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TEMPERAMENT, PARENTING, AND PROSOCIAL BEHAVIORS: APPLYING A NEW INTERACTIVE THEORY OF PROSOCIAL DEVELOPMENT

by

Meredith McGinley

A DISSERTATION

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TEMPERAMENT, PARENTING, AND PROSOCIAL BEHAVIORS: APPLYING A NEW INTERACTIVE THEORY OF PROSOCIAL DEVELOPMENT

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University of Nebraska, 2008

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The primary purpose of the current study was to examine whether theoretically based interactions between dimensions of children's temperament and maternal socialization predicted children's and early adolescents' prosocial (i.e, helping) behaviors. A new theory was derived by examining how an existing interactive model of early moral development, Kochanska's (1993) theory of early conscience internalization, would apply to the prediction of prosocial behaviors. Aspects of child temperament and maternal socialization were thought to operate in a different manner from Kochanska's theory. Unlike early conscience internalization, fearful temperament and parental punishment do not appear to promote prosocial behavior. Moreover, it was thought that children with vulnerable temperaments may especially benefit from maternal responsiveness to children's distress as the regulation of distressful emotions is necessary before children can help others. The current study thus tested the hypothesis that the relations between responsive parenting and prosocial behaviors would be the most positive for children and early adolescents with vulnerable (i.e., fearful, angry/frustrated, shy) temperaments. It was also expected that the relations between firm discipline and

prosocial behaviors would not be positive for individuals with vulnerable temperaments. The current study examined 1,068 (538 girls, 83% White) children across several time points (54 months, 6 and 10, 11, and 12 years) who participated in the NICHD Study of Early Child Care. No support for the hypotheses proposing interactions between maternal socialization and children's vulnerable temperament was evident. However, partial support was found for main effects such that angry/frustrated temperament was generally negatively related to prosocial behaviors, and maternal responsiveness and firm discipline were generally positively related to prosocial behaviors. Contrary to the hypothesis, fearful and shy temperament were not related to prosocial behaviors and maternal responsiveness did not emerge as a unique predictor in relation to firm discipline. Demographic variables were related to prosocial behaviors; girls were rated as being more prosocial than boys, White children were rated as being more prosocial than minority children, and family income was positively related to prosocial behaviors. These results indicate that interactions between children's temperament and maternal socialization may not be predictive of children's and early adolescents' prosocial behaviors.

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Chapter 1

Introduction

Advancing our knowledge of the development of prosocial behaviors is critical as these behaviors not only have significant implications for others, but also on our understanding of morality and the self. Given that prosocial behaviors are defined as any behaviors that are intended to help or benefit others in need (Eisenberg, Fabes, & Spinrad, 2006), society as a whole should take an interest in behaviors that positively impact its members. Scholars have moreover identified the need to study this beneficent-centered morality in addition to the justice-centered approach, which emphasizes maintaining the law and order of society, in order to develop a more comprehensive understanding of morality (e.g., Carlo, 2006; Gilligan, 1982; Skoe, 1998; Witherell & Edwards, 1991). Being a prosocial individual may also serve as a protective factor for the self. Studies have demonstrated that those who engage in more prosocial behaviors also engage in fewer aggressive and antisocial behaviors, succeed in academics, participate in positive extracurricular activities, and experience more acceptance by their peers (Caprara, Barbaranelli, Pastorelli, Bandura & Zimbardo, 2000; Chen et al., 2002; Crick, 1996; McGinley & Carlo, 2007; Uggen, & Janikula, 1999).

Even though empirical research examining the individual and social correlates of prosocial moral development has proliferated, no formal theory has attempted to integrate these components in an explanatory manner. Given our increasing knowledge of individual correlates of prosocial behavior, it is essential that these findings be reviewed and synthesized in order to drive future research and to apply this knowledge in a more informative manner. Identifying such an integrative model may also provide an

alternative to the existing temperament x parenting interactive theory in early moral development, namely Kochanska's (1993) model of early conscience development. As stated previously, morality embraces behavior that conforms to or is restricted by existing societal rules (i.e., conscience-related behaviors), but also that behavior which is not necessarily governed by society (i.e., empathic or prosocial behaviors). The individual and social correlates of these interrelated though separate aspects of morality may also be somewhat distinct; it is thus unlikely that an existing model of early conscience development can be completely applied to the prediction of prosocial behaviors. Still, Kochanska's model of early conscience development has generated much scholarly interest and empirical research, highlighting the need for a comparable theoretical model in the prosocial literature; such a competing model could ultimately drive future research in the area of prosocial development.

Therefore, the purpose of the current study was to test an alternative interactive model to predict children and early adolescents' prosocial behaviors. In contrast to Kochanska's (1993) theory of moral development which posits that the promotion of conscience development can capitalize on children's negative emotionality (namely fear), children's negative, or vulnerable temperament has conversely been found to inhibit their prosocial tendencies. It was believed that a particular parenting style, responsiveness to distress, would mitigate these negative relations between vulnerable temperament and prosocial behaviors. Responding to children's distress may provide them with the resources needed to effectively cope with negative emotions and consequently help others in times of need, rather than focusing on their own distressful feelings. In order to test this these hypothesized relations, analyses examining whether children's vulnerable

(i.e., fearful, angry/frustrated, shy) temperament significantly interacted with maternal responsiveness to distress to predict children's and early adolescents' prosocial behaviors were conducted.

Prosocial Behaviors, Temperament, and Parenting

Prosocial behaviors are defined as any behavior intended to benefit or help another (e.g., comforting, sharing, donating, volunteering). Empathy, or understanding another person's cognitive and emotional states, is one of the earliest precursors of future prosocial behaviors. Moreover, empathy has been posited to develop into personal distress or sympathetic distress after children are able to make the self-other distinction. Empathic individuals who successfully cope with the vicarious negative affect that accompanies understanding others' distressful situations develop sympathy (i.e., compassion) for others. This compassion for others is thought to motivate one to engage in prosocial behavior. If an empathic person fails to cope with such negative feelings, however, the individual may become overwhelmed with feelings of personal distress and focus on relieving their own negative feelings instead of helping others (Carlo & Randall, 2002; Eisenberg, 2005; Hill, 2004; Hoffman, 1987).

Research has accordingly found that individuals who are prone to negative emotions are less likely to engage in prosocial behaviors. For example, children who have higher levels of temperamental fear are more personally distressed in helping situations and are less likely to be nominated as a prosocial individual (e.g., Eisenberg, Fabes, Karbon, Murphy, Wosinski et al., 1996; Spinrad & Stifter, 2006). Negative relations between fear and prosocial behaviors have especially been pronounced in studies defining prosocial behaviors as helping unfamiliar others (van der Mark, van

Ijzendoorn, & Bakermans-Kranenburg, 2002). Other aspects of vulnerable temperament, such as shyness, anger, frustration, and general negative emotionality have been similarly found to inhibit children and adolescents' prosocial behaviors (Carlo, Roesch, & Melby, 1998; Eisenberg, Fabes, Karbon, Murphy, Carlo et al., 1996; Eisenberg, Liew, & Pidada, 2004; Farver & Branstetter, 1994; Kiang, Moreno, & Robinson, 2004; Miller & Jansen op de Haar, 1997; Rothbart, Ahadi, & Hershey, 1994; Russell, Hart, & Olsen, 2003; Young, Fox, & Zahn-Waxler, 1999). Although some studies have provided contradictory evidence regarding these negative relations (e.g., Rothbart et al., 1994), these findings support the notion that children prone to negative emotionality may experience high levels of personal distress, consequently lessening the likelihood of feeling sympathy and engaging in prosocial behaviors.

Parenting styles and practices have also been found to influence children and adolescents' prosocial behaviors. Harsh or power-assertive discipline, for example, has consistently been found to be negatively related to prosocial behaviors (e.g., Cornell & Frick, 2007; Deater-Deckard et al., 2001; Feshbach, 1974; Janssens & Gerris, 1992; Krevans & Gibbs, 1996; Romano, Tremblay, Boulerice, & Swisher, 2005). Other types of discipline emphasizing the emotions of others (i.e., inductions) have instead been found to promote sympathy and prosocial behaviors (Feshbach, 1974; Hoffman, 1975; Janssens & Gerris, 1992; Krevans & Gibbs, 1996). Researchers have also focused on whether positive aspects of parenting relate to prosocial behaviors. Indeed, parenting dimensions such as warmth, secure attachment, and responsiveness to distress have been positively related to prosocial outcomes (e.g., Denham, 1993, 1994; Eberly & Montemayor, 1998; Kestenbaum, Farber, & Sroufe, 1989; Kiang et al., 2004; Laible, Carlo, & Raffaelli,

2000; Markiewicz, Doyle, & Brendgen, 2001; McGrath, Zook, & Weber-Roehl, 2003; Robinson, Zahn-Waxler, & Emde, 1994; Strayer & Roberts, 2004; van der Mark, van IJzendoorn et al. 2002; Zahn-Waxler, Radke-Yarrow, & King, 1979; Zhou et al, 2002) although studies examining parental warmth have sometimes failed to find significant relations between these constructs (Hoffman, 1975; Iannotti, Cummings, Pierrehumbert, Milano, & Zahn-Waxler, 1992; Koestner, Franz, & Weinberger, 1990; Krevans & Gibbs, 1996).

Studying Prosocial Behaviors in an Interactive Framework

Although our knowledge of the individual (e.g., temperament) and social (e.g., parental socialization) correlates of prosocial behaviors has increased over the past three decades, theorists have called for conceptual models that examine how the environment differentially impacts individuals over and above more parsimonious models that only consider the main effects of these influences (Anastasi, 1958; Clausen, 1967; Escalona, 1968; Gallagher, 2002; Grusec, 2002; Kendler & Eaves, 1986; Lewin, 1935; Magnusson & Allen, 1983; Putnam, Sanson, & Rothbart, 2002; Sanson, Hemphill, & Smart, 2004; Wachs & Plomin, 1991; Yarrow, Rubenstein, & Pederson, 1975; Young et al., 1999). For example, Zahn-Waxler and Radke-Yarrow (1990) have proposed that "[i]t may be more fruitful to ask what are the conditions of development, temperament, family life, socialization, and culture that influence the diverse ways in which self-concern and concern for others are expressed and balanced within different individuals….Both research and cumulative wisdom indicate that individuals vary markedly in their capacities to establish these empathic ties" (p. 126). In other words, Zahn-Waxler and Radke-Yarrow suggest not only understanding the factors that promote prosocial

development, but also that attempting to recognize the social milieu that may best promote prosocial development for persons who differ in their temperament or personality.

However, few researchers have adopted this multiplicative framework when studying prosocial behaviors. Of those who have, most have examined these relations using the theoretical approach of moderated linkage (Rothbart & Bates, 1998, 2006) rather than implementing other major theories centered around examining joint effects (see Bronfenbrenner & Crouter, 1983; Thomas & Chess, 1977). In their review of the existing literature studying indirect temperament and adjustment relations, Rothbart and Bates (1998, 2006) revealed that while no support for several mediational models involving temperament was apparent, empirical evidence was mounting in favor of models incorporating the moderating effects of temperament. Three subtopics were identified following their review: temperament x temperament (e.g., emotionality x emotion regulation); temperament x gender (e.g., shyness x gender); and temperament x environment (e.g., fearful temperament x harsh punishment). While moderate systematic (temperament x temperament) or unsystematic (temperament x gender) evidence has been found for two of these subtopics, more substantial evidence has been uncovered that supports the examination of temperament x environment interactions (Rothbart & Bates, 2006).

Several studies examining children's and adolescents' prosocial behaviors have revealed the need to more closely study these temperament x environment interactions. An early and exploratory examination of these factors suggested that the simultaneous presence of certain temperamental and parenting dimensions promote infant's burgeoning

sympathy (Robinson et al., 1994). For example, infants who maintained high levels of observed sympathy to feigned distress had significantly higher levels of positive emotionality/sociability and lower levels of negative emotionality (mother-reported) than groups of infants who dropped to lower levels of sympathy over time. Additionally, mothers of infants in this high-sympathy group were also observed to exhibit less maternal negative control. Given the unique characteristics of this sustained high-sympathy group, the authors posited that the "synergy of constitutional…and environmental…factors" contributed to these infants' continuing sympathetic reactions to others' distress (Robinson et al., 1994, p. 141).

Additional studies have more formally tested temperament x socialization interactions, although no hypotheses were explicitly stated by the authors. Kienbaum, Volland, and Ulich (2001) tested interactions among different aspects of temperament and parenting in relation to five-year-olds' sympathy. For mothers below the mean on responsiveness (i.e., feeling sorry for and helping her child when he was in distress), the relation between inhibition and sympathy was negative (r = -.27), although this marginally significant relation was only evident for boys (Kienbaum et al. 2001). Russell et al. (2003) examined how several dimensions of parenting (authoritarian and authoritative) and temperament (sociability, shyness and activity) interacted to predict teacher-reported prosocial behavior. For children who were below the median on sociability, authoritarian parenting was related to decreased prosocial behavior. Furthermore, authoritative parenting was inversely related to prosocial behavior for children below the median on activity. Cornell and Frick (2007) tested whether interactions between behavioral inhibition and several aspects of parenting predicted

young children's mother-reported empathy. Only inconsistent parenting interacted with this dimension of temperament; for uninhibited children only, the relations between inconsistent parenting and empathy were negative. Finally, Carlo et al. (1998) reported that at low levels of anger, adolescents who were below the mean on sociability were more sympathetic under increasing levels of parental support. For high levels of anger, however, adolescents who were below the mean on sociability were *less* sympathetic with increasing levels of parental support. Main effects for maternal support and adolescent sociability were not predictive of prosocial behaviors, however, an unexpected interaction was found among these factors: high maternal warmth, coupled with low sociability, was related to fewer adolescent prosocial behaviors (Carlo et al., 1998). Perhaps the measure of warmth used reflected the extent of involvement in the adolescent's life, and high levels could be more reflective of mothers' overprotectiveness with their children.

Notably, only two studies have developed and tested hypotheses regarding how temperament x parenting interactions may predict prosocial behaviors. Hastings, Rubin, and DeRose (2005) expected that the prosocial behavior of the most vulnerable children in their study (i.e., the more fearful children) would be the children most positively affected by maternal socialization assessed at two years (i.e., a temperamental susceptibility hypothesis). Fearful temperament and maternal socialization were found to interact, but only with gender. As hypothesized, authoritative parenting was related to greater prosocial behavior for fearless boys, but *less* prosocial behavior for fearless girls. Relations with authoritarian parenting more directly opposed the hypothesis; fearful girls helped more often under *high* levels of authoritarian parenting. Thus, Hasting et al.'s

(2005) temperamental susceptibility hypothesis was not fully supported. Similarly, Spinrad and Stifter (2006) hypothesized that fearfulness measured at 10 months would be positively related to infants' personal distress in distressing situations designed to elicit sympathetic responses at 18 months. However, these relations were thought to be moderated by maternal sensitive responding (e.g., responding contingently to the infant), such that the relation between fearfulness and personal distress should be stronger under low levels of sensitive responding. No support for this moderating hypothesis was found. However, parallel exploratory analyses conducted with temperamental anger revealed weak support for this hypothesis (i.e., only one interaction out of twelve was found to be significant). The pattern of findings for this one interaction indicated that under low levels of sensitive responding, greater anger was associated with fewer prosocial behaviors, whereas under high levels of responsivity greater anger was related with more prosocial behaviors (Spinrad & Stifter, 2006).

A study of female infants' prosocial behaviors, however, failed to find significant temperament x parenting interactions. Van der Mark, van IJzendoorn, et al. (2002) reported that although maternal attachment, sensitive parenting, and fearful temperament predicted prosocial behaviors in expected ways, interactions between fearfulness and maternal attachment or sensitivity did not relate to female infants' prosocial behaviors. Notably, descriptive statistics reported for sympathy indicated a ceiling effect; there may not have been enough variability in girls' prosocial behaviors in order to detect an interaction effect.

With the exception of the van der Mark, van IJzendoorn, et al. study (2002), these studies provide evidence for employing Rothbart and Bates' (1998, 2006) model of

moderated linkage (temperament x environment interactions). Support for Hastings et al.'s (2005) temperamental susceptibility hypothesis has been less consistent. It is difficult to determine why some vulnerable children appear to benefit from authoritarian parenting, or why parental support was found to be detrimental to adolescents' prosocial development. Notably, this general theory does not lend itself to explaining how general "positive" parenting can specifically influence prosocial development in temperamentally vulnerable youth; thus, it is difficult to evaluate the existing research. In fact, no theory has been posited that systematically explains how vulnerable temperament and positive parental socialization interact to predict prosocial behaviors.

Kochanska's Theory of Early Conscience Development

One existing model of moral development that prosocial researchers can look to for guidance is Kochanska's theory of early conscience development. Kochanska (1993) proposed a interactive framework for studying early conscience development, or the internalization of societal standards of behavior. These standards which define conscience typically focus on a child's ability to refrain from behavior that is prohibited by society. One aspect of a child's biological make-up, temperamental fearfulness, has been thought to strongly orient children towards these standards. Highly fearful children are especially sensitive to minimal (i.e., not overarousing) parental discipline, and may internalize standards more readily than their less fearful counterparts (Dienstbier, 1984; Kochanska, 1993). Children who lack such fear may alternatively adopt societal standards because they are motivated by a mutually responsive and warm relationship with their caregiver (Kochanska, 1993). With respect to development, Kochanska believed that the main effects of temperament and parenting on early conscience are most

evident in younger children, but as children develop and interact with parents, these links increasingly become more complex and interactive.

Empirical work conducted by Kochanska and colleagues has provided convincing support for this theory. In general, higher levels of fear, gentle discipline, and a warm, mutually responsive relationship between the parent and child are all positively related to early conscience internalization (Fowles & Kochanska, 2000; Kochanska, 1991, 1995, 1997b; Kochanska & Aksan, 1995; Kochanska, Aksan, & Joy, 2007; Kochanska, Aksan, Knaack, & Rhines, 2004; Kochanska, Coy, & Murray, 2001; Kochanska, DeVet, Goldman, Murray, & Putnam, 1994; Kochanska, Forman, Aksan, & Dunbar, 2005; Kochanska, Gross, Lin, & Nichols, 2002; Kochanska & Murray, 2000). Other scholars have similarly found that attachment, warm parenting, gentle discipline, and a mutually responsive orientation to be positively related to measures of early conscience (Braungart-Rieker, Garwood, & Stifter, 1997; Feldman, Greenbaum & Yirmiya, 1999; Feldman & Klein, 2003; Lehman, Steier, Guidash, & Wanna, 2002; Londerville & Main, 1981; Lytton 1977). In addition to these hypothesized main effects, evidence for the hypothesized temperament x parenting interactions have also been uncovered. Several studies have found that for children who were temperamentally fearful, self reported and observed maternal discipline that deemphasized power was positively related to contemporaneous and longitudinal measures of conscience (Fowles & Kochanska, 2000; Kochanska; 1991, 1995, 1997a). These same relations were not evident for relatively fearless children, who instead responded to mothers' secure attachment or warmth (Fowles & Kochanska, 2000; Kochanska, 1995, 1997a). Also in line with her theory, overly arousing discipline (i.e., power assertion) is markedly detrimental to the

development of moral internalization in highly fearful children (Kochanska et al. 2007). Recent studies, however, have not replicated these findings. Van der Mark, Bakermans-Kraneburg, and van IJzendoorn (2002) failed to find an interaction between mother's sensitivity and children's fearfulness in the prediction of female infants' compliant behaviors, and Cornell and Frick (2007) reported that authoritative parenting did not interact with children's inhibition to predict mother-reported guilt.

Conscience and Prosocial Behaviors: Conceptual and Empirical Disparities

What, if any, relevance does Kochanska's theory have to the study of prosocial development? Although scholars have conceptualized and presented empirical support for interpreting sympathy as a dimension of conscience (Aksan & Kochanska, 2005; Kochanska et al. 1994; Kurtz & Eisenberg, 1983), others have posited that differences do exist between conscience and sympathy. For example, Emde, Johnson and Easterbrooks (1987) proposed that these two "streams" of morality are socialized in different contexts; while prohibition-related morality (i.e., conscience) arises from situations involving conflict, sympathetic morality is learned in conflict-free circumstances. Grusec (1991) explicitly stated that the it may be incorrect to assume that the current knowledge of the socialization and principles of "morality" (i.e., conscience) informs us of the socialization and principles of altruism (which has been less-studied) given their different natures. For example, decisions to refrain from prohibited acts may be less involved than decisions to engage in altruistic acts, which often involve consideration of multiple factors (e.g., who, where, how much) because of limited resources (Grusec, 1991). Kochanska (1993) herself noted that her theory centered around the idea of children prohibiting their actions rather than sympathetic or prosocial behavior, and later presented the idea that early

conscience is better conceptualized as two constructs, rather than one: moral emotions (e.g., guilt, empathy), and rule-compatible conduct (e.g., internalization of prohibitions and rules; Aksan & Kochanska, 2005).

Parents and children in Western societies moreover tend to view violations relating to conscience and prosocial development as being somewhat separate from one another. Moral transgressions (i.e., conscience violations) have been regarded by parents as more serious, eliciting anger from the parent, whereas failures to be prosocial are viewed as less serious as the child is not engaged in an inherently "bad" or seriously norm-breaking behavior. Consequently, when children fail to be altruistic, parents use more scolding and empathy training but rarely any physical or material punishment, which are instead reserved for children's moral transgressions (Grusec & Dix, 1986; Grusec, Dix, & Mills, 1982). Other empirical studies examining both sympathy and moral transgressions have similarly reported that these two types of moral behavior are related to divergent measures of parenting (Eisenberg, Wolchik, Goldberg, & Engel, 1992; Feshbach, 1974; Spinrad et al., 1999; Zahn-Waxler et al., 1979). Children have similarly rated failures to be prosocial as more acceptable than moral transgressions, and believe that punishment is more appropriate in transgression situations than in failure to be prosocial situations (Grusec & Pedersen, 1989). Moreover, children tend to cite others' needs, but not authority or punishment reasons, when contemplating prosocial situations (Eisenberg-Berg & Hand, 1979; Eisenberg-Berg & Neal, 1979). Confirming these relations, recent research has also found that authoritarian parenting and corporal punishment have been negatively related to mother-reports of young children's empathy, whereas authoritarian parenting has been positively related to reports of children's guilt

over transgressions (Cornell & Frick, 2007). Taken together, these studies suggest that the socialization of two types of moral development (i.e., conscience and prosocial development) are distinct; although punishment is seen by parents and children as appropriate in the development of conscience, punishment's role in the development of prosocial behaviors is seen as unnecessary and detrimental, at least in Western societies were this research has been conducted.

Research on temperament also points to different developmental correlates of conscience and prosocial development. Whereas temperamental fear has been theoretically and empirically related to measures of conscience, researchers have typically found that children who have higher levels of temperamental fear engage in fewer prosocial behaviors (see above review). A pair of studies conducted by van der Mark and colleagues exemplifies this contrast. Examining infant girls' fear, compliance, and empathy, it was reported that fear was positively related to greater compliance in a "don't" task, but girls' fear in this same sample was related to *less* helping (van der Mark, Bakermans-Kranenburg et al., 2002; van der Mark, van IJzendoorn et al., 2002).Similarly, Kochanska and colleagues' (Kochanska & Aksan, 1995; Kochanska et al., 2001) assessment of compliance in "don't" contexts and "do" contexts also highlights this disparity. Compliance in "don't" contexts appears to more closely tap into prohibition-related morality as children are asked to refrain from touching objects. Conversely, compliance in "do" context may tap into sympathetic or moral development as children in this task are often asked to help mothers out with household tasks; research has found that compliant prosocial behaviors are related to sympathy and other measures of helping (e.g., Carlo & Randall, 2002). Compliant behaviors in these contexts

accordingly had different correlates; children's fearfulness was positively related to compliance in "don't" contexts, but not with compliance in "do" contexts (Kochanska et al., 2001).

Temperament, Maternal Responsiveness, and Prosocial Behaviors

Why do fearful children have varying degrees of success regarding these two related, but separate aspects of morality? Hastings, Utendale and Sullivan (2007) proposed that "(a)nxious children may internalize standards from authoritative parents and be aware of appropriate prosocial behavior but then be unable to act on this knowledge under socially challenging conditions" (p. 644). This notion closely corresponds to the theory in prosocial development that indicates that empathic individuals unable to cope with others' negative emotions focus on their personal distress instead of developing a sense of sympathy (which instead facilitates one's prosocial responding, see above review). Thus, any child prone to distress must somehow regulate these negative emotions before they can successfully become prosocial individuals.

One type of socialization that promotes the regulation of negative emotions is responsive parenting, or parenting that provides appropriate emotional support towards children in times of distress (Calkins & Hill, 2007; Eisenberg, Cumberland, & Spinrad, 1998; Skinner & Edge, 2002; Sroufe, 2000). Appropriate emotional support includes being accepting of children no matter the negative emotion they are displaying, being aware of children's needs while still respecting their autonomy, and being a source of skillful strategies that may help children cope with the situation at hand (Eisenberg et al., 1998; Gottman, Katz, & Hooven, 1996; Janssens & Gerris, 1992, Morris, Silk, Steinberg, Myers, & Robinson, 2007). Mothers who are responsive to their child's negative affect or

distress in this manner promote emotion regulation by helping to regulate their child's psychobiological stress systems (Gottman et al., 1996; Hastings, Utendale, et al., 2007; Propper & Moore, 2006; Thompson & Lagattuta, 2006). With practice, these external regulatory responses may become internally integrated into a child's general repertoire of approaches to handling a variety of distressful situations (Calkins, Gill, Johnson, & Smith, 1999; Calkins & Hill, 2007; Grolnick & Farkas, 2002; Morris et al. 2007). Children who regularly implement constructive regulatory responses in turn feel in control and secure in a variety of situations, permitting them shift attention away from themselves (i.e., personal distress). This shift permits individuals to more freely act on their own personal beliefs, such as helping others who are in distress (Eisenberg & Valiente, 2002; Janssens & Gerris, 1992; Staub, 1979).

Thus, the relation between responsive parenting and prosocial behaviors appears to be mediated by emotion regulation of negative emotions (see Morris et al., 2007 for a review on the mediating role of emotion regulation between parenting and child outcomes). Accordingly, scholars have uncovered evidence that sensitive responsive parenting promotes emotion regulation of these negative emotions (Davidov & Grusec, 2006; Denham, 1993; Garner, 2006; Haley & Stransbury, 2003; Kogan & Carter, 1996; Morris et al., 2007). Emotion regulation has also been positively linked to sympathetic and prosocial behaviors (Davidov & Grusec, 2006; Eisenberg, 2000; Eisenberg, Fabes, Murphy, Karbon, Murphy, Wosinski et al., 1996; Eisenberg et al., 2004; Rydell, Berlin, & Bohlin, 2003), and sometimes especially for children with vulnerable temperaments (Diener & Kim, 2004). Of particular interest to the current study, responsive parenting appears be related, and at times uniquely related, to prosocial behaviors. Zahn-Waxler et

al. (1979) observed that mothers' responsive parenting (e.g., anticipating child difficulties, prompt responding, and nurturant caregiving) was positively related to toddlers' prosocial responding (e.g., giving a band-aid to hurt others) in natural and simulated bystander situations. Responsive parenting has also been found to be significantly related to similar types of prosocial responding in longitudinal studies (Kiang et al., 2004), preschoolers' general sympathy (Jensen, Peery, Adams, & Gaynard, 1981), female siblings' observed comforting and sharing (Bryant & Crockenberg, 1980), boys' comforting of distressed infants in a lab setting (Eisenberg, Fabes, & Murphy, 1996), as well as young infants' concerned attention and lack of personal distress towards others in distress (Spinrad & Stifter, 2006). Responsive parenting has been positively related to prosocial behavior in several contexts, such as at school (Janssens & Gerris, 1992; Garner, 2006), and in the lab (McGrath et al., 2003). Interestingly, the responsiveness, but not prosocial behavior, of an older sibling has been distinctively related to preschoolers' comforting and helping (Sawyer et al., 2002).

Notably, Davidov and Grusec (2006) compared the differential effects of parental warmth and responsiveness on emotion regulation of positive affect, emotion regulation of negative affect, empathy/prosocial responding, and peer acceptance. The authors hypothesized that parental responsiveness would promote greater regulation of negative emotions, namely because responsive parents provide their children with strategies of dealing with the negative affect. Increased or more effective negative affect regulation should in turn be related to greater sympathy/prosocial responding in distressing situations. Parental warmth, on the other hand, was thought to predict greater regulation of *positive affect* and peer acceptance. Parents who are warm are likely to engage in

pleasant and inherently rewarding interactions with their children, thus providing opportunities for parents to model or coach the regulation of positive affect. Since this positive interaction style that results is thought to then foster positive peer relationships, the authors proposed that regulation of positive affect mediates the effect parental warmth has on peer acceptance. Accordingly, the authors reported that although a moderate positive correlation was found for the two dimensions of positive parenting (parental warmth and responsiveness), each dimension had a unique contribution to their hypothesized outcomes. That is, responsiveness to distress uniquely predicted negative affect regulation and prosocial behaviors, and parental warmth uniquely predicted positive affect regulation and peer acceptance. Additionally, both types of regulation were found to mediate their respective positive parenting→social outcome relations (Davidov & Grusec, 2006).

Despite this set of findings, the relations between responsiveness and prosocial behaviors have not been consistently found. These findings, however, should be interpreted with caution. For example, since ceiling or floor effects for prosocial responding were reported in the van der Mark, van IJzendoorn, et al. (2002), Spinrad and Stifter (2006) and Bryant and Crockenberg (1980) studies, the likelihood of detecting relations among parenting and prosocial behaviors was greatly diminished in these studies. Abraham, Kuehl, and Christopherson's (1983) responsiveness scale reflected responding in such a manner "all the time", which could signify that parents were not adjusting their responses to the child's stage of development, thus undermining their empathic tendencies. Roberts (1999) reported mixed findings concerning relations among Q-sort items of parental responsiveness and prosocial behaviors, but this could be linked

to the fact that responsiveness unreliably assessed with single items from the Q-sort. Finally, the type of responsiveness assessed in many studies has either been too general, subsuming responsiveness to distress, (e.g., Deater-Deckard et al., 2001; see Deater-Deckard, Pylas, & Petrill, 1997), or too context-specific (e.g., comforting only when the child has transgressed, Janssens & Gerris, 1992). Several scholars have underscored the multidimensional nature of responsiveness and the unique relations among various subtypes of responsiveness and domain-relevant outcomes (Landry, Smith, & Swank, 2006; Martin, Maccoby, & Jacklin, 1981; Tamis-LeMonda, 1996; Tamis-LeMonda, Bornstein, Baumwell, & Damast, 1996).

Even after taking these limitations into account, the overall relations between responsiveness and prosocial behaviors in the existing literature are nonetheless strong, unique, and theoretically consistent. Responsiveness to distress has moreover been found to mitigate negative relations between children's vulnerable temperament and outcomes. Although a majority of this research has focused on the reduction of negative outcomes such as feeding problems and behavioral problems (Belsky, 2005; Crockenberg & Leerkes, 2006; Early et al., 2002; Hagekull, Bohlin, & Rydell, 1997; Morris et al., 2007; Warrens & Simmons), research has also found that responsiveness may moderate negative temperament-prosocial behavior relations. As previously reported, Spinrad and Stifter (2006) and Kienbaum et al. (2001) found significant negative relations between infants' anger and prosocial behaviors and boys' shyness and sympathy (respectively) for less responsive mothers, but these relations became nonsignificant for more responsive mothers.

Proposed Theory and Hypotheses

Children with a capacity to be empathic but who tend to become distraught in arousing situations may be especially prone to focusing on relieving their own distress; this personal distress may in turn inhibit a child from engaging in prosocial behaviors (i.e., relieving the distress of others). However, if a parent offers appropriate assistance to a child more prone to distress, this child may in time may learn to effectively regulate this distress, consequently enabling the child to help when others require assistance. Thus, it is proposed that for children who are relatively prone to negative emotionality (e.g., fearful, shy, angry/frustrated temperament), appropriate parental responsiveness to distress should promote prosocial behaviors. For example, children prone to becoming angry or frustrated may only be able to engage in prosocial behaviors in the presence of maternal responsiveness. Children who are not temperamentally vulnerable will not be as impacted by this socialization because they are less likely to become distressed in these same situations (Calkins, 1994).

Another aspect of parenting, firm discipline, is not expected to be related to prosocial behaviors in the same way, contradicting Kochanska's (1993) proposed temperament x parenting pathways to conscience development. As previously stated, the development of conscience and prosocial behaviors may be different for conceptual and empirical reasons (e.g., parent and child reasoning, disparate socialization and temperamental correlates). For example, in this model, fear is not thought to ready children to be receptive to conscience-related socialization, but instead hinder their likelihood of prosocial responding. Parenting is also thought to operate in an incongruent manner. Unlike matters related to conscience, children and parents are less likely to implicate punishment when discussing motivators of prosocial behavior. Such a notion

calls into question whether punishment, even at lower levels, may play a significant role in the socialization of prosocial behaviors. This may especially hold true for temperamentally vulnerable children, who are likely to already be emotionally overly aroused in situations involving the needs or distress of others. If children are focused on relieving their own distress, it is unlikely they would react receptively to punishment. In order to formally examine these relations, several study hypotheses were proposed:

Hypothesis 1. The relations between dimensions of children's vulnerable temperament (i.e., fearfulness, shyness, and anger/frustration) and their prosocial behaviors were expected to be negative.

Hypothesis 2. Maternal responsiveness was expected to be positively related to children's and adolescents' prosocial behaviors.

Hypothesis 3. Firm discipline was expected to be positively related to children's and adolescents' prosocial behavior. However, discipline was not anticipated to make a unique contribution to these prosocial behaviors relative to maternal responsiveness.

Hypothesis 4. Vulnerable temperament and sensitive responsiveness were expected to interact, such that the relations between responsiveness and prosocial behaviors were positive for children at higher levels of vulnerable temperament. For less vulnerable children, these relations were expected to be less positive or zero (Figure 1).

Hypothesis 5. For temperamentally vulnerable children, the relations between maternal firm discipline and prosocial behaviors were expected to be either zero or negative. No hypotheses were made concerning the relation between firm

discipline and prosocial behaviors for children who were not temperamentally vulnerable.

Age, Gender, Race, and Income

Finally, the relations among the main study variables may moreover be directly influenced or differ by age, gender, race, and measures of socioeconomic status (i.e., income). Thus, these relations were explored in the current study.

Age. Throughout childhood and into adolescence, there is a marked increase in prosocial behaviors, with adolescents engaging far more prosocial behaviors than preschool-aged children (Carlo, 2006). Although study characteristics may dictate the extent of these age differences (e.g., experimental vs. naturalistic studies, the specific type of prosocial behaviors assessed, type of data collection used) (Carlo, 2006; Eisenberg et al., 2006), adolescents tend to be more prosocial than young children for several reasons. For example, adolescents may have more opportunities to engage in such behaviors as they begin to explore their social world. Through these opportunities, adolescents may also learn skills needed for instrumental helping (Carlo, 2006; Eisenberg et al., 2006). Theorists such as Hoffman also suggest that adolescents possess more sophisticated sociocognitive skills (i.e., perspective-taking, hypothetical inferences of other's emotional states) that may motivate them to act in a prosocial manner (Hoffman, 2001). Empirical research appears to generally support these age-related changes in prosocial behavior (Eisenberg et al., 2006).

Additionally, the transition to adolescence signifies a period where an individual, at least in the United States, typically begins to spend more time with peers rather than parents (Carlo, Fabes, Laible, & Kupanoff, 1999; Hart & Carlo, 2005; Morris et al.,

2007). Some studies have shown that peer influences may more strongly predict empathic and prosocial behaviors when simultaneously considered with parental influences (Carlo, Crockett, Randall, & Roesch, 2007; Laible et al., 2000; Laible, Carlo, & Roesch, 2004; Wentzel & McNamara, 1999). Yet, parents still have some influence on their adolescents' social, emotional and moral development (Klimes-Dougan et al., 2007; Laible et al., 2000), and adolescents' psychological achievements are the product of what has already been accomplished in childhood (Hart & Carlo, 2005). Therefore it is likely that responsive parenting in childhood will still be related to early adolescent's prosocial behaviors in the current study. The effect should be attenuated, however, due to competing influences such as sociocognitive advances and the emerging role of peers, as well as the fact that measures of parenting captured parental socialization at kindergarten as opposed to early adolescence (although these processes will not be directly examined in the current study). Based on this reasoning, temperament should have a lessened, but still notable impact on early adolescent's prosocial behaviors, although research in this area is sparse (Carlo et al. 1998; Fabes, Carlo, Kupanoff, & Laible, 1999).

Gender. Consistent with gender socialization theory that posits that girls are encouraged to be more nurturing and caring, girls tend to be more prosocial in their behavior than boys (Carlo, 2006; Gilligan, 1982; Maccoby & Jacklin, 1974). As these gender-specific experiences accumulate over time, gender differences in prosocial behaviors have accordingly been found to be the greatest into adolescence. Again, some scholars caution that these differences become attenuated once study characteristics are taken into account; notably, a failure to distinguish the type of prosocial behavior being assessed may mask such differences (Carlo, 2006; Eisenberg et al., 2006). For example,

Eagly and Crowley (1986) reported that while women engaged in more nurturant types of prosocial behaviors, men tended to engage in more risky or chivalrous types of prosocial behaviors. Others have suggested that even the similar types of parenting subtly encourage gender-specific prosocial behavior (Hastings, McShane, Parker, & Ladha, 2007).

In addition to the study by Hastings, McShane, et al., (2007), other studies have shown that gender moderates the relations between prosocial behaviors and its correlates (Carlo, 2006). For example, Robinson et al. (1994) found positive relations among sympathy, maternal warmth *and* family disorganization for girls, and positive relations among sympathy and family organization for boys. Bryant (1987) reported that maternal concern, maternal responsiveness, paternal limit setting and paternal engaging in pleasurable activities more positively predicted girls', but not boys', subsequent sympathy. Another study similarly revealed that maternal responsiveness was only positively related to girls' sympathic responding (Spinrad & Stifter, 2006). While gender x parenting interactions have not been consistently found (Davidov & Grusec, 2006; Diener & Kim, 2004; Keresteš, 2006; Kiang et al., 2004), these studies seem to establish relations between parenting and a "feminine" form of prosocial behaviors (i.e., sympathy; see Hastings, McShane, et al., 2007) for girls only.

In their proposal of moderated linkage, Rothbart and Bates (1998; 2006) similarly posited that gender interacts with temperament to predict developmental outcomes. Research has supported this framework for the study of sympathy and prosocial behaviors. Bryant (1987) found that stronger intensity of response (i.e., not easily soothed/distracted) and persistence predicted higher sympathy in girls. For boys only,

greater regularity/rhythmicity and less externalizing of feelings predicted sympathy. Robinson et al. (1994) reported that infant positive/social temperament was characteristic of boys who increased in sympathy over time. In a study of Indonesian preadolescents, Eisenberg et al. (2004) reported that shyness and negative emotionality were only negatively related to peer ratings of prosocial behavior for boys only. Negative emotionality has also predicted less sympathy, less prosocial behavior and more personal distress for boys in studies conducted with younger children from white, middle-class backgrounds (Diener & Kim, 2004; Eisenberg, Fabes, Karbon, Murphy, Wosinski, et al., 1996; Eisenberg, Fabes, Murphy, Karbon, et al., 1996; Spinrad & Stifter, 2006). Again, while not all studies have found significant temperament x gender interactions (Kiang et al., 2004; Kienbaum et al., 2001), studies that have detected this interaction have consistently revealed relations between temperament and prosocial behaviors for boys only.

Only three studies have examined three-way interactions among temperament, parenting, and gender in their examinations of prosocial behavior. Two of these studies (Kienbaum et al., 2001; Spinrad & Stifter, 2006) failed to find a significant three-way interaction, although Kienbaum et al. (2001) did find a marginal warmth x shyness x gender interaction when assessing *teachers*' warmth. Positive relations between shyness and sympathy were found for girls in classes with higher teacher warmth, whereas negative relations between shyness and sympathy were found for boys whose teachers were below the median on warmth. As previously reported, Hastings et al.'s (2005) parenting x temperament interactions were all qualified by gender. Fearful boys'

prosocial behavior was positively related to authoritative parenting, whereas fearful girls' prosocial behavior was instead positively related to authoritarian parenting.

In sum, the above studies support gender's moderating role in the examination of parenting, temperament, and prosocial behaviors. Various aspects of positive parenting were more strongly and positively related to girls', but not boys', prosocial behaviors in several studies. These studies (Bryant, 1987; Spinrad & Stifter, 2006) support the notion that parenting more greatly impacts girls' empathic behavior, a more "feminine" type of prosocial behavior (Hasting, McShane, et al., 2007). Conversely, relations among all types of temperament and prosocial behaviors tended to be stronger among boys than girls (Diener & Kim, 2004; Eisenberg et al., 2004; Eisenberg, Fabes, Karbon, Murphy, Wosinski, et al., 1996; Eisenberg, Fabes, Murphy, Karbon, et al., 1996; Robinson et al., 1994; Spinrad & Stifter, 2006). Although Spinrad and Stifter (2006) have suggested that temperament may be especially predictive of boys' empathic responding, theoretical justification for this expectation was not presented. Results from the studies evaluating three-way interactions are less clear, although one consistent trend found was that inhibited or fearful boys tended to benefit more from parental or teacher warmth/authoritative parenting (Kienbaum et al., 2001; Hastings et al., 2005). The reason why these more temperamentally vulnerable girls helped more under authoritarian or overprotective parenting is less clear, although the authors speculated that the situation evoked demands for compliant behavior from more authoritarian mothers (Hastings et al., 2005). Thus, it was expected that the relations between vulnerable temperament and prosocial behavior will be stronger for boys, and less negative for boys who experience more sensitive parenting. Given that the measure of prosocial behavior in this study will

tap into both “feminine” (e.g., comforting) and “masculine” (e.g., cooperating; Hastings, McShane, et al., 2007) types of prosocial behavior, no significant interactions were expected regarding gender and parenting.

Race and Income. The relations among race, income, and prosocial behaviors were also examined, as findings regarding the relations between these demographic variables and prosocial behaviors have been mixed. For example, measures of socioeconomic status (SES) have been both positively related to prosocial behaviors (Dearing, McCartney, & Taylor, 2001; Dunn et al., 1998; Eisenberg et al., 2006; Janoski & Wilson, 1995; Keresteš, 2006; Lichter, Shanahan, & Gardner, 2002; Romano et al. 2005; Schieman & Van Gundy, 2000) as well as negatively related to prosocial behaviors (Garner, 2006; Knight & Kagan, 1977). The relations between race, ethnicity, and prosocial behaviors have been even more inconclusive. Studies have either reported that European American children exhibit greater prosocial behaviors (Carlo, Knight, McGinley, Zamboanga, & Jarvis, in press; Wentzel, Filisetti, & Looney, 2004) or fewer prosocial behaviors (Beutel & Johnson, 2004; Kagan & Knight, 1984; Richman, Berry, Bittle, & Himan, 1988) than children of other racial or ethnic groups. Moreover, ethnic or racial differences in prosocial behavior have not always been found (Barry & Wentzel, 2006; Carlo et al., in press; Eisenberg et al., 2006). In order to elucidate these findings among income, race, and prosocial behaviors, the current study examined these relations.

Chapter 2

Methods

Participants

Participants were part of a larger ongoing study conducted by the NICHD-funded Study of Early Child Care (NICHD SECC). At birth, families of newborns were recruited at ten study locations throughout the United States (Little Rock, AR; Irvine, CA; Lawrence, KS; Boston, MA; Philadelphia, PA; Pittsburgh, PA; Charlottesville, VA; Morganton, NC; Seattle, WA; Madison, WI). Mothers who were ultimately eligible (e.g., over 18, healthy, single birth) and willing to participate were then part of a pool. Over half of this pool was selected as part of a conditional random sample to be phoned at 2 weeks after the birth. If the families were still eligible (e.g., healthy child) and desired to be part of the study, they became part of the study (N = 1364). Full details of the initial recruiting process may be found at the NICHD websites (http://secc.rti.org or www.nichd.nih.gov/crmc/secc) (NICHD Early Child Care Research Network, 2004).

For the current study, families remaining active in the study when the study child was 54 months old (Phase 2 of the study) and when the child was between 10-12 years old (Phase 3 of the study) were examined. Children who were either not active at both Phases, or did not have any data for either the predictive or outcome measures (see below) at Phase 3 were excluded from analysis. Ultimately, 1,068 study children (538 girls) were included for analysis. A majority of these children were White (regardless of ethnicity; n = 883, 83%), whereas the rest of the children were either Black or African American (n = 121, 11%), Asian or Pacific Islander (n = 15, 1%), American Indian, Eskimo, or Aleutian (n = 3, <1%), or of an "other" race (n = 46, 4%). Additionally, a majority of the children were not of a Hispanic ethnicity (n = 1008, 94%). At the 12-year data collection point, 17% of the families had a total income of $27,500 or less, 28% had an income between $32,500 and $65,000, 29% reported an income between $65,000 and

$95,000, and 27% of families made a yearly income of $125,000 or more. Additionally, 86% of study children (n = 906) were classified as a data collection Wave 1 children. The remaining children were data collection Wave 2 children, or children who entered formal schooling a year later than their Wave 1 cohorts.

Procedure

When the child was 54 months old, a NICHD SECC coordinator scheduled a home visit with the child and her mother. During the visit, the child's mother was administered several questionnaires by a Home Visitor, which were completed while the child was being tested. These questionnaires included the Raising Children Checklist (see below). The study child and her mother also participated in a laboratory visit at 54 months. During the visit, the mother was asked to leave the room and complete a packet of questionnaires while the Visit Coordinator engaged the child in another task. The Child Behavior Questionnaire, another measure of interest to the current study, was included in the packet (see below).

After the child and Visit Coordinator were finished with their task, and the mother had completed the packet, the Visit Coordinator prepared the mother for the next task. The mother was instructed to face a one-way mirror and camera with her child, and to keep boxes containing activities for the task behind the mother and child so as to not obstruct the view between the dyad and the one-way mirror. She was then told that the activities selected were enjoyable for her and the child, although the first two were slightly difficult for the child's age. The mother was required to allow the child to try and solve these activities on their own at first. After a while, she would be allowed to help her child in any way she pleased. The entire task was to take 15-20 minutes.

Finally, instructions were given to the mother for each specific activity, and mothers were permitted to ask questions about the tasks after instructions were given. The first activity involved solving a maze that was placed on top of the Etch-A-Sketch, with the requirement that the child had to solve the maze without crossing over any of the lines. The second challenging task including constructing a tower out of small blocks in order for it to look like the sample tower (which was just one piece). The final task simply required the mother and child to play together with puppets, and no specific instructions were given for this activity (these puppets included two parrots, two frogs, and two blue alligators).

The study child was also observed interacting with a friend or regular playmate at 54 months. This friend, identified by the mother at a phone call at 53 months, was required to be a similar age and gender (as much as possible), and could not be the study child's sibling. If no regular playmate could be identified, observations were not carried out. The NICHD SECC contacted the friends' parent if the mother did not prefer to contact the parent herself. When possible, the study child and friend were observed interacting in the child's normal child-care setting. The research assistant brought a special cardboard portable playroom (5' x 3') for the children in order to guarantee continuity in setting across participants. The 15-minute video- and audio-recorded observation was divided into three equal sections, all requiring different toys. A Mickey Mouse Pop-up game (with a "popper" bubble) was introduced for the 5 minutes of joint problem solving observation. Next, the research assistant brought in a Viewmaster with one Lion King slide in order to establish 5 minutes of "limited resource" play. Finally, a Fisher-Price Doctor Kit and a doll (to match the child's gender and race) was given to the

pair so the coder could observe 5 minutes of fantasy role play. The research assistant was instructed to give the pair very limited information on how to play with the toy. Ratings were conducted after each 5 minute observation segment, and each segment was rated separately from one another. Afterwards, the children were thanked for their participation and handed a sticker. Additionally, the child care provider was asked to complete the California Preschool Social Competence Scale during this visit (see below).

During first grade, the study child was observed interacting with peers by trained research assistants. However, this time the observation occurred during an unstructured school setting (i.e., recess, or any other "non-teacher directed" time). Examples of this time included outside or inside recess, inside classroom free play, or lunchroom time. Children were observed interacting with peers who also participated in this unstructured time, regardless of exact age and gender. Research assistants were asked to observe children for at least 15 minutes, although the preferred time was 20 minutes. Following 20 minutes of alternating 30 second observation time and 30 seconds of record time for behavioral scales, observers also recorded notes for qualitative ratings of social behaviors.

When the child was ten-, eleven- and twelve-years-old, the Child Behavior with Peers (see below) questionnaire was distributed her mother and teacher. Mothers again completed a packet of questionnaires while the child was engaged in another task with a friend and the Visit Coordinator. The child's teacher was also mailed packets containing the Child Behavior with Peers questionnaire. After completing the packet, the teachers were instructed to mail back the packet to the data collection site in a self-addressed stamped envelope.

Measures

Child Behavior Questionnaire (CBQ). A summary of all study measures can be found in Table 1. The CBQ, a parent-report measure of child temperament, was administered to children's mothers at 54 months. Although the CBQ typically assesses fifteen dimensions of temperament (196 items total), the NICHD SECC administered a shortened form (8 dimensions, 80 items) to mothers. The current study focused on three scales of the CBQ: Fearfulness (10 items, sample item: "*My child is afraid of loud noises*"), Shyness (10 items, sample item: "*My child acts shy around new people*"), and Anger/Frustration (10 items, sample item: "*Becomes easily frustrated when tired*") (See Appendix A). Mothers rated the CBQ items on a 7 point Likert-type scale, reflecting to what extent the item was true of their child during the past six months (1 = extremely untrue, 4 = neither true nor false, 7 = extremely true). If the situation presented had never applied to the child, mothers were asked to respond Not Applicable (i.e., circle "8"). All Not Applicable responses were coded as missing values. Reliabilities for these scales in the current study were modest to high (see Table 2). Moreover, previous studies have demonstrated these subscales of the full-length and shortened CBQ have adequate internal consistency, are stable over time, and are concurrently and longitudinally related to theoretically relevant constructs (e.g., Komsi et al., 2006; Leve, Kim & Pears, 2005; Putnam & Rothbart, 2006; Rothbart, Ahadi, Hershey & Fisher, 2001; Wilson, 2006).

Mother-Child Interaction Task (MCIT). The MCIT was designed in part to measure mothers' responsiveness to her child in distressful situations. At 54 months, children and mothers were observed while engaged in three tasks: a maze task with an Etch-A-Sketch, reconstructing a block tower, and open play with puppets (see above

Procedure section). Videotapes of these three tasks were then sent to the main investigator for scoring using several scales adopted from the Egeland and Hiester (1993) Teaching Task Rating Scales. These scales were rated using a unique 7-point Likert type scale (see Appendix B). The first maternal rating was *Supportive Presence*, defined as expressing appropriate emotional support towards the child. This support could include encouraging the child during the task and/or being reassuring and calm when the child was distressed. Parents scoring very high (7) on this scale were actively concerned over their child's (and not their own) needs, and displayed skillful strategies while helping their child. Parents scoring very low (1) on this scale were uninvolved or even somewhat hostile to the child when she needed support.

Mothers were also rated on their *Respect for Child's Autonomy*. This scale assessed whether or not mothers respected her child's individuality and unique perspective of the task at-hand. Mothers scoring on the high end of the scale (7) demonstrated this respect by carefully listening to the child's view, modeling her own view, and negotiating a course that incorporated both perspectives. Mothers scoring at the low end of this scale (1) completely disregarded their child's perspective and were intrusive, dominating, and even forceful regarding their own desires for how the task should be completed.

The final scale of interest to the current study was maternal *Hostility*. Mothers receiving a (7) on this scale were those who were those who displayed strong, uncontrolled bouts of anger towards the child, possibly indicating abuse. A (6) on this scale indicated the mother was hostile and rejecting of her child during most of the session, and mainly used this expression as a method to control her child. Mothers

receiving a (1) on this scale reflected no outright rejecting of the child, even if the mother was not necessarily supportive of her child during the task.

A composite labeled *Maternal Responsiveness* was finally formed by taking the mean of *Supportive Presence, Respect for Autonomy*, and *Hostility* (reversed). Higher scores on the Maternal Responsiveness scale indicated greater supportive presence provided for the child, greater respect for the child's autonomy, and less hostility displayed towards the child. Inter-rater reliability statistics were moderate to high for the Maternal Responsiveness composite for the full sample (Pearson correlation coefficient = .78; Winer (1971) unbiased estimator of reliability = .88), as was the internal reliability for the current sample (see Table 2). Similar reliabilities have been reported elsewhere (Belden & Luby, 2006; Egeland & Hiester, 1995).

Raising Children Checklist (RCC). In order to measure mothers' feelings regarding the use of discipline, the RCC was administered to mothers (Shumow, Vandell, & Posner, 1998). Although three types of discipline were assessed (firm, lax, harsh), only the firm subscale is reported here. Parents were asked to use a 4 point Likert scale (1 = Definitely No, 2 = Mostly No, 3 = Mostly Yes, 4 = Definitely Yes) to answer the items on the RCC regarding firm discipline (e.g., "*Do you try to explain the reasons for the rules you make?*"; "*Do you give your child lots of hugs and kisses?*") when their child was 54 months old. The authors of the NICHD SECC implemented a common 3-factor solution among the mother and fathers/other adults to determine which items of the RCC should be used for each of the subscales. The six items of the RCC ultimately used to construct the firm parenting subscale (Appendix C) had modest reliability (see Table 2). The RCC, and the original measure it was modified from, has demonstrated acceptable

internal consistency and test-retest reliability (Greenberger & Goldberg, 1989; Hill, Stein, Keenan, & Wakschlag, 2006; McGuire & Earls, 1993; Shumow et al., 1998).

Friendship Interaction. As outlined above (see Procedure), each study child and a close friend were observed in a controlled setting for 15 minutes playing with three sets of toys (5 minutes for each set were allowed). Two types of prosocial behaviors were recorded for the study child during these three observational periods. *Sharing and turntaking* (labeled Prosocial Behavior 1) was defined as the study child sharing materials, including the friend during play, and deliberately encouraging turntaking during a game or activity. These ratings were conducted on a 1-5 scale, indicating both the quantity and quality of prosocial sharing/turntaking. A (1-low) was given to children who did not share/turntake, or who only did it once. The child received a (2-fair) score if they were selective in the toys they share, offer only a few times to share, and otherwise play independently. Moderate (3) scores indicated that the study child shared or took turns on several occasions, but the these acts are passively or implicitly conducted. When these acts were more explicit, the child would receive a (4-high). Finally, very high scores (5) indicated that the child engaged in sharing or turntaking most of the time (see Appendix D).

Expressions of caring or concern (labeled Prosocial Behavior 2) were also observed and rated during these structured friendship interactions. Examples of these behaviors included showing interest in the friend's feelings, consoling a distressed friend, helping a friend without intention to gain anything, and encouraging a friend. These behaviors may additionally be verbal (e.g., saying "please" and "thank you") or nonverbal (e.g., giving a hug). Unlike *sharing and turntaking*, which was on a 5-point

scale, expressions of caring or concern were rated on a 3-point scale: (1) = none, (2) = low, and (3) = high. Additionally, ratings for both scales were given a 7 if the study child's behavior was uncodable (see Appendix D). All uncodable data was recoded as missing data.

In order to examine a measure of prosocial behavior that reflected the other prosocial measures in the current study, a composite of the two types of prosocial behaviors (Sharing and turntaking/Expression of caring or concern) in the three observational periods was computed. Since these ratings were coded using different scales, standardized scores were used to develop this composite. This six-item scale had modest reliability (see Table 2). As reported by the NICHD SECC, inter-rater reliability statistics were modest for the overall Prosocial Behavior I scale (Pearson correlation coefficient = .57; Winer (1971) unbiased estimator of reliability = .72) and low to modest for the overall Prosocial Behavior II scale (Pearson correlation coefficient = .42; Winer (1971) unbiased estimator of reliability = .59). This scale was developed originally for the NICHD SECC, and no base references were provided regarding its development.

California Preschool Social Competence Scale (CPSC). When the study child was 54 months old, the child caregiver was administered the 34-item CPSC in order to measure various aspects of social competency (e.g., peer interactions, effective communication). Although the NICHD SECC identified three factors of the CPSC, the current study was interested in four items that tapped into empathic and prosocial behaviors (Appendix E). The items on the empathic and prosocial behavior subscale were rated using a 4 point Likert scale indicating how often the child shared, helped, empathized, and cooperated (responses varied, see Appendix E) and a fifth option labeled

"non-applicable". The original version of the CPSC included 30 items, and the NICHD SECC added 4 items including two used in the empathic and prosocial behavior scale (Empathy and Cooperative Play). This four-item prosocial subscale of the CPSC had modest internal reliability (see Table 2). Prior studies have shown the CPSC to have good internal consistency, interrater reliability, and stability across time (Flint, Hick, Horan, Irvine, & Kukuk, 1980; Ladd & Price, 1987; Levine, Elzey, & Lewis, 1969; Ribas-Fitó et al., 2007).

Unstructured Peer Observation. During the unstructured peer observation conducted when the child was in first grade, qualitative ratings of prosocial behavior were obtained for the study child. Prosocial behavior was defined as two types of prosocial behavior: sharing/turntaking (e.g., patiently waiting for a toy, taking turns during a game) and expressions of caring or concern (e.g., consoling a distressed friend, showing appreciation, helping a friend without intending to gain anything, being polite). These behaviors may additionally be verbal (e.g., saying "please" and "thank you") or nonverbal (e.g., giving a hug). These behaviors were rated on a scale from 1 to 7. A rating of (1) indicated that no prosocial behavior was observed. Ratings between (2) and (3) indicated only a brief expression of either type of prosocial behavior. A (4) indicated that one aspect was obviously displayed, but still was not a very strong display. Ratings of (5) and (6) reflected strong indicators of one aspect of prosocial behavior, or a mix of both types of prosocial behavior. A (7) was given to children who strongly displayed both types of prosocial behavior (see Appendix F). As reported by the NICHD SECC, inter-rater reliability statistics were low to modest for this single rating of prosocial behavior (Pearson correlation coefficient = .52; Winer (1971) unbiased estimator of reliability =

.68). Additionally, this rating system was developed especially for the NICHD SECC, and no base references were provided regarding its development.

Child Behavior with Peers (CBP). The CBP is a questionnaire that asks adults familiar with the study child about different types of that child's behaviors with their peers. Subscales of the CBP tap into Prosocial Behaviors, Aggression, Relational Aggression, Asocial Behaviors, Peer Exclusion, and Peer Victimization. The Prosocial Behaviors subscale was the only scale of the CBP used in the current study. In order to create the Prosocial Behavior subscale of the CBP, the NICHD SECC adapted five of eight prosocial scale items from the Child Behavior Scale (CBS; Ladd & Profilet, 1996). Items tapping into prosocial behavior included "*My child offers help or comfort when peers are upset*" and "*My child is kind toward peers*" (see Appendix G). Mothers and teachers responded to these items by using a 3-point responses scale (0 = Not True, 1 = Sometimes True, 2 = Often True) when the child ten-, eleven- and twelve-years-old. Higher scores on the CPS prosocial behavior subscale reflected greater prosocial behavior for children.

In order to capture a wider range of early adolescents' prosocial behaviors (i.e., across contexts and observers), a composite measure of prosocial behavior was created from both the mother and teacher responses at each age. For all ages, the correlation among the mother and teacher scores were positively and significantly correlated (all rs = .29, ps < .001). Additionally, the prosocial behavior composites of the CBP had high alpha coefficients across at all three ages (see Table 2). Prior research has shown that the original prosocial behavior subscale of the CBS has strong psychometric properties (Birch & Ladd, 1998; Clark & Ladd, 2000; Coplan & Armer, 2005; Cummings,

Schermerhorn, Davies, GoekeMorey, & Cummings, 2006; Ladd & Profilet, 1996; Laible, 2004, 2006; Miles & Stipek, 2006; Sturge-Apple, Davies, & Cummings, 2006).

Data Analysis Plan

A series of bivariate correlations and hierarchical multiple regression analyses were conducted to test the previously outlined hypotheses. First, overall bivariate relations were examined among the main study variables by calculating Pearson correlation coefficients among fearfulness, shyness, anger/frustration, maternal responsiveness, firm discipline, and the seven prosocial behavior scores (Hypotheses 1, 2 and 3). In order to determine whether maternal responsiveness more strongly predicts prosocial behaviors than firm discipline, regression analyses were conducted to determine the unique relations among these variables and the seven prosocial behavior outcomes (Hypothesis 3). In these regression models, control variables (total household income, race, gender) were entered on Step 1, as well as the main effects for both measures of maternal socialization (maternal responsiveness and firm discipline). As a post-hoc analysis, the maternal responsiveness x firm discipline interaction was also entered at Step 2. Early individual differences in prosocial behaviors were also controlled for at Step 3 in the models examining early adolescents' prosocial behaviors.

Bivariate correlation analyses were then conducted separately by gender (gender exploratory analyses). The next set of analyses conducted examined the hypothesized temperament and parenting interactions (Hypotheses 4 and 5) as well as the moderating effect of gender (gender exploratory analyses). In these regression models, control variables (total household income, race) were entered on Step 1. Additionally, gender, one aspect of temperament, and one maternal socialization variable were entered on Step

1. Next, the corresponding temperament x maternal socialization term, gender x temperament interaction term, and gender x maternal socialization term were entered in Step 2. The three-way interaction of gender, temperament, and maternal socialization was then entered in Step 3. Finally, a measure of early prosocial behaviors were entered in Step 4 in the models examining early adolescent prosocial behaviors (see below). A total of 36 regression analyses (1 gender term x 3 temperament variables x 2 socialization variables x 6 outcome variables) were conducted.

In order to reduce nonessential collinearity, all continuous main effects in Step 1 were mean-centered and the corresponding interaction terms in Step 2 and Step 3 were computed using these mean-centered variables (Aiken & West, 1991). If the interaction terms were statistically significant, the relations between parenting and prosocial behaviors were plotted for vulnerable temperament 1 standard deviation above the mean and vulnerable temperament that is 1 standard deviation below the mean. Similarly, if three-way interactions were detected, multiple regression analyses testing the two-way vulnerable temperament x parenting interaction were conducted separately by gender to examine whether this interaction was different for boys and girls. T-tests of these slopes were conducted in order to determine whether the slopes depicting the relation between parenting and prosocial behaviors were statistically significant (Aiken & West, 1991). If two-way interactions involving gender were significant, multiple regression analyses were tested separately for boys and girls to examine whether the main effects of the continuous variable (e.g., temperament, parenting) differed for boys and girls.

Chapter 3

Results

Descriptive Statistics and Bivariate Correlations

Means, standard deviations, and other descriptive statistics for the main study variables are summarized in Table 2. Bivariate correlations among the main study variables and demographic variables can be found in Table 3; only significant correlations ($p < .05$) are reported here. Gender was related to both shyness and anger/frustration; girls were more shy, whereas boys were more angry/frustrated. Girls were additionally found to be more prosocial than boys for all six measures of prosocial behaviors. Race (recoded as White or Not White) was not related to the three measures of temperament, but was related to both measures of maternal socialization. Being White was related to greater use of maternal responsiveness and firm discipline. Additionally, being White was related to greater prosocial behaviors as measured by the 54-month Prosocial Competence measure and the three early adolescent measures of prosocial behavior. Income was negatively related to anger/frustration for all years except when income was assessed when the child was 6-years-old. Additionally, all measures of income were positively related with maternal responsiveness, firm discipline, and prosocial behavior (except prosocial behavior as assessed by the 54-month Friend Observation measure).

Bivariate correlations among the main study variables can be found in Table 4; again, only significant correlations ($p < .05$) are reported here. The temperamental dimensions of fearfulness, shyness, and anger/frustration were positively correlated with one another. Maternal responsiveness was positively correlated with firm discipline. The six measures of prosocial behaviors were generally positively correlated with one another; however, the 54-month Friend measure was only related to the 10- and 12-year

Prosocial Behavior measures, and the 54-month Competence measure was not related to the 6-year Peer Observation measure. Since the 54-month Prosocial Competence score was strongly correlated with the three early adolescent prosocial behavior measures, this measure was used to control for early individual differences in prosocial behaviors in analyses examining early adolescent prosocial behavior.

Except for the 54-month Friend Observation and 6-year Peer Observation measures, anger/frustration was negatively correlated with prosocial behaviors, as hypothesized (Hypothesis 1). Contrary to the hypothesis, fearfulness and shyness were not correlated with any of the six measures of prosocial behavior. As hypothesized, maternal responsiveness and firm discipline were typically positively correlated with prosocial behaviors (Hypotheses 2 and 3). Maternal responsiveness, however, was not correlated with the 54-month Friend Observation and 6-year Peer Observation measures, and firm discipline was negatively correlated with the 6-year Peer Observation measure.

Maternal Responsiveness and Firm Discipline

To examine the relative contribution of both maternal responsiveness and firm discipline, multiple regression analyses were conducted (Hypothesis 3). As can be seen in Table 5, all models tested were significant. Only significant predictors ($p < .05$) are reported here, unless otherwise noted. In general, family income, and early prosocial behavior positively predicted prosocial behaviors (although family income was not significantly related to the 54-month Friend Observation and 6-year Peer Observation measures). Additionally, being White and female was significantly predictive of prosocial behaviors (except race was not significant in the 54-month Prosocial Competence and 6-year Peer Observation models). The relations among maternal responsiveness, firm

discipline and prosocial behaviors were mixed, contrary to the hypothesis that maternal responsiveness would emerge as a unique predictor of prosocial behavior. In the 54-month Friend Observation model, only firm discipline was positively related to prosocial behaviors. In the 54-month Prosocial Competence model, firm discipline and maternal responsiveness were not significant predictors. Contrary to the hypothesis, firm discipline was negatively related to 6-year Peer Observation measure of prosocial behaviors. For all three measures of early adolescent prosocial behavior, both firm discipline and maternal responsiveness were positive predictors at all steps. None of the maternal responsiveness x firm discipline interactions entered at Step 2 were significant.

Bivariate Correlations by Gender

Bivariate relations among the main study variables were then examined for boys and girls (Table 6); only the significant correlations ($p < .05$) are presented here. For both boys and girls, fearfulness was related to both shyness and anger/frustration. The relation between maternal responsiveness and firm discipline was positive for boys only. For boys only, the 54-month Friend Observation prosocial measure was positively related to both the 54-month Prosocial Competence and 11-year Prosocial Behavior measures, and the 6-year Peer Observation was positively related to the 10-year\ Prosocial Behavior measure. For both boys and girls, the relations among the 54-month Prosocial Competence measure and the three early adolescent measures were positive. Regarding hypothesized relations among the main study variables, prosocial behavior was not related to either fearfulness or shyness for boys and girls. For boys, anger/frustration was negatively related to the 54-month Prosocial Competence and 10-year and 12-year Prosocial Behavior measures. For girls, anger/frustration was negatively related to the 54-month

Prosocial Competence, 6-year Peer Observation, and 10-year and 11-year Prosocial Behavior measures (Hypothesis 1). For boys and girls, the relations among maternal responsiveness and the three early adolescent prosocial behaviors were positive. Additionally, the relation between maternal responsiveness and the 6-year Peer Observation measure was positive for boys (Hypothesis 2). Firm discipline was positively related to the 10-year and 11-year Prosocial Behavior measures for girls. However, firm discipline was negatively related to the 6-year Peer Observation measure and positively related to the three early adolescent prosocial behavior measures for boys (Hypothesis 3).

Multiple Regression Analyses: Testing Main Effects and Interactions among Vulnerable Temperament, Maternal Socialization, and Gender

Results for multiple regression analyses can be found in Tables 7-11. Beta weights, F values, degrees of freedom, R^2 values, and significance tests (F and ΔR^2) are reported for each set of analyses. All regression models and predictors reported in text were significant ($p < .05$), unless otherwise noted. In general, the control variables (family income, gender, race and early prosocial behavior) were significant predictors. Family income and early prosocial behavior positively predicted prosocial behaviors, and being female and White was related to higher levels of prosocial behaviors. However, family income was not significantly related to the 54-month Friend Observation and 6-year Peer Observation measures, and race was not related to the 54-month Prosocial Competence and 6-year Peer Observation measures.

Maternal responsiveness and fearful temperament (Hypothesis 4). Results from this analysis can be found in Table 7. Fearful temperament was not related to prosocial behavior in the six models examined. In Step 1, maternal responsiveness was a positive

predictor of the three early adolescent prosocial behavior measures. In Steps 2-4, maternal responsiveness was only a positive predictor for the 10- and 12-year Prosocial Behavior measures. No two-way interactions were significant predictors of prosocial behaviors. However, the three-way interaction for the 11-year Prosocial Behavior model was significant in Steps 3 and 4. The two-way fear x responsiveness interaction was significant for boys only (ß = -.15, $p < .01$; Figure 2). Contrary to the hypothesis, maternal responsiveness was positively related to prosocial behaviors for boys who were below the mean on fearfulness (this slope was significant; t (597) = 3.67, $p < .001$). No relations were found for boys above the mean on fearfulness.

Maternal responsiveness and shy temperament (Hypothesis 4). Results from this analysis can be found in Table 8. In the first step, shyness was not related to prosocial behavior in the six models examined, although shyness became a negative predictor in the 11-year Prosocial Behavior model in Steps 2-4. In Step 1, maternal responsiveness positively predicted the three measures of early adolescent prosocial behavior. Maternal responsiveness only positive predicted the 10-year and 12-year Prosocial Behavior measures at Steps 2-4. No significant interactions were found at Steps 2-4.

Maternal responsiveness and angry/frustrated temperament (Hypothesis 4). Results from this analysis can be found in Table 9. Anger/frustration negatively predicted the 54-month Prosocial Competence and 10-year and 11-year Prosocial Behaviors measures in Step 1. In Steps 2-4, anger/frustration negatively predicted the 6-year Peer Observation and 10-year and 11-year Prosocial Behavior measures. Maternal responsiveness positively predicted the three early adolescent prosocial behavior measures at Step 1. At Steps 2-4, maternal responsiveness only positively predicted the

12-year Prosocial Behavior measure. The gender x anger/frustration interaction predicted the 6-year Peer Observation measure at Steps 2 and 3. Anger/frustration was negative predictor of prosocial behaviors for girls only (ß = -.12, $p < .05$). Additionally, the anger/frustration x maternal responsiveness interaction significantly predicted the 54-month Friend Observation and Prosocial Competence measures at Steps 2 and 3. Contrary to the hypothesis, the relation between maternal responsiveness and the 54-month Friend Observation measure was positive for those below the mean on anger/frustration (this slope was significant, t (723) = 2.47, $p < .01$; Figure 3). Additionally, the relation between maternal responsiveness and the 54-month Friend Observation measure was negative for those above the mean on anger/frustration (this slope was significant, t (723) = -2.14, $p < .05$; Figure 4). Next, the anger/frustration x responsiveness interaction was examined for the 54-month Prosocial Competence measure. As hypothesized, the relation between maternal responsiveness and prosocial behavior was positive for children above the mean on anger/frustration (this slope was significant, t (763) = 2.42, $p < .01$). However, no relation was found for children below the mean on anger/frustration. Finally, the three-way interaction for the 11-year Prosocial Behavior model was significant in Steps 3 and 4. The two-way fear x responsiveness interaction was not significant for either boys or girls, however.

Firm discipline and fearful temperament (Hypothesis 5). Results from these analyses are summarized in Table 10. Fearfulness did not predict prosocial behaviors in the six models examined. In Step 1, firm discipline positively predicted the 54-month Friend Observation and the three early adolescent measures of prosocial behavior. However, firm discipline negatively predicted the 6-year Peer Observation measure. Firm

discipline was not related to prosocial behavior at Step 2, but positively predicted the 10-year Prosocial Behavior measure in Steps 3 and 4. Only the gender x firm discipline interaction significant predicted the 12-year Prosocial Behavior measure at Steps 3 and 4; firm discipline positively predicted prosocial behaviors for boys only (ß = .20, $p < .01$).

Firm discipline and shy temperament (Hypothesis 5). Results from these multiple regression analyses are summarized in Table 11. Shyness did not predict prosocial behaviors in the six models examined. At Step 1, firm discipline positively predicted the 54-month Friend Observation measures and the three measures of early adolescent prosocial behavior, and negatively predicted the 6-year Peer Observation measure. Firm discipline did not predict prosocial behaviors at Steps 2-4. The shyness x firm discipline interaction predicted the 6-year Peer Observation measure at Step 2. For children above the mean on shyness, the relation between firm discipline and prosocial behavior was negative (this slope was significant, t (852) = -2.57, $p < .01$; Figure 5). No relation was found for those below the mean on shyness. At Steps 2 and 3, the gender x firm discipline interaction predicted the 12-year Prosocial Behavior measure. Firm discipline positively predicted prosocial behavior for boys only (ß = .19 , $p < .01$). At Steps 3 and 4, the three-way interaction significantly predicted the 12 year-Prosocial Behavior measure. The two-way shyness x firm discipline interaction was significant for boys only (ß = .19 , $p < .01$). For boys above the mean on shyness, the relation between firm discipline and prosocial behavior was positive (this slope was significant, t (558) = 3.86, $p < .001$; Figure 6). No relations were found for boys below the mean on shyness.

Firm discipline, anger/frustrated temperament, and gender (Hypothesis 5). Results from these multiple regression analyses can be found in Table 12.

Anger/frustration negatively predicted the 10-year and 11-year Prosocial Behaviors measures at all steps. Anger/frustration negatively predicted the 54-month Prosocial Competence measure at Step 1 and the 6-year Peer Observation measure at Steps 2 and 3. The gender x anger/frustration two-way interaction predicted the 6-year Peer Observation model at Steps 2 and 3. Anger/frustration negatively predicted prosocial behavior for girls only (ß = -.11, p = .02). The gender x firm discipline interaction predicted 12-year Prosocial Behaviors at Steps 3 and 4; firm discipline was a positive predictor of prosocial behavior for boys only (ß = .22, $p < .01$).

Attrition Analyses

Attrition analyses were also conducted to investigate whether differences in the main analyses existed between participants who had data at both earlier and later time points, and those who had data at an earlier time point but not at a later (i.e., early adolescence) time point. However, analyses to test for attrition were complicated to the nature of the NICHD SECC dataset. For example, children could have data on all three early prosocial outcomes and data for just one of the later early prosocial outcomes. Conversely, children could have prosocial outcomes on two of the three early measures and later measures of prosocial behavior. Thus, differences in the analyses testing the main hypothesis (responsiveness x temperament interaction) were examined the pair of early and later data analyses that represented the fewest number of participants completing data at each time point. Angry temperament was selected since it was the only dimension of temperament that predicted prosocial behaviors and yielded the greatest number of significant interactions.

Based on this criteria, participants who completed the 54-month Friend Observation and the 12-year Prosocial Behavior measures were examined. Overall, 740 participants had data for the 54-month Friend Observation measure compared to the 555 participants who had data on the 12-year Prosocial Behavior measure. Thus, the attrition rate was 25%. An examination of the multiple regression models across these two groups revealed difference regarding the significant predictors of each model. In the model representing those participants with data at each time point, only race was a significant predictor of 54-month Friend Observation prosocial behaviors, although the anger x responsiveness interaction was a marginal predictor. Conversely, gender, the anger x responsiveness interaction, and the three-way interaction were significant predictors in the model predictor the 54-month Friend Observation prosocial behaviors for those without data at the 12-year time point.

Chapter 4

Discussion

Many scholars have attempted to understand the individual and social underpinnings of prosocial behavior in children and adolescents. However, these factors have often been studied without consideration of how they interact with one another even though scholars have repeatedly demonstrated the need to understand these relations in a multiplicative fashion. Existing research that has considered these potential interactions has moreover failed to introduce theoretically based expectations regarding the pattern of relations among these variables. Thus, the primary purpose of the current study was to examine whether theoretically-based interactions between vulnerable temperament and maternal socialization predicted children's and early adolescents' prosocial behaviors.

The primary hypothesis that the relations between responsive parenting and prosocial behaviors would be the most positive among children and early adolescents with vulnerable temperaments had no support. No support was likewise found for the hypothesis that the relations between firm discipline and prosocial behaviors would not be positive for individuals with vulnerable temperaments.

This study also attempted to replicate previous findings that three dimensions of children's vulnerable temperament (i.e., fear, shyness, anger/frustration) would be negatively related to prosocial behaviors, and that maternal responsiveness and firm discipline would be positively related to prosocial behaviors. Partial support for these hypotheses was found in this study. Only the anger/frustration dimension was negatively related to prosocial behaviors; no relations existed between the fearful and shy temperament dimensions and prosocial behaviors. Maternal responsiveness and firm discipline were generally positively related to prosocial behaviors assessed in early adolescence, supporting the hypothesis. However, the relations between parenting and prosocial behaviors were weaker or even negative when children's prosocial behavior was examined. Notably, angry/frustrated temperament and maternal responsiveness were significant predictors in early adolescence even after controlling for early individual differences in prosocial behavior, suggesting that these dimensions of parenting and temperament assessed in early childhood remain important predictors of prosocial behaviors in early adolescence.

As expected, girls engaged in more prosocial behaviors than boys, regardless of how or when prosocial behavior was assessed. However, exploratory analyses examining gender's moderating influence were not conclusive. The relations between early

socialization and prosocial behaviors were stronger in early adolescence versus early childhood, contrary to study expectations. Exploratory analyses examining the relations among income, race, and prosocial behaviors found significant relations between these demographic variables and prosocial behaviors. Higher income and being white were related to increased use of maternal responsiveness and firm discipline, and higher levels of children and early adolescents' prosocial behaviors. Income was moreover inversely related to children's angry/frustrated temperament.

Hypothesis 1: Vulnerable Temperament and Prosocial Behaviors.

Partial support was found for this hypothesis which predicted negative relations between three aspects of children's vulnerable temperament (fearfulness, shyness, and anger/frustration) and prosocial behaviors. Results from all analyses conducted suggested that fearfulness and shyness were not directly related to prosocial behaviors at any age under examination. Only the anger/frustration dimension of temperament was directly and negatively related to prosocial behaviors reported by familiar adults at 54 months and in early adolescence. This finding that anger/frustration was strongly related to prosocial behaviors supports previous research (Carlo et al., 1998; Farver & Branstetter, 1994; Kiang et al., 2004; Rothbart et al., 1994; Spinrad & Stifter, 2006). Additionally, the finding that anger/frustration was the only dimension of temperament consistently related to prosocial behaviors is not entirely surprising; both anger and prosocial behaviors have been conceptually and empirically linked by scholars to empathic tendencies (Carlo, 2006; Carlo et al., 1998; Feshbach & Feshbach, 1986; Kuppens & Tuerlinckx, 2007; McGinley & Carlo, 2007; Mohr, Howells, Gerace, Day & Wharton, 2007; Rothbart et al., 1994; Rudolph, Roesch, Greiyemeyer, & Weiner, 2004; Strayer & Roberts, 2004).

Supporting this common empathic link, angry/frustrated temperament was not related to observational measures that did not directly tap into empathy. These observational measures at 54 months (with a friend) and at 6 years (with peers) may have instead captured behaviors better defined as social competence, a construct that has been differentiated from prosocial behaviors (Chen et al., 2002; Davidov & Grusec, 2006; Russell et al., 2003; Rydell et al., 2003). For example, these observations assessed several socially competent behaviors, such as peer inclusion, turn taking, and saying "please" and "thank you". Moreover, few behaviors relating to empathy may have also been captured in this scale. For example, caring and concerned behaviors were not frequently captured in the 54-month friend observation; the original five-point scale for this measure was collapsed by the study investigators into a three-point scale because no variance found at the upper end of the original scale.

Conversely, only one significant and negative relation between shyness and prosocial behaviors (assessed at 11 years) emerged. Although this finding was in the anticipated direction, it is likely a chance finding given that no other analysis found this relation. This finding corresponds to the limited research that has failed to find relations between shyness and prosocial behaviors (Diener & Kim, 2004; Phillipsen, Bridges, McLemore, & Saponaro, 1999; Rydell, Bohlin, & Thorell, 2005), raising the potential that no relation exists between these constructs. Interestingly, the context of prosocial behaviors may have also influenced the strength of this relation in the current study. Studies that have reported negative relations between shyness and children's prosocial behaviors found this relation in unfamiliar, but not familiar, laboratory contexts (Eisenberg, Fabes, Karbon, Murphy, Carlo et al., 1996; Stanhope, Bell & Parker-Cohen,

1987; Young et al., 1999). Prosocial behaviors in the current study were notably assessed as behavior in familiar and everyday contexts with friends or peers. Scholars examining shyness have concordantly found that relations between shyness and children's outcomes do depend on whether the context is familiar to the child (Asendorph & Meier, 1993; Crozier & Hostettler, 2003; Kagan, Reznick, Snidman, Gibbons, & Johnson, 1988). Thus, it is possible that a relation between shyness and helping may have been apparent if helping was assessed unfamiliar, laboratory contexts. Other findings regarding the negative links between shyness and prosocial behavior also differ from the current investigation. For example, these relations have often been found in samples composed of participants from different or multiple cultures (Eisenberg et al., 2004; Russell, et al., 2003), or in a small sample of primarily European American preschoolers (Miller & Jansen op de Haar, 1997). The current attempt to replicate this finding in a large, representative sample of children residing in the United States suggests that the relation between shyness and prosocial behaviors may only exist in particular cultural groups.

The links between fearful temperament and prosocial behaviors are less understood as existing research studying this relation has not lent itself straightforward interpretation. Eisenberg, Fabes, Karbon, Murphy, Wosinski et al. (1996), for example, reported that fear was negatively related to peer nominations of prosocial behavior. However, fear in this study was only one component of a "negative emotionality" composite that was also comprised of sadness and reactivity. It is not known which aspects of this composite accounted for this negative relation between negative emotionality and prosocial behavior nominations. Another study found a positive relation between temperamental fearfulness and personal distress in infants, but no relations were

found regarding actual prosocial behavior (Spinrad & Stifter, 2006), and interestingly another has reported a *positive* relation among children's fear and empathy (Rothbart et al., 1994). Negative relations between fear and prosocial behaviors have been found to exist when helping is assessed in unfamiliar or unusual situations (van der Mark, van Ijzendoorn et al., 2002; Young et al., 1999), again highlighting the need to assess prosocial behaviors in both familiar and unfamiliar situations. Finally, the definition of fearful temperament in the current study may also explain these nonsignficant relations. The items assessing children's temperamental fearfulness in the current study did not inquire about fear displayed in common, everyday situations; for example, these items focused on the extent to which a child is afraid of nightmares, injections at the doctor's office, dogs, and the dark. It is unlikely that reactions in these situations readily apply to behaviors displayed with peers or in school settings.

Hypothesis 2: Maternal Responsiveness and Prosocial Behaviors.

As hypothesized, the relations between maternal responsiveness and prosocial behaviors were positive. However, this relation was most apparent for the three prosocial outcomes measured in early adolescence as compared to the three prosocial outcomes measured in early childhood. Two separate explanations may elucidate these weak relations between maternal responsiveness and children's prosocial behaviors. First, no relations existed between maternal responsiveness to distress and prosocial behaviors for the two observational measures of prosocial behaviors, measured at 54 months and 6 years. The theoretical assumption of these relations was that maternal responsiveness to distress was thought to help children respond to others in distress. As previously stated, it is unknown how often during these observational measures helping in distress was

captured, particularly since other aspects of social competence were found to be just as, or more characteristic of these observational prosocial scores. Conversely, items capturing responding to other children in distress were included in the early adolescent measures of prosocial behavior. Because similar items tapping into responding to distress were included in the 54 month prosocial competence scale, this may also explain the weak, but significantly positive bivariate relation between these prosocial behaviors and maternal responsiveness.

Still, the relation between maternal responsiveness and the 54 month prosocial competence scale became nonsignificant in the subsequent multiple regression analyses. This relation was also nonsignificant for girls when bivariate relations were examined separately by gender. Thus, an alternate explanation for this nonsignificant relation between maternal responsiveness and early prosocial behavior is needed. The relations between maternal responsiveness and prosocial behaviors were hypothesized to be mediated by the regulation of negative emotions because responsive mothers may teach or provide examples of how to regulate negative affect. More time may be needed for maternal responsiveness to have a measurable effect on children's regulation of distress (which in turn will be related to increased prosocial behaviors), or conversely, children may need to be older in order to effectively translate this maternal support into coping strategies. For example, relations among responsiveness, regulation, and prosocial behavior have been found in a sample of older children, six- to eight-years-old (Davidov & Grusec, 2006), whereas responsiveness and prosocial behaviors were assessed at 54 months and six years in the current study. This pattern of findings corresponds to Piaget's theory of cognitive development. Preoperational children have more difficulty applying

learned solutions to problems to other contexts than children at the concrete operational stage (Boyd, Gaa, Ghatala, & Swank, 1986; Ricco, 1989; Schleser, Cohen, Meyers, & Rodick, 1984). Preoperational children may also be less receptive to socialization attempts, such as fostering a child's independence or social skills, because egocentric tendencies can limit a child's awareness of her need to socialize well with others (Appel, 1977).

Hypothesis 3: Firm Discipline and Prosocial Behaviors.

A secondary goal of this study was to examine how firm discipline, a type of maternal socialization linked to early conscience development, was related to prosocial behaviors. Supporting the hypothesis, firm discipline was typically positively related to children and early adolescents' prosocial behaviors. However, contrary to the hypothesis, a negative relation was found between firm discipline and the six-year observational measure of prosocial behavior. It was also hypothesized that maternal responsiveness would emerge as a more important predictor of prosocial behaviors when the relative contributions of both maternal responsiveness and firm discipline were considered. Contrary to the hypothesis, support for each type of maternal behavior was evident; both responsiveness and firm discipline positively predicted the three early adolescent measures of prosocial behavior. Firm discipline additionally emerged as the only significant predictor when examining the 54-month friend observation and the 6-year unstructured peer observation measures, although firm discipline again negatively predicted prosocial behaviors for this latter measure. Finally, interactions between maternal responsiveness and firm discipline were examined in a post-hoc analysis. None

of the six interactions tested were found to be significant predictors of prosocial behaviors.

It is not immediately clear as to why firm discipline was both positively and negative related to the participants' prosocial behaviors. A closer examination of the firm discipline measure used in the current study (the Raising Children Checklist) reveals that these items may have primarily tapped into parental warmth and a discursive communication style regarding rules and punishment. Parents were not asked whether they actually used gentle discipline, enforced rules, or implemented other methods of firm control. Thus, it is difficult to draw sound conclusions regarding the links between firm discipline and prosocial behaviors in the current study. Instead, it may be better to conceptualize this measure as mentioned above; as a composite measure of warmth and discursive communication style used in the context of punishment. Traditionally, the relations between parental warmth and prosocial behaviors have been mixed (Carlo et al., 1999; Eisenberg et al., 2006; Hastings, Utendale et al., 2007; Kerr, Beck, Shattuck, Kattar, & Uriburu, 2003; Koestner et al., 1990; Krevans & Gibbs, 1996), as has the more limited research regarding discursive communication styles and prosocial behaviors (Carlo, McGinley, Hayes, Batenhorst, & Wilkinson, 2007). The current study supports the findings in these studies establishing positive relations among warmth, discursive communication, and prosocial behaviors. Yet, these studies have not reported negative relations between these parenting styles or practices and prosocial behaviors, such as the finding in the current study between firm discipline and prosocial behaviors assessed in the observation measure with peers. Additional research needs to be conducted to flesh out the true relations among these various parenting dimensions and prosocial behaviors.

Hypotheses 4 and 5: Vulnerable Temperament x Parenting Interactions and Prosocial Behaviors

There was essentially no support for the hypothesis that maternal responsiveness would be more positively related to prosocial behaviors for children with more vulnerable temperaments (Hypothesis 4). Only one of the 18 interactions tested supported this predicted pattern of relations: the relation between maternal responsiveness and prosocial behavior (assessed at 54 months-prosocial competence scale) was positive only for children above the mean on angry/frustrated temperament. Otherwise, maternal responsiveness was found to positively predict prosocial behaviors only for children at or below the mean on vulnerable temperament. Maternal responsiveness was positively related to prosocial behavior (assessed at 11 years) for boys below the mean on fearful temperament. Additionally, maternal responsiveness was positively related to prosocial behaviors (assessed at 54 months-Friend observational measure) for children below the mean on angry/frustrated temperament. Directly contradicting the hypothesis, maternal responsiveness was negatively related to this same measure of prosocial behavior for those above the mean on angry/frustrated temperament. Minimal support was likewise found for the hypothesis that the relations between firm discipline and prosocial behavior would not be positive for children with vulnerable temperaments (Hypothesis 5). Although firm discipline was negatively related to prosocial behaviors (assessed at 6 years) for children above the mean on shyness, firm discipline was also positively related to prosocial behaviors (assessed at 12 years) for boys above the mean on shyness.

Thus, an inspection of the significant temperament x maternal socialization interactions revealed that no consistent pattern between these constructs existed in the

current study. These mixed findings were moreover inconsistent with the theoretically-based hypotheses that temperamentally vulnerable children's prosocial behaviors would either considerably increase with the use of maternal responsiveness, or be negatively impacted by the use of maternal firm discipline. The number of significant interactions involving dimensions of parenting and temperament (including the three-way interactions with gender) found was furthermore approximately the number of significant interactions expected by chance alone. Taken together, it appears that no theoretically-consistent, or even theoretically-inconsistent interactions existed between vulnerable temperament and maternal socialization in the current investigation of children's and early adolescents' prosocial behaviors.

One reason for these findings may be due to discrepancies between the sample examined in the present study and samples implemented in existing studies. To the author's knowledge, this is the first study to examine the interactive relations between vulnerable temperament and parental socialization as they relate to morally-relevant outcomes in a large, more nationally representative sample of children. Samples used in previous studies examining similar interactions and moral development have been primarily small, Caucasian, middle-class, and/or limited to particular geographic areas of the country (Carlo et al., 1998; Cornell & Frick, 2007; Hastings et al., 2005; Kienbaum et al., 2001; Kochanska, 1991, 1995, 1997a, 2007; Robinson et al., 1994; Russell et al., 2003; Spinrad & Stifter, 2006; van der Mark, van IJzendoorn et al., 2002). Thus, the detection of temperament x parenting interactions could be dependent on these sample characteristics, which were related to the main study variables. Both higher income and being white were related to higher levels of prosocial behavior, increased use of maternal

responsiveness and firm discipline, as well children's angry/frustrated temperament (income only). Notably, children in the current sample had relatively higher mean levels of fearful or angry/frustrated temperament than children in similar studies that have predominately used European American samples (i.e., ≥ 95% European American; Carlo et al., 1998; Hastings et al., 2005; Spinrad & Stifter, 2006). Although the differences in these constructs between racial and income groups do not necessarily beget different interaction effects, they do suggest that these study variables may have different salience across groups. If the meaningfulness of these constructs differs across groups, the pattern of interactions across groups may also differ; however, additional research is needed to more closely examine this possibility.

An alternate explanation for the current findings can be linked to Darling and Steinberg (1993), who posited that relevant parenting practices, rather than general parental styles, are more strongly or directly to children's acquisition of traits and behaviors. One study has supported this theory in regards to adolescents' prosocial behaviors; Carlo, McGinley et al. (2007) reported that specific prosocial parenting practices were related to adolescents' prosocial behaviors and sympathy. General parental responsiveness, conversely, was not related to sympathy and explained less variance in the prosocial behavior outcomes than specific prosocial parenting practices. Parenting practices have similarly been related to the development of emotion regulation (the hypothesized mediating mechanism between responsiveness and prosocial behaviors), and thus may be better predictors of regulation as compared to general practices (i.e., responsiveness to distress). For example, maternal practices such as matching emotions, discussing emotions, or using distraction when children are distressed have been

significantly related to preschooler's emotion regulation, but not general maternal comforting provided when the child was distressed (Garner, 2006). Perhaps maternal responsiveness itself is not sufficient in providing the resources children need to develop more sophisticated coping strategies in arousing situations involving negative affect.

In addition to measuring specific types of parenting practices, aspects of parenting and temperament may also be differentially related to various types of prosocial behaviors. Scholars (see Carlo, 2006) have emphasized the need to capture different types of prosocial behaviors (e.g., across situations or motivations) as these behaviors often have unique correlates; using more global measures of prosocial behaviors may instead dampen these distinct relations. Davidov and Grusec (2006), for example, measured a specific type of parenting (responsiveness to distress) and type of emotion regulation (regulation of negative or distressful emotions). These specific correlates corresponded to the prosocial behavior displayed in distressful situations. In contrast, the only measures of prosocial behaviors available in the current study were more global measures. For example, these measures simultaneously captured helping behaviors displayed in distressful situations and in situations that do not necessarily involve distress (e.g., cooperative play, being kind to others, saying "please" and "thank you", and general concerns about fairness or justice). Because of this broad or global operational definition, it is likely that the relations between maternal responsiveness in distressful situations (as well as fearful temperament) in the current study were suppressed.

The age at which in the interactions between parenting and temperament are assessed may also affect the current findings. In this study, interactions between temperament and parenting were assessed when the child was 54 months old; however,

many studies that have reported direct support for temperament x parenting interactions have assessed these constructs at early ages, generally in infancy or toddlerhood (Belsky, 2005; Crockenberg & Leerkes, 2006; Early et al., 2002; Hagekull et al., 1997; Kochanska, 1991, 1995, 1997a, 2007; Stright, Gallagher, & Kelley, 2008; Warren & Simmens, 2005). Testing interactions at younger ages may more accurately capture the interplay between temperament and parenting; as children grow older, it is likely that other sources of socialization the child is introduced to (e.g., gender, peers, media) further moderate or mediate the relation between temperament and parenting (Kochanska, 1997a). Assessing parenting styles at 54 months may have also reduced the possibility of capturing enough variance in parenting styles for children with certain temperaments; studies have documented how a child's temperament can increase or lessen the use of parenting styles over time (e.g., Clark, Kochanska, & Ready, 2000; Lengua & Kovacs, 2005; Pettit, Keiley, Laird, Bates, & Dodge, 2007; Rubin, Nelson, Hastings, & Asendorpf, 1999). If parenting techniques become dictated by a child's particular temperamental make-up, it would be increasingly difficult with age to detect temperament x parenting interactions because these children become exposed to a restricted range parenting styles or practices.

A final explanation for these nonsignificant findings may simply be a confirmation of the null hypothesis: interactive relations between temperament and parenting do not predict morally-relevant behaviors. Akin to the current findings, scholars have reported few significant parenting x temperament interactions in their studies of prosocial behavior (e.g., Carlo et al., 1998; Hastings et al., 2005; Kienbaum et al., 2001; Spinrad & Stifter, 2006; van der Mark, van IJzendoorn et al., 2002). These

interactions moreover tend to be weak and/or inconsistent with one another, making subsequent interpretation difficult (Carlo et al., 1998; Hastings et al., 2005; Russell et al., 2003). In her studies of conscience development, Kochanska (1991, 1995, 1997a, 2007) has instead found somewhat consistent support regarding hypothesized interactions between temperamental fear and parenting. However, other scholars have not been able to replicate these findings (Cornell & Frick, 2007; van der Mark, Bakermans-Kranenburg, et al., 2002), and few others have attempted to replicate these findings. Therefore, it is largely unknown whether the interactions reported by Kochanska are impervious to the use of alternative (i.e., larger or more diverse) samples, measurements or observations, or data analytic approaches.

Gender

Gender was a significant predictor of prosocial behavior in all analyses; girls were rated as exhibiting more prosocial behaviors than boys in both observational and survey measures of prosocial behaviors. This finding, as well as the finding that these relations were strongest when prosocial behaviors were assessed in early adolescence is consistent with gender socialization theory and previous studies on prosocial behavior (Carlo, 2006; Eisenberg et al., 2006). The current study thus adds to the current body of research by confirming existing theories and research. However, this study also contributes to a number of studies that have failed to differentiate among types of prosocial behaviors; it is unknown if the current findings on gender may have been qualified by the type of prosocial behavior assessed (Carlo, 2006).

In exploratory analyses, gender also moderated some of the relations among temperament, parenting, and prosocial behaviors; anger/frustration was a negative

predictor of prosocial behaviors (assessed at 6 years) for girls only, and firm discipline was a positive predictor of prosocial behaviors (assessed at 12 years) for boys only. Gender moderated several two-way maternal socialization x vulnerable temperament interactions such that the two-way interaction was found to be significant for boys only. Maternal responsiveness was only positively related to prosocial behavior (assessed at 11 years) for boys below the mean on fear and anger, and firm discipline was positively related to prosocial behavior (assessed at 12 years) for boys above the mean on shyness. These findings were contrary to the expectation that temperament would be a more important predictor for boys, and that no interaction was expected regarding parenting because these prosocial behaviors typically captured both feminine and masculine aspects of prosocial behavior (Hastings et al., 2007). Yet, given that no consistent pattern of gender moderation existed across the measures of prosocial behaviors, it is difficult to draw any conclusions regarding the interactive effect of gender.

Race and Income

Exploratory analyses of race revealed that being white was related to engaging in more prosocial behaviors. These findings are similar to limited research that has reported greater prosocial behaviors in White children as compared to minority children (Wentzel et al., 2004). However, given that other scholars have found that children of other racial and ethnic groups engage in more prosocial behaviors (e.g., Beutel & Johnson, 2004; Kagan & Knight, 1984; Richman et al., 1988) and that mothers of these children value prosocial behaviors more than White mothers (Suizzo, 2007), the reason for this current finding is not immediately clear. The prosocial behaviors assessed in this study may have been developed by researchers who have not considered how prosocial behaviors may be

different across cultures, thus limiting the definition of prosocial behaviors to one agreed on in the majority (i.e., White) culture. Income was also found to be positively related to children and adolescents' prosocial behaviors, consistent with the current literature reporting similar relations between aspects of SES and prosocial behaviors (Dearing et al., 2001; Dunn et al., 1998; Eisenberg et al., 2006; Janoski & Wilson, 1995; Keresteš, 2006; Lichter et al., 2002; Romano et al. 2005; Schieman & Van Gundy, 2000). Children whose families report higher incomes may have more of their needs (e.g., physical, emotional) met than children whose families are struggling financially, thus enabling them to focus on the needs of others around them. In the current study, income was negatively related to the temperamental dimension of anger/frustration, which was strongly negatively related to children's prosocial behaviors. These children may be more angry or frustrated because parents are less available (e.g., working several jobs) to comfort them in times of distress, or because their parents are less aware of the effectiveness of these parenting strategies (e.g., income was also negatively related to the decreased use of maternal responsiveness to distress). Finally, it should be noted the significant relations between race, income and prosocial behaviors still existed in the multivariate analyses, suggesting that both of these demographic variables offer unique information in the prediction of children and early adolescents' prosocial behaviors.

Limitations and Future Directions

Although this study has addressed several gaps in the previous literature with a large, nationally-representative sample of participants, its findings are limited. Since this study was conducted using existing data, the measures of temperament, parenting, and prosocial behaviors available for analysis were limited. For example, fear may have not

been related to prosocial behaviors in the current study because it was not assessed in situations where prosocial behaviors would also be measured. It would be informative to examine whether other measures of fearfulness applicable to social situations are related to prosocial behaviors, such as the social fearfulness scale of the Goldsmith Toddler Behavior Assessment Questionnaire (TBAQ; Goldsmith, 1996). Although Hastings et al. (2005) did not find main effects among a composite comprised of this TBAQ subscale and helping, this composite was found to significantly interact with gender and parenting to predict young children's prosocial behavior. As previously addressed, the measures of prosocial behaviors were also too broadly defined (i.e., helping in primarily distressful situations could not be assessed) and may have possibly masked relations between prosocial behaviors and either responsiveness to distress, gender, and fearful or shy dimensions of temperament. Researchers should use existing measures(e.g., Prosocial Tendencies Measure, Carlo & Randall, 2002) which have revealed gender differences in different types of prosocial behaviors, or that assess helping in distressful situations. Similarly, observational measures in which an adult feigns pain may also capture young children's helping behaviors in distressful situations. Negative relations between either fearfulness or shyness and prosocial behaviors may also be evident with this observational procedure; children who are prone to being fearful or shy may be more likely to help a familiar other (e.g., mother) versus an unfamiliar other (e.g., experimenter). Finally, measures of discipline that directly tap into firm discipline that deemphasizes power (e.g., observed "gentle discipline"; Kochanska, 1997a) are needed in order to strengthen the current findings; firm discipline as assessed in the current study

appeared to capture a composite of parental warmth and discursive punishment styles rather than the actual use of discipline.

The available measures also presented the current investigation with other unanticipated limitations. For example, it was impossible to examine whether maternal responsiveness was related to the hypothesized mediator, negative emotion regulation. The items used in the measure labeled "emotion regulation" appeared to only tap into children's negative emotionality. It is moreover interesting to note that the available measures of vulnerable temperament, maternal socialization, and prosocial behavior in this study were only available as either observations or adult-reports. Both methods provide somewhat unique information about a construct; for example, observations provide more objective information about a behavior in a controlled setting or limited time-frame, whereas adult-reports provide more subjective information regarding a child's behavioral tendencies over time. Consistently using of both techniques may have captured these constructs in a more congruent and comprehensive fashion, thus possibly strengthening the current findings.

Attrition between childhood and early adolescence also limited the current results. Attrition analyses indicated that the number of participants available for later analyses was reduced as much as 25%. Moreover, differences in predicting earlier measures of prosocial for groups with data for both time points and those with data only at earlier time points were evident. Taken together, the attrition of participants likely introduced some bias in the current findings. Future research should implement current missing data techniques such as maximum likelihood estimation (i.e., as opposed to listwise deletion as used in the current study) in order to reduce this probable bias (see Enders, 2006).

These findings also suggested that future studies more closely examine how race, ethnicity or culture may affect the relations among temperament, parenting, and prosocial behaviors. Notable differences in the racial and socioeconomic makeup of the sample in this study and samples implemented in similar studies were apparent, and as well as relations between these demographic characteristics and temperament, parenting, and prosocial behaviors. Scholars have supported the notion that socialization agents across cultures place differing importance on certain temperaments, values, or behaviors children possess, as well as parenting practices used to achieve socialization goals (Klein & Ballantine, 1991; Knight, Bernal, Cota, Garza, & Ocampo, 1993; Raver, Gershoff, & Aber, 2007; Rubin, 1998; Russell et al. 2003; Suizzo, 2007). This varying importance may also translate into differing relations among these variables; recent studies have shown that parenting styles may differentially relate to children's and adolescent's outcomes, depending on their race or ethnicity. For example, more restrictive or demanding parenting has been related to more positive outcomes for African Americans, Latinos and Asians as compared to European Americans (Cox, 2006; Dearing, 2004; Ho, Bluestein, & Jenkins, 2008; Ispa et al., 2004; Parke et al., 2004; Polaha, Larzelere, Shapiro, & Pettit, 2004; and also for lower SES versus higher SES families, see Ruiz, Roosa, & Gonzalez, 2002). Similarly, parental warmth has been more strongly linked to positive outcomes for European Americans than these other cultural groups (Lau, Litrownik, Newton, Black, & Everson, 2006; Nowlin & Colder, 2006; Ruiz et al., 2002; with exceptions, see Dearing, 2004). Taken together, the interactive relations among parenting, temperament, and prosocial behaviors may vary according to the race or ethnicity under examination. It should be noted that although preliminary evidence

supporting equivalent relations between parenting styles and prosocial behavior does exist (Carlo et al., in press; Kiang et al., 2004; Whiteside-Mansell, Bradley, Owen, Randolph, & Cauce, 2003), research on this topic is still in its infancy, and it is moreover unknown what role temperament would play in this culturally-sensitive process.

Other culturally-relevant characteristics should be taken into account in future investigations. For example, the relations between parenting and prosocial behaviors should be tested in cultures that may sanction its members for failing to engage in prosocial behaviors. The current theory rests on the notion that the role of punishment is irrelevant in the promotion of helping behaviors; however, this may only be true in some cultures or societies. Edwards (1987) reported that Oyugis children in Kenya were likely to be punished by adults for failing to care for younger siblings or kin; older children in this community are expected to carry out this responsibility as they spend most of their time in a community, as opposed to a formal school ssetting. Moreover, issues that have been deemed as "conventional" by researchers (e.g., politeness, dress) appeared to not be strongly distinguished from other moral behaviors (e.g., aggression) in this Kenyan community; children were similarly disciplined for failing to adhere to established social rules and being aggressive towards others. Interestingly, conflicts among children related to "justice" issues (e.g., sharing and turntaking) rarely occurred or were addressed by adults, although these episodes were prevalent among children in a U.S. sample. Moreover, no instances of caring for others were evident in these observations with the U.S. sample, further suggesting the differing importance of these two aspects of morality in these two cultures. Thus, it is necessary to conduct research similar to what Grusec and colleagues have conducted (Grusec et al., 1982; Grusec & Pedersen, 1989), such as

interviewing children and parents about the appropriateness of punishment in promoting differing aspects of morality before carrying out research on parenting and prosocial behaviors in other cultures. Likewise, it may be necessary to examine whether individuals vary on this construct within cultures. Although research on adolescents' judgments of parental appropriateness appear to change according to the domain (e.g., prosocial or antisocial, moral and conventional), variance in adolescents' responses does exist, indicating that it would be useful to examine these individual differences (Padilla-Walker & Carlo, 2006).

Besides addressing the concerns outlined above (i.e., examining whether the current model is equivalent across cultures, ethnic groups, or socioeconomic groups; applying better/additional measures and missing data techniques), future research can approach this question of temperament x parenting interactions in more sophisticated ways. For example, longitudinal data analysis may answer questions that could not be addressed in the current study. To the author's knowledge, no studies have examined how prosocial behaviors change across time from childhood to adolescence, and whether predictors of prosocial behavior (e.g., maternal socialization) have differing effects on the intercept or slope of prosocial behaviors at various time points. Using this approach could answer the question of whether temperament x parenting interactions differentially predict prosocial behaviors across time. It was noted earlier that maternal socialization may only interact with children's temperament early in their development due to competing influences, and the tendency for temperament to influence parenting over time. Thus, longitudinal data could reveal that this interaction is only predictive of children's helping at younger, but not older ages, as well as when this interaction begins

to decrease in power. Additionally, growth mixture modeling could be implemented with longitudinal data in order to determine whether groups with different trajectories of prosocial behavior emerge across time. It is possible that interactive theories may only apply to certain subpopulations; for example, these interactions may not have much predictive power with groups defined as consistently high in levels of prosocial behaviors over time. At the same time, these interactions may influence children who initially display low levels of prosocial behavior but are susceptible to responsive parenting, thus increasing their levels of prosocial behavior across time.

Conclusions

Findings in the current study yielded no support for the hypothesis that vulnerable temperament would interact with maternal responsiveness to distress to predict children and early adolescents' prosocial behaviors. Given that similar investigations have also provided limited and mixed support regarding these relations among temperament, parenting, and morally-relevant outcomes, it is unlikely that these interactions are of theoretical importance when studying prosocial behaviors. Even if future investigators take into account the potential effects of culture and parenting, judgments of appropriateness of punishment, and different types of prosocial behaviors on these relations, it will be difficult to capture these relations in a single parsimonious theory. In other words, it is likely that the interplay among these variables in the prediction of prosocial behaviors is multifaceted in nature. At the same time, this study has contributed to the current literature by confirming that relations between theoretically relevant constructs (e.g., maternal responsiveness to distress, angry/frustrated temperament, and gender) are related to prosocial behaviors in a large, nationally representative sample of

children and early adolescents. Moreover, it has raised awareness of the need to consider and understand the effects of income and race in the study of prosocial behaviors. Future research can therefore build on the current findings to achieve a more comprehensive and sophisticated understanding of the individual and social correlates of prosocial behaviors.

References

Abraham, K. G., Kuehl, R. O., & Christopherson, V. A. (1983). Age-specific influence of parental behaviors on the development of empathy in preschool children. *Child Study Journal, 13,* 175-185.

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

Aksan, N., & Kochanska, G. (2005). Conscience in childhood: Old questions, new answers. *Developmental Psychology, 41,* 506-516.

Anastasi, A. (1958). Heredity, environment, and the question "How"? *Psychological Review, 65,* 197-208.

Appel, Y. H. (1977). Developmental differences in children's perception of maternal socialization behavior. *Child Development, 48,* 1689-1693.

Asendorpf, J. B., & Meier, G. H. (1993). Personality effects on children's speech in everyday life: Sociability-mediated exposure and shyness-mediated reactivity to social situations. *Journal of Personality and Social Psychology, 64,* 1072–1083.

Barry, C. M., & Wentzel, K. R. (2006). Friend influence on prosocial behavior: The role of motivational factors and friendship characteristics. *Developmental Psychology, 42,* 153–163.

Belden, A. C., & Luby, J. L. (2006). Preschoolers' depression severity and behaviors during dyadic interactions: The mediating role of parental support. *Journal of the American Academy of Child and Adolescent Psychiatry, 45,* 213-222.

Belsky, J. (2005). Differential susceptibility to rearing influence: An evolutionary hypothesis and some evidence. In J. Ellis and D. F. Bjorklund (Eds.), *Origins of*

the social mind: Evolutionary psychology and child development (pp. 139-163). New York: Guilford Press.

Beutel, A. M., & Johnson, M. K. (2004). Gender and prosocial values during adolescence: A research note. *Sociological Quarterly, 45,* 379–393.

Birch, S. H., & Ladd, G. W. (1998). Children's interpersonal behaviors and the teacher-child relationship. *Developmental Psychology, 34,* 934-946.

Boyd, D. R., Gaa, J. P., Ghatala, E. S., & Swank, P. (1986). The influence of Piagetian level and training on derivative recognition. *Human Learning: Journal of Practical Research & Applications, 5,* 219-227.

Braungart-Rieker, J., Garwood, M. M., & Stifter, C. A. (1997). Compliance and noncompliance: The roles of maternal control and child temperament. *Journal of Applied Developmental Psychology, 18,* 411-428.

Bronfenbrenner, U., & Crouter, A. (1983). The evolution of environmental models in developmental research. In P. H. Mussen (Vol. Ed.) & W. Kessen (Series Ed.), *Handbook of child psychology: Vol. 1. History, theory and methods* (4th ed., pp. 357-414). New York: Wiley.

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

Bryant, B. K., & Crockenberg, S. B. (1980). Correlates and dimensions of prosocial behavior: A study of female siblings with their mothers. *Child Development, 51,* 529-544.

Calkins, S. D. (1994). Origins and outcomes of individual differences in emotion regulation. *Monographs of the Society for Research in Child Development, 59,* 53-72.

Calkins, S. D., Gill, K. L., Johnson, M. C., & Smith, C. L. (1999). Emotional reactivity and emotional regulation strategies as predictors of social behavior with peers during toddlerhood. *Social Development, 8,* 310-334.

Calkins, S. D. & Hill, A. (2007). Caregiving influences on emerging emotion regulation: Biological and environmental transactions in early development. In J. J. Gross (Ed.), *The Handbook of Emotion Regulation.* (pp. 229-248). New York: Guilford Press.

Caprara, G. V., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. G. (2000). Prosocial foundations of children's academic achievement. *Psychological Science, 11,* 302-306.

Carlo, G. (2006). Care-based and altruistically-based morality. In M. Killen & J. G. Smetana (Eds.), *Handbook of moral development* (pp. 551-579). Mahwah, NJ: Erlbaum.

Carlo, G., Crockett, L. J., Randall, B. A., & Roesch, S. C. (2007). A latent growth curve analysis of prosocial behavior among rural adolescents. *Journal of Research on Adolescence, 17,* 301-324.

Carlo, G., Fabes, R. A., Laible, D. & Kupanoff, K. (1999). Early adolescence and prosocial/moral behavior II: The role of social and contextual influences. *Journal of Early Adolescence, 19,* 133-147.

Carlo, G., Knight., G. P., McGinley, M., Zamboanga, B. L., & Hope, L. J. (in press). The multidimensionality of prosocial behaviors and evidence of measurement invariance in Mexican American and European American early adolescents. *The Journal of Research on Adolescence.*

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, 168*, 147-176.

Carlo, G., & Randall, B. A. (2002). The development of a measure of prosocial behaviors for late adolescents. *Journal of Youth and Adolescence, 31,* 31-44.

Carlo, G., Roesch, S. C., & Melby, J. (1998). The multiplicative relations of parenting and temperament to prosocial and antisocial behaviors in adolescence. *Journal of Early Adolescence, 18,* 266-290.

Chen, X., Liu, M., Rubin, K. H., Cen, G., Gao, X., & Li, D. (2002). Sociability and prosocial orientation as predictors of youth adjustment: A seven-year longitudinal study in a Chinese sample. *International Journal of Behavioral Development, 26,* 128-136.

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,* 485-498.

Clark, L. A., Kochanska, G., & Ready, R. (2000). Mothers' personality and its interaction with child temperament as predictors of parenting behavior. *Journal of Personality and Social Psychology, 79,* 274-285.

Clausen, J. A. (1967). The organism and socialization. *Journal of Health and Social Behavior, 8,* 243-252.

Coplan, R. J., & Armer, M. (2005). Talking yourself out of being shy: Shyness, expressive vocabulary, and socioemotional adjustment in preschool. *Merrill-Palmer Quarterly, 51,* 20-41.

Cornell, A. H., & Frick, P. J. (2007). The moderating effects of parenting styles in the association between behavioral inhibition and parent-reported guilt and empathy in preschool children. *Journal of Clinical Child and Adolescent Psychology, 36*, 305–318.

Cox, M. F. (2006). Racial differences in parenting dimensions and adolescent condom use at sexual debut. *Public Health Nursing, 23,* 2–10.

Crick, N. R. (1996). The role of overt aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. *Child Development, 67,* 2317-2327.

Crockenberg, S. C., & Leerkes, E. M. (2006). Infant and maternal behavior moderate reactivity to novelty to predict anxious behavior at 2.5 years. *Development and Psychopathology, 18,* 17-34.

Crozier, W., & Hostettler, K. (2003). The influence of shyness on children's test performance. *British Journal of Educational Psychology, 73, 317*-328.

Cummings, E. M., Schermerhorn, A. C., Davies, P. T., GoekeMorey, M. C., & Cummings, J. S. (2006). Interparental discord and child adjustment: Prospective investigations of emotional security as an explanatory mechanism. *Child Development, 77,* 132–152.

Davidov, M., & Grusec, J. E. (2006). Untangling the links of parental responsiveness to distress and warmth to child outcomes. *Child Development, 77,* 44-58.

Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin, 113,* 487–496.

Dearing, E. (2004). The developmental implications of restrictive and supportive parenting across neighborhoods and ethnicities: Exceptions are the rule. *Journal of Applied Developmental Psychology, 25,* 555-575.

Dearing, E., McCartney, K., & Taylor, B. A. (2001). Change in family income-to-needs matters more for children with less. *Child Development, 72,* 1779-1793.

Deater-Deckard, K., Pike, A., Petrill, S. A., Cutting, A. L., Hughes, C., & O'Connor, T. G. (2001). Nonshared environmental processes in social-emotional development: An observational study of identical twin differences in the preschool period. *Developmental Science, 4,* F1-F6.

Deater-Deckard, K., Pylas, M., & Petrill, S. A. (1997). *The Parent-Child Interaction System (PARCHISY).* London: Institute of Psychiatry.

Denham, S. A. (1993). Maternal emotional responsiveness and toddlers' social-emotional competence. *Journal of Child Psychology and Psychiatry, 34,* 715-728.

Denham, S. A. (1994). Mother-child emotional communication and preschoolers' security of attachment and dependency. *The Journal of Genetic Psychology, 155,* 119-121.

Diener, M. L., & Kim, D.-Y. (2004). Maternal and child predictors of preschool children's social competence. *Applied Developmental Psychology, 25,* 3-24.

Dienstbier, R. A. (1984). The role of emotion in moral socialization. In C. E. Izard, J. Kagan, & R. B. Zajonc (Eds.), *Emotions, Cognitions and Behavior*. Cambridge: Cambridge University Press, 484-514.

Dunn, J., Deater-Deckard, K., Pickering, K., O'Connor, T. G., Golding, J., & ALSPAC Study Team. (1998). Children's adjustment and prosocial behavior in step-, single, and nonstep-family settings : Findings from a community study. *Journal of Child Psychology and Psychiatry, 39,* 1083–1095.

Eagly, A. H., & Crowley, M. (1986). Gender and helping behavior: A meta-analytic review of the social psychological literature. *Psychological Bulletin, 100,* 283-308.

Early, D. M., Rimm-Kauffman, S. E., Cox, M. J., Saluja, G., Pianta, R. C., Bradley, R. H., et al. (2002). Maternal sensitivity and child wariness in the transition to kindergarten. *Parenting: Science and Practice, 2,* 355-377.

Eberly, M. B., & Montemayor, R. (1998). Doing good deeds: An examination of adolescent prosocial behavior in the context of parent-adolescent relationships. *Journal of Adolescent Research, 13,* 403-432.

Edwards, C. P. (1987). Culture and the construction of moral values. In J. Kagan & S. Lamb (Eds.), *The emergence of morality in young children* (pp. 123-151). Chicago: University of Chicago Press.

Egeland, B. & Hiester, M. (1993). *Teaching task rating scales.* Institute of Child Development, University of Minnesota.

Egeland, B. & Hiester, M. (1995). The long-term consequences of infant day-care and mother-infant attachment. *Child Development, 66,* 474-485.

Eisenberg, N. (2000). Emotion, regulation, and moral development. *Annual Review of Psychology, 51,* 665-697.

Eisenberg, N. (2005). The development of empathy-related responding. In Carlo, G., & Edwards, C. P. (Eds.), *51st Annual symposium on motivation: Moral development across the lifespan* (pp. 73-117). Lincoln, NE: University of Nebraska Press.

Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry, 9,* 241-273.

Eisenberg, N., Fabes, R. A., Karbon, M., Murphy, B. C., Carlo, G., & Wosinski, M. (1996). Relations of school children's comforting behavior to empathy-related reactions and shyness. *Social Development, 5,* 330–351.

Eisenberg, N., Fabes, R. A., Karbon, M., Murphy, B. C., Wosinski, M., Polazzi, L., et al. (1996). The relations of children's dispositional prosocial behavior to emotionality, regulation, and social functioning. *Child Development, 67,* 974-992.

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,* 2227-2247.

Eisenberg, N., Fabes, R. A., Murphy, B. C., Karbon, M., Smith, M., & Maszk, P. (1996). The relations of children's dispositional empathy-related responding to their emotionality. *Developmental Psychology, 32,* 195–209.

Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial development. In W. Damon & R. M. Lerner (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of*

Child Psychology: Vol. 3. Social, Emotional, and Personality Development (6th ed., pp. 646-718). New York: Wiley.

Eisenberg, N., Liew, J., & Pidada, S. U. (2004). The longitudinal relations of regulation and emotionality to quality of Indonesian children's socioemotional functioning. *Developmental Psychology, 40,* 790-804.

Eisenberg, N., & Valiente, C. (2002). Parenting and children's prosocial and moral development. In M. H. Bornstein (Ed.), *Handbook of Parenting: Vol 5. Practical Issues in Parenting* (2nd ed., pp. 111-142). Mahwah, NJ: Erlbaum.

Eisenberg, N., Wolchik, S. A., Goldberg, L., & Engel, I. (1992). Parental values, reinforcement, and young children's prosocial behavior: A longitudinal study. *The Journal of Genetic Psychology, 153,* 19-36.

Eisenberg-Berg, N., & Hand, M. (1979). The relationship of preschoolers' reasoning about prosocial moral conflicts to prosocial behavior. *Child Development, 50,* 356-363.

Eisenberg-Berg, N., & Neal, C. (1979). Children's moral reasoning about their own spontaneous prosocial behavior. *Developmental Psychology, 15,* 228-229.

Emde, R. N., Johnson, W. F., & Easterbrooks, A. (1987). The do's and don'ts of early moral development: Psychoanalytic tradition and current research. In J. Kagan & S. Lamb (Eds.), *The emergence of morality in young children* (pp. 245–276). Chicago: University of Chicago Press.

Enders, C.K. (2006). Analyzing structural equation models with missing data. In G.R. Hancock & R.O. Mueller (Eds.), *A Second course in structural equation modeling* (pp. 313-344). Information Age: Greenwich, CT.

Escalona, S. K. (1968). *The roots of individuality.* Chicago: Adline.

Fabes, R. A., Carlo, G., Kupanoff, K., & Laible, D. (1999). Early adolescence and prosocial/moral behavior I: The role of individual processes. *The Journal of Early Adolescence, 19,* 5-16.

Farver, J. A. M., & Branstetter, W. H. (1994). Preschoolers' prosocial responses to their peers' distress. *Developmental Psychology, 30,* 334-341.

Feldman, R., Greenbaum, C. W., & Yirmiya, N. (1999). Mother-infant affect synchrony as an antecedent of the emergence of self-control. *Developmental Psychology, 35,* 223-231.

Feldman, R., & Klein, P. S. (2003). Toddlers' self-regulated compliance to mothers, caregivers, and fathers: Implications for theories of socialization. *Developmental Psychology, 39,* 680-692.

Feshbach, N. D. (1974). The relationship of child-rearing factors to children's aggression, empathy and related positive and negative social behaviors. In J. de Wit and W. W. Hartup (Eds.), *Determinants and Origins of Aggressive Behavior* (pp. 427-436). The Hague: Mouton.

Feshbach, S., & Feshbach, N. D. (1986). Aggression and altruism: A personality perspective. In C. Zahn-Waxler, E. M. Cummings, & R. Iannotti (Eds.), *Altruism and Aggression: Biological and Social Origins* (pp. 135–164). Cambridge University Press, Cambridge, MA

Flint, D. L., Hick, T. L., Horan, M. D., Irvine, D. J., & Kukuk, S. E. (1980). Dimensionality of the California Preschool Social Competency Scale. *Applied Psychological Measurment, 4,* 203-212.

Fowles, D. C., & Kochanska, G. (2000). Temperament as a moderator of pathways to conscience in children: The contribution of electrodermal activity. *Psychophysiology, 37,* 788-795.

Gallagher, K. C. (2002). Does child temperament moderate the influence of parenting on adjustment? *Developmental Review, 22,* 623-643.

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

Gilligan, C. (1982). *In a different voice: Psychological theory and women's development.* Cambridge, MA: Harvard University Press.

Goldsmith, H. (1996). Studying temperament via construction of the Toddler Behavior Assessment Questionnaire. *Child Development, 67,* 218 – 235.

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology, 10,* 243-268.

Greenberger, E. & Goldberg, W. (1989). Work, parenting, and the socialization of Children. *Developmental Psychology,* 25, 22-35.

Grolnick, W. S., & Farkas, M. (2002). Parenting and the development of children's self-regulation. In M. H. Bornstein (Ed.), *Handbook of Parenting: Vol 5. Practical Issues in Parenting* (2nd ed., pp. 89-110). Mahwah, NJ: Erlbaum.

Grusec, J. E. (1991). The socialization of altruism. In M.S. Clark (Ed.), *Prosocial Behavior* (pp. 9 – 33). Newbury Park, CA: Sage.

Grusec, J. E. (2002). Parental socialization and children's acquisition of values. In M. H. Bornstein (Ed.), *Handbook of Parenting: Vol 5. Practical Issues in Parenting* (2nd ed., pp. 143-167). Mahwah, NJ: Erlbaum.

Grusec, J. E., & Dix, T. (1986). The socialization of prosocial behavior: Theory and Reality.

In C. Zahn-Waxler, E. M. Cummings, and R. Iannotti (Eds.), *Altruism and aggression: Biological and social origins* (pp. 219-237). Cambridge, MA: Cambridge University Press.

Grusec, J. E., Dix, T. & Mills, R. (1982). The effects of type, severity, and victim of chidren's transgressions on maternal discipline. *Canadian Journal of Behavioral Science, 14,* 277-289.

Grusec, J. E., & Pedersen, J. (1989, April). *Children's thinking about prosocial and moral behavior.* Paper presented at the biennial meeting of the Society for Research in Child Development, Kansas City, KS.

Hagekull, B., Bohlin, G., & Rydell, A. (1997). Maternal sensitivity, infant temperament, and the development of early feeding problems. *Infant Mental Health Journal, 18,* 92-106.

Haley, D. W. & Stansbury, K. (2003). Infant stress and parent responsiveness: Regulation of physiology and behavior during still-face and reunion. *Child Development, 74,* 1534-1546.

Hart, D., & Carlo, G. (2005). Moral development in adolescence. *Journal of Research on Adolescence, 15,* 223-233.

Hastings, P. D., McShane, K. E., Parker, R., & Ladha, F. (2007). Ready to make nice:

parental socialization of young sons' and daughters' prosocial behaviors with peers. *The Journal of Genetic Psychology, 168,* 177-200.

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,* 467-493.

Hastings, P. D., Utendale, W. T., & Sullivan, C. (2007). The socialization of prosocial development. In J. Grusec & P. D. Hastings (Eds.), *The Handbook of Socialization: Theory and Research* (pp. 638-664). New York: Guilford Press.

Hill, C. E. (2004). *Helping skills: Facilitating exploration, insight, and action* (2nd ed.). Washington, DC: American Psychological Association.

Hill, C., Stein, J., Keenan, K., & Wakschlag, L. S. (2006). Mother's childrearing history and current parenting: Patterns of association and the moderating role of current life stress. *Journal of Clinical Child and Adolescent Psychology, 35,* 412-419.

Ho, C., Bluestein, D. N., & Jenkins, J. M. (2008). Cultural differences in the relationship between parenting and children's behavior. *Developmental Psychology, 44,* 507-522.

Hoffman, M. L. (1975). Altruistic behavior and the parent-child relationship. *Journal of Personality and Social Psychology, 31,* 937-943.

Hoffman, M. L. (1987). The contribution of empathy to justice and moral judgment. In N. Eisenberg, & J. Strayer (Eds.), *Empathy and its development* (pp. 47-80). New York: Cambridge University Press.

Hoffman, M. L. (2001). Toward a comprehensive empathy-based theory of prosocial moral development. In A. C. Bohart & D. J. Stipek (Eds.), *Constructive &*

Destructive Behaviors: Implications for family, school, & society. Washington, DC: APA.

Iannotti, R. J., Cummings, E. M., Pierrehumbert, B., Milano, M. J., & Zahn-Waxler, C. (1992). Parental influences on prosocial behavior and empathy in early childhood. In J. M. A. M. Janssens & J. R. M. Gerris (Eds.), *Parental Influences on Prosocial Behavior and Empathy in Early Childhood* (pp.77-100). Amsterdam : Swets & Zeitlinger.

Ispa, J. M., Fine, M. A., Halgunseth, L. C., Harper, S., Robinson, J., Boyce, L., Brooks-Gunn, J., et al. (2004). Maternal intrusiveness, maternal warmth, and mother-toddler relationship outcomes: Variations across low-income ethnic and acculturation groups. *Child Development, 75,* 1613-31.

Janoski, T., & Wilson, J. (1995). Pathways to volunteerism: Family socialization and status transmission models. *Social Forces, 74*, 271-292

Janssens, J. M. A. M., & Gerris, J. R. M. (1992). Child-rearing, empathy, and prosocial development. In J. M. A. M. Janssens & J. R. M. Gerris (Eds.), *Child Rearing: Influence on prosocial and moral development* (pp. 57-75). Amsterdam : Swets & Zeitlinger.

Jensen, L., Peery, C., Adams, G., & Gaynard, L. (1981). Maternal behavior and the development of empathy in preschool children. *Psychological Reports, 48,* 879-884.

Kagan, J., Reznick, J. S., Snidman, N., Gibbons, J., & Johnson, M. O. (1988). Childhood derivatives of inhibition and lack of inhibition to the unfamiliar. *Child Development, 59,* 1580-1589.

Kagan, S., & Knight, G. P. (1984). Maternal reinforcement style and cooperation-competition among Anglo American and Mexican American children. *The Journal of Genetic Psychology, 145, 37*-46.

Kendler, K. S., & Eaves, L. J. (1986). Models for the joint effect of genotype and environment on liability to psychiatric illness. *The American Journal of Psychiatry 143,* 279-289.

Keresteš, G. (2006). Children's aggressive and prosocial behavior in relation to war exposure: Testing the role of perceived parenting and child's gender. *International Journal of Behavioral Development, 30,* 227-239.

Kerr, M. H., Beck, K., Shattuck, T. D., Kattar, C., & Uriburu, D. (2003). Family involvement, problem and prosocial behavior outcomes of Latino youth. *American Journal of Health Behavior, 27,* 55-65.

Kestenbaum, R., Farber, E. A., & Sroufe, L. A. (1989). Individual differences in empathy among preschoolers: Relation to attachment history. *New Directions in Child Development, 44,* 51-64.

Kiang, L., Moreno, A. J., & Robinson, J. L. (2004). Maternal preconceptions about parenting predict child temperament, maternal sensitivity, and children's empathy. *Developmental Psychology, 40,* 1081-1092.

Kienbaum, J., Volland, C., & Ulich, D. (2001). Sympathy in the context of mother-child and teacher-child relationships. *International Journal of Behavioral Development, 25,* 302-309.

Klein, H. A., & Ballantine, J. H. (1991). Children's temperament: Patterns across cultures. *Journal of Research in Childhood Education, 6,* 47-53.

Klimes-Dougan, B., Brand, A. E., Zahn-Waxler, C., Usher, B., Hastings, P. D., Kendziora, K., et al. (2007). Parental emotion socialization in adolescence: Differences in sex, age and problem status. *Social Development, 16,* 326-342.

Knight, G. P., Bernal, M. E., Cota, M. K., Garza, C. A., & Ocampo, K. A. (1993). Family socialization and Mexican American identity and behavior. In M. E. Bernal & G. P. Knight (Eds.), *Ethnic identity: Formation and transmission among Hispanics and other minorities* (pp. 105-129). Albany, NY: State University of New York Press.

Knight, G. P., and Kagan, S. (1977). Development of prosocial and competitive tendencies in Anglo-American and Mexican-American children. *Child Development, 48,* 1385-1394

Kochanska, G. (1991). Socialization and temperament in the development of guilt and conscience. *Child Development, 62,* 1379-1392.

Kochanska, G. (1993). Toward a synthesis of parental socialization and child temperament in early development of conscience. *Child Development, 64,* 325-347.

Kochanska, G. (1995). Children's temperament, mothers' discipline, and security of attachment: Multiple pathways to emerging internalization. *Child Development, 66,* 597-615.

Kochanska, G. (1997a). Multiple pathways to conscience for children with different temperaments: From toddlerhood to age 5. *Developmental Psychology, 33,* 228-240.

Kochanska, G. (1997b). Mutually responsive orientation between mothers and their young children: Implications for early socialization. *Child Development, 68,* 94-112.

Kochanska, G., & Aksan, N. (1995). Mother-child mutually positive affect, the quality of child compliance to requests and prohibitions, and maternal control as correlates of early internalization. *Child Development, 66,* 236-254.

Kochanska, G., Aksan, N., & Joy, M. E. (2007). Children's fearfulness as a moderator of parenting in early socialization: Two longitudinal studies. *Developmental Psychology, 43,* 222-237.

Kochanska, G., Aksan, N., Knaack, A., & Rhines, H. M. (2004). Maternal parenting and children's conscience: Early security as moderator. *Child Development, 75,* 1229-1242.

Kochanska, G., Coy, K. C., & Murray, K. T. (2001). The development of self-regulation in the first four years of life. *Child Development, 72,* 1091-111.

Kochanska, G., DeVet, K., Goldman, M., Murray, K., & Putnam, S. P. (1994). Maternal reports of conscience development and temperament in young children. *Child Development, 65,* 852-868.

Kochanska, G., Forman, D. R., Aksan, N., & Dunbar, S. B. (2005). Pathways to conscience: Early mother-child mutually responsive orientation and children's moral emotion, conduct, and cognition. *Journal of Child Psychology and Psychiatry, 46,* 19-34.

Kochanska, G., Gross, J. N., Lin, M. & Nichols, K. E. (2002). Guilt in young children: Development, determinants, and relations with a broader system of standards. *Child Development, 73,* 461-482.

Kochanska, G., & Murray, K. T. (2000). Mother-child mutually responsive orientation and conscience development: From toddler to early school age. *Child Development, 71,* 417–431.

Koestner, R., Franz, C., & Weinberger, J. (1990). The family origins of empathic concern: A 26-year longitudinal study. *Journal of Personality and Social Psychology, 58,* 709-717.

Kogan, N., & Carter, A. S. (1996). Mother-infant reengagement following the still-face: The role of maternal emotional availability in infant affect regulation. *Infant Behavior and Development, 19,* 359-370.

Komsi, N. Räikkönen, K., Pesonen, A., Heinonen, K., Keskivaara, P., Järvenpää, A.,et al. (2006). Continuity of temperament from infancy to middle childhood. *Infant Behavior & Development, 29,* 494-508.

Krevans, J., & Gibbs, J. C. (1996). Parents' use of inductive discipline: Relations to children's empathy and prosocial behavior. *Child Development, 67,* 3263-3277.

Kuppens, P., & Tuerlinckx, F. (2007). Personality traits predicting anger in self-, ambiguous-, and other caused unpleasant situations. *Personality and Individual Differences, 42*, 1105-1115.

Kurtz, C. A., & Eisenberg, N. (1983). Role-taking, empathy, and resistance to deviation in children. *The Journal of Genetic Psychology, 142,* 85-95.

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,* 1008-1024.

Ladd, G. W. & Price, J. M. (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development, 58,* 1168-1189.

Laible, D. (2004). Mother–child discourse in two contexts: Links with child temperament,
attachment security, and socioemotional competence. *Developmental Psychology, 40,* 979-992.

Laible, D. (2006). Maternal emotional expressiveness and attachment security: Links to representations of relationships and social behavior. *Merrill-Palmer Quarterly, 52,* 645-670.

Laible, D., Carlo, G. & Raffaelli, M. (2000). The differential relations of parent and peer attachment to adolescent adjustment. *Journal of Youth and Adolescence, 29,* 45-59.

Laible, D., Carlo, G., & Roesch, S. C. (2004). Pathways to self-esteem in late adolescence: the role of parent and peer attachment, empathy, and social behaviours. *Journal of Adolescence, 27,* 703-716.

Landry, S. H., Smith, K. E., Swank, P. R. (2006). Responsive parenting: Establishing early foundations for social, communication, and independent problem-solving skills. *Developmental Psychology,* 42, 627-642.

Lau, A. S., Litrownik, A. J., Newton, R. R., Black, M. M., & Everson, M. D. (2006) Factors
affecting the link between harsh physical discipline and child externalizing problems
in Black and White families. *Journal of Community Psychology, 34,* 89-103.

Lehman, E. B., Steier, A. J., Guidash, K. M., & Wanna, S. Y. (2002). Predictors of compliance in toddlers: Child temperament, maternal personality, and emotional availability. *Early Child Development and Care,* 301-310.

Lengua, L. J., & Kovacs, E. A. (2005). Bidirectional associations between temperament and parenting and the prediction of adjustment problems in middle childhood. *Journal of Applied Developmental Psychology, 26,* 21–38.

Leve, L. D., Kim, H. K., & Pears, K. C. (2005). Childhood temperament and family environment as predictors of internalizing and externalizing trajectories from ages 5 to 17. *Journal of Abnormal Child Psychology, 33,* 505-520.

Levine, S., Elzey, F. F., & Lewis, M. (1969). *California Preschool Social Competency Scale.* Palo Alto, CA: Consulting Psychologists Press.

Lewin, K. (1935). *A dynamic theory of personality: Selected papers*. New York: McGraw-Hill.

Lichter, D. T., Shanahan, M. J., & Gardner, E. L. (2002). Helping others?: The effects of childhood poverty and family instability on prosocial behavior. *Youth & Society 34*, 89-119.

Londerville, S., & Main, M. (1981). Security of attachment, compliance, and maternal training methods in the second year of life. *Developmental Psychology, 17,* 289-299.

Lytton, H. (1977). Correlates of compliance and the rudiments of conscience in two-year-old boys. *Canadian Journal of Behavioral Science, 9,* 242-251.

Maccoby, E. E., & Jacklin, C. N. (1974). *The psychology of sex differences.* Stanford, Calif.: Stanford University Press, 1974.

Magnusson, D., & Allen, V. L. (1983). An interactional perspective for human development. In D. Magnusson & V. L. Allen (Eds.), *Human development: An interactional perspective* (pp. 3-31). New York: Academic Press.

Markiewicz, D., Doyle, A. B., & Brendgen, M. (2001). The quality of adolescents' friendships: Associations with mothers' interpersonal relationships, attachments to parents and friends, and prosocial behaviors. *Journal of Adolescence, 24,* 429-445.

Martin, J. A., Maccoby, E. E., & Jacklin, C. N. (1981). Mothers' responsiveness to interactive bidding and nonbidding in boys and girls. *Child Development, 52,* 1064-1067.

McGinley, M. & Carlo, G. (2007). Two sides of the same coin? The relations between prosocial and physically aggressive behaviors. *Journal of Youth and Adolescence, 37,* 337-349.

McGrath, M. P., Zook, J. M., & Weber-Roehl, L. (2003). Socializing prosocial behavior in children: The roles of parents and peers. In S. P. Shohov (Ed.): *Advances in psychology research* (Vol. 20, pp. 53-59). Hauppauge, NY: Nova Science.

McGuire, J. & Earls, F. (1993). Exploring the reliability of measures of family relations, parental attitudes, and parent-child relations in a disadvantaged minority population. *Journal of Marriage and the Family, 55,* 1042-1046.

Miles, S. B., & Stipek, D. (2006). Contemporaneous and longitudinal associations between social behavior and literacy achievement in a sample of low-income elementary
school children. *Child Development, 77,* 103-117.

Miller, P. A., & Jansen op de Haar, M. A. (1997). Emotional, cognitive, behavioral, and temperament characteristics of high-empathy children. *Motivation and Emotion, 21,* 109-125.

Mohr, P., Howells, K., Gerace, A., Day, A., Wharton, M. (2007). The role of perspective taking in anger arousal. *Personality and Individual Differences, 43,* 507-517.

Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development, 16,* 361-388.

NICHD Early Child Care Research Network. (2004). Trajectories of physical aggression from toddlerhood to middle childhood. *Monographs of the Society for Research in Child Development, 69,* vii-129.

Nowlin, P. R., & Colder, C. R. (2007). The role of ethnicity and neighborhood poverty on the relationship between parenting and adolescent cigarette use. *Nicotine & Tobacco Research, 9,* 545-556.

Padilla-Walker, L. M., & Carlo, G. (2006). Adolescent perceptions of appropriate parental reactions in moral and conventional social domains. *Social Development, 15,* 480 - 500.

Parke, R. D., Coltrane, S., Duffy, S., Buriel, R., Dennis, J., Powers, J., et al.. (2004). Economic stress, parenting, and child adjustment in Mexican American and European American Families. *Child Development, 75,* 1632-1656.

Pettit, G. S., Keiley, M. K., Laird, R. D., Bates, J. E., & Dodge, K. A. (2007). Predicting the developmental course of mother-reported monitoring across childhood and adolescence from early proactive parenting, child temperament, and parents' worries. *Journal of Family Psychology, 21,* 206-217.

Phillipsen, L. C., Bridges, S. K., McLemore, T. C., & Saponaro, L. A. (1999). Perceptions of social behavior and peer acceptance in kindergarten. *Journal of Research in Childhood Education, 14,* 68-77.

Polaha, J., Larzelere, R. E., Shapiro, S. K., & Pettit, G. S. (2004). Physical discipline and child behavior problems: A study of ethnic group differences. *Parenting: Science and Practice, 4,* 339-360.

Propper, C. & Moore, G. A. (2006). The influence of parenting on infant emotionality: A multi-level psychobiological perspective. *Developmental Review, 26,* 427-460.

Putnam, S. P., & Rothbart, M. K. (2006). Development of short and very short forms of the Children's Behavior Questionnaire. *Journal of Personality Assessment, 87,* 102-112.

Putnam, S. P., Sanson, A., & Rothbart, M. K. (2002). Child temperament and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 1. Children and parenting* (2nd ed., pp. 255-277). Mahwah, NJ: Erlbaum.

Raver, C. C., Gershoff, E. T., & Aber, J. L. (2007). Testing equivalence mediating models of income, parenting, and school readiness for White, Black, and Hispanic children in a national sample. *Child Development, 78,* 96-115.

Ribas-Fitó, N., Torrent, M., Carrizo, D., Júlvez, J., Grimalt, J. O, & Sunyer, J. (2007). Exposure to Hexachlorobenzene during pregnancy and children's social behavior at 4 years of age. *Environmental Health Perspectives, 115*, 447-450.

Ricco, R. B. (1989). Operational though and the acquisition of taxonomic relations involving figurative dissimilarity. *Developmental Psychology, 25,* 996-1003.

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

Roberts, W. L. (1999). The socialization of emotional expression: Relations with prosocial behaviour and competence in five samples. *Canadian Journal of Behavioural Science, 31,* 72-85.

Robinson, J. L., Zahn-Waxler, C., & Emde, R. N. (1994). Patterns of development in early empathic behavior: Environmental and child constitutional influences. *Social Development, 3,* 125-145.

Romano, E., Tremblay, R. E., Boulerice, B., & Swisher, R. (2005). Multilevel correlates of childhood physical aggression and prosocial behavior. *Journal of Abnormal Child Psychology, 33,* 565-578.

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

Rothbart, M. K., Ahadi, S. A., Hershey, K. L., & Fisher, P. (2001). Investigations of temperament at three to seven years: The Children's Behavior Questionnaire. *Child Development, 72,* 1394-1408.

Rothbart, M. K., & Bates, J. E. (1998). Temperament. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of Child Psychology: Vol. 3. Social, Emotional, and Personality Development* (5th ed., pp. 105-176). New York: Wiley.

Rothbart, M. K., & Bates, J. E. (2006). Temperament. In W. Damon & R. M. Lerner (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of Child Psychology: Vol. 3. Social, Emotional, and Personality Development* (6th ed., pp. 99-166). New York: Wiley.

Rubin, K. H. (1998). Social and emotional development from a cultural perspective. *Developmental Psychology, 34,* 611–615.

Rubin, K. H., Nelson, L. J., Hastings, P., & Asendorpf, J. (1999). The transaction between parents' perceptions of their children's shyness and their parenting styles. *International Journal of Behavioral Development, 23,* 937-957.

Rudolph, U., Roesch, S. C., Greiyemeyer, T., & Weiner, B. (2004). A meta-analytic review of help giving and aggression from an attributional perspective: Contributions to a general theory of motivation. *Cognition and Emotion, 18,* 815-848.

Ruiz, S., Roosa, M., & Gonzales, N. A. (2002). Predictors of self-esteem for Mexican American and European American youths: A reexamination of the influence of parenting. *Journal of Family Psychology,* 16, 70-80.

Russell, A., Hart, C. H., Robinson, C. C., & Olsen, S. F. (2003). Children's sociable and aggressive behaviour with peers: A comparison of the US and Australia, and contributions of temperament and parenting styles. *International Journal of Behavioral Development, 24*, 74-86.

Rydell, A. M., Berlin, L., & Bohlin, G. (2003). Emotionality, emotion regulation, and adaptation among 5- to 8-year-old children. *Emotion, 3,* 30–47.

Rydell, A. M., Bohlin, G., & Thorell, L. B. (2005). Representations of attachment to parents and shyness as predictors of children's relationships with teachers and peer competence in preschool. *Attachment and Human Development, 7,* 187–204.

Sanson, A., Hemphill, S. A., & Smart, D. (2004). Connections between temperament and social development: A review. *Social Development, 13,* 142-170.

Sawyer, K. S., Denham, S., DeMulder, E., Blair, K., Auerbach-Major, S., & Levitas, J. (2002). The contribution of older siblings' reactions to emotions to preschoolers' emotional

and social competence. *Marriage & Family Review, 34,* 183-212.

Schleser, R., Cohen, R., Meyers, A. W., & Douglas, R. J. (1984). The effects of cognitive level and training procedures on the generalization of self-instructions. *Cognitive Therapy and Research, 8,* 187-199.

Schieman, S., & Van Gundy, K. (2000). The personal and social links between age and self-reported empathy. *Social Psychology Quarterly, 63,* 152-174.

Shumow, L. Vandell, D.L., & Posner, J. (1998). Harsh, firm, and permissive parenting in low-income families: Relations to children's academic achievement and behavioral adjustment. *Journal of Family Issues, 19, 483*-507.

Skinner, E., & Edge, K. (2002). Parenting, motivation, and the development of children's coping. In L. Crockett (Ed.) *48th Annual symposium on motivation: Agency, motivation, and the life course* (pp. 77-143). Lincoln, NE: University of Nebraska Press.

Skoe, E. E. (1998). The ethic of care: Issues in moral development. In E. E. Skoe & A. L. von der Lippe (Eds.), *Personality development in adolescence: A cross national and life span perspective* (pp. 143–171). London: Routledge.

Spinrad, T. L., Losoya, S. H., Eisenberg, N., Fabes, R. A., Shepard, S. A., Cumberland, A., et al. (1999). The relations of parental affect and encouragement to children's moral emotions and behaviour. *Journal of Moral Education, 28,* 323-337.

Spinrad, T. L. & Stifter, C. A. (2006). Toddlers' empathy-related responding to distress: Predictions from negative emotionality and maternal behavior in infancy. *Infancy, 10,* 97-121.

Sroufe, L A. (2000). Early relationships and the development of children. *Infant Mental Health Journal, 21,* 67-74.

Stanhope, L., Bell, R. Q., & Parker-Cohen, N. Y. (1987). Temperament and helping behavior in children. *Developmental Psychology, 23,* 347-353.

Staub, E. (1979). *Positive social behavior and morality: Socialization and development* (Vol. 2). New York: Academic Press.

Strayer, J., & Roberts, W. (2004). Empathy and observed anger and aggression in five-

year-olds. *Social Development, 13,* 1-13.

Stright, A. D., Gallagher, K. C., & Kelley, K. (2008). Infant temperament moderates relations between maternal parenting in early childhood and children's adjustment in first grade. *Child Development, 79,* 186-200.

Sturge-Apple, M. L., Davies, P. T., & Cummings, M. E. (2006). Impact of hostility and withdrawal in interparental conflict on parental emotional unavailability and children's adjustment difficulties. *Child Development, 77,* 1623-1641.

Suizzo, M. (2007). Parents' goals and values for children: Dimensions of independence and interdependence across four U.S. Ethnic groups. *Journal of Cross-Cultural Psychology, 38,* 506-530.

Tamis-LeMonda, C. S. (1996). Maternal sensitivity: Individual, contextual and cultural factors in recent conceptualizations. *Early Development and Parenting, 5,* 167-171.

Tamis-LeMonda, C. S., Bornstein, M. H., Baumwell, L., & Damast, A. M. (1996). Responsive parenting in the second year: Specific influences on children's language and play. *Early Development and Parenting, 5,* 173-183.

Thomas, A. & Chess, S. (1977). *Temperament and development.* Philadelphia, PA: Brunner/ Mazel.

Thompson, R. A., & Lagattuta, K. H. (2006). Feeling and understanding: Early emotional development. In K. McCartney & D. Phillips (Eds.), *The blackwell handbook of early childhood development* (pp. 317-337). Malden, MA: Blackwell.

Uggen, C., & Janikula, J. (1999) Volunteerism and arrest in the transition to adulthood. *Social Forces, 78,* 331-362.

van der Mark, I. L., Bakermans-Kranenburg, M. J., and van IJzendoorn, M. H. (2002). The role of parenting, attachment, and temperamental fearfulness in the prediction of compliance in toddler girls. *British Journal of Developmental Psychology, 20,* 361–378.

van der Mark, I. L., van IJzendoorn, M. H., and 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,* 451-468.

Wachs, T. D., & Plomin, R. (1991). Overview of current models and research. In T. D. Wachs & R. Plomin (Eds.), *Conceptualization and measurement of organism-environment interaction* (pp. 1-8). Washington. DC: APA.

Warren, S. L., & Simmens, S. J. (2005). Predicting toddler anxiety/depressive symptoms: Effects of caregiver sensitivity on temperamentally vulnerable children. *Infant Mental Health Journal, 26,* 40-55.

Wentzel, K. R., Filisetti, L., & Looney, L. (2007). Adolescent prosocial behavior: The role of self–processes and contextual cues. *Child Development, 78,* 895–910.

Wentzel, K. R., & McNamara, C. C. (1999). Interpersonal relationships, emotional distress, and prosocial behavior in middle school. *Journal of Early Adolescence, 19,* 114-125.

Whiteside-Mansell, L., Bradley, R. H., Owen, M. T., Randolph, S. M., & Cauce, A. M. (2003). Parenting and children's behavior at 36 months: Equivalence between African American and European American mother-child dyads. *Parenting: Science and Practice, 3,* 197-234.

Witherell, C. S., & Edwards, C. P. (1991). Moral versus social-conventional reasoning: A narrative and cultural critique. *Journal of Moral Education, 20,* 293-305.

Winer, B. J. (1971). *Statistical Principles in Experimental Design.* New York: McGraw-Hill.

Wilson, B. J. (2006). The entry behavior of aggressive/rejected children: The contributions of status and temperament. *Social Development, 15,* 463-479.

Yarrow, L. J., Rubenstein, J. L., & Pederson, F. A. (1975). *Infant and environment: Early cognitive and motivational development.* Oxford, England: Hemisphere.

Young, S. K., Fox, N. A., & Zahn-Waxler, C. (1999). The relations between temperament and empathy in 2-year-olds. *Developmental Psychology, 35,* 1189-1197.

Zahn-Waxler, C., & Radke-Yarrow, M. (1990). The origins of empathic concern. *Motivation and Emotion, 14,* 107-130.

Zahn-Waxler, C., Radke-Yarrow, M., & King, R. A. (1979). Child rearing and children's prosocial initiations toward victims of distress. *Child Development, 50,* 319-330.

Zhou, Q., Eisenberg, N., Losoya, S. H., Fabes, R. A., Reiser, M., Guthrie, I. K., et al. (2002). The relations of parental warmth and positive expressiveness to children's empathy-related responding and social functioning: A longitudinal study. *Child Development, 73,* 893-915.

Table 1

Summary of Study Measures

Construct/Measure Name (Abbreviation)	Method	Location	Child Age	Respondent	Primary Citation
Child Temperament (Fear, Shyness, Anger/Frustration)					
Child Behavior Questionnaire (CBQ)	Questionnaire	Laboratory	54 months	Mother	Rothbart, Ahadi,, & Hershey (1994)
Maternal Responsiveness					
Mother-Child Interaction Task (MCIT)	Observation	Laboratory	54 months	Mother + child observed	Egeland & Hiester (1993)
Maternal Firm Discipline					
Raising Children Checklist (RCC)	Questionnaire	Home	54 months	Mother	Shumow, Vandell, & Posner (1998)
Child Prosocial Behavior					
Friendship Interaction (54 month-Friend)	Observation	Child Care	54 months	Child + Friend observed	NICHD SECC
California Preschool Social Competence Scale (54 month-Competence)	Questionnaire	Child Care	54 months	Caregiver	Levine, S., Elzey, F. F., & Lewis, M. (1969)
Unstructured Peer Observation (6 year-Observation)	Observation	School	1st grade	Child observed	NICHD SECC
Child Behavior with Peers (10 year-Prosocial, 11 year-Prosocial, 12 year-Prosocial)	Questionnaire	Laboratory	5th, 6th grade	Mother	Ladd & Profilet (1996)
		Mailed	5th, 6th grade	Teacher	

Table 2

Descriptive Statistics for the Main Study Variables

Variable	Range	# Items	Minimum	Maximum	N	Mean (SD)	Skewness	Kurtosis	α
Child Temperament									
Fearfulness	1-7	10	1.40	6.40	1036	4.06 (.86)	-.19	-.20	.64
Shyness	1-7	10	1.00	6.60	1042	3.52 (1.11)	.14	-.30	.87
Anger/Frustration	1-7	10	1.60	6.90	1042	4.74 (.83)	-.25	.10	.76
Maternal Socialization									
Responsiveness[a]	1-7	3	1.33	7.00	1029	5.66 (.96)	-1.35	2.44	.84
Firm Discipline	1-4	6	2.50	4.00	1062	3.57 (.28)	-.42	-.07	.60
Child Prosocial Behavior									
54 mo.-Friend[b]	--	3	-3.04	6.70	760	0.00 (.95)	.95	3.19	.59
54 mo.-Comp.	1-4	4	1.25	4.00	805	3.06 (.55)	-.41	-.24	.64
6 year-Observation	1-7	1	1.00	7.00	938	2.39 (1.46)	.99	.28	.68[c]
10 year-Prosocial	0-2	10	.10	2.00	808	1.56 (.34)	-.89	.58	.80
11 year-Prosocial	0-2	10	.30	2.00	817	1.57 (.32)	-.88	.72	.79
12 year-Prosocial	0-2	10	.30	2.00	766	1.55 (.32)	-.86	.65	.78

[a] Computed as the mean of three observed qualitative ratings; alpha computed using these three observed ratings
[b] Computed as the mean of six standardized values from two scales: Prosocial Behavior 1 (1-5 scale, 3 items) and Prosocial Behavior II (1-3 scale, 3 items).
[c] Winer unbiased estimator of reliability reported for internal reliability.

Table 3

Bivariate Correlations Among the Main Study and Demographic Variables

Temperament	Gender	Race	Income @ 54 months	Income @ 6 years	Income @ 10 years	Income @ 11 years	Income @ 12 years
Fearfulness	-.02	.00	.03	.00	-.03	-.02	.01
Shyness	-.06*	-.01	.05	.02	-.02	-.01	-.01
Anger/Frustration	.09**	.04	-.08**	-.06	-.09**	-.08*	-.07*
Maternal Socialization							
Responsiveness	.00	.29**	.24**	.26**	.36**	.39**	.37**
Firm Discipline	-.01	.08**	.10**	.13**	.12**	.11**	.10**
Prosocial Behavior							
54 month-Friend	-.12**	.05	.04	.04	.05	.07	.05
54 month-Competence	-.14**	.08*	.11**	.05	.09*	.09*	.09*
6 year-Observation	-.09**	.06	.12**	.05	.07*	.10**	.06
10 year-Prosocial	-.25**	.25**	.24**	.23**	.32**	.31**	.29**
11 year-Prosocial	-.23**	.21**	.22**	.20**	.27**	.26**	.25**
12 year-Prosocial	-.27**	.20**	.16**	.18**	.27**	.27**	.26**

*$p < .05$, **$p < .01$; Gender is coded as 0 = girls, 1 = boys; Race is coded as 0 = other, 1 = White.

Table 4

Bivariate Correlations among the Main Study Variables

Temperament	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Fearfulness	--										
2. Shyness	.19**	--									
3. Anger/Frustration	.25**	.06*	--								
Maternal Socialization											
4. Responsiveness	.01	.01	-.03	--							
5. Firm Discipline	-.07*	-.02	-.02	.10**	--						
Prosocial Behavior											
6. 54 month-Friend	.03	-.05	-.01	.02	.09*	--					
7. 54 month-Competence	.03	-.05	-.15**	.10**	.08*	.08	--				
8. 6 year-Observation	-.03	-.01	-.05	.02	-.09**	.06	.04	--			
9. 10 year-Prosocial	-.01	.05	-.16**	.21**	.14**	.13**	.29**	.08*	--		
10. 11 year-Prosocial	.03	-.02	-.13**	.23**	.11**	.05	.22**	.10**	.60**	--	
11. 12 year-Prosocial	-.01	-.02	-.12**	.27**	.13**	.09*	.27**	.08*	.57**	.61**	--

*$p < .05$, **$p < .01$; Gender is coded as 0 = girls, 1 = boys.

Table 5

Controls, Responsiveness, and Firm Discipline Predicting Prosocial Behaviors

	Prosocial Behavior					
First Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.09*	.04	.20**	.14**	.10*
Gender	-.11**	-.13**	-.10**	-.26**	-.24**	-.27**
Race	.08*	.01	.07	.13**	.10*	.10*
Responsiveness	-.02	.06	.00	.10**	.11**	.19**
Firm Discipline	.08*	.07	-.10**	.10**	.11**	.11**
Multiple R^2	.03	.04	.03	.19	.14	.17
F	4.21**	6.25**	4.43**	27.93**	19.87**	22.84**
(df)	(5, 730)	(5, 767)	(5, 849)	(5, 596)	(5, 599)	(5, 559)
Second Step						
Variable						
Family Income	.02	.09*	.04	.20**	.14**	.10*
Gender	-.11**	-.13**	-.10**	-.26**	-.24**	-.27**
Race	.08*	.01	.07	.13**	.10*	.10*
Responsiveness	-.02	.06	-.01	.11**	.11**	.18**
Firm Discipline	.08*	.07	-.10**	.10**	.11**	.11**
Responsiveness x Firm Discipline	-.03	-.02	-.03	.01	.01	-.03
Multiple R^2	.03	.04	.03	.19	.14	.17
F	3.63**	5.24**	3.82**	23.26**	16.54**	19.16**
(df)	(6, 729)	(6, 766)	(6, 848)	(6, 595)	(6, 598)	(6, 558)

Third Step

Variable						
Family Income	--	--	--	.18**	.13**	.08*
Gender	--	--	--	-.22**	-.22**	-.24**
Race	--	--	--	.13**	.10*	.10*
Responsiveness	--	--	--	.09*	.10*	.17**
Firm Discipline	--	--	--	.09*	.10**	.10*
Responsiveness x Firm Discipline	--	--	--	.01	.01	-.03
Early Prosocial Behavior	--	--	--	.22**	.16**	.19**
Multiple R^2	--	--	--	.24**	.17**	.21**
F	--	--	--	26.18**	16.98**	20.59**
(df)	--	--	--	(7, 594)	(7, 597)	(7, 557)

*$p < .05$, **$p < .01$; Gender is coded as 0 = girls, 1 = boys; Race is coded as 0 = other, 1 = White.

Table 6

Bivariate Correlations between Main Study Variables, by Gender

Temperament	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Fearfulness	--	.18**	.18**	-.06	-.03	.05	.04	-.01	-.02	.03	-.05
2. Shyness	.19**	--	.08	.02	-.04	-.09	-.06	-.03	-.04	.02	-.01
3. Anger/Frustration	.31**	.06	--	-.03	-.06	.00	-.19**	.03	-.16**	-.09	-.11*
Maternal Socialization											
4. Responsiveness	.08	.01	-.03	--	.14**	-.02	.13*	.04	.21**	.22**	.24**
5. Firm Discipline	-.10*	.00	.01	.07	--	.10	.09	-.13**	.11*	.12*	.19**
Prosocial Behavior											
6. 54 month-Friend	.02	-.04	.01	.04	.09	--	.14*	.07	.11	.12*	.05
7. 54 month-Competence	.01	-.05	-.10*	.07	.07	.00	--	.02	.27**	.25**	.27**
8. 6 year-Observation	-.05	-.01	-.10*	.01	-.07	.04	.04	--	.11*	.08	.09
9. 10 year-Prosocial	.00	-.08	-.13*	.24**	.16**	.10	.27**	.01	--	.57**	.53**
10. 11 year-Prosocial	.02	-.08	-.13*	.25**	.10*	-.05	.13*	.07	.58**	--	.62**
11. 12 year-Prosocial	.03	-.06	-.10	.32**	.07	.08	.21**	.03	.55**	.52**	--

*$p < .05$, **$p < .01$

Note. Girls are below the diagonal, Boys are above the diagonal

Table 7

Gender, Fearful Temperament, Maternal Responsiveness, Two-Way Interactions and Three-Way Interactions Predicting Prosocial Behaviors

	Prosocial Behavior					
First Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.09*	.03	.20**	.15**	.11**
Gender	-.11**	-.14**	-.10**	-.26**	-.23**	-.27**
Race	.09*	.02	.06	.14**	.10*	.10*
Fear	.04	.03	-.05	-.02	.01	-.03
Responsiveness	.01	.07	-.02	.12**	.12**	.19**
Multiple R^2	.02	.04	.02	.18	.13	.16
F	3.41**	5.94**	4.69**	26.44**	17.63**	20.73**
(df)	(5, 719)	(5, 757)	(5, 837)	(5, 593)	(5, 596)	(5, 553)
Second Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.09*	.03	.20**	.16**	.10**
Gender	-.11**	-.14**	-.10**	-.27**	-.24**	-.27**
Race	.10*	.02	.06	.13**	.10*	.11**
Fear	.01	.01	-.07	-.02	.00	-.01
Responsiveness	.07	.02	-.03	.11*	.07	.20**
Gender x Fear	.03	.04	.04	.00	.03	-.03
Gender x Responsiveness	-.08	.06	.02	.00	.07	-.02
Fear x Responsiveness	.01	.04	.00	-.07	-.06	-.04
Multiple R^2 (ΔR^2 sig.)	.03	.04	.02	.19	.14	.16
F	2.49*	4.16**	1.95	16.92**	11.61**	13.11**
(df)	(8, 716)	(8, 754)	(8, 834)	(8, 590)	(8, 593)	(8, 550)

Third Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.09*	.03	.20**	.15**	.10**
Gender	-.11**	-.14**	-.10**	-.27**	-.24**	-.27**
Race	.09*	.02	.06	.13**	.10*	.11**
Fear	.01	.01	-.07	-.02	.00	-.01
Responsiveness	.07	.02	-.03	.11*	.08	.20**
Gender x Fear	.03	.04	.04	.00	.03	-.02
Gender x Responsiveness	-.08	.06	.02	.02	.07	-.02
Fear x Responsiveness	.03	.04	-.01	-.01	.01	-.02
Three-way Interaction	-.02	.01	.00	-.09	-.12*	-.04
Multiple R^2 (ΔR^2 sig.)	.03	.04	.02	.19	.14*	.16
F	2.23*	3.69**	1.73	15.47**	11.07**	11.69**
(df)	(9, 715)	(9, 753)	(9, 833)	(9, 589)	(9, 592)	(9, 549)

Fourth Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	--	--	--	.18**	.14**	.09**
Gender	--	--	--	-.24**	-.22**	-.25**
Race	--	--	--	.13**	.11**	.11**
Fear	--	--	--	-.03	.00	-.01
Responsiveness	--	--	--	.11*	.07	.20**
Gender x Fear	--	--	--	-.01	.02	-.03
Gender x Responsiveness	--	--	--	.00	.06	-.03
Fear x Responsiveness	--	--	--	-.02	.01	-.02
Three-way Interaction	--	--	--	-.08	-.12*	-.04
Early Prosocial Behavior	--	--	--	.21**	.16**	.18**
Multiple R^2 (ΔR^2 sig.)	--	--	--	.23**	.17**	.19**
F	--	--	--	17.72**	11.95**	13.04**
(df)	--	--	--	(10, 588)	(10, 591)	(10, 548)

*$p < .05$, **$p < .01$; Gender is coded as 0 = girls, 1 = boys; Race is coded as 0 = other, 1 = White

Table 8

Gender, Shy Temperament, Maternal Responsiveness, Two-Way Interactions and Three-Way Interactions Predicting Prosocial Behaviors

	Prosocial Behavior					
First Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.09*	.03	.20**	.15**	.11**
Gender	-.11**	-.14**	-.10**	-.26**	-.24**	-.27**
Race	.09*	.01	.06	.13**	.10**	.10*
Shyness	-.06	-.06	-.02	-.06	-.05	-.06
Responsiveness	-.01	.06	-.01	.11**	.12**	.19**
Multiple R^2	.02	.04	.02	.18	.13	.16
F	3.60**	6.26**	2.61**	26.63**	18.40**	21.32**
(df)	(5, 727)	(5, 767)	(5, 847)	(5, 597)	(5, 599)	(5, 560)
Second Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.10*	.03	.20**	.15**	.11**
Gender	-.11**	-.14**	-.10**	-.26**	-.24**	-.27**
Race	.09*	.01	.06	.13**	.10*	.10*
Shyness	-.04	-.05	-.02	-.05	-.12*	-.07
Responsiveness	.03	.03	-.02	.10*	.08	.20**
Gender x Shyness	-.02	-.01	-.01	-.01	.10	-.01
Gender x Responsiveness	-.06	.05	.01	.01	.06	-.02
Shyness x Responsiveness	-.06	.00	.03	.04	-.01	-.04
Multiple R^2 (ΔR^2 sig.)	.03	.04	.02	.18	.14	.16
F	2.76*	4.08**	1.73	16.76**	12.15**	13.46**
(df)	(8, 724)	(8, 764)	(8, 844)	(8, 594)	(8, 596)	(8, 557)

Third Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.10**	.03	.20**	.15**	.11**
Gender	-.11**	-.14**	-.10**	-.26**	-.24**	-.27**
Race	.09*	.01	.06	.13**	.10*	.10*
Shyness	-.04	-.04	-.02	-.05	-.12*	-.07
Responsiveness	.03	.03	-.02	.10*	.08	.20**
Gender x Shyness	-.02	-.01	-.01	-.01	.10	.01
Gender x Responsiveness	-.06	.05	.01	.01	.05	-.02
Shyness x Responsiveness	-.02	-.06	-.02	.01	.01	-.05
Three-way Interaction	-.07	.08	-.02	.05	-.02	-.04
Multiple R^2 (ΔR^2 sig.)	.03	.04	.02	.19	.14*	.16
F	2.65*	3.95**	1.55	14.99**	10.80**	11.69**
(df)	(9, 723)	(9, 763)	(9, 843)	(9, 593)	(9, 595)	(9, 556)

Fourth Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	--	--	--	.19**	.14**	.09**
Gender	--	--	--	-.23**	-.21**	-.24**
Race	--	--	--	.14**	.10*	.10**
Shyness	--	--	--	-.05	-.11*	-.07
Responsiveness	--	--	--	.10	.08	.20**
Gender x Shyness	--	--	--	.01	.10	.02
Gender x Responsiveness	--	--	--	.00	.04	-.04
Shyness x Responsiveness	--	--	--	.01	.01	-.04
Three-way Interaction	--	--	--	.05	-.02	.00
Early Prosocial Behavior	--	--	--	.22**	.16**	.19**
Multiple R^2 (ΔR^2 sig.)	--	--	--	.23**	.17**	.19**
F	--	--	--	17.77**	11.71**	13.04**
(df)	--	--	--	(10, 592)	(10, 594)	(10, 555)

*$p < .05$, **$p < .01$; Gender is coded as 0 = girls, 1 = boys; Race is coded as 0 = other, 1 = White

Table 9

Gender, Angry/Frustrated Temperament, Maternal Responsiveness, Two-Way Interactions and Three-Way Interactions Predicting Prosocial Behaviors

	Prosocial Behavior					
First Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.08*	.02	.19**	.15**	.11**
Gender	-.11**	-.13**	-.09**	-.24**	-.23**	-.26**
Race	.09*	.02	.06	.14**	.11**	.10*
Anger	.01	-.12**	-.04	-.13**	-.10**	-.08
Responsiveness	-.01	.06	-.01	.10*	.11**	.18**
Multiple R^2	.01	.05	.02	.20	.14	.16
F	3.13**	8.09**	2.86*	29.19**	19.64**	21.74**
(df)	(5, 727)	(5, 767)	(5, 847)	(5, 597)	(5, 599)	(5, 560)
Second Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.08*	.03	.19**	.15**	.11**
Gender	-.11**	-.13**	-.09**	-.24**	-.23**	-.26**
Race	.09*	.02	.06	.14**	.10*	.10*
Anger	.01	-.07	-.11*	-.11*	-.12*	-.07
Responsiveness	.01	.12	-.03	.10	.07	.18**
Gender x Anger	-.01	-.07	.10*	-.04	.03	-.02
Gender x Responsiveness	-.03	.03	.02	.01	.06	-.01
Anger x Responsiveness	-.12**	.07*	.00	.01	-.01	-.06
Multiple R^2 (ΔR^2 sig.)	.03**	.06	.02	.20	.14	.17
F	3.43**	6.01**	2.40*	18.27**	12.45**	13.86**
(df)	(8, 724)	(8, 764)	(8, 844)	(8, 594)	(8, 596)	(8, 557)

Third Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.08*	.02	.19**	.15**	.11**
Gender	-.10**	-.13**	-.10**	-.24**	-.23**	-.26**
Race	.09*	.02	.06	.14**	.10*	.10*
Anger	.02	-.07	-.12*	-.11*	-.12*	-.07
Responsiveness	.00	.06	-.02	.09	.09	.18**
Gender x Anger	-.01	-.07	.11*	-.04	.03	-.02
Gender x Responsiveness	-.03	.03	.02	.00	.06	.00
Anger x Responsiveness	-.16**	.12**	.05	-.01	.06	-.07
Three-way Interaction	.06	-.08	-.08	.03	-.11*	.02
Multiple R^2 (ΔR^2 sig.)	.03	.06	.03	.20	.15*	.17
F	3.20**	5.76**	2.45**	16.28**	11.74**	12.32**
(df)	(9, 723)	(9, 763)	(9, 843)	(9, 593)	(9, 595)	(9, 556)

Fourth Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	--	--	--	.18**	.14**	.09**
Gender	--	--	--	-.21**	-.21**	-.24**
Race	--	--	--	.14**	.10*	.11**
Anger	--	--	--	-.10*	-.11*	-.05
Responsiveness	--	--	--	.08	.08	.17**
Gender x Anger	--	--	--	-.02	.05	.01
Gender x Responsiveness	--	--	--	-.01	.05	-.02
Anger x Responsiveness	--	--	--	-.03	.04	-.08
Three-way Interaction	--	--	--	.05	-.10*	.03
Early Prosocial Behavior	--	--	--	.21**	.15**	.19**
Multiple R^2 (ΔR^2 sig.)	--	--	--	.24**	.17**	.20**
F	--	--	--	18.74**	12.28**	13.87**
(df)	--	--	--	(10, 592)	(10, 594)	(10, 555)

*$p < .05$, **$p < .01$; Gender is coded as 0 = girls, 1 = boys; Race is coded as 0 = other, 1 = White

Table 10

Gender, Fearful Temperament, Maternal Firm Discipline, Two-Way Interactions and Three-Way Interactions Predicting Prosocial Behaviors

	Prosocial Behavior					
First Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.09*	.04	.23**	.18**	.15**
Gender	-.11**	-.14**	-.10**	-.25**	-.23**	-.28**
Race	.08*	.03	.06	.14**	.12**	.12**
Fear	.04	.03	-.05	-.01	.02	-.02
Firm Discipline	.08*	.07	-.10**	.11**	.12**	.12**
Multiple R^2	.03	.04	.03	.17	.13	.15
F	4.50**	5.76**	4.39**	26.23**	18.03**	18.82**
(df)	(5, 722)	(5, 764)	(5, 845)	(5, 598)	(5, 600)	(5, 556)
Second Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.09*	.04	.23**	.18**	.15**
Gender	-.11**	-.14**	-.10**	-.26**	-.23**	-.28**
Race	.09*	.03	.05	.15**	.12**	.12**
Fear	.03	.02	-.08	-.01	.02	.01
Firm Discipline	.08	.04	-.08	.09	.09	.05
Gender x Fear	.02	.02	.04	-.01	.00	-.05
Gender x Firm Discipline	.00	.03	-.02	.03	.04	.11
Fear x Firm Discipline	-.03	-.01	.03	.03	.00	.01
Multiple R^2 (ΔR^2 sig.)	.03	.04	.03	.17	.13	.15
F	2.91**	3.67**	2.93**	16.47**	11.31**	12.43**
(df)	(8, 719)	(8, 761)	(8, 842)	(8, 595)	(8, 597)	(8, 553)

Third Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.01	.09*	.04	.20**	.18**	.15**
Gender	-.11**	-.13**	-.11**	-.27**	-.23**	-.28**
Race	.09*	.03	.06	.13**	.12*	.12**
Fear	.03	.02	-.09	-.02	.01	.01
Firm Discipline	.08	.04	-.08	.11*	.10	.05
Gender x Fear	.03	.01	.05	.00	.01	-.05
Gender x Firm Discipline	.00	.03	-.03	.02	.04	.11*
Fear x Firm Discipline	.01	-.04	.07	-.01	.07	.00
Three-way Interaction	-.05	.04	-.06	-.09	-.09	.02
Multiple R^2 (ΔR^2 sig.)	.03	.04	.03	.17	.14	.15
F	2.73**	3.34**	2.77**	14.94**	10.45**	11.04**
(df)	(9, 718)	(9, 760)	(9, 841)	(9, 594)	(9, 596)	(9, 552)

Fourth Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	--	--	--	.18**	.17**	.13**
Gender	--	--	--	-.24**	-.21**	-.26**
Race	--	--	--	.13**	.12**	.12**
Fear	--	--	--	-.03	.00	.01
Firm Discipline	--	--	--	.11*	.08	.04
Gender x Fear	--	--	--	-.01	.01	-.05
Gender x Firm Discipline	--	--	--	.00	.04	.11*
Fear x Firm Discipline	--	--	--	-.02	.07	-.01
Three-way Interaction	--	--	--	-.08	-.10	.02
Early Prosocial Behavior	--	--	--	.21**	.17**	.18**
Multiple R^2 (ΔR^2 sig.)	--	--	--	.23**	.16**	.17**
F	--	--	--	17.31**	11.60**	12.44**
(df)	--	--	--	(10, 593)	(10, 595)	(10, 551)

*$p < .05$, **$p < .01$; Gender is coded as 0 = girls, 1 = boys; Race is coded as 0 = other, 1 = White

Table 11

Gender, Shy Temperament, Maternal Firm Discipline, Two-Way Interactions and Three-Way Interactions Predicting Prosocial Behaviors

	Prosocial Behavior					
First Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.10**	.04	.23**	.18**	.16**
Gender	-.12**	-.14**	-.10**	-.25**	-.23**	-.28**
Race	.08*	.02	.06	.14**	.12**	.10**
Shyness	-.06	-.06	-.02	-.06	-.04	-.05
Firm Discipline	.09*	.06	-.10**	.10**	.12**	.12**
Multiple R^2	.03	.04	.02	.18	.13	.15
F	4.95** j	6.03**	4.23**	26.62**	18.60**	19.24**
(df)	(5, 730)	(5, 774)	(5, 855)	(5, 602)	(5, 603)	(5, 563)
Second Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.10**	.04	.23**	.18**	.16**
Gender	-.12**	-.14**	-.10**	-.25**	-.23**	-.28**
Race	.08*	.02	.06	.14**	.12**	.12**
Shyness	-.05	-.05	.00	-.05	-.10	-.07
Firm Discipline	.08	.03	-.07	.08	.09	.04
Gender x Shyness	-.02	-.01	-.02	-.01	.09	.02
Gender x Firm Discipline	.00	.04	-.04	.03	.05	.11*
Shyness x Firm Discipline	.03	.02	-.07*	.02	-.01	.02
Multiple R^2 (ΔR^2 sig.)	.03	.04	.03	.18	.14	.15
F	3.18**	3.88**	3.27**	16.64**	12.10**	12.66**
(df)	(8, 727)	(8, 771)	(8, 852)	(8, 599)	(8, 600)	(8, 560)

Third Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.02	.10**	.04	.23**	.18**	.15**
Gender	-.12**	-.14**	-.10**	-.25**	-.23**	-.28**
Race	.08*	.02	.06	.14**	.12**	.12**
Shyness	-.05	-.05	.00	-.05	-.10	-.06
Firm Discipline	.09	.04	-.07	.08	.09	.05
Gender x Shyness	-.02	-.01	-.02	-.01	.09	.02
Gender x Firm Discipline	.00	.04	-.04	.03	.05	.11*
Shyness x Firm Discipline	.02	.01	-.06	.04	.00	-.05
Three-way Interaction	.01	.02	-.02	-.03	.02	.11*
Multiple R^2 (ΔR^2 sig.)	.03	.04	.03	.18	.14	.16**
F	2.83**	3.46**	2.92**	14.81**	10.76**	11.88**
(df)	(9, 726)	(9, 770)	(9, 851)	(9, 598)	(9, 599)	(9, 559)

Fourth Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	--	--	--	.21**	.17**	.13**
Gender	--	--	--	-.22**	-.21**	-.26**
Race	--	--	--	.14**	.12**	.12**
Shyness	--	--	--	-.05	-.10	-.06
Firm Discipline	--	--	--	.08	.08	.04
Gender x Shyness	--	--	--	.01	.09	.03
Gender x Firm Discipline	--	--	--	.02	.04	.10
Shyness x Firm Discipline	--	--	--	.03	.00	-.06
Three-way Interaction	--	--	--	-.03	-.02	.11*
Early Prosocial Behavior	--	--	--	.22**	.17**	.19**
Multiple R^2 (ΔR^2 sig.)	--	--	--	.23**	.17**	.20**
F	--	--	--	17.70**	11.90**	13.58**
(df)	--	--	--	(10, 597)	(10, 598)	(10, 558)

*$p < .05$, **$p < .01$; Gender is coded as 0 = girls, 1 = boys; Race is coded as 0 = other, 1 = White

Table 12

Gender, Anger/Frustrated Temperament, Maternal Firm Discipline, Two-Way Interactions and Three-Way Interactions Predicting Prosocial Behaviors

	Prosocial Behavior					
First Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.01	.09*	.04	.22**	.17**	.15**
Gender	-.11**	-.12**	-.09**	-.23**	-.22**	-.27**
Race	.08*	.02	.06	.14**	.12**	.12**
Anger	.01	-.12**	-.05	-.14**	-.10*	-.08
Firm Discipline	.09*	.06	-.10**	.10**	.12**	.11**
Multiple R^2	.03	.05	.03	.20	.14	.15
F	4.32**	7.95**	4.55**	29.39**	19.82**	19.71**
(df)	(5, 730)	(5, 774)	(5, 855)	(5, 602)	(5, 603)	(5, 563)
Second Step						
Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.01	.09*	.04	.22**	.17**	.15**
Gender	-.11**	-.12**	-.09**	-.23**	-.22**	-.27**
Race	.08*	.03	.06	.15**	.12**	.12**
Anger	.01	-.08	-.11*	-.11*	-.11*	-.07
Firm Discipline	.09	.04	-.08	.09	.09	.05
Gender x Anger	.00	-.07	.10*	-.05	.03	-.01
Gender x Firm Discipline	.00	.02	-.03	.02	.04	.10
Anger x Firm Discipline	-.03	.01	.01	.05	.00	.05
Multiple R^2 (ΔR^2 sig.)	.03	.05	.03	.20	.14	.16
F	2.78**	5.29**	3.44**	18.72**	12.47**	13.13**
(df)	(8, 727)	(8, 771)	(8, 852)	(8, 599)	(8, 600)	(8, 560)

Third Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	.01	.09*	.04	.22**	.17**	.15**
Gender	-.11**	-.12**	-.09**	-.23**	-.22**	-.27**
Race	.08*	.03	.06	.15**	.12*	.13**
Anger	.01	-.08	-.11*	-.11*	-.11*	-.07
Firm Discipline	.09	.04	-.08	.09	.09	.04
Gender x Anger	.00	-.07	.09*	-.05	.03	-.01
Gender x Firm Discipline	.00	.02	-.03	.02	.04	.11*
Anger x Firm Discipline	-.02	-.01	.00	.05	.02	.00
Three-way Interaction	-.01	.04	.01	.00	-.02	.08
Multiple R^2 (ΔR^2 sig.)	.03	.05	.03	.20	.14*	.16
F	2.47**	4.78**	3.07**	16.61**	11.08**	11.93**
(df)	(9, 726)	(9, 770)	(9, 851)	(9, 598)	(9, 599)	(9, 559)

Fourth Step

Variable	Friend	CPSC	UPO	10 years	11 years	12 years
Family Income	--	--	--	.20**	.16**	.14**
Gender	--	--	--	-.21**	-.20**	-.25**
Race	--	--	--	.15**	.12**	.13**
Anger	--	--	--	-.10*	-.11*	-.06
Firm Discipline	--	--	--	.08	.08	.03
Gender x Anger	--	--	--	-.02	.04	.01
Gender x Firm Discipline	--	--	--	.01	.04	.10*
Anger x Firm Discipline	--	--	--	.04	.01	.00
Three-way Interaction	--	--	--	-.01	-.03	.06
Early Prosocial Behavior	--	--	--	.21**	.16**	.18**
Multiple R^2 (ΔR^2 sig.)	--	--	--	.24**	.17**	.19**
F	--	--	--	18.95**	12.01**	13.22**
(df)	--	--	--	(10, 597)	(10, 598)	(10, 558)

*$p < .05$, **$p < .01$; Gender is coded as 0 = girls, 1 = boys; Race is coded as 0 = other, 1 = White

Figure Captions

Figure 1: Hypothesized moderational model among responsiveness, temperament, and prosocial behaviors

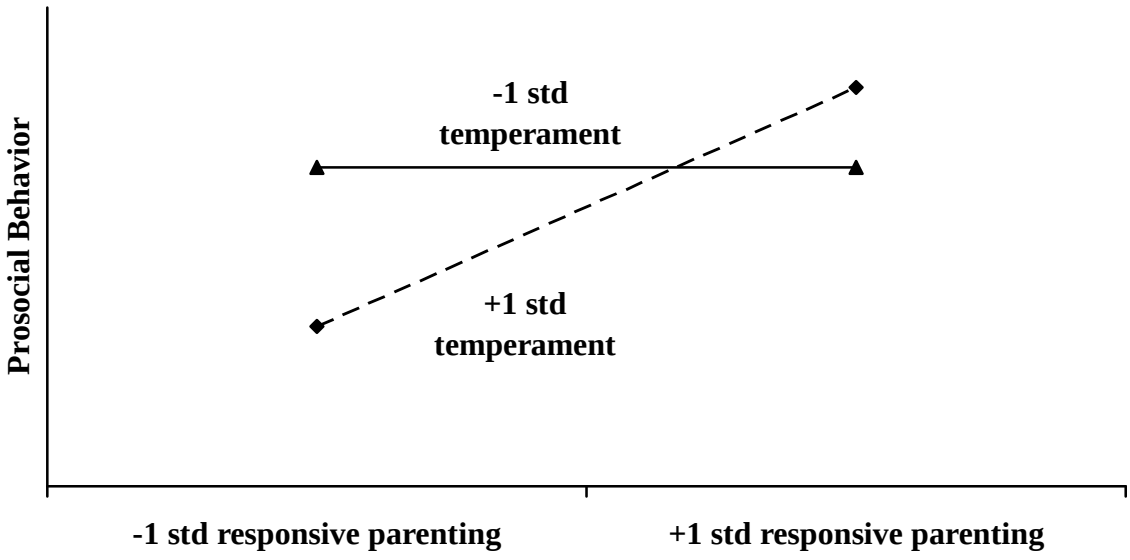
Figure 2: Maternal Responsiveness x Fearful Temperament interaction for prosocial behavior at 11 years (CBP), boys only

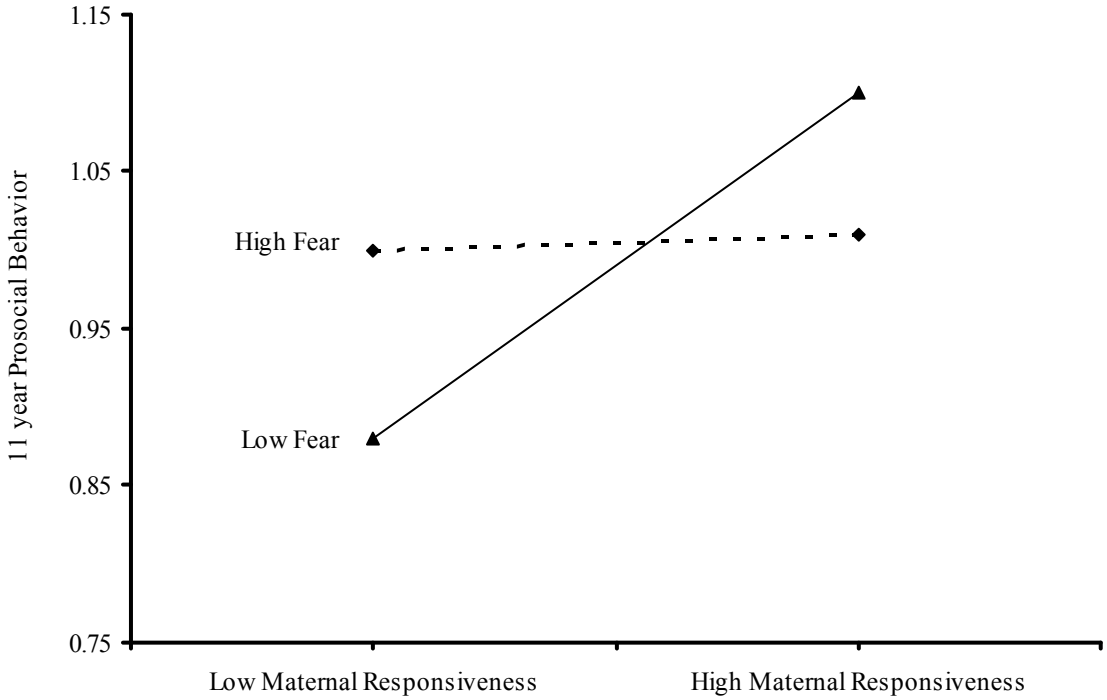
Figure 3: Maternal Responsiveness x Angry/Frustrated Temperament interaction for Friend prosocial behavior

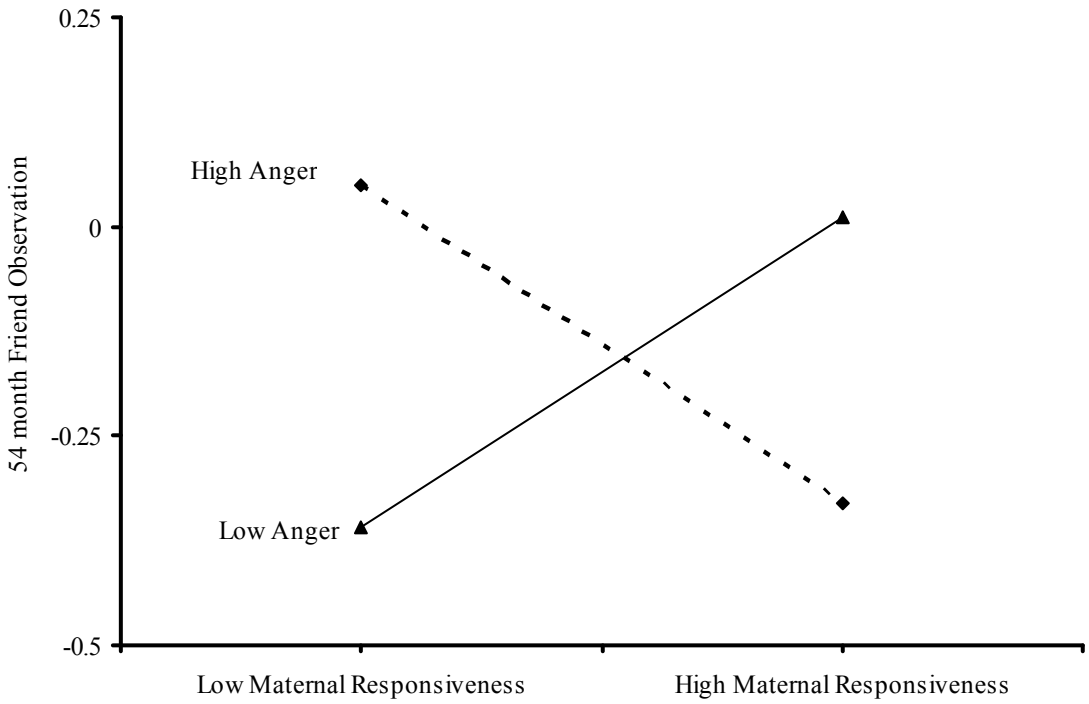
Figure 4: Maternal Responsiveness x Angry/Frustrated Temperament interaction for CPSC prosocial behavior

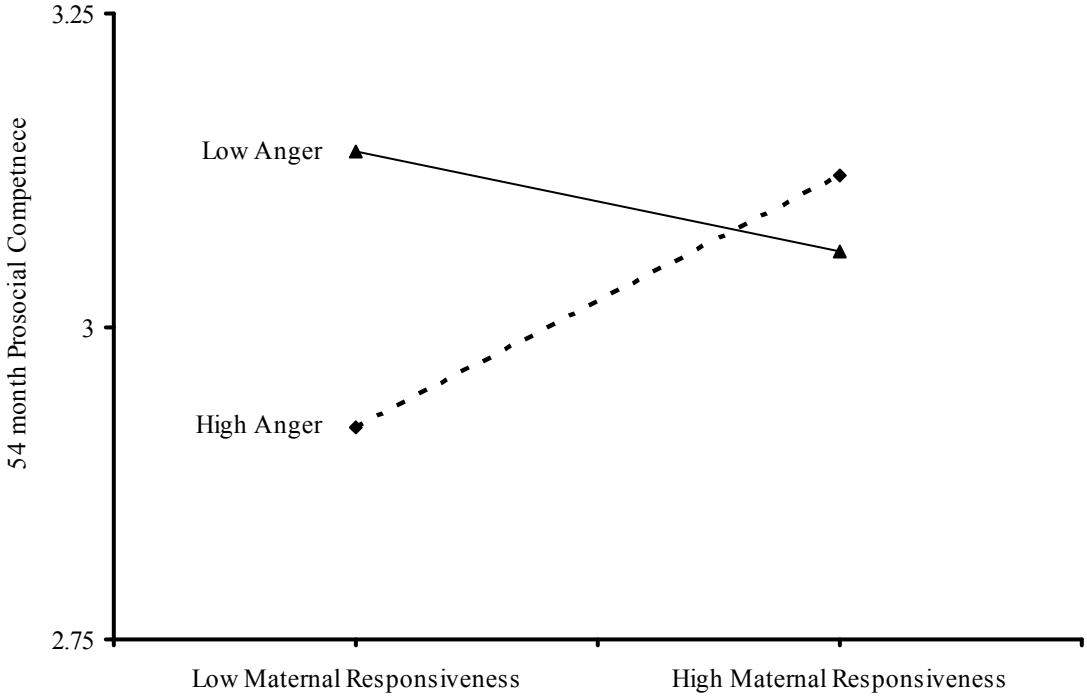
Figure 5: Maternal Firm Discipline x Shy Temperament interaction for UPO prosocial behavior

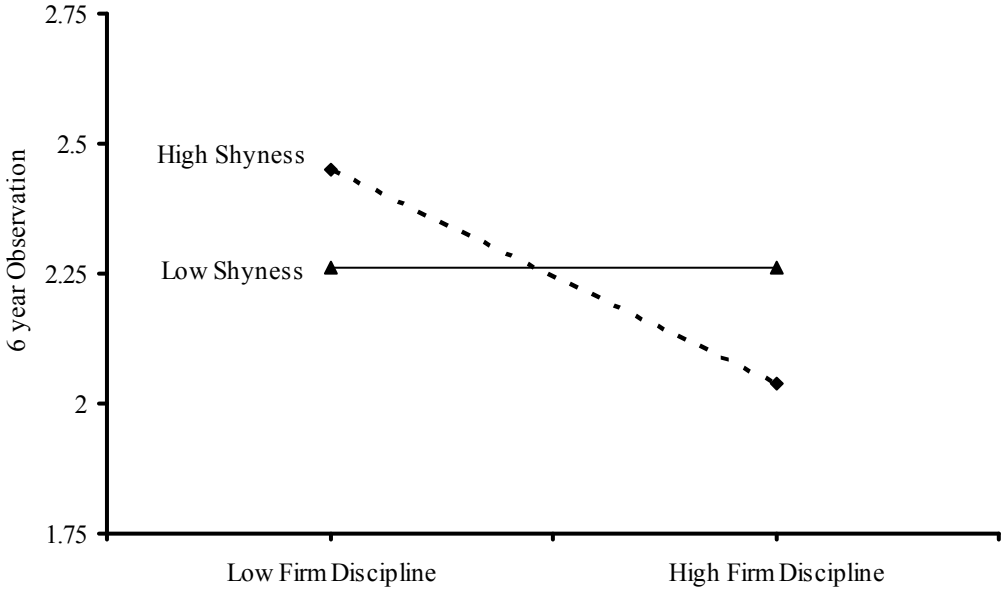
Figure 6: Maternal Firm Discipline x Shy Temperament interaction for prosocial behavior at 12 years (CBP), boys only

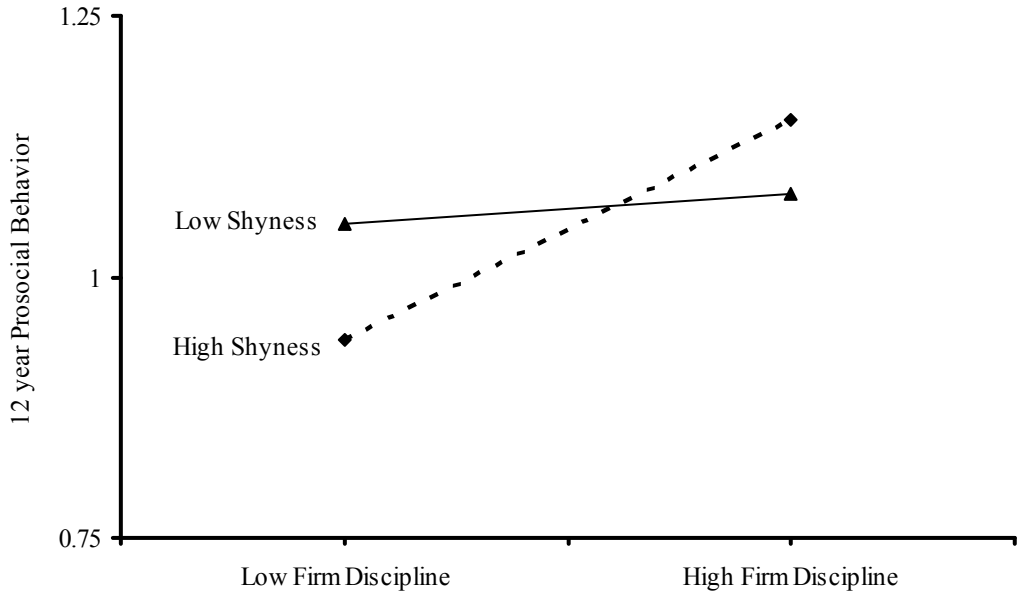

Prosocial Behavior
-1 std
temperament
+1 std
temperament
-1 std responsive parenting
+1 std responsive parenting


1.15
1.05
0.95
0.85
0.75
11 year Prosocial Behavior
High Fear
Low Fear
Low Maternal Responsiveness
High Maternal Responsiveness


0.25
0
-0.25
-0.5
54 month Friend Observation
High Anger
Low Anger
Low Maternal Responsiveness
High Maternal Responsiveness


3.25
3
2.75
54 month Prosocial Competnece
Low Anger
High Anger
Low Maternal Responsiveness
High Maternal Responsiveness


2.75
2.5
2.25
2
1.75
6 year Observation
High Shyness
Low Shyness
Low Firm Discipline
High Firm Discipline


1.25
1
0.75
12 year Prosocial Behavior
Low Shyness
High Shyness
Low Firm Discipline
High Firm Discipline

Appendix A

Children's Behavioral Questionnaire

On the next several pages you will see a set of statements that describe children's reactions to a number of situations. We would like you to tell us what your 4 1/2 year-old's reaction is likely to be in those situations. Of course, there are no "correct" ways of reacting; children differ widely in their reactions, and it these differences we are trying to learn about. Please read each statement and decide whether it is a "true" or "untrue" description of your 4 1/2 year-old's reaction within the past six months.

If you cannot answer one of the items because you have never seen your 4 1/2 year-old in that situation, for example if the statement is about your 4 1/2 year-old's reaction to your singing and you have never sung to your 4 1/2 year-old, then circle 8 (Not Applicable). Please be sure to circle a number for every item.

My 4 1/2-year-old:

(Fearfulness items only:)

		extremely untrue	quite untrue	slightly untrue	neither true nor false	slightly true	quite true	extremely true	NA
5.R	Is not afraid of large dogs and/or other animals	1	2	3	4	5	6	7	8
21.	Is afraid of loud noises	1	2	3	4	5	6	7	8
23.R	Doesn't worry about injections by the doctor	1	2	3	4	5	6	7	8
26.R	Is not afraid of the dark	1	2	3	4	5	6	7	8
31.	Is afraid of fire	1	2	3	4	5	6	7	8
34.	Is very frightened by nightmares	1	2	3	4	5	6	7	8
52.	Is afraid of the dark	1	2	3	4	5	6	7	8
55.R	Is rarely frightened by "monsters" seen on TV or at movies	1	2	3	4	5	6	7	8
63.R	Is not afraid of heights	1	2	3	4	5	6	7	8
70.R	Is rarely afraid of sleeping alone in a room	1	2	3	4	5	6	7	8

(Shyness items only:)

3.	Sometimes prefers to watch rather than join other children playing	1	2	3	4	5	6	7	8

8.R	Seems to be at ease with almost any person	1	2	3	4	5	6	7	8
14.	Gets embarrassed when strangers pay a lot of attention to her/him	1	2	3	4	5	6	7	8
18.R	Acts very friendly and outgoing with new children	1	2	3	4	5	6	7	8
22.R	Joins others quickly and comfortably, even when they are strangers	1	2	3	4	5	6	7	8
28.	Is sometimes shy even around people s/he has known a long time	1	2	3	4	5	6	7	8
33.	Sometimes seems nervous when talking to adults s/he has just met	1	2	3	4	5	6	7	8
39.	Acts shy around new people	1	2	3	4	5	6	7	8
45.R	Is comfortable asking other children to play	1	2	3	4	5	6	7	8
51. R	Talks easily to new people	1	2	3	4	5	6	7	8

(Anger/Frustration items only:)

7. R	Rarely gets irritated when s/he makes a mistake	1	2	3	4	5	6	7	8
12.	Has temper tantrums when s/he doesn't get what s/he wants	1	2	3	4	5	6	7	8
24.	Gets quite frustrated when prevented from doing something s/he wants to do	1	2	3	4	5	6	7	8
30.	Gets angry when s/he can't find something s/he wants to play with	1	2	3	4	5	6	7	8
46.R	Rarely gets upset when told s/he has to go to bed	1	2	3	4	5	6	7	8
50.	Becomes easily frustrated when tired	1	2	3	4	5	6	7	8
61.R	Rarely protests when another child takes his/her toy away	1	2	3	4	5	6	7	8

68.	Easily gets irritated when s/he has trouble with some task (e.g., building, drawing, dressing)	1	2	3	4	5	6	7	8
71.	Is usually able to resist temptation when told s/he is not supposed to do something	1	2	3	4	5	6	7	8
77.	Gets mad when provoked by other children	1	2	3	4	5	6	7	8

**R = Reverse-Scored*

Appendix B

Mother-Child Interaction Task Score Sheet

(Responsiveness items only:)

1 = Very Low
2 = Low
3 = Moderately Low
4 = Moderate
5 = Moderately High
6 = High
7 = Very High

Mother Ratings							
1. Supportive Presence	1	2	3	4	5	6	7
2. Respect for Autonomy	1	2	3	4	5	6	7
3. Hostility	1	2	3	4	5	6	7

Appendix C

Raising Children

These questions below are about raising children. For each one, please circle the answer that best describes how you feel.

(Firm Discipline items only:)

	Definitely No	**Mostly No**	**Mostly Yes**	**Definitely Yes**
Do you praise your child when he/she does something you like?	1	2	3	4
Do you give your child a chance to explain before punishing him/her?	1	2	3	4
Do you give your child lots of hugs and kisses?	1	2	3	4
Do you try to show that you understand your child's feelings when you punish him/her for misbehaving?	1	2	3	4
Do you try to explain the reasons for the rules you make?	1	2	3	4
Do you think an important thing your child must learn is to respect the rights of others?	1	2	3	4

Appendix D

Friendship Interaction Score Sheet

(*Prosocial Items Only:)*

	Mickey Mouse Game	Viewmaster	Doctor Kit
Prosocial Behavior I	1 2 3 4 5 7 99	1 2 3 4 5 7 99	1 2 3 4 5 7 99
Prosocial Behavior II	1 2 3 7 99	1 2 3 7 99	1 2 3 7 99

Appendix E

California Preschool Social Competence Scale

This is a questionnaire that is used for children of different ages. We do not expect that 4 1/2 year olds will be able to do all these things. Please just answer each question about what the study child can do or usually does now at this age. If the child sometimes does one thing and sometimes another, choose the one s/he does most. If you have had no opportunity to observe the child in these situations, mark "NA" (not applicable).

(Selected Empathic/Prosocial Items Only:)

Sharing with Other Children	1 Does not share equipment or toys. 2 Shares but only after adult intervention. 3 Occasionally shares willingly with other children. 4 Frequently shares willingly with other children. 5 NA
Helping Other Children	*When another child is having difficulty (such as using equipment, dressing) --* 1 Never helps the other child. 2 Helps another child only when they are playing together. 3 Sometimes stops own play to help another child. 4 Frequently stops own play to help another child. 5 NA
Empathy	*When other children are distressed or upset, is concerned and offers help or comfort --* 1 Almost never 2 Sometimes 3 Often 4 Almost always 5 NA
Cooperative Play	*Cooperates in games and activities with other children, accepting their ideas --* 1 Almost never 2 Sometimes 3 Often 4 Almost always 5 NA

Appendix F

Unstructured Peer Observation Score Sheet

(*Prosocial Items Only:)*

1 = Very Uncharacteristic
2
3 = Minimally Uncharacteristic
4
5 = Minimally Characteristic
6
7 = Very Characteristic

Child Ratings

Prosocial	1	2	3	4	5	6	7

Appendix G

Child Behavior with Peers

We would like for you to describe your child's behavior with peers–other children who are about your child's age. Circle the number of the descriptions that best apply.

(Prosocial subscale items only:)

	Not True	Sometimes True	Often True
7. Seems concerned when other children are distressed	0	1	2
14. Kind toward peers	0	1	2
21. Is cooperative with peers	0	1	2
29. Shows concern for moral issues (e.g., fairness, welfare of others)	0	1	2
32. Offers help or comfort when other children are upset	0	1	2