Parker et al., 2012). For example, perhaps mothers of Black children are more supportive of anger than sadness when faced with a distressing situation compared to mothers of non-Black children; thus, when unable to regulate their own emotions in the face of others' distress, Black children may be more likely to respond with anger than sadness. Given the lack of evidence in this area, more research is needed to shed light on these possibilities.

Understanding Results in light of Past Studies

Several of the findings in the present study were inconsistent with past studies of the same topic. In this section, I will explore some of the methodological and sample-related differences across studies that may have produced these results.

Interrelations of various prosocial behaviors. First, it is noteworthy that the various types of prosocial behaviors (helping, sharing, and comforting) were correlated with each other in this study - a pattern that is inconsistent with several previous studies. What might have caused these different results? Methodologically, the present study differed from many of the others because it used observational measures of prosocial responding toward an adult experimenter within a controlled experimental setting. Given the potentially crucial differences in children's behavior when measured observationally versus using mother or teacher reports, including differences related to reporter bias, setting of the prosocial behavior, and target of the prosocial behavior, I will only consider methodological differences among studies that also used observational measures of child prosocial action.

One possible reason for the different pattern of correlations among prosocial behaviors may be the small sample sizes of past studies, which perhaps obscure correlations due to lack of power. Dunfield and colleagues (2011) used a method closely resembling that of the present study (i.e., multiple counterbalanced laboratory tasks), but they only analyzed data from 24 children. Another possible reason is that prosocial behaviors may be differentially related across developmental periods. In two other studies that used up to eight increasingly explicit need cues from the experimenter and up to 6 trials per type of behavior, no cross-type prosocial behaviors were correlated, but the children were only up to 30 months old (Brownell et al., 2013; Pettygrove et al., 2013). These reasons are unlikely to explain the

different findings, however, given that several other studies included large sample sizes with preschool-age children and also found no interrelations among different types of prosocial behaviors. For example, Dunfield and Kuhlmeier (2013) examined 95 preschool children using a paradigm that closely resembled that of the present study, and found no correlations. However, the tasks in this paradigm were only 20-30 seconds long, which may have not been enough time for sufficient variation in prosocial behavior to emerge. Although the length of tasks may have contributed somewhat to the different findings, it cannot fully explain the differences. In two other observational studies with large sample sizes of preschool children, several minutes were given to the children to act prosocially, and there were no (or negative) correlations between helping and comforting. However, although an adult experimenter was present in the room, the prosocial behavior measured was in response to a confederate peer who simulated the need for instrumental and emotional help, rather than the experimenter herself (Rehberg & Richman, 1989; Richman et al., 1988). Furthermore, the helping and comforting variables were scored within the same brief task, which may explain why there was a negative correlation in one of the studies (because while a child is comforting, he or she cannot also be scored for helping, and vice versa; Richman et al., 1988). Perhaps the identity of the person in need also contributes somewhat to the different pattern of correlations, but it also cannot fully explain the differences. In another large study of children aged 3 to 7, observed sharing and comforting of an experimenter were correlated with each other, but neither were correlated with helping (Yarrow et al., 1976).

If methodological differences cannot fully explain the inconsistent findings, perhaps the differences are instead a result of the population to which the findings are generalized. In all of the studies described above, the sample consisted primarily of individuals from a middle socioeconomic background, and in all but two of the studies, the sample was predominantly White (in the two exceptions, 50% was Black and 50% was White; Rehberg & Richman, 1989; Richman et al., 1988). These distributions are quite different from those in the present study (i.e., 87% African American, 100% low SES). Perhaps patterns of prosocial behavior in Black children differ from those in White children, although the two studies with 50% Black children did not find this to be the case. Alternatively, perhaps patterns of

prosocial behavior in children from low SES backgrounds differ from those from middle SES backgrounds. Indeed, studies find that the developmental course of prosocial behavior and prosocial motives are different for children from low versus middle SES backgrounds (McGrath & Brown, 2008), and that children from poorer families are more altruistic (Miller, Kahle, & Hastings, 2015). Studies of SES with adults find that poorer individuals are more dispositionally compassionate (Stellar et al., 2012), more generous and helpful (Piff et al., 2010), and more ethical (Piff, Stancato, Côté, Mendoza-Denton, & Keltner, 2012) than their more affluent counterparts, possibly due to the effects of stress on increased prosocial behavior (von Dawans, Fischbacher, Kirschbaum, Fehr, & Heinrichs, 2012). Moreover, there is evidence that individuals from low SES backgrounds are more likely to activate neural circuitry involved in 'mentalizing', or thinking about others' thoughts and feelings, in situations calling for prosocial behavior (Muscatell et al., 2012). Given the recent reconceptualization of prosocial behavior as multi-dimensional in children, and the host of studies utilizing this reconceptualization as a framework, future work may benefit from including more culturally diverse samples in order to evaluate the generalizability of this reconceptualization.

Links between PRD and children's comforting behaviors. No previous studies have examined PRD in relation to children's helping or sharing, but a few studies have examined its relation to comforting, and found positive, significant links. What could account for the different pattern of findings in the present study?

One possible reason for the different findings is the ages of the children. The influence of PRD cannot be assumed to be the same across all developmental periods, and in past studies of PRD and comforting, both younger (Zahn-Waxler et al., 1979) and older (Eisenberg et al., 1996) children were examined. This explanation does not, however, account for the studies that found links with comforting among preschoolers (Denham et al., 1997) and Kindergartners (Eisenberg et al., 1993).

Another possibility for the different findings relates to the methods for collecting data on PRD and children's prosocial behavior. For example, questionnaire data is subject to reporter bias, including social desirability and the 'halo effect', as well as shared method variance, if both predictor and outcome

are reported by the same individual. This explanation is also unlikely, given the mixture of methods used in previous studies, including observations of both predictor and outcome (Denham et al., 1997; Zahn-Waxler et al., 1979), and parent-reported PRD in combination with observed comforting (a combination that matches the methods used in the present study; Eisenberg et al., 1993, 1996). Also, none of the significant findings in previous studies or in the present study were the result of reported PRD relating to reported comforting: All involved at least one observational method, thereby eliminating any 'halo effects' or shared method variance.

A third possibility is more likely. None of the previous studies of PRD and child comforting behaviors considered comforting directed toward an adult experimenter; rather, they measured comforting in response to peers, parents, or babies. Even among studies measuring global prosociality, none considered children's responses to unfamiliar adults. Interestingly, post hoc analyses replacing the observational measures of child prosocial behavior with mothers' reports of their preschoolers' global prosocial behavior on the Infant/Toddler Social-Emotional Assessment (ITSEA; Carter, Briggs-Gowan, Jones, & Little, 2003) revealed a positive association with Supportive PRD, $\beta = .14$, $t(133) = 2.03$, $p = .049$, in a model controlling for Unsupportive PRD and child demographic variables. The ITSEA asks mothers to report on behaviors directed toward other people in general, including peers, family members, and the mother herself. Given that children respond with prosocial behavior differently depending on who is expressing need (e.g., van der Mark, van IJzendoorn, & Bakermans-Kranenburg, 2002; Zahn-Waxler et al., 1992), it may be that PRD is not related to comforting toward an unfamiliar adult experimenter. Although the procedure involved a warm-up period and the children played with the experimenter for an hour or more during the course of the study, this may not have been enough time for some children to become as comfortable as they might be at home or in a familiar classroom with friends and peers.

A final possibility relates to the sample in the present study. As previously discussed, the participants in this study had a different racial and socioeconomic make-up than those of nearly all previous studies of PRD and child prosocial behavior. A goal of this study was to contribute to the literature on prosociality in African American children from low-income families, as most studies use

predominantly European American children from middle-income families. Given that emotion socialization practices and emotion regulation strategies relate to different outcomes in African American families (e.g., less emotional expression in the parent-child relationship was linked to internalizing problems for White, but not Black, children; Vendlinski, Silk, Shaw, & Lane, 2006), it may be that PRD does not exert the same influence on prosocial behavior among White and Black children. In general, Black mothers tend to respond to their children's negative emotions with less emotional encouragement and more punitive and control strategies (i.e., emotion suppression; Nelson et al., 2012) and more minimization of negative emotions (Halberstadt, Craig, Lozada, & Brown, 2011). Evidence supports the notion that behaviors considered maladaptive in one culture may be adaptive in another, and indeed, emotion suppression as a regulatory strategy has been linked to negative outcomes among European Americans, but this link is absent or weaker in ethnic minority groups (Butler, Lee, & Gross, 2007; Gross & John, 2003). Theoretically, these differences can be explained by historical and current societal conditions in the USA, which reflect discriminatory treatment of individuals from ethnic minority groups (Nelson et al., 2013). Displays of negative emotions in African Americans are more likely to be viewed as aggressive or threatening by the majority culture (Kang & Chasteen, 2009); as a result, African American individuals develop defense mechanisms that suppress emotional expression, and African American families encourage emotional self-control in their children, in order to avoid negative social consequences (Nelson et al., 2012). Therefore, seemingly unsupportive responses to children's negative emotions among African American mothers may not carry the same meaning as they would among European American mothers. In other words, perhaps race moderates the association between PRD and social-emotional outcomes in children. A recent study of this hypothesis found that aspects of supportive PRD were positively linked to five-year-olds' school competence in White children, but negatively linked to competence in Black children (Nelson et al., 2013). Although the current study did not find race to be a moderator, there may have been too few non-African American individuals to find interactive links. More importantly, the dichotomy did not compare Black children to only White children: The non-African American group included other ethnic minorities, such as Hispanic/Latino, American Indian, and Asian

American children, due to the small number of non-Black children. Before generalizations can be made about the role of PRD in child development, future research must consider the role of the broader cultural context, including racial and ethnic identity.

Limitations and Future Directions

This research is among the first to investigate the relations between parents' responding to their children's negative emotions and child prosocial behavior among low-income, mostly African American families. It is the first to examine these links using multiple dimensions of prosociality (helping, sharing, and comforting). There are a number of strengths of the present study, including its experimentally controlled design, its observational measures of child behavior, the multiple tasks used to measure a single behavior, and its relatively large sample size. Some of its limitations are noteworthy as well, and point to potentially rich avenues for future research.

First, the present study measures concurrent child behavior and parent reports at a single time point, precluding a full understanding of how PRD influences the continuing development of prosocial behavior. For example, it may be that supportive PRD predicts prosocial behavior only longitudinally, after repeated long-term exposure to a supportive or unsupportive environment. Perhaps PRD exerts its strongest influence on child social-emotional development in the early years, when sensitive periods of brain development allow for heightened sensitivity to environmental inputs. A single measurement of both predictor and outcome when the child is in preschool would not reflect this parenting influence. Furthermore, the present study is correlational, which limits the causal conclusions that can be drawn. Parent and child behaviors likely influence each other bidirectionally, and the possibility that more prosocial children elicit more supportive parental responses cannot be ruled out. Considering that none of the reviewed studies can draw conclusions about causation, and only three used longitudinal designs, future studies would benefit from a longitudinal investigation into how PRD relates to prosocial development over time, or an experimental design in which the causal role of PRD can be determined.

Second, the tasks used in the present study differ from each other in important ways, and performance on these tasks likely reflect more than prosocial tendencies. Specifically, each task type

(e.g., sharing tasks versus helping tasks) not only demanded children's ability and motivation to enact a distinct form of prosocial behavior, they also demanded the ability and motivation to call upon other distinct social, physical, cognitive, and linguistic skills that may or may not be related to the accompanying prosocial behavior. For example, varying levels of executive functioning were required for children to effectively respond to the experimenter's need cue in each task type. In the comforting tasks, fairly sophisticated problem-solving and planning abilities were needed to infer what could make the experimenter feel better; a child with exceptionally advanced executive functioning may have scored higher on comforting, particularly on problem-focused comforting responses. In the helping tasks, a lower level of reasoning and problem-solving was required, as the immediate solution to the problem was apparent. In the comforting tasks, children also received higher scores if they verbally stated solutions - and the more verbal utterances, the higher the score. In helping and sharing tasks, the target behavior did not require any language, and so high prosocial scores could be earned more easily by children with reduced verbal skills. Thus, a limitation of this study is that the set of demands involved in one type of task (e.g., comforting) are different from those involved in the other two types of tasks, and it is difficult to untangle the various contributors to children's ultimate prosocial behavior. As another example, the type of task is confounded with the level of negative emotion expressed by the experimenter. In helping tasks, virtually no negative emotions were expressed; in the comforting tasks, negative emotions were expressed intensely and for an extended period of time; in the sharing tasks, negative emotionality fell somewhere in between. The ability of a child to behave prosocially in some of these contexts might depend heavily on their ability to, for example, regulate their own emotional arousal, and this ability might only exert an influence on behavior within comforting or sharing tasks. In general, the helping tasks demanded the least of the children, and the comforting tasks demanded the most. Basic versions of the helping tasks have been used in other studies with infants and toddlers (e.g., Dunfield et al., 2011), and so they require a lower level of developmental maturity. We attempted to curtail some of these cross-task differences by making helping harder and comforting easier. For example, we dramatically extended the length of the comforting tasks compared to previous studies, in order to give children time to think of

solutions or become more accustomed to the sudden outburst of negative emotion by the experimenter. We added the measure of concerned attention in order to give prosocial 'credit' to shy or inhibited children. Anecdotally, a large majority of children were able to initiate at least one comforting response within the 2-minute window of time, including extremely shy children. To make the helping tasks harder than they were in previous studies, we introduced a novel toy just before the task began and we extended the physical distance between the child and the experimenter. Thus, although these issues present a limitation in the current study design, efforts were made to reduce these problems as much as possible.

Third, the methods of this study cannot elucidate children's underlying motivations for engaging in prosocial behavior. Prosociality is not always motivated by the desire to improve others' welfare. It may also be motivated by self-focused reasons, such as anticipation of reciprocation (Kenward, Hellmer, Winter, & Eriksson, 2015) or desire to reduce one's own negative feelings (Preston & de Waal, 2002), or by other general social reasons (Paulus, 2014; Rheingold, 1982), such as perceived compliance, a desire to maintain social relationships, conformity to social norms, or simply the pleasure felt from joint social activities (for a review of children's prosocial motivations, see Martin & Olson, 2015). In many ways, the theoretical role of supportive PRD in increasing child prosocial behavior is assumed to be its effect on an altruistic, other-focused desire to improve others' welfare. If children are acting prosocially in these tasks for a variety of reasons, some of which are not other-focused, then PRD-based individual differences in prosocial behavior may not emerge. Personal distress, if occurring before the prosocial action, may serve as a cue that the action was motivated by self-interest; likewise, concerned attention occurring before prosocial action may suggest an other-focused motivation. The present study, however, cannot untangle the influences of personal distress from genuine concern. Future studies would benefit from consideration of children's motivations when determining how, when, or why children engage in prosocial behavior.

Fourth, an important direction for future studies will be to explore the moderating roles of race and SES in the associations between PRD and child prosocial behavior. The present study could not examine the moderating role of racially relevant categories (e.g., White and Black families, racial majority and racial minority families), nor could it examine SES differences. Yet, the results of the

present study differ in noteworthy ways from similar studies that used mostly White, middle-income families, highlighting the possibility that PRD does not relate to child prosocial behavior in the same ways for every racial or socioeconomic group. One previous study (Garner, 2006) found that observed PRD in the home related positively to an observed prosocial composite in the classroom. Thus, more research is needed to shed light on possible cross-cultural differences. More broadly, future research on parenting and its influence on the developing child should include ethnically and racially diverse samples before drawing strong conclusions about how parenting affects child outcomes. Too often, research on the racial and socioeconomic majority is generalized to the society as a whole, despite clear calls for a culture-specific lens when conducting social science research.

Finally, the lack of findings contrast with those of several previous studies, highlighting the need for more research on the multi-dimensional nature of prosocial behavior across cultures and among various socioeconomic levels. Growing evidence builds a compelling case for the multi-faceted nature of prosociality in children, but before strong claims can be made, we must consider the evidence among diverse groups of children and how the larger macrosystems in which they develop might play a role. The contrasting findings also highlight the need to consider a child's broader social ecology when drawing conclusions about the effects of PRD on child prosocial behavior, including his or her culture, race, ethnicity, and SES. There are a number of possible reasons for the null findings in the present study with regard to PRD and prosocial behavior, including the possibility that helping, sharing, and comforting do not, in fact, relate to PRD. Within the context of the entire body of research on this topic, however, it is worth considering whether the different emotion socialization practices of African American mothers (compared to European American mothers) contributed to these results - at least in relation to comforting behaviors. Future studies on PRD should investigate this intriguing possibility. Relatedly, given the null findings on helping and sharing as well, and the dearth of evidence (significant or null) in the literature, much more research is needed on these specific dimensions of prosocial behavior. Unfortunately, the lack of studies reporting an investigation of helping and sharing may reflect a "file-drawer" problem, in which links with PRD were tested, but not reported due to weak or absent results.

In summary, it is clear that several new avenues for future research offer ways to clarify some of the unanswered questions about parents' role in child prosocial behavior. We know that prosocial children are better adjusted, have more friends, and perform better in school. They are more likely to grow up to be prosocial adults who volunteer their time, donate money to charities, and comfort friends and family members in need. Parents who foster prosocial tendencies in their young children contribute not only to the child's positive development, but also to the development of a kinder, more peaceful world. Understanding the roots of prosociality in childhood, especially those that are amenable to change, is an important task for current and future research, in order to promote positive social development across the lifespan.

Appendices

Appendix A: IRB Approval Letter

UNIVERSITY OF MARYLAND
INSTITUTIONAL REVIEW BOARD

1204 Marie Mount Hall
College Park, MD 20742-5125
TEL 301.405.4212
FAX 301.314.1475
irb@umd.edu
www.umresearch.umd.edu/IRB

DATE: February 21, 2013

TO: Jude Cassidy
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [413745-1] Promoting Secure Attachment In Preschool Children
REFERENCE #:
SUBMISSION TYPE: New Project

ACTION: APPROVED
APPROVAL DATE: February 21, 2013
EXPIRATION DATE: February 20, 2014
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # *6 and 7*

Thank you for your submission of New Project materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure which are found on the IRBNet Forms and Templates Page.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of February 20, 2014.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.

Appendix B: Study Consent Form

PROMOTING SECURE ATTACHMENT IN PRESCHOOL CHILDREN
RESEARCH CONSENT FORM

Participating child's name:_____

Purpose: Your child is in Head Start. You are now being asked to take part in research. It is about the Circle of Security - Parenting (COS-P) program. Dr. Jude Cassidy, Ph.D., is in charge of this study at the University of Maryland, College Park. The purpose of the parenting program is to help mothers learn about ways to support child growth. The purpose of the research is to learn how the parenting program helps families. This consent form will tell you about the program and research:

Procedures: If you join the parenting program, you will take part in three activities during the next few months.

1. First, you will join us for a group meeting held at a Head Start center. There, you will fill out some questionnaires about yourself and your child. This will take place in a private room. Only other mothers who have signed up for the project will be invited. No one will see your answers to the questions except research staff.

The questionnaires will ask about yourself, your child, and how you parent. The questionnaires will also ask about your feelings in close relationships, your social network, and your recent thoughts and feelings. If you do not wish to answer a question, you may skip it. If you would like someone to read the questions with you, please ask the research staff. You will be able to ask questions if you have them. This meeting will take about an hour. You will be paid $25 for your time at this meeting.

2. Next, the parenting program will begin. Not all mothers will be able to start the program right away. You will either be part of the group who starts the program right away or the group who starts a few months later. We will flip a coin to decide which group you are in.

The program will be at a Head Start center and will last 10 weeks. You will go to one 90-minute session each week. There will be free childcare for each visit. You will be part of a group of approximately 10 other mothers whose children are also in Head Start. During the program meetings, you will watch videos of parents and their children. You will also have the chance to talk about what it is like to be a parent, ways to work and relate with your child, and your thoughts and feelings about parenting. At the end of some of the meetings, you will be asked to complete confidential forms about your experiences in the group. If there is any question you do not want to answer, you can skip it. If you would like someone to read the questions with you, please ask the research staff. The sessions will be videotaped for research purposes. Programs like this one have been done before with other families. Many mothers said they enjoyed and learned from the experience. You will be paid $30 after the second meeting you attend. You will be paid $15 for each meeting you attend after that.

3. After the first group is done with the parenting program, we will call you to plan a visit to our research playroom in Baltimore. We will find a good time to meet that works for you. Free childcare will be provided.

During the visit, you will fill out questionnaires about yourself, your child, and your thoughts and feelings about parenting. You will also answer questions about your how you've been feeling and how you parent. These questionnaires will be filled out in a private room. No one will see your answers except research staff. If there is any question you do not want to answer, you can skip it. If you would like someone to read the questions with you, please ask the research staff.

At this visit, you and your child will also do some activities together. You will be in a different room from your child for part of the time, but you will always be able to see your child through a window. When your child is in a different room, he or she will play some games with a female staff member. While your child is in a different room, you will watch some video clips of babies and answer questions. Some of this will be videotaped. In all, the playroom visit will take about 2 hours. You will be paid $50 for your time.

Risks/Discomforts to mothers: In this study, there are no big risks for you or your child. Like all research projects, there is the risk that someone who should not see the things you tell us might see them. This will probably not happen. We have many ways to make sure this does not happen. See the Confidentiality section below to see how we will keep the things you tell us private.

Some questions you will answer are about personal things that have happened to you or your moods and feelings. For example, some questions are about things that have happened to your child, such as being spanked. Some topics discussed during the parenting program are also like this. Sometimes, thinking or talking about personal things causes people to feel sad or angry. If you are feeling this way, you can skip any question that you do not want to answer. You can also choose to end any part of the study at any time. During the parenting program sessions, you can share personal stories if you want to, but you do not have to.

Risks/Discomforts to children: Your child will only take part in the playroom visit. The tasks and games that will be done with your child have been done by researchers many times before with no serious risks. These activities are meant to be fun for children, like playing with toys and eating a snack. However, your child will be away from you for part of the time. This sometimes causes children to become upset. If your child is upset during the visit, you will see it, and you can ask us to stop any activity. We will also try to make sure your child leaves the playroom in a good mood.

Benefits: We do not know if being in this study will help you. The study may help scientists learn more about child growth and parenting. Some studies show that parenting programs like this one can help mothers learn what children need. They can also help mothers relate to their children. Many mothers who have been in programs like this one have felt good about sharing their stories. They have also felt good about knowing that

they are helping scientists learn more about children. By being part of this study, you will help professionals better understand child growth. You will also help Head Start staff, teachers, other mothers like you, and children.

Confidentiality: We have many ways to protect your and your child's privacy. What you tell us will only be seen by the research staff. If you sign this form, you agree to allow yourself and your child to be videotaped. You also agree to allow researchers to watch and analyze those videotapes. The videos of you and your child will also only be seen by the research staff. The videotapes and what you tell us are only used for research, unless you choose to sign an extra consent form at the end of the study. The extra form would let us share your information in places where it could help others learn how children grow. No Head Start staff will see the things you tell us or the videotapes, except for those who are in the room at the time.

We will be very careful about the way we get information from you. We will also be very careful about where we keep it. No questionnaires or videotapes will have your or your child's name on them. Instead, we will use a number to code your information. We will keep all information and the list of codes in locked offices. If it is kept on a computer, it will have a password. Only research staff will see the information and the list of codes. Doing this has worked well to protect information in the past.

Possible exceptions to confidentiality include cases of suspected child abuse or neglect. If there is reason to believe that a child has been abused or neglected, we are required by law to report this suspicion to the proper authorities. It is also possible that other mothers in the parenting group may talk about things they heard during meetings with people outside of the group. To try to keep this from happening, everyone will sign a form at the start of the group promising not to do this.

Right to decline participation/withdraw: Being part of this study is your choice. You do not have to be in this study to keep getting services from Head Start. Even if you decide to be in this study, you can stop being in it at any time. You can also ask us to get rid of the things you tell us about you and your child. We cannot get rid of the videotapes made during the parenting sessions. This is because they show many other mothers and staff. However, you may ask that the things you tell us in the group not be included in the research. If you decide this, we will stop using what you tell us.

If you do not want to be in this study, that is ok. You will still get services from Head Start. You will continue to receive all of the same services you and your child receive now. If you decide to stop being in the study, have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact: Jude Cassidy, Professor of Psychology, University of Maryland, College Park, MD 20742 (301) 405-4973.

Compensation: You will receive up to $225 for being part of this research. You will be responsible for any taxes assessed on the compensation.

Participant rights: If you have any questions about your rights as a research subject or wish to report a research-related injury, please contact:

University of Maryland College Park
Institutional Review Board Office
1204 Marie Mount Hall
College Park, Maryland, 20742
E-mail: irb@umd.edu
Telephone: 301-405-0678

This research has been reviewed according to the University of Maryland College Park IRB procedures for research involving human subjects.

If you give permission for you and your child to be in this study, please sign your name below.

Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You will receive a copy of this signed consent form. If you agree to participate, please sign your name below.

_____ _____
Participant's name Child's name

_____ _____
Participant's signature Date

____ I give my permission to be contacted by the researchers in the future about possible participation in future studies of parenting or in a focus group about my opinions of the Circle of Security Parenting program.

Investigator
Jude Cassidy
Professor of Psychology
University of Maryland
College Park, MD 20742
(301) 405-4973

Information provided when collecting compensation:

☐ Check here if you expect to earn $600 or more from research studies being done by the University of Maryland, College Park in this calendar year. If you check this box, you must provide your name, address and social security number to receive compensation.

OR

☐ Check here if you do not expect to earn $600 or more from research studies being done by the University of Maryland, College Park in this calendar year. If you check this box, your name, address, and social security number will **not** be collected to receive compensation.

Appendix C: Prosocial Behavior Coding Manual

Prosocial Behavior Coding Manual

The University of Maryland

Unpublished Coding Manual

General Comforting Tasks Notes

This manual codes the variety of behaviors shown by preschool children in a series of 3 tasks measuring children's comforting and/or negative behavior toward an adult experimenter's emotional distress (Phone, Knee, and Drawing).

Before you begin coding, please understand that capturing children's nuanced behavior from videotape is difficult to do with a series of strict rules. We have developed these coding rules to help capture the "spirit" of the children's intentions and attitudes, but there will always be cases that aren't covered by the existing rules. Sometimes, we will need to make exceptions to the rules or create NEW rules that more accurately reflect reality. **As a coder, part of your job is to recognize when the existing rules need to be changed or added to in order to better reflect reality.** These rules are no substitute for human reason. Therefore, always keep in mind the spirit of WHAT exactly you are coding and the underlying reasons for WHY. Always be alert and ask yourself what you think is really happening in the task, and whether the codes you enter are accurate reflections of reality. In other words, take into consideration both the "spirit" and the "letter" of the law.

Throughout this manual, we have included explanations for what the code is and why you are coding it, but if you ever feel like you don't fully understand the codes or their reasons, please ask a coding supervisor. It is important that you are fully informed about the construct you are coding.

Sometimes, the manual will specify how many times to watch a task. If, however, you need to watch a task or a portion of a task more times to fully understand what is happening or to hear something more clearly, please watch it as MANY TIMES AS NEEDED. Never guess at what you see or hear. Take the time to replay the segment or task until you fully understand. It is better to be accurate than quick.

It also may seem as though you are watching the task too many times, and it's becoming repetitive and boring, especially when it comes to coding the comforting tasks. However, the more you watch the task, the better you "get to know" the child and coding becomes easier. It is also very easy to miss some subtle behavior, especially if you don't watch it as many times as the manual specifies!

If a child says part of a sentence and then stops, code whatever information you have from what was said. We cannot guess at what the child WOULD HAVE said, but we can go ahead and code what was said. In addition, we cannot give a child credit for something they say they WILL do (but never follow through with), or with what we are certain they WOULD HAVE done (but never actually did).

Never code with another coder in the room. It is very important that your actions not influence any other coder. This includes you both coding silently but together. Only during group meetings may you share any information about coding (other than asking for help with understanding a child's utterances).

Basic Coding Rules for Comforting Tasks

Instructions are the same for Phone, Knee, and Drawing tasks.

- When coding, don't only pay attention to what is said, but also to actions. Nonverbal behavior and body language are also codeable responses.

- Watch the video as many times as needed to determine what was said/what is happening. If you can't understand the child, keep watching as many times as needed. Do not guess at what the child said! If you still cannot understand what is happening or what was said, then do the following (in this order):

1) Check the transcript.

2) Open the file in VLC media player and turn up the volume all the way. Wear headphones, as this may also make it louder and clearer-sounding.

3) Ask other people in the lab to come in and listen. Ask other RAs and graduate students, whoever is around.

4) If no one can understand, then put a large star at the top of the coding sheet, with a note about which interval you could not understand. Bring it to the next coding meeting and we will all listen.

5) If no one can understand at the meeting, the starred interval will remain on the coding sheet. <u>Code that interval as though the child said nothing at all - this means the child may get all 0's, or you may be able to code non-verbal behaviors, such as concerned attention or proximity.</u>

- Code each 10-second timeslice as a stand-alone segment. Meaning, for example, if a response begins in the first timeslice and continues into the second timeslice, both timeslices would receive a code of 1 for that type of response. Even if only 1 second of a response extends into a certain timeslice, that timeslice would get a code of 1 for that type of response. Anything less than 1 second does not count. If it's a full word, it counts, even if less than 1 second.
- When coding timeslices, watch out for behavior and/or verbal statements that carry over into the next timeslice, or began in the previous timeslice. It's very easy to miss the codeable response that only occurred for a second in a particular timeslice - this is especially true of behavior!
- You may have to watch an timeslice before or after the one you are coding in order to determine whether something is part of a supportive/negative/personal distress response or not. Context is important.
- When in doubt of the subjective meaning or intent behind a child's response, then go with the literal wording. We cannot guess at child's intent when it is unclear.
- Each task is divided into 4 segments (if it did not end early). See the description of the tasks above for more details. While watching the task for the very first time, try to notice the 4 different segments. You will need to identify in which segment many responses occurred, so be familiar with what each segment looks like.
- As a general rule, never have any blank spaces on your coding sheet. If a certain blank space on the coding sheet is not applicable, then mark it with an X or NA.
- Intervals that are less than 8 seconds long are not included in your total response count. Instead, it will be included as part of the preceding interval. For example, if the last interval is 3 seconds long, it will be added to the previous 10-second interval, to create a 13-second final interval. Code both intervals separately, but then collapse the numbers across both intervals (i.e., if one or both intervals contain a certain behavior, then the 13-second combined interval

will get a "1" for that behavior. Only if both do NOT contain the behavior will the 13-second interval get a "0" for that behavior). The only exception to this rule is if the child physically COMFORTS (not just touches) and E ends the task early, resulting in a single, short interval containing this important comforting action. We want 1 and only 1 interval to capture the physical comforting response, so keep the interval, even if it is less than 8 seconds long. Code other response types for what ever you can. If the child physically TOUCHES (non-comforting) or if E didn't end the task early, then code the intervals using the regular rules (above).

- **Make sure any interval that is not included in the total response count (<8 seconds long, hugging carried over) is still coded normally**. Just make sure it is crossed out on the coding sheet. You will still use this information to calculate the latency and global scores (see #5 in Coding Procedure).

Description of Comforting Tasks

Phone: In this comforting task the experimenter (E) drops her phone and says, "oh my phone! The screen broke...look, it's all cracked!" Then E acts very sad, moaning and sighing for duration of the task. The maximum duration of this task is 2 minutes (task ended if and when child physically soothed). In the first 30 seconds (approximately), E says nothing (SEGMENT 1). In the second 30 seconds, E states the problem three times (e.g., "I'm so sad my phone is broken", "my phone won't even turn on now") but does not look at the child (SEGMENT 2). In the third 30 seconds, E states the problem three times while looking at the child periodically (SEGMENT 3). In the final 30 seconds, E first asks the child, "Is there anything you can do to make me feel better?", states the problem once more, and then asks, "Can you think of anything else you can do?" (SEGMENT 4). She then resolves the problem – "Oh, I just remembered, my cousin knows how to fix phones… it'll be alright."

Knee: In this comforting task the experimenter (E) bumps her knee on the sandtable and says, "oh, my knee!" Then E acts very hurt, moaning for duration of the task. The maximum duration of this task is 2 minutes (task ended if and when child physically soothed). In the first 30 seconds (approximately), E says nothing (SEGMENT 1). In the second 30 seconds, E states the problem three times (e.g., "my knee hurts so much", "I bumped my knee on the table really hard!") but does not look at the child (SEGMENT 2). In the third 30 seconds, E states the problem three times while looking at the child (SEGMENT 3). In the final 30 seconds, E first asks the child, "Is there anything you can do to make me feel better?", states the problem once more, and then asks, "Can you think of anything else you can do?" (SEGMENT 4). She then resolves the problem – "Maybe if I stretch a little… oh that feels better."

Drawing: In this comforting task the experimenter (E) accidentally spills water on her own drawing and says, "oh my drawing!" Then E acts very sad, moaning and sighing for duration of the task. The maximum duration of this task is 2 minutes (task ended if and when child physically soothed). In the first 30 seconds (approximately), E says nothing (SEGMENT 1). In the second 30 seconds, E states the problem three times (e.g., "I'm so sad my drawing is ruined", "I worked so hard on this and now it's

ruined") but does not look at the child (SEGMENT 2). In the third 30 seconds, E states the problem three times while looking at the child (SEGMENT 3). In the final 30 seconds, E first asks the child, "Is there anything you can do to make me feel better?", states the problem once more, and then asks, "Can you think of anything else you can do?" (SEGMENT 4). She then resolves the problem – “You know, I can just make another one tomorrow. Yea I’ll do that!”

Recognizing "segments" within each 2-minute task

It is important before you begin coding that you understand how and why each task is divided into segments. We are interested in the difference between SPONTANEOUS prosocial behavior and REQUESTED prosocial behavior. Some kids will be prosocial, but only after someone asks them to be. Other kids will automatically and spontaneously help a person without any requests or cues. Therefore, we divided every task up into segments, in which the requests for help become more and more obvious. Prosocial behavior exhibited during the first task will be considered "more spontaneous" than the same behaviors exhibited during later segments. Each segment is ABOUT 30 seconds long.

The first segment is the most subtle, and therefore, any prosocial behavior occurring here will be the most spontaneous on the part of the child. It involves E simply drawing the child's attention to the situation (with a verbal statement), and then not saying anything more about the problem, and not even LOOKING at the child, since looking at someone while in need may be perceived as an implicit request for help.

The second segment is a bit more obvious. It involves E putting the problem into words 3 different ways. In case the child didn't understand the nature of the problem based on non-verbal cues, he/she will understand it now during this segment. That makes acting prosocially a little less spontaneous. However, E still does not look at the child, so as not to imply she is "requesting" help implicitly.

In the third segment, E again states the problem in 3 different ways AND periodically glances at the child. This segment makes prosocial behavior more likely.

In the final segment, E directly asks the child, "Is there anything you can do to make me feel better?" She then states the problem once more. She then asks the question again. Throughout this segment, E is periodically looking at the child.

Use the information below as a guide while coding:

> **Segment 1** = E doesn't say any sentences (only things like, "oh no") and doesn't look at the child at all. The only exception is that E will say something when the event first happens (e.g., “oh no, my phone broke! The screen is cracked!”). But after this initial comment, E will not say anything

else about the nature of the problem or look at the child. E may answer the child's direct questions (because not doing so would be awkward). BEGINS: At the beginning of the initial comment about what happened. ENDS: When E first begins to say something (unless it was a response to the child's direct question, and occurred sooner than 30 seconds).

Segment 2=E states the problem (e.g., "I hit my knee so hard!", "I'm very sad about my drawing"), but still does not look at the child at all. You'll know this segment has begun when E first states the problem (and it's been about 30 seconds). BEGINS: When child first begins to say something for the first time (after about 30 seconds have passed). ENDS: When E first looks at child.

Segment 3=E states the problem AND looks periodically at the child. You'll know this segment has begun when E looks directly at the child and states the problem again (and it's been about 30 seconds from the start of the previous segment). BEGINS: When E first looks at child. ENDS: When E first begins to ask, "is there anything..."?

Segment 4=Begins as soon as E asks, "Is there anything you can do to help me feel better?" This will be the final 30 seconds or so of the task. BEGINS: When E first begins to ask, "is there anything..."? ENDS: When E first begins to say something that will resolve the situation.

IMPORTANT NOTE ABOUT SEGMENTS: Sometimes, E made an error while moving through these segments. For example, E accidentally looks at the child at the transition into segment 2, thinking it was segment 3, or if a segment is > 45 seconds. **If this happens, code behaviors as if E did not make a mistake, and simply mark on the coding sheet that there was an error, and what the error was**. If, however, the error was extreme, or makes it difficult to know how to code certain things, (such as E completely skips a segment or makes eye contact multiple times during segment 2), then flag it, do not code, let a coding supervisor know asap, and bring it to the meeting.

Types of Responses

There are a variety of ways that someone can respond when another person is in need of comfort. The goal of coding these tasks is to capture the diversity of responses that a child can display, as well as to capture the frequency and duration of responses. To do this, we have divided all possible responses into 6 categories: (1) supportive responses (with two subtypes: emotion-focused and problem-focused), (2)

negative responses, (3) personal distress, (4) concerned attention, (5) proximity increasing/maintaining, and (6) ignoring E's distress.

EVERY MOMENT of a comforting task can be classified into ONE AND ONLY ONE of these categories. **The only exception is that proximity increasing/maintaining can co-occur with supportive responses or concerned attention.** Some responses may seem to fit into more than one category or none of them at all. To determine which category a response is, you will use a decision hierarchy.

- First, consider whether the response is supportive OR negative OR personal distress. It can only be one of these. (If it is supportive then it may also be proximity increasing/maintaining).
- If it is none of these 3, then consider whether the response is concerned attention. (It may also be proximity increasing/maintaining).
- If it not concerned attention either, and it is also not proximity increasing/maintaining, then it will be coded as ignoring E's distress (by default).

Use the following guidelines to decide which category a response fits into:

1. **Supportive responses**: In general, these responses are intended to make the other person feel better. There are two types of supportive responses: **emotion-focused** (i.e., any response oriented towards feelings/emotions/mood and with the goal of improving these things) and **problem-focused** (i.e., any response oriented towards solving or taking action to fix the underlying problem.) Use the following examples as a guide to classify the response in question:

Emotion-focused responses

- Physical Soothing (e.g., hugging, patting, rubbing, leaning against E, handshaking). *Note: Physical soothing includes gestures such as hugging, rubbing, or patting, and does NOT include times the child was touching E incidentally, or in service of another goal. The physical touch must be something intended to be comforting, such as placing a hand on E's arm. If the physical comforting happens during the knee task, it may be coded as PF, not EF, because touching E would be in the service of fixing the "problem", while touching in every other task would only be to make E feel better.*
- Verbal Soothing (e.g., "it's ok", "are you ok?", "it happens sometimes", "It's not your fault")
- Mirroring E's sadness, in a way that is not personal distress ("awwwwww", "I feel bad", "I'm sad too").
- Reflection of personal experience with this same problem in which the personal experience ended positively (e.g., "my daddy dropped his phone, and it was ok"). If the reflection of personal experience ended neutrally, negatively, or did not end, then see the concerned attention section.
- Compensation (i.e., physically giving OR offering to give/share an object to E in order to help E feel better). Examples of compensation include: getting a book off the shelf and bringing it over to E, sharing the child's own nickels with E, saying, "I could buy you a racecar", saying, "do you want a cookie?".
    - NOTE: It's only considered compensation if the material object offered isn't a "problem-fixer" but rather is an "emotion-helper". That is, consider whether the object offered is instrumental in "fixing" the problem at hand (e.g., like giving a bandaid when E hurts her knee, giving own drawing when E ruins hers) or, instead, is something irrelevant to the problem whose only purpose is to improve E's mood (e.g., like giving a teddy bear or an ice cream cone when E hurts her knee). If the object offered is an "emotion-helper", it is compensation, because it targets the EMOTION of E, helping her to feel better. If the object offered is a "problem-fixer", it is NOT compensation, and instead is a problem-focused solution, because it targets the PROBLEM of E, helping her to solve it.
- Attempts to distract E from her distress by introducing a new toy or activity to E with the intention of cheering her up. This is different from compensation because the child doesn't actually give or offer to give it to E, but just mentions it or holds it up to show E. This could include attempts to bring E back to play. If it looks like it could be this, then code it as distraction
- Friendly invitations to play (e.g., looking at E, smiling, switching to a new toy, phrasing the invitation as a suggestion for what E could do like "you can still…"). The key component here is that the child is trying to be nice to E while suggesting new play activities. If the child stops showing same friendliness or keeps suggestions the same thing over and over after E clearly says she doesn't want to, then it is no longer a friendly invitation to play.

<u>Problem-focused responses</u>

- Verbal instrumental helping. This category includes all suggestions for fixing the problem (e.g., "I'll buy you another one", "I'll get my mommy to help you", "when I get hurt, I do xx", "you could try to clean it up", "you can go to the doctor "). It also includes suggestions meant to be helpful, or advice (e.g., "you should watch out next time", "be more careful"). **<u>It does not</u>**

include statements about how the child did it correctly (e.g., "I pushed my chair back", "I didn't spill my water", "my phone is still ok").

- Physical instrumental helping. These are physical ACTIONS the child takes to remedy the problem, and may or may not be accompanied by verbal instrumental helping (e.g., trying to clean up mess or fix the phone, wiping the drawing with hand, shaking the phone).
    - The child must be doing something ACTIVE the object to be considered PF and not simply curiosity or CA. MUST BE OBVIOUSLY TRYING TO CLEAN/REPAIR. USE THE WORDS OF THE CHILD BEFORE AND DURING AND AFTER THE ACTION TO HELP DECIDE THE PURPOSE OF THESE ACTIONS (e.g., "let me get this for you" is a clue that the action that follows is PF). Active things include: shaking the phone (rather than just picking it up and looking at it), holding up the drawing and shaking it (rather than just holding it up to look at it), balling up the drawing in order to throw it away or use it to clean off the table, or folding it deliberately to tidy it up (rather than just folding it over to look at the back of it). Moving a single finger across the drawing does not count as PF, as this is just playing with it (not CA, Neg, or PF). But wiping the water off with a hand is PF. If child says she will get the stickers off for E, and starts to peel them off the drawing, this is PF too because child is trying to salvage part of the drawing. If child keeps the stickers for herself, however, this is not PF. If child draws on E's paper, this is playing so is not PF. ***But above all, use child's words to help decide if the action is meant to be helpful or is FOR the experimenter's benefit. That may clarify some of these ambiguous actions.***
- If the child says something about how his/her mom, other family member or they could help, or ANY OTHER person could help, including the child him or herself, without specifying what the "help" would be, we will code these as problem-focused. If the child is more specific about what the help would entail, code it accordingly (e.g., "my mom could give you a teddy bear" is emotion-focused). Note: asking where another person is, without giving more info, is too vague to be considered PF (e.g., "where the other lady at?", "where's my mom?")

Note: *Consider the child's tone of voice, facial expression, and context when deciding if a suggestion or statement is actually supportive, or if it was meant to be callous, demanding, or controlling. For example, the phrase "you should be more careful" could be considered a negative response if it's taunting, callous, or if the child is ordering E. It could also be considered supportive if delivered in the right way. A statement like "you hit your knee" could be taunting and judgmental, or it could be sympathetic.*

If you see a response that you think is supportive and is not included on this list, please tell a coding supervisor and it may be added to the manual.

What to do when a response could be classified as both emotion- AND problem-focused

By their nature, problem-focused responses are often intended to both fix the problem at hand AND to improve the emotions of E. However, we cannot guess at the intentions of the child and can only use what we see and hear from the child. Therefore, responses intended to fix the problem will only be coded as problem-focused. If, on the other hand, the child explicitly mentions feelings/emotions or says

something that shows he/she is thinking about the internal state of E (e.g., "I'm sorry", "it'll be ok", "don't worry", "don't be sad", "are you alright?"), then we can code for the presence of an emotion-focused response as well. Therefore, some statements can be double-coded as both problem- and emotion- focused WITHIN THE SAME SENTENCE, as long as both elements are present. For example, if a child says, "it's ok, I can buy you another one", then "it's ok" will be coded as emotion-focused, and "I can buy you another one" will be coded as problem-focused. Another example of both in one sentence is “You can go to the doctor and you will feel better!”. The part about going to the doctor is PF, but the "feeling better" part is EF because the child is addressing E’s distress and/or feelings.

**** If the action is definitely meant to comfort E but there is no way to know if the action was EF or PF, always default to PF.

2**. Negative responses:** In general, these responses would typically make the Experimenter feel worse about her situation. Examples include:

- Laughing at E. (If you're not sure whether it's a laugh or not, then code it as though it were not)
- Teasing/taunting/mocking (e.g., while smiling, "you hurt yourself again!"). This is not to be confused for sympathetically restating the problem.

- Callous statements (e.g., "that's what you get", "you suck")
- Statements or "suggestions" that seem controlling or demanding (e.g., "don't spill it anymore!!!") This is not to be confused with helpfully giving advice.
- Scolding (e.g., "Why did you do that, you shouldn't do that").
- Any ambiguous sentence (could be interpreted as nice or mean, such as "you should be more careful") that is said in a negative way, such as yelled or screamed.
- Any sentence that brings all the focus away from E and onto the child, especially if said in a negative tone of voice.
- Intentionally making the situation worse (e.g. ripping or ruining E's paper, dropping the phone). Note: this does not include accidentally ripping the drawing while taking off the stickers on E's paper.

Consider the child's tone of voice, facial expression, and context when deciding if a suggestion is helpful, or if it was meant to be callous, demanding, or negative. The phrase "you should be more careful" could be considered a negative response if it's taunting, callous, or if the child is ordering E. It could also be considered supportive if delivered in the right way.

If you see a response that you think is negative and is not included on this list, please tell a coding supervisor and it may be added to the manual.

3. **Personal distress**: Sometimes, a child becomes upset when another person is upset. Examples of personal distress include:

- Crying, whining, or whimpering because child is distressed. If there are other cues that point to a different motivation (e.g. child can't reach across the table, child is being impatient), these would not be coded as personal distress
- Very obvious facial distress (e.g., face falls and looks like about to cry). This does not include anything that could be confused with concerned attention; it must be clearly distress.
- Physical self-soothing (e.g., thumb-sucking, hand wringing)
- Verbal statements of personal distress (e.g., "I wanna go home", "I don't like this").
- Speaking in a strained, upset-sounding way.
- Upset about own thing they messed up
- Defensiveness (e.g. "It's not MY fault").

If you see a response that you think shows personal distress and is not included on this list, please tell a coding supervisor and it may be added to the manual.

4. **Concerned attention (CA):** Only if a response cannot be classified as any of the three categories above, then it may be considered for concerned attention. Please understand what CA is before attempting to code it. This is because often, you will just have to use your best intuitive judgment in

deciding whether the child is showing CA "in spirit". We think of CA as an outward sign that the child is concerned about E: the child's thoughts are tuned into E's distress and the child has entered E's mental world. The child is allowing him/herself to enter E's "zone of distress" by acknowledging the situation. The child could express this concern in two ways: overtly or through non-verbal means.

What is NOT considered CA?

- NODDING HEAD OR SAYING YES IN RESPONSE TO E'S QUESTION IN SEGMENT.
- If the child is in the midst of an EF or PF solution, child cannot also get credit for CA. Be sure to watch out for non-verbal EF or PF (e.g., child goes to cabinet to get a book for E, brings book back, and is holding it up for E to see, child is holding out her drawing for E to take), because that whole block of time cannot be considered CA.
- If the sentence child says qualifies for overt CA (below) but is also part of the EF or PF solution, then it is not CA (because it's already considered part of the comforting solution).

Overt (verbal) CA: If a child says something that does not qualify as comforting, yet shows that he/she is acknowledging the situation or that something bad happened, then it's CA. This could include something showing that they are thinking about E's plight, but without explicitly offering a solution or comfort.

It is overt (verbal) CA if:

Child says or does any of the following (for any length of time, even a second or two) AND shows reduced/minimal play for at least 3 seconds OR very obvious facial concern for any length of time (i.e., is not simply acknowledging the situation, but is CONCERNED about the situation):

- "I can't help you", if said in a tone that suggests the child is sympathetic.
- "I have bandaids at home." Again, consider tone of voice and facial expression.
- Seeking more information about the situation (e.g., "what happened?", "are you hurt?", "does it hurt?")
- Reflecting on a personal experience similar to E's problem, in which the ending was neutral, negative, or doesn't have an end (e.g., "I went to the phone store when I broke it, and it cost a lot of dollars"). Basically, this includes any ending that is not positive, because a positive ending implies that it will also turn out OK for E (in which case, this is EF comforting).
- Sympathetic restatement of what happened (e.g., "you hit your knee??", "your drawing!") Consider the child's tone of voice, facial expression, and other cues of sympathy to determine if the statement is truly concerned. We include these types of statements into CA because it is a way of connecting sympathetically with E's plight, entering her zone of distress, and acknowledging that something bad has happened to her, but it does not qualify as comforting.
- "Let me see…" (while showing obvious signs of "thinking" about what to do for at least 3 sec)
- If you're not sure what child says, but child is clearly oriented to the situation (and you can't give them credit for any other code), then code as CA (see nonverbal CA section below).

Non-verbal CA: Even though the child is not saying or doing anything, we can tell that he/she is concerned about the situation or about E. We can tell because the child becomes focused on the scene, often stops playing and talking, and stares at E with a concerned expression. Sometimes, the child

shows momentary gaze aversions from E (1 second or less), because the situation is hard to look at, and so the child quickly glances away and looks back again.

To be coded as concerned attention, the child must be doing the following things **simultaneously for at least 3 continuous seconds**:

- MUST be oriented toward the scene, which includes looking at E or the object (i.e., turned toward her and paying attention to what is happening with her). If, during this time, the child momentarily looks away from E (i.e., 1 second or less) and then looks back again, that is ok. This is simply a gaze aversion, and can happen during CA.
- MUST have a neutral/concerned face (i.e., not smiling or crying or very obviously distressed)
- MUST be playing/doing an activity less than he/she was moments before the task began (e.g., slowed hand movements, reduced energy in play, stopping play altogether). This is because reduced play indicates that the child is "tuned into" E's pain and is paying more attention to E's situation than to previous play. If the child wasn't playing at all before the scene began, then reduced play will simply be not playing at all. It is, however, possible for the child to be walking or moving closer to E while showing concerned attention.
- Cannot overlap with words or actions that have already been classified as comforting, negative, or personal distress.
- The child could be listening to something E is saying or listening to E respond to him/her as part of an ongoing conversation. If the child is having a conversation with E, they MAY get codes for CA only while listening to E, as long as they otherwise meet all the criteria for CA.

5. Proximity increasing/maintaining: This code is for any physical movement towards E. This only includes steps, so leaning forward does not count. The ONLY exceptions are:

- Child is on a mission to reach another location in the room and just passes by E, and does not stop. If child stops for any reason, and looks at E or the situation (for at least 2 seconds), then it's proximity.

- Once at their destination, if child turns around and looks at E/situation (for at least 2 seconds), this is proximity (IF the destination is closer to E than the child's original position, such as by the box of sand toys). If the destination is father than original position (such as the cabinet or the nickels by the door), turning around to look at E/situation is NOT proximity.
- Once at the destination, any movement away from the destination will be subject to the same rules as if the child was starting from the sand table (the original position).
- Side to side stepping does not count if the child stays behind the sand table. Child must come out around the table (if seated) to get proximity (or be on her way out from behind sand table plus on her way directly over to E).
- If the only proximity in a given interval is carry-over from the previous interval, child must hold that position for at least one whole second to count as proximity in that interval.

6. Ignoring E's Distress: This code will capture any response that cannot be coded into any of the above 5 categories. As a result, this code will not reflect the child ignoring E or the entire situation, but rather it should reflect the child ignoring SPECIFICALLY E's distress. Examples include:

- Keeping attention focused on activity
- Smiling at E (i.e., not concerned attention because not neutral/concerned)
- Making irrelevant conversation (e.g., "my birthday is tomorrow")
- Staring at the floor
- Statements about the child's own property not being damaged (e.g., "MY phone isn't broken", "MY drawing isn't wet")
- Statements about the child's play or activity that he/she has been occupied with (e.g., "look, I finished the puzzle!")
- Statements about a toy/activity that aren't meant to cheer E up (e.g., "I wanna keep playing dinosaurs with you.")
- When E asks, "is there anything you can do to help me feel better?", if the child simply says, "yes" or nods head (or says "no" or shakes head), without actually saying or doing anything in addition to this, this will mostly likely be coded as Ignoring E's distress. That is because it is not supportive, negative, personal distress, or CA.
- Any response that cannot be classified

Coding setup

1. Open the INTERACT program (you will need to close and reopen between every task).

2. Select "Open existing data file" and select the template of the child/task you are coding. Each task has its own file, but you want to **always code the tasks in the order they were presented to the child.** Some

children will start with Phone, and others will start with Knee. Drawing will always be second (unless there are unusual circumstances, such as child did not cooperate and a task had to be skipped, fire drill, etc). Start with the task that happened first, then code the second task, then the last task.

3. Double click "Set 1" on the lefthand side of the screen, and several green pencils should appear below it. These are the 10-second timeslices.

4. Click on the small manila folder at the top left corner of the small Control Panel window. Select the correct video to open. The video should appear in a separate window.

5. To jump straight to the task, double click on the white space to the left of the first green pencil. If you want to view the task from beginning to end without breaks, use the Control Panel (press the righthand green arrow to play it through). If you want to view the task with the 10-second breaks, use the green pencils (double click the white space next to the timeslice you want to view).

6. Open the transcript (if available). It will be located on the U: drive. Use this to help you understand speech when you're not 100% certain of what the child is saying. Always have it open in the background.

7. Get the correct post lab notes from the Wave 1 or Wave 2 outcome drawer (located in the very back of the cabinet).

8. Get a blank paper coding sheet of the correct task, and fill in the basic information at the top. USE THE START AND STOP TIMES SPECIFIED IN INTERACT (the first and last times, located next to Set 1).

9. Now that you have everything in front of you, BE VERY SURE YOU ARE CODING THE CORRECT CHILD. Play the video from the very beginning until the white board reveals the subject (e.g., S1) and participant number (e.g., 4011). Verify that it matches the INTERACT template you have open, the video you opened, the transcript you have open, and the post lab notes in front of you.

10. If they all match, then write the participant number at the top of EVERY PAGE OF your paper coding sheet. Now you are ready to follow the coding procedure below.

11. You may also want to have a blank sheet of paper or Word document open to jot down any questions/comments for the group that arise during coding that you can bring to the next coding meeting.

Coding Procedure

1. **Make general notes on your paper coding sheet.** Before you begin, take out the post-lab notes sheet for this participant and read the Prosocial Notes section for any relevant details about this task. First, write the physical description of the child, and verify that it matches the child in the video you have

open. Then, write all relevant notes in the "Notes" section of your coding sheet. This could include notes specifically about this particular task (phone, knee, or drawing) OR about comforting tasks in general OR about the entire lab visit (whatever is relevant to this task). If there is nothing, write "None". Keep these notes in mind while coding.

2. **Watch the entire 2 minute task all the way through. Again verify that you are coding the correct child by making sure the physical description matches what you see. While watching, get a feel for this child's behavior and become familiar with the task. Also take note of when you think the Experimenter moved from one segment to the next. Then code the following items:**

- If phone task: Did E say "the screen is broken! It's all cracked!", or something similar? If knee task: Did E say, "Oh my knee!", or something similar? If drawing task, did E say, "oh no, my drawing", or something similar? (1=yes, 0=no). IF NO, WHAT DID E SAY? Write it verbatim. IF YES, MARK AN X.
- Did E make any errors with regard to segments? This could include (but is not limited to): stating the problem or looking at the child during segment 1 (other than the initial prompt or in response to a direct question from child), looking at the child during segment 2, NOT looking at the child during segment 3, NOT stating the problem during segment 2, asking "is there anything you can do...?" during segment 3, NOT asking 2 questions during segment 4, NOT looking at the child during segment 4. (circle Y or N)
- During which segment(s) did the errors occur? **If none, cross them all out.** As an example, if E accidentally looked at the child at the very beginning of segment 2 (the transition INTO segment 2), mark the error as occurring in segment 2. Circle all that apply (1, 2, 3, or 4). IF YES, DESCRIBE THE ERROR. IF NO, MARK AN X.
- During which segment of the task did the child first physically comfort E? (1= before E has stated the problem, 2=E has already stated problem but has not yet looked at the child, 3=E has already looked at the child but has not yet asked if there's anything he/she can do to help, 4=E has already asked if there's anything child can do to help, but task has not yet ended, 0=child did not physically comfort).

Note: Code this as the segment within which the first moment of physical contact was made to soothe E. Physical comforting includes gestures such as hugging, rubbing, patting, or placing a hand on E, and does NOT include simply brushing against E or non-soothing touch.

- Did E end the task early because of this physical soothing? (Y=Yes, E ended soon after child physically soothed, N=No, E did not end the task even though child physically soothed her, NA=Not applicable. Circle this if the child never physically soothed).
- During which segment of the task did the child first physically TOUCH E in a NON-comforting way? (1= before E has stated the problem, 2=E has already stated problem but has not yet looked at the child, 3=E has already looked at the child but has not yet asked if there's anything he/she can do to help, 4=E has already asked if there's anything child can do to help, but task has not yet ended, 0=child did not physically touch in a non-comforting way).

Note: Code this as the segment within which the first moment of physical contact was made. Examples include: Incidental touch, like brushing against E's arm while doing something else, pulling E toward the door because child wants to play outside, bumping into E.

- Did E end the task early because of this physical non-comforting touch? (Y=Yes, E ended soon after child physically touched, N=No, E did not end the task after this non-comforting touch, NA=Not applicable. Circle this if the child never physically touched).

3. Now, you will break the task up into 10-second intervals ("timeslices") in order to see how frequently the child shows each of the five types of response (i.e., supportive, negative, personal distress, concerned attention, and proximity increasing/maintaining). Because all comforting tasks were approximately 2 minutes long, each task will have approximately 12 timeslices, but the number may vary as individual tasks may have lasted slightly longer or shorter than 2 minutes. ADD THE TOTAL FREQUENCY OF EACH RESPONSE ON YOUR CODING SHEET, BUT DO NOT INCLUDE THE FINAL INTERVAL IF IT IS LESS THAN 8 SECONDS LONG. You do not even need to code final intervals that are less than 8 seconds. The only exception is when E stops the task due to physical comforting. In this case, we want 1 and only 1 interval to capture that comforting behavior. Do not throw it out, even if it's less than 8 seconds long. The entire interval will be coded and included in the totals for all codes in this case. If the child physically comforts and E does not stop the task, or if the child physically TOUCHES (i.e., would not get an EF score), then stick to the regular rules.

Step 1. COMFORTING: Watch each 10-second timeslice (one at a time) to code for the presence of an emotion-focused and/or problem-focused supportive response in that timeslice.

Does any portion of the given timeslice contain any portion of an emotion-focused response? (1=yes, 0=no).

Does any portion of the given timeslice contain any portion of a problem-focused response? (1=yes, 0=no).

Step 2. NEGATIVE RESPONSES: Watch each 10-second timeslice (one at a time) to code for the presence of a negative response OR personal distress in that timeslice.

Does any portion of the given timeslice contain any portion of a negative response? (1=yes, 0=no).

Does any portion of the given timeslice contain any personal distress? (1=yes, 0=no).

Step 3. CONCERNED ATTENTION: Watch each 10-second timeslice (one at a time) to code for the presence of concerned attention in that timeslice.

Does any portion of the given timeslice contain overt CA or AT LEAST 3 FULL SECONDS of non-verbal CA? (1=yes, 0=no). *Please remember that concerned attention cannot occur AT THE SAME MOMENTS as any of the above 3 types of response. However, a given 10-second timeslice may contain codes for supportive response AND concerned attention (or negative and concerned attention, or personal distress and concerned attention), but these codes must have happened at different moments within that timeslice (e.g., supportive response ended within the first 3 seconds, and concerned attention began immediately after it).*

NOTE TO CODERS: If it's non-verbal CA, a timeslice must contain within it a full continuous 3 seconds as a stand-alone interval to be coded as having concerned attention.

Step 4. PROXIMITY: Watch each 10-second timeslice **one more time** (one at a time) in order to code for the child increasing OR maintaining proximity to E.

At any point during the given timeslice, did the child get noticeably physically closer to E (or remain closer to her as the result of an initial ACTIVE approach toward her), while also being emotionally/attentionally oriented toward E ? (1=yes, 0=no).

Step 5. IGNORING: After you have coded all 5 types of response in all 10-second timeslices, code for the lack of any response in each timeslice (i.e., ignoring E's distress). You don't need to watch the timeslices again to do this.

For each timeslice: Were there NO types of response coded for in this timeslice? (1=yes, there were no coded responses, 0=no, there was at least one coded response).

Step 6: Enter the number of intervals that were calculated in your total. This won't include rows with 999 (missing data), or intervals of less than 8 seconds long (unless child physically comforted and E ended the task early because of this - then you WILL include that interval in the total).

4. **After coding the timeslices, answer the following questions on your coding sheet. Go back to view the video as many times as needed:**

- During which segment of the task did the child first begin an EMOTION-FOCUSED supportive response? (1= before E has stated the problem, 2=E has already stated problem but has not yet looked at the child, 3=E has already looked at the child but has not yet asked if there's anything he/she can do to help, 4=E has already asked if there's anything child can do to help, but task has not yet ended, 0=child did not display an emotion-focused supportive response).

  Note: Code this as the segment within which the child first begins to say or do the emotion-focused supportive response.

- During which segment of the task did the child first begin a PROBLEM-FOCUSED supportive response? (1= before E has stated the problem, 2=E has already stated problem but has not

yet looked at the child, 3=E has already looked at the child but has not yet asked if there's anything he/she can do to help, 4=E has already asked if there's anything child can do to help, but task has not yet ended, 0=child did not display a problem-focused supportive response).

Note: Code this as the segment within which the child first begins to say or do the problem-focused supportive response.

- During which segment of the task did the child first begin a negative response? (1= before E has stated the problem, 2=E has already stated problem but has not yet looked at the child, 3=E has already looked at the child but has not yet asked if there's anything he/she can do to help, 4=E has already asked if there's anything child can do to help, but task has not yet ended, 0=child did not display a negative response).

Note: Code this as the segment within which the child first begins to say or do the negative response.

- During which segment of the task did the child first begin to show personal distress? (1= before E has stated the problem, 2=E has already stated problem but has not yet looked at the child, 3=E has already looked at the child but has not yet asked if there's anything he/she can do to help, 4=E has already asked if there's anything child can do to help, but task has not yet ended, 0=child did not display a negative response).

Note: Code this as the segment within which the child first begins to show the personal distress.

- During which segment of the task did the child first begin to increase proximity to E (i.e., move noticeably physically closer to E while being emotionally oriented toward her, such as trying to do something for her or just simply getting closer while looking at her)? (1= before E has stated the problem, 2=E has already stated problem but has not yet looked at the child, 3=E has already looked at the child but has not yet asked if there's anything he/she can do to help, 4=E has already asked if there's anything child can do to help, but task has not yet ended, 0=child did not increase proximity).
- Did the child mention his/her/anyone's mom/dad/grandparent for any reason?

<u>Also mark on the coding sheet the timestamp for when the mention BEGAN, as well as copy verbatim what the child said.</u>

5. Global Score - Watch the task 1 more time from beginning to end. Mark quick bullet point notes about the types of things the child said or did during the task. If child attempted something more than once, just put tally marks next to it. Use these bullet points to help you code the global score.

What is your overall impression of how comforting this child was toward E? *Note: this code should be done immediately after the other codes were entered, so the child is fresh in the coder's mind.*

All previous scores have only considered frequency and latency of the response, leaving us unable to differentiate between a child who gives away their own possessions from a child who simply gives advice. This global score will capture the diversity, quality, and activity of child's attempts to comfort. Consider the number of DISTINCT attempts, including the creativity seen in the diversity. A child who suggests the same thing over and over will not be treated the same as a child who suggests the same number of things but which are all distinct and creative. Also consider the quality of attempts, especially sweet statements or offers, big gestures, and offers to give E the child's OWN possessions (e.g., nickels, balloon, drawing). Also consider the activity of the child's attempts (e.g., a child who goes to the shelf to get something, or to the door to look for help, is not the same as a child who sits in her chair and continues playing while simply saying suggestions). You will also inevitably consider the frequency of comforting, amount of concerned attention, proximity, ignoring, attitude, general demeanor, negativity, etc. **The amount of proximity is also the deciding factor if wavering between two scores.**

1 - Not at all comforting. To get this score, a child may:

- Show no sign of being concerned about the experimenter's distress and make no effort to comfort her
- Show concerned attention within the first 15 seconds of the task, but subsequently shows no concerned attention and no comforting behaviors
- Make one or two brief and minimal efforts to comfort, with very little to no concerned attention
- Make a few half-hearted attempts to comfort, but largely ignores or acts negatively toward E
- Child is personally distressed for much of the time and unable to focus on E's needs

2 - In between a 1 and 3. (for ex: at least 70% CA but no attempts to comfort, not engaging E much or at all, and no proximity; or at least 50% CA with 1 attempt to comfort)

3 - Somewhat/moderately comforting. To get this score, a child may:

- Attempt at least 3 or 4 distinct mid-quality ways to comfort, with concerned attention for ≥ 33%
- Attempt at least 2 distinct and mid- to high-quality ways to comfort with concerned attention for ≥ 50%
- Display concerned attention for more than 75% of the task, with one high-quality or mid-high quality attempt to comfort.

4 - In between a 3 and a 5.

5 - Very comforting. To get this score, a child may:

- show ANY large display of physical comfort (e.g., a hug) at any point
- physically comfort with a handshake, rub, or pat within the first 30 sec or after first trying a few (3-5) other comforting strategies
- attempt to comfort for more than 75% of the duration of the task, with mid- to high-quality comforting, and with a good amount of attention toward E (engaged with E for most of the time, *very* little ignoring)

NOTE: If any negative responses or some obvious and persistent physical distress (e.g., almost crying) responses are present, knock the global score down one point

6. Once you've finished filling out the paper coding sheets for ALL 3 TASKS, open your SPSS document located in your folder on the U:drive. Carefully transfer the codes into the SPSS document, verifying that you're on the right row, and are starting at the correct column. REMEMBER that when you add up the timeslice totals, DO NOT INCLUDE THE FINAL TIMESLICE IF IT'S LESS THAN 8 SECONDS.

7. Save your SPSS document twice, so that you always have 2 copies. Save in between every child.

8. After all 3 tasks have been coded and entered into SPSS, go back and double check that all codes were transferred correctly from paper to SPSS.

9. Clip all 3 paper coding sheets together and file them in your folder. Store the folder on the wall behind the door and bring to every coding meeting. Put completed packets into your file folder in the cabinet.

HELPING & SHARING TASKS

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General Coding Notes

This manual codes the variety of prosocial behaviors shown by preschool children in a series of 10 tasks. Three of the tasks measure children's instrumental helping in response to an adult experimenter (E) needing something (Poster, Door, Marbles). Three of the tasks measure children's sharing behavior in response to E's expression of material desire (Cookies, Snacks, Balloons). One of the tasks measures children's sharing behavior toward another child, not present in the room (Nickels). Finally, three of the tasks measure children's comforting and/or negative behavior toward E's emotional distress (Phone, Knee, and Drawing).

Before you begin coding, please understand that capturing children's nuanced behavior from videotape is difficult to do with a series of strict rules. We have developed these coding rules to help capture the "spirit" of the children's intentions and attitudes, but there will always be cases that aren't covered by the existing rules. Sometimes, we will need to make exceptions to the rules or create NEW rules that more accurately reflect reality. As a coder, part of your job is to recognize when the existing rules need to be changed or added to in order to better reflect reality. These rules are no substitute for human reason. Therefore, always keep in mind the spirit of WHAT exactly you are coding and the underlying reasons for WHY. Always be alert and ask yourself what you think is really happening in the task, and whether the codes you enter are accurate reflections of reality. In other words, take into consideration both the "spirit" and the "letter" of the law.

Throughout this manual, we have included explanations for what the code is and why you are coding it, but if you ever feel like you don't fully understand the codes or their reasons, please ask a coding supervisor. It is important that you are fully informed about the construct you are coding.

Sometimes, the manual will specify how many times to watch a task. If, however, you need to watch a task or a portion of a task more times to fully understand what is happening or to hear something more clearly, please watch it as MANY TIMES AS NEEDED. Never guess at what you see or hear. Take the time to replay the segment or task until you fully understand. It is better to be accurate than quick.

It also may seem as though you are watching the task too many times, and it's becoming repetitive and boring, especially when it comes to coding the comforting tasks. However, the more you watch the task, the better you "get to know" the child and coding becomes easier. It is also very easy to miss some subtle behavior, especially if you don't watch it as many times as the manual specifies!

If a child says part of a sentence and then stops, code whatever information you have from what was said. We cannot guess at what the child WOULD HAVE said, but we can go ahead and code what was said.

Poster

Description: In this instrumental helping task, the experimenter (E) drops her tape while hanging a poster on the wall. She says, "oh my tape!" and then reaches for it while grunting and struggling with the poster. The maximum duration of this task is 30 seconds. In the first 10 seconds (approximately), E says nothing. In the second 10 seconds, E states the problem twice (e.g., "I can't reach my tape", "my tape fell on the floor"). In the final 10 seconds, E states the problem twice while looking at the child. The task begins when E finishes saying "oh my tape!" (or something similar - use whatever was said as the benchmark). The task ends as soon as E gets down from the chair and touches the tape herself (i.e., the moment she touches the tape) OR as soon as the child hands E the tape (i.e., the moment it touches E's hand). We are coding the children's helping behavior, including their latency to help and the prompt required before they picked up the tape and handed it to E.

Coding instructions:

1. **Make basic notes on your coding sheet.** Before you begin, take out the post-lab notes sheet for this participant and read the Prosocial Notes section for any relevant details about this task. Type them into the "Notes" section of your coding sheet. This could include notes specifically about the poster task OR about helping tasks in general OR about the entire lab visit (whatever is relevant to this task). If there is nothing, write "None". Keep these notes in mind while coding.

2. **Watch the video all the way through in Interact and do the following:**

- Mark the moment the task begins (i.e., very end of the word "tape" spoken by E).
- Also mark the moment when the child hands E the tape (i.e., the moment it touches E's hand). If child never hands E the tape, then mark the moment when the task ends.
- Record the exact number of seconds from beginning mark to ending mark.
- Just watch what happens and become familiar with the event.

3. Watch the video all the way through a second time and code the following items:

- Did E say "oh my tape!"? (1=yes, 0=no)
- Was child behind the sandtable when the tape fell? (1=yes, 0=no)
- Did child offer to help or ask if E needed help? (1=yes, 0=no)
- During which segment of the task did the tape touch E's hand as a result of the child handing it to E? (1= before E has stated the problem, 2=E has already stated problem but before E looks at the child, 3=E has already looked at the child but before the task has ended, 0=child did not help).
- Did child mention his/her mother? If so, write the sentence verbatim.

Open Door

Description: In this instrumental helping task, the experimenter (E) picks up a stack of boxes, says "this is a lot of boxes!" and then tries to open the door unsuccessfully while holding the boxes. She says, "oh the door!" and then continues to try to open the door while struggling with the boxes. The maximum duration of this task is 30 seconds. In the first 10 seconds (approximately), E says nothing. In the second 10 seconds, E states the problem twice (e.g., "I can't open the door", "I have too many boxes to open it"). In the final 10 seconds, E states the problem twice while looking at the child. The task begins when E finishes saying "oh the door!" (or something similar - use whatever was said as the benchmark). The task ends as soon as E sets down the boxes and opens the door herself (i.e., the moment she touches the door handle) OR as soon as the child opens the door for E (i.e., the moment child touches the door handle). We are coding the children's helping behavior, including their latency to help and the prompt required before they opened the door for E. *Note: some children can't open the door, but we will record their attempt to open it the same as opening it. Carrying a box for E counts as helping.*

Coding instructions:

1. **Make basic notes on your coding sheet.** Before you begin, take out the post-lab notes sheet for this participant and read the Prosocial Notes section for any relevant details about this task. Type them into the "Notes" section of your coding sheet. This could include notes specifically about the Open Door task OR about helping tasks in general OR about the entire lab visit (whatever is relevant to this task). If there is nothing, write "None". Keep these notes in mind while coding.

2. **Watch the video all the way through in Interact and do the following:**

- ☐ Mark the moment the task begins (i.e., very end of the word "door" spoken by E).
- ☐ Mark the moment when the child's hand touches the door handle in order to open it. If child never attempts to open the door, then mark the moment when the task ends.
- ☐ Record the exact number of seconds from beginning mark to ending mark.
- ☐ Just watch what happens and become familiar with the event.

3. Watch the video all the way through a second time and code the following items:

- ☐ Did E say "oh the door!"? (1=yes, 0=no)
- ☐ Was child behind the sandtable when the task began? (1=yes, 0=no)
- ☐ Did child offer to help or ask if E needed help? (1=yes, 0=no)
- ☐ During which segment of the task did child first touch the door handle in order to open it (or attempt to open it)? (1= before E has stated the problem, 2=E has already stated problem but before E looks at the child, 3=E has already looked at the child but before the task has ended, 0=child did not help). *Note: attempts include touching the handle and either twisting or pulling, even if door did not open. Helping also counts as carrying a box for E to the door. If happens, tell a coding superviser.*
- ☐ Did child mention his/her mother? If so, write the sentence verbatim.

Marbles

Description: In this instrumental helping task, the experimenter (E) drops her cup of marbles while child's back is turned and child is across the room. She says, "oh my marbles!" and then begins to pick them up from the floor. The maximum duration of this task is 30 seconds. In the first 10 seconds (approximately), E says nothing. In the second 10 seconds, E states the problem twice (e.g., "My marbles spilled", "I have to pick up all my marbles"). In the final 10 seconds, E states the problem twice while looking at the child. The task begins when E finishes saying "oh my marbles!" (or something similar - use whatever was said as the benchmark. The task ends as soon as E is finished picking up all the marbles by herself (i.e., the moment the last marble is dropped into the cup) OR as soon as the child picks up the first marble to help E (i.e., the moment child touches the first marble). We are coding the children's helping behavior, including their latency to help and the prompt required before they began picking up marbles to give to E. *Note: Picking up marbles is only counted as helping if the child gives AT LEAST ONE of the marbles he/she picked up to E before the task ends. If the child picks up marble(s) and puts them all in his or her own cup, this is not counted as helping. Details for coding this are below.*

Coding instructions:

1. **Make basic notes on your coding sheet.** Before you begin, take out the post-lab notes sheet for this participant and read the Prosocial Notes section for any relevant details about this task. Type them into the "Notes" section of your coding sheet. This could include notes specifically about the Marbles task OR about helping tasks in general OR about the entire lab visit (whatever is relevant to this task). If there is nothing, write "None". Keep these notes in mind while coding.

2. **Watch the video all the way through in Interact, and make a mental note about whether the child ever gave at least one marble to E during the task. Then watch it again and do the following:**

- Mark the moment the task begins (i.e., very end of the word "marbles" as spoken by E).
- If the child ever gave a marble to E, mark the moment when the child's hand touched the first marble that was given to E. If the child never gave a marble to E or never picked any marbles up, then mark the moment when the task ends.
- Record the number of seconds from beginning mark to ending mark. *Note: If a child picks up a bunch of marbles at once, puts them into his/her hand, and then gives some and keeps some, you can't tell which specific marbles were given and which were kept. In this case, mark the moment the FIRST marble in this bunch was touched, AS LONG AS AT LEAST ONE OF THESE MARBLES WAS GIVEN TO E before the task ended.*
- Just watch what happens and become familiar with the event.

3. Watch the video all the way through a second time and code the following items:

- Did the child appear to be closer to the pling machine than to E when the marbles dropped? (1=yes, 0=no)
- Did E say "oh my marbles!"? (1=yes, 0=no)
- Did child offer to help or ask if E needed help? (1=yes, 0=no)
- Did child steal at least 1 of E's marbles at any point during the task? (1=yes, 0=no). *Note: Stealing is counted as picking up at least one of E's marbles and putting it into child's own cup or keeping it for him or herself.*
- During which segment of the task did child first touch a marble that was eventually given to E? (1= before E has stated the problem, 2=E has already stated problem but before E looks at the child, 3=E has already looked at the child but before the task has ended, 0=child did not help). *Note: If child gives some marbles he/she picks up to E and keeps some for self, only consider the first marble that was given to E for this code. If a child picks up a bunch of marbles at once, puts them into his/her hand, and then gives some and keeps some, you can't tell which specific marbles were given and which were kept. In this case, use the segment within which the FIRST marble in this bunch was touched, AS LONG AS <u>AT LEAST ONE</u> OF THESE MARBLES WAS GIVEN TO E before the task ended. If all marbles were kept by the child, mark this code as "0".*
- Did child mention his/her mother? If so, write the sentence verbatim.

Cookies

Description: In this sharing task, the experimenter (E) pours 4 cookies for the child, pushes the bowl toward the child, and before the child begins eating, tries to pour some for herself and discovers there are no more cookies left. She says, "oh no, there are no more cookies left..." and then looks sadly at her empty bowl while sighing. The maximum duration of this task is 45 seconds. In the first 15 seconds (approximately), E says nothing. In the second 15 seconds, E states the problem twice (e.g., "I wish I had some cookies", "there were none left for me"). In the final 15 seconds, E states the problem twice while looking at the child. The task begins the moment after E finishes saying "oh no, there are no more cookies left" (or something similar - use whatever was said as the benchmark). The task ends as soon as E says "oh well I can get some tomorrow" (i.e., the moment after the last syllable of this sentence is spoken; it may not be this sentence exactly, but use whatever was said here as the benchmark). OR, if the child shared, as soon as E says "thanks for sharing those xxx cookies with me" (i.e., the moment after the last syllable of this sentence is spoken; it may not be this sentence exactly, but use whatever was said here as the benchmark). IF SHARING OCCURS WITHIN 5 SECONDS OF THE TASK ENDING, WE WILL COUNT THIS AS SHARING. We are coding the children's sharing behavior, including their latency to share, the number they shared, and the prompt required before they shared.

Coding instructions:

1. **Make basic notes on your coding sheet.** Before you begin, take out the post-lab notes sheet for this participant and read the Prosocial Notes section for any relevant details about this task. Type them into the "Notes" section of your coding sheet. This could include notes specifically about the Cookies task OR about sharing tasks in general OR about the entire lab visit (whatever is relevant to this task). If there is nothing, write "None." Keep these notes in mind while coding.

2. **Watch the video all the way through in Interact and do the following:**

- Mark the moment the task begins (i.e., very end of the word "left" as spoken by E in the sentence "there are no more cookies left"; the sentence may be something slightly different, so the task begins as soon as the final word of the sentence has been spoken).
- Mark the moment when the child shares his or her first cookie (i.e., the moment the overt gesture to share ended, such as the moment the child's arm is finished extending toward E). If child never shared, then mark the moment when the task ends.
- Record the number of seconds from beginning mark to ending mark.
- Just watch what happens and become familiar with the event.

3. Watch the video all the way through a second time and code the following items:

- Did E say "oh no, there are no more cookies left", or something similar? (1=yes, 0=no)
- Did E give the child her/his cookies before discovering there were none left for her? (1=yes, 0=no)
- How many cookies did child share? (0-4)
  Note: Sharing includes any overt gesture to transfer a cookie, such as putting it in E's bowl, moving it closer to E, putting in E's hand, extending an arm toward E with a cookie in hand, etc. It does NOT include offers to share without the overt gesture.
  Note: Make sure the number written on the post-lab notes matches the tape. At the end of the task, E will say "thank you for sharing those xx cookies with me".
  Note: Only count cookies that were shared during the task or within 5 seconds of the task ending.
  Note: If child shares part of a cookie, record the portion as accurately as possible (e.g., 2.5).
- Did child offer to share or ask if E wanted a cookie? (1=yes, 0=no)
- During which segment of the task did the child share the first cookie? (1= before E has stated the problem, 2=E has already stated problem but before E looks at the child, 3=E has already looked at the child but before the task has ended, 4=the task ended but 5 seconds or fewer have passed, 0=child did not share).
  Note: We will consider sharing to be in the segment within which the overt gesture to share ended, NOT THE SEGMENT WITHIN WHICH THE COOKIE TOUCHES E'S HAND OR BOWL (although they will often be the same moment). For example, if the child extends her arm toward E with an open hand, but doesn't actually put the cookie into E's hand, code the segment within which the child's arm became fully extended. We are not concerned with the moment E takes the cookie, but with the intent of the child to give it to E. As another example, if the child holds out a cookie toward E, pauses for a few moments, and then drops it into E's bowl, code the segment within which the child finished extending her arm to hold out the cookie, NOT the segment within which the cookie landed in the bowl.
- Did child mention his/her mother? If so, write the sentence verbatim.

Stickers

Description: In this sharing task, the experimenter (E) gives 4 stickers to the child and then discovers all of her own stickers were already used. She says, "oh no, this one was already peeled off...and so is this one....these were all already peeled off..." and then looks sadly at her used stickers while sighing. The maximum duration of this task is 45 seconds. In the first 15 seconds (approximately), E says nothing. In the second 15 seconds, E states the problem twice (e.g., "I wish I had some stickers too", "all my stickers were already used"). In the final 15 seconds, E states the problem twice while looking at the child. The task begins the moment after E finishes saying "these were all already peeled off" (or something similar - use whatever was said as the benchmark). The task ends as soon as E says "oh well I can get some tomorrow" (i.e., the moment after the last syllable of this sentence is spoken; it may not be this sentence exactly, but use whatever sentence was said as the benchmark). OR, if the child shared, as soon as E says "thanks for sharing those xxx stickers with me" (i.e., the moment after the last syllable of this sentence is spoken; it may not be this sentence exactly, but use whatever was said here as the benchmark). IF SHARING OCCURS WITHIN 5 SECONDS OF THE TASK ENDING, WE WILL COUNT THIS AS SHARING. We are coding the children's sharing behavior, including their latency to share, the number they shared, and the prompt required before they shared.

Coding instructions:

1. **Make basic notes on your coding sheet.** Before you begin, take out the post-lab notes sheet for this participant and read the Prosocial Notes section for any relevant details about this task. Type them into the "Notes" section of your coding sheet. This could include notes specifically about the Stickers task OR about sharing tasks in general OR about the entire lab visit (whatever is relevant to this task). If there is nothing, write "None". Keep these notes in mind while coding.

2. **Watch the video all the way through in Interact and do the following:**

- Mark the moment the task begins (i.e., very end of the word "off" as spoken by E in the sentence "these were all already peeled off"; the sentence may be something slightly different, so the task begins as soon as the final word of the sentence has been spoken).
- Mark the moment when the child shares his or her first sticker (i.e., the moment the overt gesture to share ended, such as the moment the child's arm is finished extending toward E). If child never shared, then mark the moment when the task ends.
- Record the number of seconds from beginning mark to ending mark.
- Just watch what happens and become familiar with the event.

3. Watch the video all the way through a second time and code the following items:

- Did E say "oh no, these were all already peeled off", or something similar? (1=yes, 0=no)
- Did child use any of his or her own stickers (e.g., stick them on a drawing) before the task began? (1=yes, 0=no)
- How many stickers did child share? (0-4)
  Note: Sharing includes any overt gesture to transfer a sticker, such as putting it in E's bowl, moving it closer to E, putting in E's hand, extending an arm toward E with a sticker in hand, etc. It does NOT include offers to share without the overt gesture.
  Note: Make sure the number written on the post-lab notes matches the tape. At the end of the task, E will say "thank you for sharing those xx stickers with me".
  Note: Only count stickers that were shared during the task or within 5 seconds of the task ending.
- Did child offer to share or ask if E wanted a sticker? (1=yes, 0=no)
- During which segment of the task did the child share the first sticker? (1= before E has stated the problem, 2=E has already stated problem but before E looks at the child, 3=E has already looked at the child but before the task has ended, 4=the task ended but 5 seconds or fewer have passed, 0=child did not share).
  Note: We will consider sharing to be in the segment within which the overt gesture to share ended, NOT THE SEGMENT WITHIN WHICH THE STICKER TOUCHES E'S HAND OR BOWL (although they will often be the same moment). For example, if the child extends her arm toward E with an open hand, but doesn't actually put the sticker into E's hand, code the segment within which the child's arm became fully extended. We are not concerned with the moment E takes the sticker, but with the intent of the child to give it to E. As another example, if the child holds out a sticker toward E, pauses for a few moments, and then drops it into E's bowl, code the segment within which the child finished extending her arm to hold out the sticker, NOT the segment within which the sticker landed in the bowl.
- Did child mention his/her mother? If so, write the sentence verbatim.

Balloons

Description: In this sharing task, the experimenter (E) gives 2 balloons to the child and then discovers there was a hole in her own balloon. She says, "oh no, my balloon had a hole in it...and that was the last one" and then looks sadly at her deflated balloon while sighing. The maximum duration of this task is 45 seconds. In the first 15 seconds (approximately), E says nothing. In the second 15 seconds, E states the problem twice (e.g., "I'm sad I don't have a balloon anymore", "I wish I had a balloon too"). In the final 15 seconds, E states the problem twice while looking at the child. The task begins the moment after E finishes saying "...and that was the last one" (or something similar - use whatever was said as the benchmark). The task ends as soon as E says "oh well I can get another one tomorrow" (i.e., the moment after the last syllable of this sentence is spoken; it may not be this sentence exactly, but use whatever was said here as the benchmark). OR, if the child shared, as soon as E says "thanks for sharing those xxx balloons with me" (i.e., the moment after the last syllable of this sentence is spoken; it may not be this sentence exactly, but use whatever was said here as the benchmark). IF SHARING OCCURS WITHIN 5 SECONDS OF THE TASK ENDING, WE WILL COUNT THIS AS SHARING. We are coding the children's sharing behavior, including their latency to share, the number they shared, and the prompt required before they shared.

Coding instructions:

1. **Make basic notes on your coding sheet.** Before you begin, take out the post-lab notes sheet for this participant and read the Prosocial Notes section for any relevant details about this task. Type them into the "Notes" section of your coding sheet. This could include notes specifically about the Balloons task OR about sharing tasks in general OR about the entire lab visit (whatever is relevant to this task). If there is nothing, write "None". Keep these notes in mind while coding.

2. **Watch the video all the way through in Interact and do the following:**

- Mark the moment the task begins (i.e., very end of the word "one" as spoken by E in the sentence "my balloon had a hole in it...and that was the last one"; the sentence may be something slightly different, so the task begins as soon as the final word of the sentence has been spoken).
- Mark the moment when the child shares his or her first balloon (i.e., the moment the overt gesture to share ended, such as the moment the child's arm is finished extending toward E). ONLY IF you cannot tell when the overt gesture ended, then mark the moment E begins to extend her hand to take the balloon. If child never shared, then mark the moment when the task ends.
- Record the number of seconds from beginning mark to ending mark.
- Also record in the "Notes" section if the child spent a good portion of the task trying to fix the deflated balloon (e.g., by trying to blow it up), and as a result, didn't understand that he/she would need to share to fix the problem. This would potentially affect latency to share.
- Just watch what happens and become familiar with the event.

3. Watch the video all the way through a second time and code the following items:

- Did E say "oh no, my balloon had a hole in it...and that was the last one", or something similar? (1=yes, 0=no)
- Was the balloon already popped before E took it out of the cabinet? (1=yes, 0=no)
- How many balloons did child share? (0-2)
  Note: Sharing includes any overt gesture to transfer a balloon, such as putting in E's hand or extending an arm toward E with a balloon in hand. It does NOT include offers to share without the overt gesture. ONLY IF you cannot tell the moment the overt gesture ended, code the moment E begins extending her hand to grab the balloon.
  Note: Make sure the number written on the post-lab notes matches the tape.
  Note: Only count balloons that were shared during the task or within 5 seconds of the task ending.
- Did child offer to share or ask if E wanted a balloon? (1=yes, 0=no)
- During which segment of the task did the child share the first balloon? (1= before E has stated the problem, 2=E has already stated problem but before E looks at the child, 3=E has already looked at the child but before the task has ended, 4=the task ended but 5 seconds or fewer have passed, 0=child did not share).
  Note: We will consider sharing to be in the segment within which the overt gesture to share ended, NOT THE SEGMENT WITHIN WHICH THE STRING TOUCHES E'S HAND (although they will often be the same moment). ONLY IF you cannot tell when the overt gesture ended, then code the segment within which E begins to extend her hand to take the balloon. For example, if the child holds out a balloon toward E, pauses for a few moments, and then E takes the balloon, code the segment within which the child finished extending her arm to hold out the balloon, NOT the segment within which the E took the balloon.
- Did child mention his/her mother? If so, write the sentence verbatim.

Nickels

Description: In this sharing task, the child has discovered a buried treasure chest in the sand table filled with 20 nickels, and the experimenter (E) gives the child the opportunity to share some of his/her nickels with another child who is not present. The sharing is done without E watching. The task begins as soon as both the child and E are seated on the ground. The task ends as soon as the child has put all the nickels into boxes and E turns to face the child. We are coding the children's sharing behavior, including the number of nickels they shared.

Coding instructions:

1. **Make basic notes on your coding sheet.** Before you begin, take out the post-lab notes sheet for this participant and read the Prosocial Notes section for any relevant details about this task. Type them into the "Notes" section of your coding sheet. This could include notes specifically about the Nickels task OR about sharing tasks in general OR about the entire lab visit (whatever is relevant to this task). If there is nothing, write "None". Keep these notes in mind while coding.

2. **Watch the video all the way through and code the following items:**

- During the instructions, did the child get all the questions correct demonstrating that he/she understood the task? Mark "yes" if child eventually answered the question correctly after repeated questioning, and mark "no" if the child never correctly answered all the questions (1=yes, 0=no, 99="E forgot to ask the questions")
- How many nickels did child share? (0-20)
  Note: Use the post lab notes to code this number. However, always watch the video just to verify that the number written on the post lab notes makes sense. You probably won't be able to see exactly how many nickels were put into each box, but you can at least verify that the number seems approximately accurate. If it seems wrong, tell a coding supervisor. ***Sometimes, a nickel got lost under the rug or somewhere on the floor and wasn't put into a box until after the task ended.***
- When E turns back around and asks the child which box is his/hers, does the child correctly identify his/her own box? (1=yes, 0=no, 99 = did not ask)
- Did child mention his/her mother? If so, write the sentence verbatim.

Coding Rationale notes:

WE WILL ALSO HAVE DIFFERENT CODERS TRANSCRIBE EVERYTHING THE CHILD SAYS OR DOES NON-VERBALLY, INCLUDING FACIAL EXPRESSIONS AND BODY LANGUAGE, AFTER E ASKS "IS THERE ANYTHING YOU COULD DO...?" UNTIL THE TASK ENDS. also would be nice to transcribe the entire child portion.

Create a "Coding thoughts and Rationale" log. Include so far:

- Problem- and emotion- focused based off of Dunfield's work, as an extension and continuation of hers
- Why is the latency to help coded differently in marbles than it is in the other helping tasks (i.e., in marbles, the latency is when child first BEGINS to help rather than when child SUCCEEDS in helping)? Because in marbles, succeeding in helping takes much more time as there are many marbles to pick up...so the latency in succeeding to help will differ widely for each child based on a number of factors, such as the diameter of spillage, the speed with which E picks up marbles, etc. It's a less controlled task, so to control the latency variable better, we had to make it latency to BEGIN helping (once verifying that child actually did eventually help and not steal the marbles).
- May want to drop the first timeslice for analyzing CA. This could reflect orienting toward a surprising event or simply curiosity.
- Frequency of comforting will appear LESS for kids who physically comforted bc the task was cut short. May want to separate them out, and/or make it a proportion of comforting frequency over # of seconds in task.
- Why did we include "was balloon already popped" question? Because: its a bad thing if it was already popped, because it means the task was different than planned. we were supposed to pull a full balloon out of the cabinet for ourselves, establish ownership of it, and then lose it in front of the child's eyes. If we pulled out an already destroyed balloon, then we never had it to begin with. I don't know if this changes the task in any important ways, but during development of the tasks, we wanted to make sure the balloon was "ok" at first and THEN we lost it. Jonathan's response: I think as long as you made a big deal about the brokenness of any pre-popped balloons, we can treat the data the same. But I agree that this is a reasonable yes/no question to include, for our own knowledge about how well the task was run.
- We chose the "start time" to be the moment the sentence or event BEGINS rather than ends because the length of the sentence prompt varied greatly, and sometimes child responses occurred during this lengthy sentence. We chose the "end time" to be the moment the end sentence begins as well, because they also varied in length, and so we don't give extra time to respond to any one child. Also, if the child physically comforted and we ended due to that, there is only 1 timeslice that will capture the physical comforting rather than 2 or more.
- Defining segments: correspondence between me and Jonathan on 9-11-14:
  Jackie: When coding which segment a behavior occurs in, should we code for what segment E SHOULD HAVE been in, or thesegment she actually was in? A few times,

Bonnie and I messed up during the 2 minutes and looked at the child at the beginning of segment 2 (second 30 seconds). Usually, we corrected ourselves by not looking again during that segment, but eye contact had already been made. So if a prosocial response occured in this segment (technically should have been segment 2, but it looked like segment 3 due to the eye contact), how would we code it?

Jonathan: Just to make sure I understand the question: you're referring to the segments (i.e., sections defined by you stating the problem, looking at the child, etc.) - not the time slices that we're doing just on comforting - right?

Assuming that's the case, there's unfortunately no easy answer here - but I guess that's why you're checking in with me! Either the segment coding becomes less accurate as a measure of time or less accurate as a measure of what supportive cues were provided to the child before any potential response.

IF you had turned your mistaken segment 2 into a full-on segment 3 (that is, by owning the eye contact and continuing to look to the child) I would definitely favor coding that as segment 3. But since you recovered and corrected by avoiding eye contact for the rest of that segment, it's less clear what to do.

The reason that making eye contact with the child is an important segment marker is that it could be taken as a nonverbal request for aid. Sometimes people are interested in how spontaneous the prosocial behavior is, and want to know whether it was provided prior to /any/ possible requests. But that's a somewhat conservative approach - many children may see you look without also inferring the nonverbal request.

So, as long as your instance of improper eye contact only happened once, I would lean towards counting it as segment 2, with segment 3 commencing when you subsequently initiate the appropriate bouts of looking to the child. But to be clear - there isn't a "right" thing to do; this is just what I'm suggesting.

If you go this route, I would request that you make a note of any subject where you or Bonnie made this mistake, and what the child subsequently did on that test event. Just like I earlier asked you to keep track of instances where the child touched you but the event didn't end, the aim is to be able to say more than that there were occasional deviations from procedure; rather, how many were there and how did these deviations influence the analysis?

For the current question, if you find that there are 5 instances where you two made this mistake, but all 5 kids don't act prosocially until at least the "true"segment 3, then this mistake had basically zero impact and wouldn't really affect how you discuss this measure or results. If all 5 kids helped you immediately after that first eye contact, then you'd probably want to consider more closely how those data points are influencing your analyses.

- Note about compensation: We had a lengthy discussion about why to make compensation be emo-focused, as long as its NOT relevant to the problem at hand. If it is relevant to the problem, it's a problem-focused solution. Jude thought that it unfairly "docked" kids who offered practical solutions whose intentions most likely were to improve E's emotions, whereas kids who offered random items would get the "better" code of emo-focused. After discussions, we decided to leave it as is, because there is no "better" code, and there is no code that should be more correlated with security or other positive stuff than the other code. Both are intended to make E feel better, and are highly prosocial...the only difference is the route the child takes to get there, whether it is via tools to solve the problem, or via a non-practical route. Both are good, both are important, and no one is being docked for problem-focused codes. They are just different methods that kids may use.

- We removed "asking for mom" from the definition of personal distress because there was overlap with the "mom mentioned" item. To be coded as PD, there must be other reasons above and beyond simply asking for mom, such as child was visibly upset or tone of voice was upset.
- Global score notes: We debated whether to have the trained coders do this, or whether to have people who weren't familiar with our codes do this.

Jonathan and my POV: I also am wondering why you would use the same coders to do the global scale. It seems as though we want to capture something distinctly different with the global scale than we are with all the specific codes. If we use coders who haven't already been trained to judge prosociality based on our list of bullet points, their brains might be more open to seeing things our bullet points have missed, or seeing them holistically rather than as a crude sum of the bullet points, and as a result, their code will more likely capture the nuances that our bullet points missed, and will more likely reflect what we hope a "global score" will - the qualitative impression of prosociality rather than some function of the quantitative parts. In other words, if we use the same people, the global score will just be the same info as the other stuff.

Jude's POV: She thinks the global score can capture some of the nuances that our coding scheme has missed, but that the trained coder noticed. It's better to have them be already trained because they know what we're looking for generally.

We also debated about whether to do the codes immediately after, or to wait a few weeks/months so that the global code could be something distinctly different, and the specific codes wouldn't heavily influence the global code. But Jude decided we should do it immediately afterward (she and Jonathan talked about it, I wasn't there for that meeting, so I don't know the reasons why). We can always go back and have them code globally again months later, if we decide it's worth their time.

- Note about Final timeslice for each task: If it's less than 10 seconds long, drop it from analyses. So drop all partial segments. We could also analyze everything with and without it later on to see if it makes a difference. We decided this on 9-17-14.

Appendix D: Coping with Toddlers' Negative Emotions Scale (CTNES)

When My Child is Upset
(CTNES)

Read each sentence about ways your child might act. Circle the number that tells how likely it is that you would respond to your child that way. Please read each item carefully. Respond as honestly as you can. For each question, circle one number for **each** item (a-g).

1. If my child becomes angry because he wants to play outside and cannot do so because he is sick, I would:

	Very Likely			Medium			Very Unlikely
a. Feel upset myself	1	2	3	4	5	6	7
b. Tell my child we will not get to do something else fun (e.g., watch TV, play games) unless he stops behaving like that	1	2	3	4	5	6	7
c. Tell my child it's ok to be angry	1	2	3	4	5	6	7
d. Soothe my child and/or do something with him to make him feel better	1	2	3	4	5	6	7
e. Help my child find something he wants to do inside	1	2	3	4	5	6	7
f. Tell my child that he is making a big deal out of nothing	1	2	3	4	5	6	7
g. Let my child play outside	1	2	3	4	5	6	7

2. If my child spilled something and made a big mess on the carpet, and then gets upset and cries, I would:

	Very Likely			Medium			Very Unlikely
a. Comfort my child by picking him up and/or trying to get him to forget about the accident	1	2	3	4	5	6	7
b. Tell my child that he is overreacting or making a big deal out of nothing	1	2	3	4	5	6	7
c. Remain calm and not let myself get upset	1	2	3	4	5	6	7
d. Send my child to his room for making a mess	1	2	3	4	5	6	7
e. Help my child find a way to clean up the mess	1	2	3	4	5	6	7
f. Tell my child that it is ok to be upset	1	2	3	4	5	6	7

3. If my child loses a favorite toy (for example, favorite blanket or stuffed animal) and reacts with tears, I would:

	Very Likely			Medium			Very Unlikely
a. Go and buy my child a new item	1	2	3	4	5	6	7
b. Help my child think of other places to look for the toy	1	2	3	4	5	6	7
c. Distract my child with another toy to make him feel better	1	2	3	4	5	6	7
d. Tell my child that it is not that important	1	2	3	4	5	6	7
e. Tell my child it is his fault for not being careful with the toy	1	2	3	4	5	6	7

f. Feel upset myself	1	2	3	4	5	6	7
g. Tell my child it is okay to feel sad about the loss	1	2	3	4	5	6	7

4. If my child is afraid of going to the doctor or of getting shots and becomes quite shaky and teary, I would:

	Very Likely			Medium			Very Unlikely
a. Tell him to shape up or he won't be allowed to do something he likes to do (for example, go to playground)	1	2	3	4	5	6	7
b. Tell my child that it is ok to be nervous or afraid	1	2	3	4	5	6	7
c. Tell my child that it's really no big deal	1	2	3	4	5	6	7
d. Comfort my child before and/or after the shot	1	2	3	4	5	6	7
e. Leave the doctor's office and reschedule for another time	1	2	3	4	5	6	7
f. Help him think of ways to make it less scary, like squeezing my hand when he gets a shot	1	2	3	4	5	6	7

g. Get nervous myself	1	2	3	4	5	6	7

5. If my child is going to spend the afternoon with a new babysitter and becomes nervous and upset because I am leaving him, I would:

	Very Likely			Medium			Very Unlikely
a. Distract my child by playing and talking about all of the fun he will have with the sitter	1	2	3	4	5	6	7
b. Feel upset or uncomfortable because of my child's reactions	1	2	3	4	5	6	7
c. Tell my child that he won't get to do something else enjoyable (like go to playground) if he doesn't stop behaving like that	1	2	3	4	5	6	7
d. Tell him that it's nothing to get upset about	1	2	3	4	5	6	7

e. Change my plans and decide not to leave my child with the sitter	1	2	3	4	5	6	7
f. Help my child think of things to do that will make it less stressful, like me calling him once during the evening	1	2	3	4	5	6	7
g. Tell my child that it's ok to be upset	1	2	3	4	5	6	7

6. If my child becomes upset and cries because he is left alone in his bedroom to go to sleep, I would:

	Very Likely			Medium			Very Unlikely
a. Become upset myself	1	2	3	4	5	6	7
b. Tell my child that if he doesn't stop crying, we won't do something fun when he wakes up	1	2	3	4	5	6	7

c. Tell my child it's okay to cry when he is sad	1	2	3	4	5	6	7
d. Soothe my child with a hug or kiss	1	2	3	4	5	6	7
e. Help my child find ways to deal with my absence (hold a favorite stuffed animal, turn on a nightlight, etc)	1	2	3	4	5	6	7
f. Stay with my child or take him out of the bedroom to be with me until he falls asleep	1	2	3	4	5	6	7
g. Tell him that there is nothing to be afraid of	1	2	3	4	5	6	7

7. If my child becomes angry because he is not allowed to have a snack (i.e., candy, ice cream) when he wants it, I would:

	Very Likely			Medium			Very Unlikely
	1	2	3	4	5	6	7
a. Send my child to his room							

b. Give my child the snack that he wanted	1	2	3	4	5	6	7
c. Distract child by playing with other toys or games	1	2	3	4	5	6	7
d. Tell him that there is no reason to be upset	1	2	3	4	5	6	7
e. Tell my child it's okay to feel angry	1	2	3	4	5	6	7
f. Help my child think of something to eat that he is allowed to have between meals	1	2	3	4	5	6	7
g. Feel angry at my child's behavior	1	2	3	4	5	6	7

8. If my child becomes upset because I removed something that my child should have not been playing with, I would:

	Very Likely			Medium			Very Unlikely
a. Tell my child that if he touches it again he will not be allowed to do something enjoyable	1	2	3	4	5	6	7
b. Help my child think of something else to do that is fun	1	2	3	4	5	6	7
c. Become upset myself	1	2	3	4	5	6	7
d. Tell my child it's okay to feel angry	1	2	3	4	5	6	7
e. Distract my child with something else interesting	1	2	3	4	5	6	7
f. Give my child what he wants	1	2	3	4	5	6	7

g. Ignore my child's upset reactions and take the object away	1	2	3	4	5	6	7

9. If my child wants me to play with him and I cannot do so right then (i.e., I am on the phone, in the middle of a conversation with someone), and my child becomes upset, I would:

	Very Likely			Medium			Very Unlikely
a. Feel upset myself	1	2	3	4	5	6	7
b. Tell my child that there is nothing to be upset about	1	2	3	4	5	6	7
c. Help my child find something to do while he waits for me to play with him	1	2	3	4	5	6	7
d. Tell my child I won't play with him later if he doesn't stop behaving like that	1	2	3	4	5	6	7
e. Tell my child it's okay to be upset	1	2	3	4	5	6	7
f. Stop what I'm doing so I can play with my child	1	2	3	4	5	6	7

g. Soothe my child and talk to him to make him feel better	1	2	3	4	5	6	7

10. If my child is playing with a puzzle or shape sorter toy and cannot fit a piece correctly, and gets upset and cries, I would:

	Very Likely			Medium			Very Unlikely
a. Remain calm and not let myself get anxious	1	2	3	4	5	6	7
b. Take the toy away from my child	1	2	3	4	5	6	7
c. Comfort my child with a pat or a kiss	1	2	3	4	5	6	7
d. Put the piece in for my child	1	2	3	4	5	6	7
e. Tell my child it's okay to get frustrated and upset	1	2	3	4	5	6	7

f. Help my child figure out how to put the piece in correctly	1	2	3	4	5	6	7
g. Tell my child it's nothing to cry about	1	2	3	4	5	6	7

11. If my child has climbed onto a piece of playground equipment and gets stuck, and becomes nervous and begins to cry, I would:

	Very Likely			Medium			Very Unlikely
a. Become anxious myself	1	2	3	4	5	6	7
b. Help my child figure out how to get down from the climber	1	2	3	4	5	6	7

c. Take my child down from the climber	1	2	3	4	5	6	7
d. Tell my child he shouldn't have gone up by himself	1	2	3	4	5	6	7
e. Tell my child its nothing to get upset about	1	2	3	4	5	6	7
f. Comfort my child with words or a pat	1	2	3	4	5	6	7
g. Tell my child it's okay to be afraid	1	2	3	4	5	6	7

12. If my child fell down and scraped himself while trying to get a favorite toy, I would:

	Very Likely			Medium			Very Unlikely
a. Become upset myself	1	2	3	4	5	6	7
b. Help my child figure out how to feel better (getting a band-aid)	1	2	3	4	5	6	7
c. Distract my child with something else	1	2	3	4	5	6	7
d. Tell my child that he should be more careful	1	2	3	4	5	6	7
e. Tell my child its nothing to get upset about	1	2	3	4	5	6	7
f. Tell my child it's okay to cry	1	2	3	4	5	6	7

Appendix E: Supplemental Results

Supplemental Results

For *presence of sharing (with experimenter),* there was a significant main effect of child sex, $\beta = .134$, $t(126) = 2.13$, $p = .033$, in which girls shared more than boys. This overall model explained a significant amount of total variance, $R^2 = .12$, $F(8, 128) = 2.16$, $p = .031$. There was also the significant three-way interaction, $\beta = -.025$, $t(126) = -2.45$, $p = .014$. I attempted to interpret the interaction using the test for differences between slopes, but the covariances between the interaction terms were so small that they were not able to be computed. However, because the interaction term did significantly predict the outcome, and the AIC value of the model indicated a better fit for the data, and the Wald Test indicated significance, I can conclude that there is indeed an interaction between Supportive PRD, child age, and child sex. In order to interpret the interaction, I plotted the data using procedures from Aiken and West (1991), as recommended by Dawson (2014), and visually examined the plot for patterns (see Figure 4). Among girls, Supportive PRD did not relate strongly to *presence of sharing (with experimenter)* for either older or younger girls. Among boys, however, Supportive PRD related in different ways to sharing depending on the child's age: It positively related to likelihood of sharing for older boys, and negatively related to likelihood of sharing for younger boys.

For *spontaneity of sharing (with experimenter)*, there was a significant main effect for intervention status, $\beta = -.390$, $t(126) = -2.35$, $p = .019$, such that children whose parents attended the intervention shared less spontaneously. There was also a main effect for child sex, $\beta = .42$, $t(126) = 2.35$, $p = .019$, in which girls shared more spontaneously than boys. There was also the significant three-way interaction between Supportive PRD, child age, and child sex in predicting *spontaneity of sharing*, $\beta = -.10$, $t(126) = -3.20$, $p = .001$. In addition, the overall model explained a significant amount of total variance in *spontaneity of sharing*, $R^2 = .17$, $F(9, 127) = 2.94$, $p = .003$. Tests of slope differences revealed significant differences in slopes between

younger and older boys (t=38.48, p<.001), and between older boys and older girls (t=-3.07, p=.003) and younger boys and younger girls (t=3.31, p=.001). In other words, the relation of Supportive PRD with sharing did not change with age for girls, but it did for boys: Younger boys shared less when their mothers reported greater Supportive PRD, but older boys shared more when their mothers reported greater Supportive PRD (see Figure 5). For girls of all ages, the slope of Supportive PRD and sharing spontaneity is flatter in general (i.e., the relation is less strong than it is for boys).

For *amount of sharing (with experimenter)*, the overall three-way interaction model explained a significant portion of the total variance, R^2 = .14, F(8, 128) = 2.60, p = .009. The three-way interaction between Supportive PRD, child age, and child sex was significant, β = -.02, t(127) = -2.49, p = .013. I attempted to interpret the interaction using the test for differences between slopes, but the covariances between the interaction terms were so small that they were not able to be computed. I used the same procedures as described above for the *presence of sharing* variable in order to plot and interpret the apparently significant interaction (see Figure 6). Once again, a pattern emerged in which Supportive PRD did not relate to *amount of sharing* for younger or older girls. Among boys, however, greater Supportive PRD was associated with more sharing in older boys, and with less sharing in younger boys.

For *global sharing (with experimenter)*, the overall three-way interaction model explained a significant portion of the variance, R^2 = .13, F(8, 128) = 2.21, p = .027. There was a marginally significant main effect for child sex in which girls tended to have a higher *global sharing* score than boys, β = -.02, t(127) = 1.93, p = .053. Plus, the three-way interaction between Supportive PRD, child age, and child sex was significant, β = -.14, t(127) = -2.90, p = .004. Tests of slope differences revealed significant differences in slopes between all combinations of sex and age (older girls, older boys, younger girls, younger boys), except for the

difference between older girls and younger boys. This pattern is similar to the pattern that emerged for the other sharing (with the experimenter) variables: Younger boys shared less when their mothers reported greater Supportive PRD, but older boys shared more when their mothers reported greater Supportive PRD (see Figure 7). For girls, the slopes were flatter in general (i.e., the relation is less strong than it is for boys), but there were still significant differences between older and younger girls. The pattern for girls was opposite the pattern for boys: Younger girls shared more when their mothers reported greater Supportive PRD, but older girls shared less when their mothers reported greater Supportive PRD.

Footnotes

[1] This trend did not emerge for comforting in response to an emotional need cue due to the fact that few infants responded to the unfamiliar adult experimenter's distress in either the experimental or the control conditions. The authors' interpreted this finding as being the result of short task lengths (i.e., 30 seconds), and the infants may have simply needed more time to respond in this emotional context (Dunfield, personal communication, April 28, 2015).

[2] In addition to the main analyses using Supportive PRD and Unsupportive PRD as predictors, I conducted secondary analyses using the individual subscales of each scale as predictors. Among 180 possible relations (6 subscales times 20 outcome variables), only 1 relation was significant. With an alpha value of 0.05, more significant relations would be expected by chance alone, and so this finding is likely spurious and not reported.

[3]The interactions involving PRD, child age, and child sex are as follows: First, all four sharing (with the experimenter) variables were predicted by a three-way interaction between Supportive PRD, child age, and child sex. Among older boys, more supportive responses related to more sharing, but among younger boys, it related to less sharing. Older and younger girls also showed different patterns of relations; however, these patterns were generally less strong (i.e., the slopes were flatter) than they were for boys, and the pattern was reversed: More supportive PRD predicted less sharing among older girls and more sharing among younger girls. Second, greater supportive PRD predicted less negativity for younger children, and more negativity for older children. Greater unsupportive PRD predicted more negativity for girls, and less negativity for boys. Third, unsupportive PRD predicted more distress for every combination of child age and sex, except for one: Among older girls, more unsupportive PRD predicted less distress. Finally, a three-way interaction predicting the amount shared (with another child) emerged, in which supportive PRD and child age moderated the relation of child sex on sharing. This interaction was not interpreted further, because the main predictor was child sex, rather than supportive PRD, and so the pattern was not of interest in the current study.

[4]In the present study's sample, Black children were not more likely to be from father-absent homes (χ (4)

= 1.96, p = .743). Interestingly, however, the children of mothers who reported being "single" rather than "in a steady relationship or married" were more likely to help the experimenter (using the *presence of helping* variable, r = -.237, p = .005). Therefore, both Black children and children whose mothers were not in a romantic relationship were more helpful, which is consistent with the findings of Richman and colleagues (1984, 1988).

Tables

Table 1

Hypothesized Direction of Relations between Parental Supportive/Unsupportive Responding and Child Prosocial Behaviors

Prosocial Outcome Variable	Supportive Responding to Child Distress	Unsupportive Responding to Child Distress
Comforting Behaviors	*Hypothesis 1* (+)	*Hypothesis 2* (-)
Concerned Attention	*Hypothesis 3* (+)	*Hypothesis 4* (-)
Personal Distress	*Hypothesis 5* (-)	*Hypothesis 6* (+)
Ignoring of Others' Distress	*Hypothesis 7* (-)	*Hypothesis 8* (+)
Antisocial (Negative) Behaviors	*Hypothesis 9* (-)	*Hypothesis 10* (+)
Instrumental Helping	*Hypothesis 11* (x)	*Hypothesis 12* (x)
Sharing	*Hypothesis 13* (+)	*Hypothesis 14* (-)

Note. (+) = positive relation. (-) = negative relation. (x) = no relation.

Table 2

Types of Outcome Variables and their Possible Ranges

	Type of Outcome Variable				
Type of Behavior	Presence	Spontaneity	Amount	Frequency	Global
Helping	(0 - 1)	(0 - 3)			(1 - 6)
Sharing (Toward Experimenter)	(0 - 1)	(0 - 3)	(0 - 1)		(1 - 7)
Sharing (Toward Child)	(0 - 1)		(0 - 1)		
Comforting		(0 - 4)		(0 - 1)	(1 - 5)
Concerned Attention				(0 - 1)	
Negativity	(0 - 1)	(0 - 4)		(0 - 1)	
Personal Distress	(0 - 1)	(0 - 4)		(0 - 1)	
Ignoring				(0 - 1)	

Table 3

Inter-coder Reliability of Outcome Variables(using Krippendorff's Alpha)

	Type of Outcome Variable				
Type of Behavior	Presence	Spontaneity	Amount	Frequency	Global
Helping	1.00	.98			.97
Sharing (Toward Experimenter)	1.00	.97	.99		.98
Sharing (Toward Child)	1.00		1.00		
Comforting		.77		.84	.89
Concerned Attention				.88	
Negativity	.69	.71		.78	
Personal Distress	.70	.70		.66	
Ignoring				.87	

Table 4

Means (and Standard Deviations) of Outcome Variables

	Type of Outcome Variable				
Type of Behavior	Presence	Spontaneity	Amount	Frequency	Global
Helping	.79 (.27)	2.00 (.82)	--	--	4.89 (1.09)
Sharing (Toward Experimenter)	.73 (.35)	1.92 (1.07)	.34 (.19)	--	5.32 (1.64)
Sharing (Toward Child)	.68 (.47)	--	6.19 (5.07)	--	--
Comforting	--	2.05 (1.01)	--	.19 (.12)	2.51 (1.10)
Concerned Attention	--	--	--	.44 (.16)	--
Negativity	.14 (.23)	.48 (.87)	--	.02 (.05)	--
Personal Distress	.09 (.21)	.23 (.58)	--	.02 (.07)	--
Ignoring	--	--	--	.32 (.18)	--

Table 5

Correlation Matrix for Predictors and Helping and Sharing Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Supportive PRD	-										
2. Unsupportive PRD	-.11	-									
3. Presence of Helping	-.13	-.06	-								
4. Spontaneity of Helping	-.09	-.05	.89**	-							
5. Global Helping	-.09	-.09	.91**	.93**	-						
6. Presence of Sharing (with child)	-.12	.01	-.13	-.09	-.10	-					
7. Amount of Sharing (with child)	-.06	.02	-.11	-.05	-.05	.85**	-				
8. Presence of Sharing (with experimenter)	.01	-.01	.25**	.33**	.33**	.04	.07	-			
9. Spontaneity of Sharing (with experimenter)	.01	.01	.26**	.36**	.36**	.08	.11	.94**	-		
10. Amount of Sharing (with experimenter)	-.01	.02	.25**	.33**	.32**	.11	.14	.88**	.87**	-	
11. Global Sharing	.04	-.05	.31**	.41**	.42**	.07	.10	.94**	.95**	.89**	-

Note. * $p <$ .05 ** $p <$ .01

Table 6

Correlation Matrix for Predictors and Comforting Task Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Supportive PRD	-												
2. Unsupportive PRD	-.11	-											
3. Frequency of Comforting	.10	.01	-										
4. Spontaneity of Comforting	.08	.07	.82**	-									
5. Global Comforting	.02	.02	.86**	.68**	-								
6. Frequency of Concerned Attention	-.06	-.00	.26**	.19*	.48**	-							
7. Frequency of Negativity	.05	-.03	-.05	.04	-.11	-.16	-						
8. Spontaneity of Negativity	.06	-.04	-.03	.06	-.16	-.21*	.82**	-					
9. Presence of Negativity	.06	-.03	-.00	.11	-.14	-.18*	.83**	.98**	-				
10. Frequency of Distress	-.08	.04	-.19*	-.17*	-.26**	-.14	-.01	.00	.01	-			
11. Spontaneity of Distress	-.07	.03	-.16	-.13	-.24**	-.13	.01	.01	.03	.86**	-		
12. Presence of Distress	-.09	.02	-.17*	-.11	-.24**	-.11	.05	.02	.04	.86**	.95**	-	
13. Frequency of Ignoring	-.04	.02	-.72**	-.60**	-.74**	-.67**	-.08	-.01	-.06	-.05	-.06	-.08	-

Note. * $p <$ .05 ** $p <$ .01

Figures

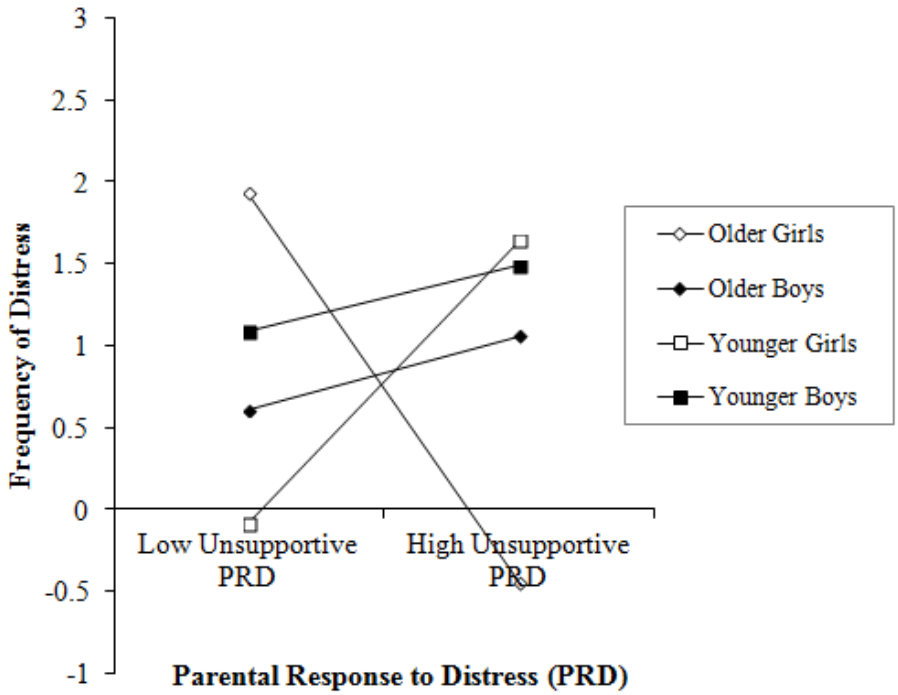

Figure 1. Three-way Interaction between Unsupportive PRD, Age of Child, and Sex of Child in Predicting Frequency of Distress

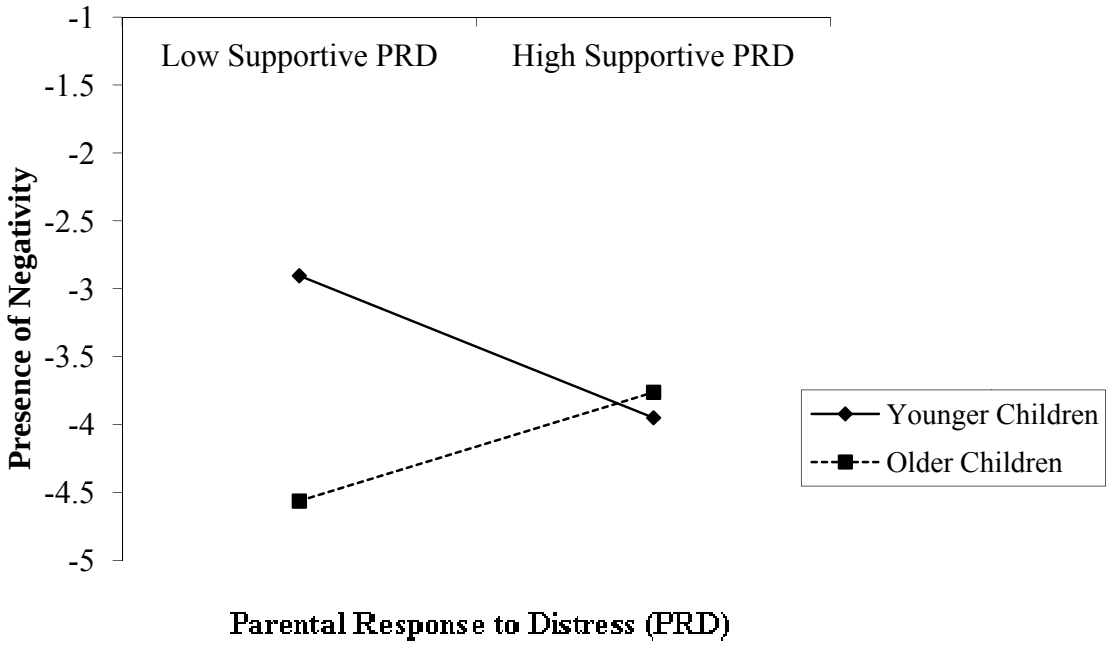

Figure 2. Two-way Interaction between Supportive PRD and Age of Child in Predicting Presence of Negativity

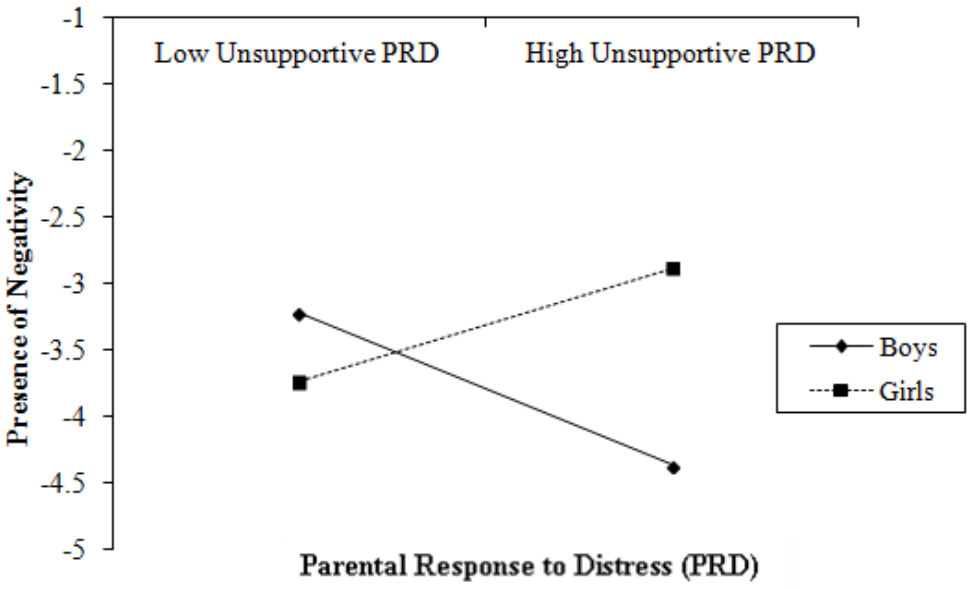

Figure 3. Two-way Interaction between Unsupportive PRD and Sex of Child in Predicting Presence of Negativity

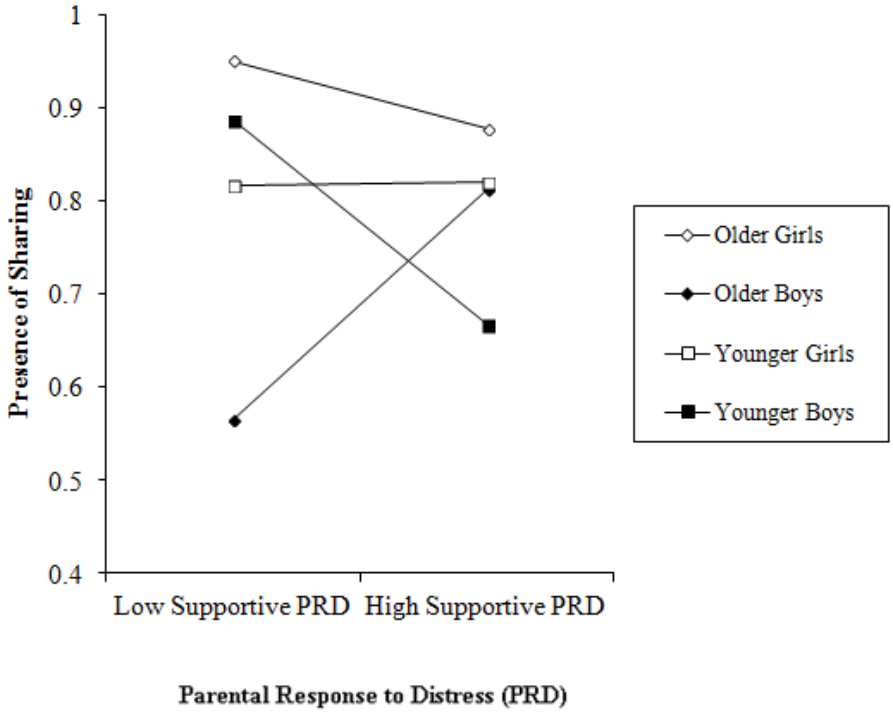

Figure 4. Three-way Interaction between Supportive PRD, Age of Child, and Sex of Child in Predicting Presence of Sharing (with Experimenter)

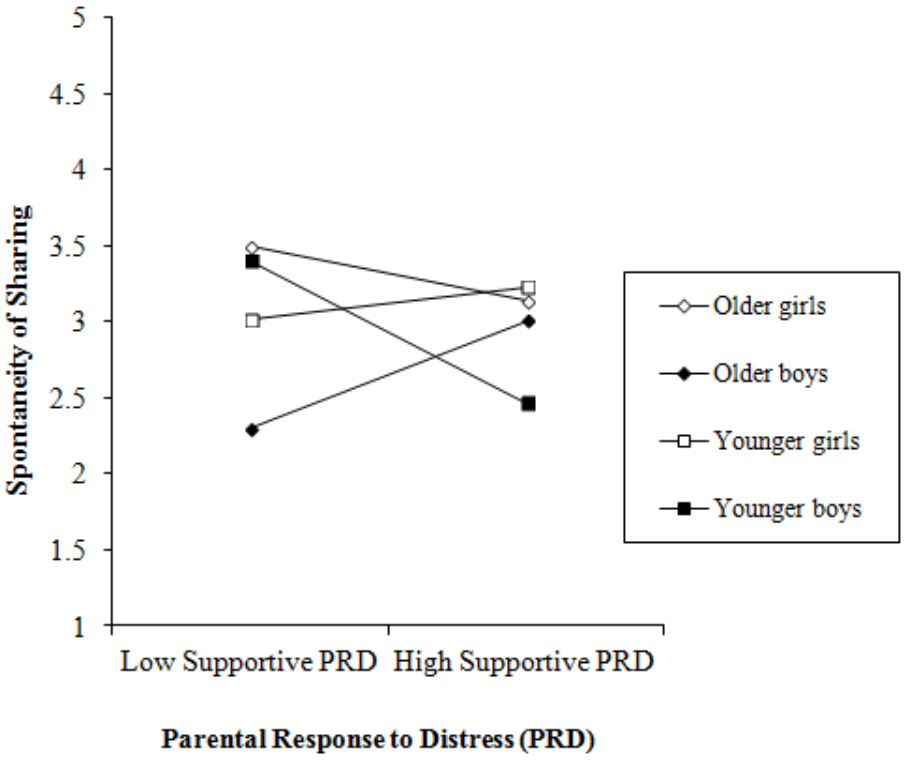

Figure 5. Three-way Interaction between Supportive PRD, Age of Child, and Sex of Child in Predicting Spontaneity of Sharing (with Experimenter)

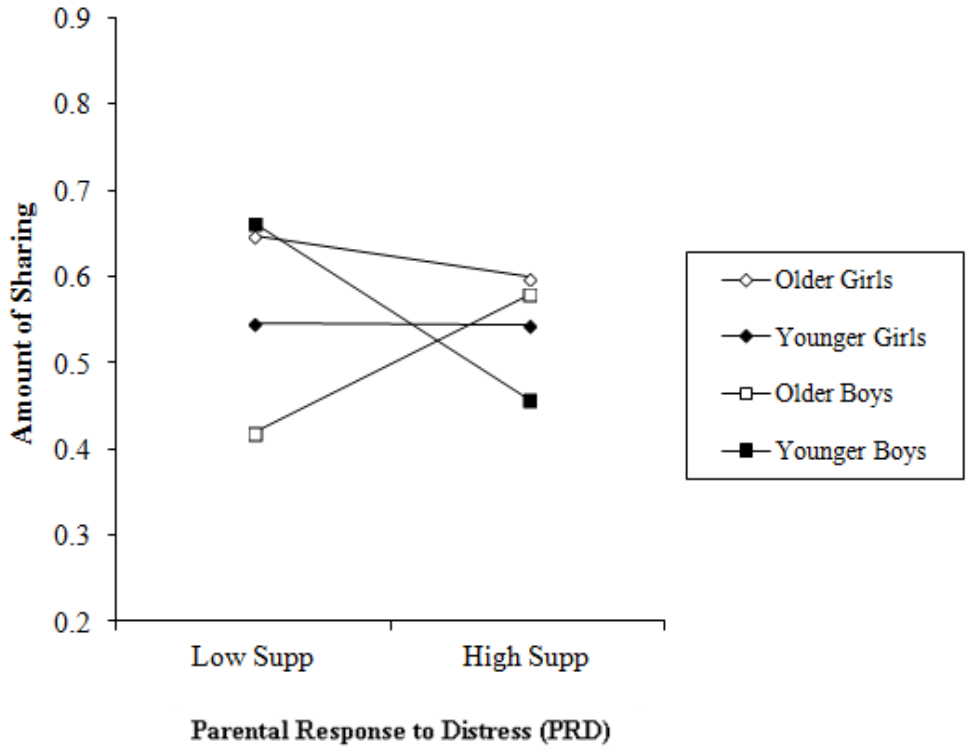

Figure 6. Three-way Interaction between Supportive PRD, Age of Child, and Sex of Child in Predicting Amount of Sharing (with Experimenter)

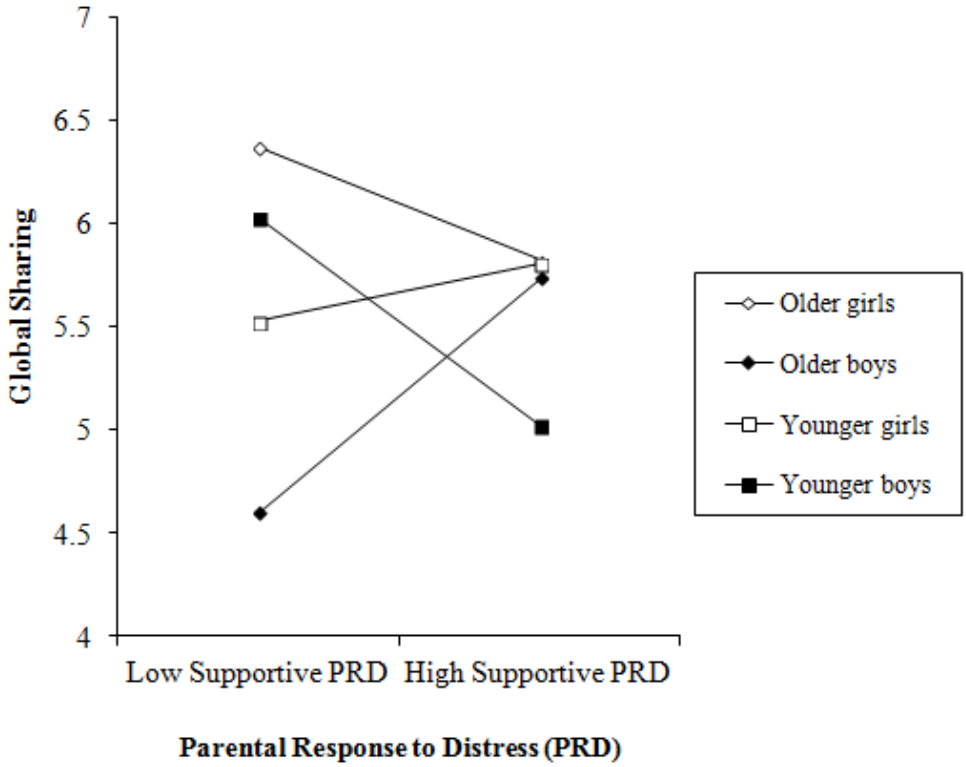

Figure 7. Three-way Interaction between Supportive PRD, Age of Child, and Sex of Child in Predicting Global Sharing (with Experimenter)

Bibliography

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, London, Sage.

Ainsworth, M. S. (1969). *Maternal care scales*. Unpublished manuscript. Retrievable as Maternal Sensitivity Scales from http://www.psychology.sunysb.edu/attachment/measures/content/ainsworth_scales.html.

Ainsworth, M. S., Bell, S. M., & Stayton, D. F. (1974). Infant-mother attachment and social development: Socialization as a product of reciprocal responsiveness to signals. In M. M. Richards, M. M. Richards (Eds.) , *The integration of a child into a social world* (pp. 99-135). New York, NY, US: Cambridge University Press.

Alessandri, G., Kanacri, B. L., Eisenberg, N., Zuffianò, A., Milioni, M., Vecchione, M., & Caprara, G. V. (2014). Prosociality during the transition from late adolescence to young adulthood: The role of effortful control and ego-resiliency. *Personality And Social Psychology Bulletin*, *40*(11), 1451-1465. doi:10.1177/0146167214549321

Batson, C. D. (1987). Prosocial motivation: Is it ever truly altruistic?. In L. Berkowitz, L. Berkowitz (Eds.) , *Advances in experimental social psychology*, Vol. 20 (pp. 65-122). San Diego, CA, US: Academic Press. doi:10.1016/S0065-2601(08)60412-8

Batson, C. D., Fultz, J., & Schoenrade, P. A. (1987). Distress and empathy: Two qualitatively distinct vicarious emotions with different motivational consequences. *Journal Of Personality, 55*(1), 19-39. doi:10.1111/j.1467-6494.1987.tb00426.x

Baumrind, D. (1968). Manual for the preschool behavior Q-Sort. Institute of Human Development, University of California, Berkeley.

Berlin, L. J., Ispa, J. M., Fine, M. A., Malone, P. S., Brooks-Gunn, J., Brady-Smith, C., & ... Bai, Y. (2009). Correlates and consequences of spanking and verbal punishment for low-income White,

African American, and Mexican American toddlers. *Child Development, 80*(5), 1403-1420. doi:10.1111/j.1467-8624.2009.01341.x

Bernier, A., Matte-Gagné, C., Bélanger, M., & Whipple, N. (2014). Taking stock of two decades of attachment transmission gap: Broadening the assessment of maternal behavior. *Child Development, 85*(5), 1852-1865.

Bischof-Köhler, D. (2012). Empathy and self-recognition in phylogenetic and ontogenetic perspective. *Emotion Review, 4*(1), 40-48. doi:10.1177/1754073911421377

Blake, P. R., & Rand, D. G. (2010). Currency value moderates equity preference among young children. *Evolution And Human Behavior, 31*(3), 210-218. doi:10.1016/j.evolhumbehav. 2009.06.012

Bowlby, J. (1973). *Attachment and loss: Vol. 2, Separation*. New York: Basic Books.

Brownell, C. A., Svetlova, M., Anderson, R., Nichols, S. R., & Drummond, J. (2013). Socialization of early prosocial behavior: Parents' talk about emotions is associated with sharing and helping in toddlers. *Infancy*, *18*(1), 91-119.

Bryant, B. K. (1987). Mental health, temperament, family, and friends: Perspectives on children's empathy and social perspective taking. In N. Eisenberg, J. Strayer, N. Eisenberg, J. Strayer (Eds.), *Empathy and its development* (pp. 245-270). New York, NY, US: Cambridge University Press.

Buck, R. (1984). The communication of emotion. New York: Guilford Press.

Butler, E. A., Lee, T. L., & Gross, J. J. (2007). Emotion regulation and culture: Are the social consequences of emotion suppression culture-specific?. *Emotion, 7*(1), 30-48. doi:10.1037/1528-3542.7.1.30

Carlo, G., McGinley, M., Hayes, R., Batenhorst, C., & Wilkinson, J. (2007). Parenting styles or practices? Parenting, sympathy, and prosocial behaviors among adolescents. *The Journal Of Genetic Psychology: Research And Theory On Human Development, 168*(2), 147-176. doi:10.3200/GNTP.168.2.147-176

Carter, Briggs-Gowan, Jones, & Little (2003). The Infant-Toddler Social and Emotional Assessment (ITSEA): Factor Structure, Reliability, and Validity. *Journal of Abnormal Child Psychology, 31*(5), 495-514.

Cassidy, J. & Marvin, R.S., with the MacArthur Working Group (1992). Attachment organization in preschool children: Procedures and coding manual (4th ed.) Unpublished manuscript, University of Virginia.

Chan, S. M. (2011). Social competence of elementary-school children: Relationships to maternal authoritativeness, supportive maternal responses and children's coping strategies. *Child: Care, Health And Development, 37*(4), 524-532. doi:10.1111/j.1365-2214.2010.01196.x

Chen, X., Chung, J., Lechcier-Kimel, R., & French, D. (2011). Culture and social development. In P. K. Smith, C. H. Hart (Eds.) , *The Wiley-Blackwell handbook of child social development* (2nd edition). (pp. 99-135). Malden, MA: Blackwell Publishing Ltd.

Christie-Mizell, C. A., Pryor, E. M., & Grossman, E. B. (2008). Child depressive symptoms, spanking, and emotional support: Differences between African American and European American youth. *Family Relations: An Interdisciplinary Journal Of Applied Family Studies, 57*(3), 335-350. doi:10.1111/j.1741-3729.2008.00504.x

Clark, K. E., & Ladd, G. W. (2000). Connectedness and autonomy support in parent–child relationships: Links to children's socioemotional orientation and peer relationships. *Developmental Psychology*, *36*(4), 485-498.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.

Coie, J., Terry, R., Underwood, M., & Dodge, K. (1990). Teacher Checklist of Social Behavior. Unpublished manuscript.

Davis, E. L., & Buss, K. A. (2012). Moderators of the relation between shyness and behavior with peers: Cortisol dysregulation and maternal emotion socialization. *Social Development, 21*(4), 801-820. doi:10.1111/j.1467-9507.2011.00654.x

Davis, M. H. (1980, January). Individual differences in empathy: A multidimensional approach. *Dissertation Abstracts International, 40*, 3480.

Davidov, M., & Grusec, J. E. (2006). Untangling the Links of Parental Responsiveness to Distress and Warmth to Child Outcomes. *Child Development, 77*(1), 44-58. doi:10.1111/j.1467-8624.2006.00855.x

Dawson, J. F. (2014). Moderation in management research: What, why, when and how. *Journal of Business and Psychology, 29*, 1-19.

Dawson, J. F., & Richter, A. W. (2006). Probing three-way interactions in moderated multiple regression: Development and application of a slope difference test. *Journal of Applied Psychology, 91*, 917-926.

Decety, J., & Svetlova, M. (2012). Putting together phylogenetic and ontogenetic perspectives on empathy. *Developmental Cognitive Neuroscience, 2*(1), 1-24. doi:10.1016/j.dcn.2011.05.003

del Carmen, R., Pedersen, F. A., Huffman, L. C., & Bryan, Y. E. (1993). Dyadic distress management predicts subsequent security of attachment. *Infant Behavior & Development, 16*(2), 131-147.

Denham, S. A. (1994). Mother-child emotional communication and preschoolers' security of attachment and dependency. *The Journal Of Genetic Psychology: Research And Theory On Human Development, 155*(1), 119-121. doi:10.1080/00221325.1994.9914765

Denham, S. A. (1997). 'When I have a bad dream mommy holds me': Preschoolers' conceptions of emotions, parental socialisation, and emotional competence. *International Journal Of Behavioral Development, 20*(2), 301-319. doi:10.1080/016502597385351

Denham, S. A., Mitchell-Copeland, J., Strandberg, K., Auerbach, S., & Blair, K. (1997). Parental contributions to preschoolers' emotional competence: Direct and indirect effects. *Motivation And Emotion, 21*(1), 65-86. doi:10.1023/A:1024426431247

Diamond, L. M., Fagundes, C. P., & Butterworth, M. R. (2011). Attachment style, vagal tone, and empathy during mother–adolescent interactions. *Journal Of Research On Adolescence, 22*(1), 165-184. doi:10.1111/j.1532-7795.2011.00762.x

Dunfield, K. A., & Kuhlmeier, V. A. (2013). Classifying prosocial behavior: Children's responses to instrumental need, emotional distress, and material desire. *Child Development*, *84*(5), 1766-1776.

Dunfield, K., Kuhlmeier, V. A., O'Connell, L., & Kelley, E. (2011). Examining the diversity of prosocial behavior: Helping, sharing, and comforting in infancy. *Infancy, 16*(3), 227-247. doi:10.1111/j.1532-7078.2010.00041.x

Eisenberg, N. (2010). Empathy-related responding: Links with self-regulation, moral judgment, and moral behavior. In M. Mikulincer, P. R. Shaver, M. Mikulincer, P. R. Shaver (Eds.) , *Prosocial motives, emotions, and behavior: The better angels of our nature* (pp. 129-148). Washington, DC, US: American Psychological Association. doi:10.1037/12061-007

Eisenberg, N., & Fabes, R. A. (1990). Empathy: Conceptualization, measurement, and relation to prosocial behavior. *Motivation And Emotion, 14*(2), 131-149. doi:10.1007/BF00991640

Eisenberg, N., & Fabes, R. A. (1994). Mothers' reactions to children's negative emotions: Relations to children's temperament and anger behavior. *Merrill-Palmer Quarterly, 40*(1), 138-156.

Eisenberg, N., & Fabes, R. A. (1995). The relation of young children's vicarious emotional responding to social competence, regulation, and emotionality. *Cognition And Emotion, 9*(2-3), 203-228. doi:10.1080/02699939508409009

Eisenberg, N., & Fabes, R. A. (1998). Prosocial development. In N. Eisenberg, N. Eisenberg (Eds.) , *Handbook of child psychology: Vol. 3, Social, emotional, and personality development* (6th ed.) (pp. 701-778). Hoboken, NJ, US: John Wiley & Sons Inc.

Eisenberg, N., Fabes, R. A., Carlo, G., Speer, A. L., Switzer, G., Karbon, M., & Troyer, D. (1993). The relations of empathy-related emotions and maternal practices to children's comforting behavior. *Journal Of Experimental Child Psychology, 55*(2), 131-150. doi:10.1006/jecp.1993.1007

Eisenberg, N., Fabes, R. A., Carlo, G., Troyer, D., Speer, A. L., Karbon, M., & Switzer, G. (1992). The relations of maternal practices and characteristics to children's vicarious emotional responsiveness. *Child Development, 63*(3), 583-602. doi:10.2307/1131348

Eisenberg, N., Fabes, R. A., Miller, P. A., Fultz, J., Shell, R., Mathy, R. M., & Reno, R. R. (1989). Relation of sympathy and personal distress to prosocial behavior: A multimethod study. *Journal Of Personality And Social Psychology, 57*(1), 55-66. doi:10.1037/0022-3514.57.1.55

Eisenberg, N., Fabes, R., Miller, P. A., & Shell, R. (1990). Preschoolers' vicarious emotional responding and their situational and dispositional prosocial behavior. *Merrill-Palmer Quarterly, 36*(4), 507-529.

Eisenberg, N., Fabes, R. A., & Murphy, B. C. (1996). Parents' reactions to children's negative emotions: Relations to children's social competence and comforting behavior. *Child Development, 67*(5), 2227-2247. doi:10.2307/1131620

Eisenberg, N., Fabes, R. A., Schaller, M., Miller, P., Carlo, G., Poulin, R., & ... Shell, R. (1991). Personality and socialization correlates of vicarious emotional responding. *Journal Of Personality And Social Psychology, 61*(3), 459-470. doi:10.1037/0022-3514.61.3.459

Eisenberg, N., Fabes, R. A., Shepard, S. A., Guthrie, I. K., Murphy, B. C., & Reiser, M. (1999a). Parental reactions to children's negative emotions: Longitudinal relations to quality of children's social functioning. *Child Development, 70*(2), 513-534. doi:10.1111/1467-8624.00037

Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial Development. In N. Eisenberg, W. Damon, R. M. Lerner, N. Eisenberg, W. Damon, R. M. Lerner (Eds.) , *Handbook of child psychology: Vol. 3, Social, emotional, and personality development* (6th ed.) (pp. 646-718). Hoboken, NJ, US: John Wiley & Sons Inc.

Eisenberg, N., Guthrie, I. K., Murphy, B. C., Shepard, S. A., Cumberland, A., & Carlo, G. (1999b). Consistency and development of prosocial dispositions: A longitudinal study. *Child Development, 70*(6), 1360-1372. doi:10.1111/1467-8624.00100

Eisenberg, N., Michalik, N., Spinrad, T. L., Hofer, C., Kupfer, A., Valiente, C., & ... Reiser, M. (2007). The relations of effortful control and impulsivity to children's sympathy: A longitudinal study. *Cognitive Development, 22*(4), 544-567. doi:10.1016/j.cogdev. 2007.08.003

Eisenberg, N., Spinrad, T. L., Eggum, N. D., Silva, K. M., Reiser, M., Hofer, C., & ... Michalik, N. (2010). Relations among maternal socialization, effortful control, and maladjustment in early childhood. *Development And Psychopathology, 22*(3), 507-525. doi:10.1017/S0954579410000246

Engle, J. M., & McElwain, N. L. (2011). Parental reactions to toddlers' negative emotions and child negative emotionality as correlates of problem behavior at the age of three. *Social Development, 20*(2), 251-271. doi:10.1111/j.1467-9507.2010.00583.x

Fabes, R. A., Eisenberg, N., Karbon, M., Troyer, D., & Switzer, G. (1994). The relations of children's emotion regulation to their vicarious emotional responses and comforting behaviors. *Child Development, 65*(6), 1678-1693. doi:10.2307/1131287

Fabes, R. A., Leonard, S. A., Kupanoff, K., & Martin, C. L. (2001). Parental coping with children's negative emotions: Relations with children's emotional and social responding. *Child Development, 72*(3), 907-920. doi:10.1111/1467-8624.00323

Fabes, R. A., Poulin, R. E., Eisenberg, N., & Madden-Derdich, D. A. (2002). The Coping with Children's Negative Emotions Scale (CCNES): Psychometric properties and relations with children's emotional competence. *Marriage & Family Review, 34*(3-4), 285-310. doi:10.1300/J002v34n03_05

Garner, P. W. (2006). Prediction of prosocial and emotional competence from maternal behavior in African American preschoolers. *Cultural Diversity and Ethnic Minority Psychology*, *12*(2), 179-198.

Garner, P. W., Jones, D. C., & Miner, J. L. (1994). Social competence among low-income preschoolers: Emotion socialization practices and social cognitive correlates. *Child Development, 65*(2), 622-637. doi:10.2307/1131405

Gentzler, A. L., Contreras-Grau, J. M., Kerns, K. A., & Weimer, B. L. (2005). Parent-child emotional communication and children's coping in middle childhood. *Social Development, 14*(4), 591-612. doi:10.1111/j.1467-9507.2005.00319.x

George, M. W., Cummings, E. M., & Davies, P. T. (2010). Positive aspects of fathering and mothering, and children's attachment in kindergarten. *Early Child Development And Care, 180*(1-2), 107-119. doi:10.1080/03004430903414752

Gershoff, E. T., Lansford, J. E., Sexton, H. R., Davis-Kean, P., & Sameroff, A. J. (2012). Longitudinal links between spanking and children's externalizing behaviors in a national sample of White, Black, Hispanic, and Asian American families. *Child Development, 83*(3), 838-843. doi:10.1111/j.1467-8624.2011.01732.x

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348-362. doi:10.1037/0022-3514.85.2.348

Grusec, J. E. (1991). Socializing concern for others in the home. *Developmental Psychology, 27*(2), 338-342. doi:10.1037/0012-1649.27.2.338

Grusec, J.E., Hastings, P.D., & Almas, A. (2011). Helping and prosocial behavior. In C. Hart, P. Smith (Eds.) , *Handbook of childhood social development,* 2nd ed. (pp. 549-566). Malden, MA: Wiley-Blackwell.

Gudmundson, J. A., & Leerkes, E. M. (2012). Links between mothers' coping styles, toddler reactivity, and sensitivity to toddler's negative emotions. *Infant Behavior & Development, 35*(1), 158-166. doi:10.1016/j.infbeh.2011.07.004

Gummerum, M., Hanoch, Y., Keller, M., Parsons, K., & Hummel, A. (2010). Preschoolers' allocations in the dictator game: The role of moral emotions. *Journal Of Economic Psychology, 31*(1), 25-34. doi:10.1016/j.joep.2009.09.002

Halberstadt, A. G., Craig, A. B., Lozada, F. T., & Brown, G. L. (2011, April). *Parents' beliefs, behaviors, and the relationships between them: Differences and similarities by ethnicity and education.* Symposium presentation presented at the biennial meeting of the Society for Research in Child Development, Montreal, CA.

Handlon, B. J., & Gross, P. (1959). The development of sharing behavior. *The Journal Of Abnormal And Social Psychology, 59*(3), 425-428. doi:10.1037/h0040555

Hastings, P. D., Rubin, K. H., & DeRose, L. (2005). Links among gender, inhibition, and parental socialization in the development of prosocial behavior. *Merrill-Palmer Quarterly, 51*(4), 467-493. doi:10.1353/mpq.2005.0023

Hay, D. F., Castle, J., Davies, L., Demetriou, H., & Stimson, C. A. (1999). Prosocial action in very early childhood. *Journal Of Child Psychology And Psychiatry, 40*(6), 905-916. doi:10.1111/1469-7610.00508

Hay, D. F., & Cook, K. V. (2007). The transformation of prosocial behavior from infancy to childhood. In C. A. Brownell, C. B. Kopp, C. A. Brownell, C. B. Kopp (Eds.) , *Socioemotional development in the toddler years: Transitions and transformations* (pp. 100-131). New York, NY, US: Guilford Press.

Hay, D. F., & Rheingold, H. L. (1983). The early appearance of some valued social behaviors. In D. L. Bridgeman (Ed.). *The nature of prosocial development: Interdisciplinary theories and strategies* (pp. 73-94). New York: Academic Press.

Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures, 1*, 77-89.

Hepach, R., Vaish, A., & Tomasello, M. (2015, March). *Measures underlying motives of prosocial behavior via changes in internal arousal*. Poster session presented at the biennial meetings of the Society for Research in Child Development, Philadelphia, PA.

Hoffman, M. L. (1982). Affect and moral development. *New Directions For Child Development*, 1683-103. doi:10.1002/cd.23219821605

Hoffman, M. L. (2007). The origins of empathic morality in toddlerhood. In C. A. Brownell, C. B. Kopp, C. A. Brownell, C. B. Kopp (Eds.) , *Socioemotional development in the toddler years: Transitions and transformations* (pp. 132-145). New York, NY, US: Guilford Press.

Holmgren, R. A., Eisenberg, N., & Fabes, R. A. (1998). The relations of children's situational empathy-related emotions to dispositional prosocial behaviour. *International Journal Of Behavioral Development, 22*(1), 169-193. doi:10.1080/016502598384568

Hutman, T., & Dapretto, M. (2009). The emergence of empathy during infancy. *Cognition, Brain, Behavior: An Interdisciplinary Journal, 13*(4), 367-390.

Johnson, S. C., Dweck, C. S., & Dunfield, K. A. (2013). How universals and individual differences can inform each other: The case of social expectations in infancy. In M. R. Banaji, S. A. Gelman, M. R. Banaji, S. A. Gelman (Eds.) , *Navigating the social world: What infants, children, and other species can teach us* (pp. 44-48). New York, NY, US: Oxford University Press. doi:10.1093/acprof:oso/9780199890712.003.0009

Jones, S., Eisenberg, N., Fabes, R. A., & MacKinnon, D. P. (2002). Parents' reactions to elementary school children's negative emotions: Relations to social and emotional functioning at school. *Merrill-Palmer Quarterly, 48*(2), 133-159. doi:10.1353/mpq.2002.0007

Kahneman, D., Knetsch, J. L., & Thaler, R. H. (1986). Fairness and the assumptions of economics. *Journal of Business, 59*(4), S285-S300. doi: 10.1086/296367

Kanacri, B. L., Pastorelli, C., Eisenberg, N., Zuffianò, A., & Caprara, G. V. (2013). The development of prosociality from adolescence to early adulthood: The role of effortful control. *Journal Of Personality, 81*(3), 302-312. doi:10.1111/jopy.12001

Kang, S. K., & Chasteen, A. L. (2009). Beyond the double-jeopardy hypothesis: Assessing emotion on the faces of multiply-categorizable targets of prejudice. *Journal of Experimental Social Psychology, 45*(6), 1281-1285. doi:10.1016/j.jesp.2009.07.002

Kärtner, J., Keller, H., & Chaudhary, N. (2010). Cognitive and social influences on early prosocial behavior in two sociocultural contexts. *Developmental Psychology, 46*(4), 905-914. doi:10.1037/a0019718

Kenward, B., Hellmer, K., Winter, L. S., & Eriksson, M. (2015). Four-year-olds' strategic allocation of resources: Attempts to elicit reciprocation correlate negatively with spontaneous helping. *Cognition, 13*(6), 1-8. doi:10.1016/j.cognition.2014.11.035

Kestenbaum, R., Farber, E., & Sroufe, L. A. (1989). Individual differences in empathy among preschoolers: Relation to attachment history. In N. Eisenberg (Ed.) , *Empathy and related emotional responses*. San Francisco: Jossey-Bass.

Kochanska, G. (2002). Mutually responsive orientation between mothers and their young children: A context for the early development of conscience. *Current Directions in Psychological Science*, *11*(6), 191-195.

Ladd, G. W., & Profilet, S. M. (1996). The Child Behavior Scale: A teacher-report measure of young children's aggressive, withdrawn, and prosocial behaviors. *Developmental Psychology, 32*(6), 1008-1024. doi:10.1037/0012-1649.32.6.1008

Lau, A. S., Litrownik, A. J., Newton, R. R., Black, M. M., & Everson, M. D. (2006). Factors affecting the link between physical discipline and child externalizing problems in Black and White families. *Journal Of Community Psychology, 34*(1), 89-103. doi:10.1002/jcop.20085

Leerkes, E. M., Parade, S. H., & Gudmundson, J. A. (2011). Mothers' emotional reactions to crying pose risk for subsequent attachment insecurity. *Journal Of Family Psychology, 25*(5), 635-643. doi:10.1037/a0023654

Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human Communication Research, 28*(4), 587-604. doi:10.1111/j.1468-2958.2002.tb00826.x

Luebbe, A. M., Kiel, E. J., & Buss, K. A. (2011). Toddlers' context-varying emotions, maternal responses to emotions, and internalizing behaviors. *Emotion, 11*(3), 697-703. doi:10.1037/a0022994

Maccoby, E. E. (1992). The role of parents in the socialization of children: An historical overview. *Developmental Psychology*, *28*(6), 1006-1017.

Martin, A., & Olson, K. R. (2015). Beyond good and evil: What motivations underlie children's prosocial behavior?. *Perspectives on Psychological Science, 10*(2), 159-175. doi:10.1177/1745691615568998

McElwain, N. L., Halberstadt, A. G., & Volling, B. L. (2007). Mother- and father-reported reactions to children's negative emotions: Relations to young children's emotional understanding and friendship quality. *Child Development, 78*(5), 1407-1425. doi:10.1111/j.1467-8624.2007.01074.x

McGrath, M. P., & Brown, B. C. (2008). Developmental differences in prosocial motives and behavior in children from low-socioeconomic status families. *The Journal of Genetic Psychology: Research and Theory on Human Development, 169*(1), 5-20. doi:10.3200/GNTP.169.1.5-20

Miller, J. G., Kahle, S., & Hastings, P. D. (2015). Roots and benefits of costly giving: Children who are more altruistic have greater autonomic flexibility and less family wealth. *Psychological Science, 26*(7), 1038-1045. doi:10.1177/0956797615578476

Mintz, T. M., Hamre, B. K., & Hatfield, B. E. (2011). The role of effortful control in mediating the association between maternal sensitivity and children's social and relational competence and problems in first grade. *Early Education And Development, 22*(3), 360-387. doi:10.1080/10409289.2011.569317

Murphy, T. P., & Laible, D. J. (2013). The influence of attachment security on preschool children's empathic concern. *International Journal Of Behavioral Development, 37*(5), 436-440.

Muscatell, K. A., Morelli, S. A., Falk, E. B., Way, B. M., Pfeifer, J. H., Galinsky, A. D., & ... Eisenberger, N. I. (2012). Social status modulates neural activity in the mentalizing network. *Neuroimage, 60*(3), 1771-1777. doi:10.1016/j.neuroimage.2012.01.080

Muthén, L. K., & Muthén, B. O. (1998-2011). Mplus User's Guide. Sixth Edition. Los Angeles, CA: Muthén & Muthén.

Myers, S. S., & Morris, A. S. (2009). Examining associations between effortful control and teacher-child relationships in relation to Head Start socioemotional adjustment. *Early Education And Development, 20*(5), 756-774. doi:10.1080/10409280802571244

Nelson, J. A., Leerkes, E. M., O'Brien, M., Calkins, S. D., & Marcovitch, S. (2012). African American and European American mothers' beliefs about negative emotions and emotion socialization practices. *Parenting: Science And Practice, 12*(1), 22-41. doi:10.1080/15295192.2012.638871

Nelson, J. A., Leerkes, E. M., Perry, N. B., O'Brien, M., Calkins, S. D., & Marcovitch, S. (2013). European-American and African-American mothers' emotion socialization practices relate differently to their children's academic and social-emotional competence. *Social Development, 22*(3), 485-498.

Newton, E. K., Goodman, M., & Thompson, R. A. (2014). Why do some toddlers help a stranger? Origins of individual differences in prosocial behavior. *Infancy, 19*(2), 214-226. doi:10.1111/infa.12043

Office of Head Start. (2013). Head Start program facts fiscal year 2013. Retrieved from http://eclkc.ohs.acf.hhs.gov/hslc/data/factsheets/docs/hs-program-fact-sheet-2013.pdf

Olson, S. L. (1984). The preschool competence questionnaire: Factor structure, longitudinal stability, and convergence with ratings of maladjustment. Unpublished manuscript.

Olson, S. L. (1989). Assessment of impulsivity in preschoolers: Cross-measure convergences, longitudinal stability, and relevance to social competence. *Journal of Clinical Psychology, 18*, 176–183

Panfile, T. M., & Laible, D. J. (2012). Attachment security and child's empathy: The mediating role of emotion regulation. *Merrill-Palmer Quarterly*, *58*(1), 1-21.

Parker, A. E., Halberstadt, A. G., Dunsmore, J. C., Townley, G., Bryant, A., Thompson, J. A., & Beale, K. S. (2012). 'Emotions are a window into one's heart': A qualitative analysis of parental beliefs about children's emotions across three ethnic groups: V. Discussion. *Monographs of the Society for Research in Child Development, 77*(3), 81-106. doi:10.1111/j.1540-5834.2012.00681.x

Paulus, M. (2014). The emergence of prosocial behavior: Why do infants and toddlers help, comfort, and share?. *Child Development Perspectives, 8*(2), 77-81. doi:10.1111/cdep.12066

Paulus, M., Kühn-Popp, N., Licata, M., Sodian, B., & Meinhardt, J. (2013). Neural correlates of prosocial behavior in infancy: Different neurophysiological mechanisms support the emergence of helping and comforting. *Neuroimage*, *66*, 522-530.

Perlman, S. B., Camras, L. A., & Pelphrey, K. A. (2008). Physiology and functioning: Parents' vagal tone, emotion socialization, and children's emotion knowledge. *Journal Of Experimental Child Psychology, 100*(4), 308-315. doi:10.1016/j.jecp.2008.03.007

Perry, N. B., Calkins, S. D., Nelson, J. A., Leerkes, E. M., & Marcovitch, S. (2012). Mothers' responses to children's negative emotions and child emotion regulation: The moderating role of vagal suppression. *Developmental Psychobiology, 54*(5), 503-513. doi:10.1002/dev.20608

Persson, G. B. (2005). Developmental perspectives on prosocial and aggressive motives in preschoolers' peer interactions. *International Journal Of Behavioral Development, 29*(1), 80-91. doi:10.1080/01650250444000423

Pettygrove, D. M., Hammond, S. I., Karahuta, E. L., Waugh, W. E., & Brownell, C. A. (2013). From cleaning up to helping out: Parental socialization and children's early prosocial behavior. *Infant Behavior & Development, 36*(4), 843-846. doi:10.1016/j.infbeh.2013.09.005

Piff, P. K., Kraus, M. W., Côté, S., Cheng, B. H., & Keltner, D. (2010). Having less, giving more: The influence of social class on prosocial behavior. *Journal Of Personality And Social Psychology, 99*(5), 771-784. doi:10.1037/a0020092

Piff, P. K., Stancato, D. M., Côté, S., Mendoza-Denton, R., & Keltner, D. (2012). Higher social class predicts increased unethical behavior. *Proceedings of the National Academy of Sciences of the United States of America, 109*(11), 4086-4091.

Powell, B., Cooper, G., Hoffman, K., & Marvin, B. (2014). *The circle of security intervention: Enhancing attachment in early parent–child relationships.* New York, NY, US: Guilford Press.

Preston, S. D., & de Waal, F. M. (2002). Empathy: Its ultimate and proximate bases. *Behavioral and Brain Sciences, 25*(1), 1-20. doi:10.1017/S0140525X02000018

Rehberg, H. R., & Richman, C. L. (1989). Prosocial behaviour in preschool children: A look at the interaction of race, gender, and family composition. *International Journal of Behavioral Development*, *12*(3), 385-401.

Rheingold, H. L. (1982). Little children's participation in the work of adults, a nascent prosocial behavior. *Child Development, 53*(1), 114-125. doi:10.2307/1129643

Richman, C. L., Berry, C., Bittle, M., & Himan, K. (1988). Factors related to helping behavior in preschool-age children. *Journal of Applied Developmental Psychology*, *9*(2), 151-165.

Richman, C. L., Berry, C., Hritzko, S., Myers, P., & Vick, P. (1984, April). *The relationship between helping behavior, gender, race and social desirability.* Paper presented at the meeting of the Southern Society for Philosophy and Psychology, Columbus, GA.

Richters, J. E., & Waters, E. (1991). Attachment and socialization: The positive side of social influence. In M. Lewis, S. Feinman, M. Lewis, S. Feinman (Eds.) , *Social influences and socialization in infancy* (pp. 185-213). New York, NY, US: Plenum Press.

Roberts, W. L. (1999). The socialization of emotional expression: Relations with prosocial behaviour and competence in five samples. *Canadian Journal Of Behavioural Science/Revue Canadienne Des Sciences Du Comportement, 31*(2), 72-85. doi:10.1037/h0087075

Roberts, W. L., & Strayer, J. (1987). Parents' responses to the emotional distress of their children: Relations with children's competence. *Developmental Psychology, 23*(3), 415-422. doi:10.1037/0012-1649.23.3.415

Root, A. K., & Stifter, C. (2010). Temperament and maternal emotion socialization beliefs as predictors of early childhood social behavior in the laboratory and classroom. *Parenting: Science And Practice, 10*(4), 241-257. doi:10.1080/15295192.2010.492035

Rose-Krasnor, L., & Denham, S. (2009). Social-emotional competence in early childhood. In K. H. Rubin, W. M. Bukowski, B. Laursen, K. H. Rubin, W. M. Bukowski, B. Laursen (Eds.) , *Handbook of peer interactions, relationships, and groups* (pp. 162-179). New York, NY, US: Guilford Press.

Rothbart, M. K., Ahadi, S. A., & Hershey, K. L. (1994). Temperament and social behavior in childhood. *Merrill-Palmer Quarterly, 40*(1), 21-39.

Rothbart, M. K., & Bates, J. E. (2006). Temperament. In N. Eisenberg, W. Damon, R. M. Lerner, N. Eisenberg, W. Damon, R. M. Lerner (Eds.) , *Handbook of child psychology: Vol. 3, Social, emotional, and personality development* (6th ed.) (pp. 99-166). Hoboken, NJ, US: John Wiley & Sons Inc.

Shaffer, A., Suveg, C., Thomassin, K., & Bradbury, L. L. (2012). Emotion socialization in the context of family risks: Links to child emotion regulation. *Journal Of Child And Family Studies, 21*(6), 917-924. doi:10.1007/s10826-011-9551-3

Shaver, P.R., Mikulincer, M., Gross, J.T., Stern, J., & Cassidy, J. (in press). A lifespan perspective on attachment and care for others: Empathy, altruism, and prosocial behavior. In J. Cassidy and P.R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical implications* (3rd edition). New York: Guilford Press.

Smith, C. L., Eisenberg, N., Spinrad, T. L., Chassin, L., Morris, A. S., Kupfer, A., & ... Kwok, O. (2006). Children's coping strategies and coping efficacy: Relations to parent socialization, child adjustment, and familial alcoholism. *Development And Psychopathology, 18*(2), 445-469. doi:10.1017/S095457940606024X

Spinrad, T., Eisenberg, N., Kupfer, A., Gaertner, B., & Michalik, N. (2004). *The coping with negative emotions scale.* Paper presented at the International Conference for Infant Studies, Chicago.

Spinrad, T. L., & Stifter, C. A. (2006). Toddlers' Empathy-Related Responding to Distress: Predictions From Negative Emotionality and Maternal Behavior in Infancy. *Infancy, 10*(2), 97-121. doi:10.1207/s15327078in1002_1

Spinrad, T. L., Eisenberg, N., Gaertner, B., Popp, T., Smith, C. L., Kupfer, A., & ... Hofer, C. (2007). Relations of maternal socialization and toddlers' effortful control to children's adjustment and social competence. *Developmental Psychology, 43*(5), 1170-1186. doi:10.1037/0012-1649.43.5.1170

Stellar, J., Manzo, V., Kraus, M. W., & Keltner, D. (2012). Class and compassion: Socioeconomic factors predict responses to suffering. *Emotion, 12*, 449-459.

Svetlova, M., Nichols, S. R., & Brownell, C. A. (2010). Toddlers prosocial behavior: From instrumental to empathic to altruistic helping. *Child Development, 81*(6), 1814-1827. doi:10.1111/j.1467-8624.2010.01512.x

Swanson, J., Valiente, C., Lemery-Chalfant, K., Bradley, R. H., & Eggum-Wilkens, N. D. (2014). Longitudinal relations among parents' reactions to children's negative emotions, effortful control, and math achievement in early elementary school. *Child Development, 85*(5), 1932-1947. doi:10.1111/cdev.12260

Taylor, Z. E., Eisenberg, N., Spinrad, T. L., Eggum, N. D., & Sulik, M. J. (2013). The relations of ego-resiliency and emotion socialization to the development of empathy and prosocial behavior across early childhood. *Emotion*, *13*(5), 822.

Thompson, R. A. (2008). Early attachment and later development: Familiar questions, new answers. In J. Cassidy, P. R. Shaver (Eds.) , *Handbook of attachment: Theory, research, and clinical applications* (2nd ed.) (pp. 348-365). New York, NY, US: Guilford Press.

Thompson, R. A., & Newton, E. K. (2013). Baby altruists? Examining the complexity of prosocial motivation in young children. *Infancy, 18*(1), 120-133. doi:10.1111/j.1532-7078.2012.00139.x

Vaish, A., Carpenter, M., & Tomasello, M. (2009). Sympathy through affective perspective taking and its relation to prosocial behavior in toddlers. *Developmental Psychology*, *45*(2), 534-543.

Valiente, C., Lemery-Chalfant, K., & Reiser, M. (2007). Pathways to problem behaviors: Chaotic homes, parent and child effortful control, and parenting. *Social Development*, *16,* 249-267.

Valiente, C., Lemery-Chalfant, K., & Swanson, J. (2009). Children's responses to daily social stressors: Relations with parenting, children's effortful control, and adjustment. *Journal of Child Psychology and Psychiatry,* 50, 707-717.

Valiente, C., Eisenberg, N., Fabes, R. A., Shepard, S. A., Cumberland, A., & Losoya, S. H. (2004). Prediction of children's empathy-related responding from their effortful control and parents' expressivity. *Developmental Psychology, 40*(6), 911-926. doi:10.1037/0012-1649.40.6.911

van der Mark, I. L., van IJzendoorn, M. H. V., & Bakermans-Kranenburg, M. J. (2002). Development of empathy in girls during the second year of life: Associations with parenting, attachment, and temperament. *Social Development*, *11*(4), 451-468.

Vendlinski, M., Silk, J. S., Shaw, D. S., & Lane, T. J. (2006). Ethnic differences in relations between family process and child internalizing problems. *Journal of Child Psychology and Psychiatry, 47*(9), 960-969. doi:10.1111/j.1469-7610.2006.01649.x

von Dawans, B., Fischbacher, U., Kirschbaum, C., Fehr, E., & Heinrichs, M. (2012). The social dimension of stress reactivity: Acute stress increases prosocial behavior in humans. *Psychological Science, 23*(6), 651-660. doi:10.1177/0956797611431576

Warneken, F., & Tomasello, M. (2006). Altruistic helping in human infants and young chimpanzees. *Science*, *311*(5765), 1301-1303.

Warneken, F., & Tomasello, M. (2007). Helping and cooperation at 14 months of age. *Infancy, 11*(3), 271-294. doi:10.1111/j.1532-7078.2007.tb00227.x

Warneken, F., & Tomasello, M. (2009). Varieties of altruism in children and chimpanzees. *Trends In Cognitive Sciences, 13*(9), 397-402. doi:10.1016/j.tics.2009.06.008

Waters, E., Wippman, J., & Sroufe, L. A. (1979). Attachment, positive affect, and competence in the peer group: Two studies in construct validation. *Child Development, 50*(3), 821-829. doi:10.2307/1128949

Weinfield, N. S., Sroufe, L. A., Egeland, B., & Carlson, E. (2008). Individual differences in infant-caregiver attachment: Conceptual and empirical aspects of security. In J. Cassidy, P. R. Shaver (Eds.) , *Handbook of attachment: Theory, research, and clinical applications* (2nd ed.) (pp. 78-101). New York, NY, US: Guilford Press.

Yagmurlu, B., & Altan, O. (2010). Maternal socialization and child temperament as predictors of emotion regulation in Turkish preschoolers. *Infant And Child Development, 19*(3), 275-296.

Yarrow, M. R., Waxler, C. Z., Barrett, D., Darby, J., King, R., Pickett, M., & Smith, J. (1976). Dimensions and correlates of prosocial behavior in young children. *Child Development, 47*(1), 118-125. doi:10.2307/1128290

Zahn-Waxler, C., Cole, P. M., Welsh, J. D., & Fox, N. A. (1995). Psychophysiological correlates of empathy and prosocial behaviors in preschool children with behavior problems. *Development And Psychopathology, 7*(1), 27-48. doi:10.1017/S0954579400006325

Zahn-Waxler, C., Radke-Yarrow, M., & Brady-Smith, J. (1977). Perspective-taking and prosocial behavior. *Developmental Psychology, 13*(1), 87-88. doi:10.1037/0012-1649.13.1.87

Zahn-Waxler, C., Radke-Yarrow, M., Wagner, E., & Chapman, M. (1992). Development of concern for others. *Developmental Psychology*, *28*(1), 126.

Zahn-Waxler, C., Radke-Yarrow, M., & King, R. A. (1979). Child rearing and children's prosocial initiations toward victims of distress. *Child Development*, 319-330.