The Relations of Ego-Resiliency and Emotion Socialization to the Development of Empathy and Prosocial Behavior Across Early Childhood

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Abstract

The present study explored early personality and environmental predictors of the development of young children's empathy, as well as relations of empathy to prosocial behavior with peers at a later age. How children manage their own emotions and behaviors when under stress—their ego-resiliency—would be expected to affect their responses to others' emotions. Also, socialization experiences, such as the quality of parenting behaviors, have been associated with individual differences in empathy-related responding. We examined whether mothers' emotion socialization practices and children's ego-resiliency at 18 months predicted initial levels and change in empathy across five time points (24, 30, 42, 48, and 54 months; $N = 242$), and whether empathy in turn predicted prosocial behavior with peers at 72/84 months of age. Ego-resiliency and mothers' expressive encouragement both uniquely predicted the intercept of empathy. Boys' empathy was lower than girls' but improved more with age. Initial levels and growth of empathy positively predicted later prosocial behavior. Children's ego-resiliency predicted the slope of empathy at near significance ($p = .054$). We also found that the intercept of empathy mediated the relation between ego-resiliency and prosocial behavior as well as the relation between mothers' expressive encouragement and prosocial behavior. These findings suggest that both parenting and personality characteristics are relevant to the development of empathy during early childhood and might contribute to children's later prosocial behavior with peers.

Keywords

empathy; ego-resiliency; parenting; prosocial behavior; early childhood

Empathy is an affective response that results from comprehension or apprehension of another's emotional state or condition (Eisenberg, Fabes, & Spinrad, 2006); thus, it involves both a rudimentary (or higher) understanding of another's emotion and vicarious sharing of it. Empathy emerges in basic form early in life (i.e., newborns' reactive crying to another's distress) and becomes more sophisticated in toddlerhood (Roth-Hanania, Davidov, & Zahn-

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Waxler, 2011; Vaish, Carpenter, & Tomasello, 2009; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992), a period in which children increasingly become aware of others' feelings and differing perspectives (Hoffman, 2000, 2007). The development of empathy has been linked to children's growing social and cognitive skills such as emotion understanding, perspective taking, and self-awareness that provide them with an awareness of other people's feelings and needs (Eisenberg et al., 2006; Hoffman, 2007).

Researchers have focused mostly on cognitive skills as antecedents to empathic abilities in early childhood, whereas there is relatively little work on dispositional characteristics of toddlers and young preschoolers that predict empathic responding. In particular, how well children manage and recoup from stress—their ego-resiliency—could affect their responses to others' emotional distress. However, relations between the trait of ego-resiliency and children's dispositional empathy remain understudied, especially during early childhood. Also important, much of the work on parental socialization of empathy has pertained to parental disciplinary practices, whereas parental socialization of emotion has received limited attention (for a review, see Eisenberg et al., 2006; Eisenberg, Spinrad, & Taylor, in press). Moreover, there are relatively few longitudinal studies of empathy so it is difficult to draw conclusions about the role of early socialization or dispositional characteristics in the development of empathy.

Empathy is of interest to developmentalists because it sometimes appears to foster prosocial actions as well as concern for the well-being of others (i.e., sympathy; Eisenberg et al., 2006, in press), although empathic overarousal can result in an aversive, self-focused reaction labeled *personal distress* (see Batson, 1991; Eisenberg et al., 2006; Trommsdorff, Friedlmeier, & Mayer, 2007). There is a natural conceptual link between empathy and prosocial behavior—intentional behavior intended to benefit another (Eisenberg et al., 2006) —because the process of empathizing with others is expected to increase the likelihood of understanding another person's feelings and responding in a sensitive manner. However, researchers have seldom examined the growth of empathy in relation to children's later prosocial behavior. Furthermore, few researchers have examined mediation in regard to children's empathy, and those that do typically assess mediators of empathy, not empathy as a mediator (for exceptions, see Krevans & Gibbs, 1996, and Padilla-Walker & Christensen, 2011, who found that empathy mediated the relations between parenting and prosocial behavior during early adolescence). Empathy has been found to mediate the relations between peer attachment and prosocial behavior in college students (Carlo, McGinley, Hayes, & Martinez, 2012) and the relation between social exclusion and prosocial behavior in adults (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007).

Given these gaps in the literature, the present study had the following aims. First, we examined whether dispositional ego-resiliency and maternal socialization of emotions were early predictors of the development in children's empathy across early childhood. Our second aim was to examine if empathy, including its initial level and change over time, mediated the relation between children's dispositional ego-resiliency, as well as maternal emotion socialization behaviors, and children's later prosocial behavior. Our final aim was to identify whether the growth of empathy predicted children's prosocial behavior with their peers in later childhood.

Antecedents to the Development of Empathy

Ego-Resiliency and Empathy

Early temperamental characteristics such as fearfulness and effortful control have been linked to the development of empathy (Rothbart, 2007). However, other traits, such as ego-resiliency, may also relate to the development of empathy. Ego-resiliency is a characteristic that reflects how individuals adapt to environmental stress, uncertainty, conflict, and change (Block & Block, 1980). An ego-resilient child is adept at adapting to changing circumstances, can shift behavior as needed, is resourceful and persistent, and uses problem-solving strategies flexibly. In contrast, a nonresilient child is disquieted by new and changing circumstances, tends to brood and worry, goes to pieces under stress, and has difficulty recouping after traumatic experiences (Block & Block, 1980, 2006). Individual differences in ego-resiliency have been found in toddlers (Chuang, Lamb, & Hwang, 2006; Taylor, Eisenberg, Spinrad, & Widaman, 2013).

Although modestly to moderately related to regulation, ego-resiliency is a construct unique from temperamental processes such as effortful control (see Block & Block, 2006; Eisenberg et al., 2003, 2004; Martel et al., 2007; Shields & Cicchetti, 1997; Taylor et al., 2013). Effortful control is a superordinate construct that includes regulatory processes such as attentional and inhibitory control and planning (Rothbart & Bates, 2006). It pertains to capacities that can be used for behavioral and emotional self-regulation. In contrast, ego-resiliency reflects individuals' dynamic and resourceful adaptability or characteristic coping style with stress and the ability to rebound (Block & Block, 2006). Eisenberg and colleagues (2003, 2004) view effortful control as a temperamentally based capacity of the individual and resiliency as a personality measure reflecting how the individual responds and adapts to stress in various situations. Ego-resiliency is expected to be influenced by temperamental and other personality characteristics (e.g., emotionality), learning (e.g., of coping skills), and the nature of the stressors in a particular context. In other words, ego-resiliency is viewed as less constitutionally based than are regulatory characteristics, and more a measure of how well individuals adapt and deal with stressful interactions. Indeed, recent empirical research has supported this distinction and found that effortful control provides the early building blocks toward children's ego-resiliency (Taylor et al., 2013).

Although researchers have found an association between empathy and effortful control (see Eisenberg et al., 2006), only a small body of empirical research supports an association between empathy and ego-resiliency, and, to our knowledge, no researchers have examined whether ego-resiliency is associated with empathy in toddlerhood. Block and Block (1980) reported that preschool children with higher levels of ego-resiliency were more empathic and skilled at expressing appropriate emotions. Similarly, Strayer and Roberts (1989) reported positive associations between ego-resiliency and empathy in 6- and 7-year-olds. Individual differences in empathy have also been shown to differentiate resilient and stress-affected school-age children, with resilient children being higher in empathy than nonresilient children (Magnus, Cowen, Wyman, Fagen, & Work, 1999; Parker, Cowen, Work, & Wyman, 1990).

A conceptual link between empathy and ego-resiliency is plausible because children who are relatively skilled at adapting their emotional and behavioral reactions to stress may better understand and respond appropriately to the emotional needs of others (Strayer & Roberts, 1989). Strong empathy can lead to personal distress, such as discomfort, anxiety, and aversive behavior, upon viewing or understanding another's emotion or situation (Batson, 1991). Those children who tend to become highly aroused when exposed to others' emotions are expected to experience personal distress and to display less prosocial or empathic behaviors than those who experience moderate arousal. Children who are more adept at recouping from their own negative emotions and experiences are less likely to try to avoid the experience of emotion, which, in turn, could lead to an openness to experiencing empathy and learning about others' feelings. Conversely, being unable to recoup from a negative or arousing experience can result in socially insensitive behavior; for example, trying to avoid others who are experiencing negative emotion. Individuals low in ego-resiliency are likely to experience, or anticipate experiencing, feelings of personal distress when exposed to others' negative emotions, which results in a focus on the self rather than others (Eisenberg, Spinrad, & Morris, 2011).

Emotion Socialization and Empathy

Socialization experiences, such as the quality of relationships with parents and parental disciplinary behaviors, also are associated with individual differences in children's empathy. For example, positive associations have been found between empathy and inductive practices (the use of reasoning), whereas negative behaviors such as harsh parental control and corporal punishment are negatively related to empathic responses (for a review, see Eisenberg et al., 2006, in press). Parental behaviors relevant to the experience and expression of emotion are also expected to contribute to the development of empathy—although fewer investigators have addressed this aspect of socialization.

Gottman, Katz, and Hooven (1996) introduced the idea that parents' beliefs, attitudes, and thoughts about emotion shape how they socialize their children, an idea that has been demonstrated in research (for a review, see Katz, Maliken, & Stettler, 2012). How parents allow children to express their emotions, and their strategies for dealing with children who are distressed, have been linked to empathy. Parents who validate and scaffold their children's emotions are expected to positively contribute to children's psychosocial adjustment such as competence and regulation (Gottman et al., 1996; Katz et al., 2012). Similarly, researchers report that children whose mothers are more accepting of their emotions are more empathic and demonstrate higher levels of emotion knowledge and understanding (e.g., Brophy-Herb et al., 2011; Denham & Kochanoff, 2002; Strayer & Roberts, 2004). In contrast, parents who discourage children's emotional expression may deny them opportunities for learning about their own and others' feelings (Eisenberg et al., 2011), which could lead to low levels of empathy-related responding.

Other emotion socialization behaviors are linked to empathy and prosocial behavior. Parents' behaviors that comfort or help their child feel better when upset have also been linked to higher levels of empathy (Davidov & Grusec, 2006), and mothers' understanding of what distresses and comforts their child predicts children's prosocial behavior (Vinik,

Almas, & Grusec, 2011). Parents who respond promptly and effectively to their children's distress by comforting or distracting their children most likely model strategies that enable children to regulate their own negative affect (Davidov & Grusec, 2006; Eisenberg, Cumberland, & Spinrad, 1998; Fabes, Leonard, Kupanoff, & Martin, 2001; Roberts & Strayer, 1987). Moreover, mothers who discuss the causes and consequences of their own emotions, or who direct their children to label emotions, have children with higher levels of empathy and prosocial behavior (Denham & Grout, 1992; Garner, 2003; Spinrad et al., 1999). Importantly, research has shown that parental socialization of emotions is distinct from other parenting behaviors such as general parental warmth and harshness (see Davidov & Grusec, 2006; Katz et al., 2012).

Empathy and Prosocial Behavior

Empathic individuals are viewed as more likely to act in prosocial ways because empathy can, if not overly aversive, direct attention to others' needs and engender feelings of concern for others in pain, need, or distress (Batson, 1991; Eisenberg et al., 2006; Trommsdorff et al., 2007). Children from toddlerhood through school age have been found to display empathic responses upon viewing another's distress, often accompanied by attempts to understand another's emotions and assist (Knafo, Zahn-Waxler, Van Hulle, Robinson, & Rhee, 2008; Zahn-Waxler, Radke-Yarrow et al., 1992), although children who become overaroused or highly distressed themselves are relatively unlikely to help (for reviews, see Eisenberg et al., 2006; Eisenberg, Eggum, & Di Giunta, 2010). Researchers have also found associations between dispositional measures of empathy and various indices of prosocial behavior (Eisenberg et al., 2006, 2010; Hoffman, 2000), although some have found these relations to be weak or inconsistent (Roberts & Strayer, 1996; Strayer & Roberts, 2004).

The Development of Empathy

Research on young children indicates that, consistent with theoretical expectations (Hoffman, 2000), empathy increases in the early years of life (Knafo et al., 2008; van der Mark, van IJzendoorn, & Bakermans-Kranenburg, 2002; Volbrecht, Lemery-Chalfant, Aksan, Zahn-Waxler, & Goldsmith, 2007; Zahn-Waxler, Robinson, & Emde, 1992). However, it is possible that empathy does not increase in a linear manner throughout early childhood. For example, researchers have found that empathy becomes fairly stable around 3 years of age, with both genetic and environmental factors contributing to changes in levels of empathy as well as to individual differences (Knafo et al., 2008).

Researchers have found prosocial behaviors to be increasingly governed by display rules, gender roles and norms, and friendships in the early years (Hay & Cook, 2007). For example, children are more likely to act prosocially toward friends versus nonfriends (e.g., Moore, 2009) and those who reciprocate prosocial behaviors (e.g., Dunfield, & Kuhlmeier, 2010; Hay, Castle, Davies, Demetriou, & Stimson, 1999). This research suggests that empathy as well as prosocial behavior becomes more selective and discriminating as children get older (Hay & Cook, 2007). Thus, it is possible that the age-related increase in empathy is lessened in the later preschool years as children start to differentiate among others and be differentially responsive to others' needs. However, even if children are

increasingly more likely with age to empathize with some children than others, one would expect young children to be more motivated to assist those individuals with whom they do empathize.

Present Study

In the present study, we examined two socialization behaviors (mothers' expressive encouragement of their child's emotions and mothers' emotion-focused strategies) as well as children's ego-resiliency, both assessed at 18 months, as predictors of the developmental trajectory of empathy-related responding across five time points in early childhood (24, 30, 42, 48, and 54 months). Using growth curve analyses, we examined the unique predictive effects of parenting and ego-resiliency, as well as whether the initial level and change of children's empathy predicted later prosocial behavior at age 6–7 years. We also tested whether empathy mediated the relations between parenting or ego-resiliency and prosocial behavior. We expected ego-resiliency and mothers' emotion socialization to positively predict both initial level of children's empathy and the slope of their empathy with age; in addition, empathy (both initial level and change) was expected to be positively associated with prosocial behavior in later childhood. Furthermore, we expected empathy (both the intercept and slope) to mediate the relations between emotion socialization or ego-resiliency and prosocial behavior, particularly for socialization of emotion to prosocial behavior because this relation has been demonstrated with other parenting methods. We also predicted a linear increase in empathy in the early years, perhaps with a slowing down of the linear trajectory with increasing age.

Method

Participants

Participants were families residing in a metropolitan area in the Southwest of the United States who were part of a longitudinal study of social and emotional development (see Spinrad et al., 2007). Mothers completed questionnaires at 18, 24, 30, 42, 48, 54, 72, and 84 months of age (ns = 256, 225, 230, 210, 194, 192, 162 and 144) and accompanied their child (55% boys) to laboratory visits. Nonparental caregivers who knew the child well (e.g., babysitter, grandparent, and preschool teachers at earlier ages, and teachers at later ages) also completed questionnaires at 18, 30, 42, 54, 72 and 84 months (ns = 176, 153, 151, 145, 144, and 133). In this study, mother data were used from 18 to 54 months and nonparental caregiver data were used at 18, 72, and 84 months. Teacher data used at 72 and 84 months were averaged; 159 children had data from one or both of those assessments. To be included in the present study, participants had to have at least one measure of mother-reported empathy (N = 242).

At 18 months, 77% of children in the sample were non-Hispanic (of any race) and 23% were Hispanic. In terms of race, 81% of the children were Caucasian, although African Americans (5%), Native Americans (4%), Asians (2%), and Pacific Islanders (less than 1%) were also represented. Average annual family income at 18 months was $45,000 –$60,000 (range: $15,000 to $100,000), and parents had an average of 2 years of college education. Because data at the oldest age in this study—teachers' reports of prosocial behavior—were

obtained at age 72 and/or 84 months with the latent construct using data from either or both time points, attrition was computed with *t* tests comparing values of the major variables and demographic variables for children with no data at either 72 or 84 months (*n* = 83) with those who had data at one or both of these time points. There were no significant differences in terms of our variables of interest other than a trend level (*p* < .08) difference in empathy measured at 24 months (*t* = 1.78, *DF* = 182). However, families that attrited had fewer years of education (*t* = −2.73, *df* = 238, *p* < .01, *M* difference = −0.41, *SE* = .14 for mothers; *t* = −2.41, *df* = 218, *p* < .05, *M* difference = −0.42, *SE* = .17 for fathers), and marginally lower family incomes (*t* = −1.93, *df* = 216, *p* =.055, *M* difference = −0.49, *SE* =.26). Given these findings, we added controls for household income and each parent's education into the analyses. The results of Little's missing completely at random (MCAR) test showed that the data were missing at random: [χ^2 = 365.609, *df* = 351, *p* =.285].

Measures

Ego-resiliency—At 18 months, mothers and caregivers rated (1 = *highly undescriptive*, to 9 = *highly descriptive*) children on an 11-item revised version of Block and Block's (1980) ego-resiliency Q-sort. This shortened scale was constructed by Eisenberg, Fabes, and Murphy (1996) and Eisenberg et al. (2003) in order to reflect a purer version of resiliency that did not overlap with other related constructs, such as negative emotionality. Six faculty and five graduate students with relevant expertise rated the resiliency items as to how much they reflected pure (i.e., uncontaminated by other constructs) resiliency from 1 (*not at all descriptive of resiliency*) to 9 (*most descriptive of resiliency*). Resiliency was defined as flexible, adaptable behavior. Only the 11 items that obtained a mean score of 5.8 or above (absolute value) were retained (e.g., "Can bounce back or recover after a stressful or bad experience," "Freezes up when things are stressful, or else keeps doing the same thing over and over again"). All correlations between the original scale and the 11-item scale were above .83 (mean *r* =.91). This shortened scale (or a 7-item version with a cutoff of 7.00) has been reliable in numerous studies with children ranging in age from toddlers to adolescents (e.g., Cumberland, Eisenberg, & Reiser, 2004; Eisenberg et al., 2004; Martel et al., 2007; Taylor et al., 2013).

Items were coded so that a high score reflected higher levels of ego-resiliency (*a* =.67 for combined reporters; *a* =.57 for mothers, *a* =.66 for nonparental caregivers). One item from the original 11-item scale was dropped at 18 months ("can talk about unpleasant things that have happened to him/her") because it was inappropriate for the age assessed. The same items for parents and caregivers were paired and then these pairs of items were randomly composited into three parcels in order to measure ego-resiliency at a latent level, with the stipulation that each indicator included both negative and positive items as recommended by Kishton and Widaman (1994). The three resultant parcels for ego-resiliency were significantly correlated (*r*s ranged from .34 to .43). Considerable research supports parceling of items to develop multiple indicators of latent constructs to avoid contaminating influences of measurement error when estimating relations among latent variables (Coffman & MacCallum, 2005; Little, Cunningham, Shahar, & Widaman, 2002).

Emotion socialization—We used two 12-item subscales of the Coping with Toddlers' Negative Emotions Scale (CTNES; Spinrad et al., 2007) to measure mothers' socialization of their children's emotions at 18 months. The CTNES measures the degree to which parents perceive themselves as reactive to their young children's negative affect in distressing situations. Six subscales are derived that reflect the specific types of coping response parents tend to use in these situations. For the present study, we examined the two subscales that involve supportive responses and directly address the child's negative emotion. The first subscale, Emotion-Focused Reactions (EFR), reflects the degree to which parents respond with strategies that are designed to help the child feel better or are oriented toward affecting the child's negative feelings (e.g., "If my child becomes upset and cries because he is left alone in his bedroom to go to sleep, I would soothe my child with a hug or kiss"; $a = .75$). The second subscale, Expressive Encouragement (EE) reflects the degree to which parents encourage children to express negative affect or the degree to which they validate children's negative emotional states (e.g., "If my child fell down and scraped himself while trying to get a favorite toy, I would tell my child it's okay to cry"; $a = .92$). Mothers rated (1 = *very unlikely* to 7 = *very likely*) the likelihood of such behaviors when dealing with their child's negative feelings. We treated these subscales as two separate latent variables because they were only moderately correlated (.25[**]) and did not load well (i.e., with high loadings) on a single latent variable. For both measures, items were randomly composited into three indicators to form a latent variable.[1]

Children's empathy—Mothers reported (1 = *not true* to 3 = *very true or often true*) children's empathy at 24, 30, 42, 48, and 54 months using the 7-item empathy subscale of the Infant-Toddler Social and Emotional Assessment (ITSEA; Carter & Briggs-Gowan, 1999; e.g., "Is aware of other people's feelings," and "Is worried or upset when someone is hurt.") One item was removed from the scale ("tries to help when someone is hurt, e.g., gives a toy") because it pertained more to prosocial behavior than to empathy. Alphas for the revised scale ranged from .68 to .74 across the five time points. The ITSEA has been used reliably in prior studies (Saudino, Carter, Purper-Ouakil, & Gorwood, 2008; Spinrad et al., 2007).

Children's prosocial peer behavior—Teachers rated (1 = *never true* to 5 = *never false*) children's prosocial behavior with peers at 72 and 84 months using the 4-item Prosocial Behavior Scale (Ladd & Profilet, 1996); for example, "This child tries to cheer up peers when they are sad or upset about something," and "This child is helpful to peers.") Two indicators—teachers' reports of child prosocial peer behavior at 72 ($a = .92$) and 84 months ($a = .94$)—were used to form the latent construct.

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[1]The three supportive scales measured by the CTNES are 1) expressive encouragement (EE), 2) problem-focused reactions (PFR) and 3) emotion-focused reactions (EFR). In our sample, these scales had modest correlations between EE and EFR (.26) and EE and PFR (.31), and stronger correlations between EFR and PFR (.55). We tried using all three constructs on one latent variable, but while EFR and PFR loaded well, EE did not. We then tried each scale individually. PFR did not predict the intercept or slope of empathy. EFR and EE predicted the intercept (but not the slope). Given that the findings between EFR and EE were similar, we then tried a variable with two indicators (EFR and EE). However, the loadings for each were .50 (slightly lower than we would like). Therefore, we decided to focus on the emotion-related socialization constructs and used both EE and EFR in the analyses, but as separate constructs. As you can see from the results, EFR was not significantly correlated with EE in the model. We debated whether to leave both constructs in and decided to do so, as it provides information for researchers using the CTNES subscales. PFR did not seem as conceptually (or empirically) relevant to emotion socialization, so we left this variable out.

Control variables—The following controls were included in the analysis: yearly household income (1 = *less than $15,000* to 7 = *over $100,000*); and mothers and father's education (1 = *grade school* to 7 = *PhD or MD)*. We also controlled for children's sex (0 = girls, 1 = boys) given that sex differences have been found in both empathy and prosocial behavior (e.g., Eisenberg et al., 2006, 2011).

Analysis Strategy

We first examined correlations among the variables. Next, we evaluated an unconditional structural equation model (SEM) to test the model with a latent growth curve (LGC) for empathy using M*plus* Version 6.1 (Muthén & Muthén, 1998–2011). We then added our predictor and outcome variables. We used full information maximum likelihood (FIML) estimation given the presence of some missing data. FIML estimation involves the fitting of covariance structure models directly to the raw data from each participant rather than to covariances among manifest variables. This avoids deleting persons with missing data (i.e., such as in listwise deletion). FIML estimation has been found to be efficient and unbiased when data are missing completely at random or are missing at random and appears to be less biased than other approaches (Arbuckle, 1996). Because some of our variables exhibited non-normality in skew or kurtosis—empathy and prosocial behavior—we also used MLR estimation, a modified form of maximum likelihood estimation that is robust to non-normality.

To evaluate the fit of a structural model, we used the standard chi-square index of statistical fit that is routinely provided under maximum likelihood estimation of parameters, as well as several indices of practical fit, including the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993), the Standardized Root Mean Square Residual (SRMR), the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and the comparative fit index (CFI, Bentler, 1990). The RMSEA is an absolute index of fit, with values under .05 indicating close fit to the data. For the SRMR, a value less than .08 is generally considered a good fit. The TLI and CFI should be greater than .90 and preferably greater than .95 (Hu & Bentler, 1998).

Results

Table 1 presents the zero-order correlations among the variables, as well as variable means and standard deviations. Results were largely as expected. For example, children's ego-resiliency, mothers' expressive encouragement, and mothers' emotion-focused reactions at 18 months were significantly positively correlated with children's empathy across all five time points. Mothers' reports of children's empathy were also positively correlated with teachers' reports of children's later prosocial behavior. Child sex was not significantly correlated with any of our variables of interest other than being marginally negatively correlated with empathy at 30 months, indicating lower empathy for boys. Based on the means (and the quadratic slope), empathy increased from 24 to 42 months and then stabilized.

These initial correlations provided support for our hypotheses so we then tested a series of structural equation models, starting with an unconditional model examining the linear and

quadratic changes of empathy. The unconditional linear model did not fit the data well, $\chi^2(10, N = 235) = 31.51$, $p < .01$, RMSEA = .09, CFI = .95; TLI = .95; SRMR = .12. We then estimated a quadratic model, which improved the fit, $\chi^2(6, N = 242) = 5.03$, $p = .54$, RMSEA = .00, CFI = 1.00; TLI = 1.00; SRMR = .07. Although the quadratic mean was significantly different from zero ($m = -.02$, $p < .01$), there was no variability ($p = .68$, $b = .00$). Thus, we ran a more parsimonious model in which we fixed the variance of the quadratic component to .00. The final unconditional quadratic model fit well and suggested that empathy increased over time on average but the rate of increase decelerated with age on average, $\chi^2(9, N = 242) = 6.389$, $p = .70$, CFI = 1.00; TLI = 1.01; RMSEA = .00; SRMR = .065; mean intercept = 2.24, $p < .01$ mean linear slope = .13, $p = .00$; mean quadratic slope = $-.015$, $p < .01$. The variances of the intercept ($b = .126$, $SE = .02$, $p < .01$) and linear slope ($b = .004$, $SE = .00$, $p < .01$) were significant, suggesting that children start out with different levels of empathy and did not follow the same trajectory.

We then added our predictor and outcome variables as shown in Figure 1, $\chi^2(141, N = 242) = 159.09$, $p > .05$; CFI = .987; TLI = .983; RMSEA = .023; SRMR = .052. Covariances between ego-resiliency, expressive encouragement, emotion-focused reactions and child sex were not significant, with the exception of a significant correlation between expressive encouragement and emotion-focused reactions. Both ego-resiliency and expressive encouragement at 18 months predicted the intercept of empathy; however, emotion-focused reactions did not predict the intercept. Ego-resiliency also positively predicted the linear slope of empathy at a trend level ($p = .054$). The intercept of empathy was lower for boys than for girls, and boys' slope increased more rapidly. Both the intercept and linear slope of empathy positively predicted prosocial behavior at 72/84 months.[2] Income and parents' education were included as covariates for all variables. There was a significant path between fathers' education and children's prosocial behavior, $\beta = .43$, $SE = .14$, $p < .01$. Parents' education and income were correlated for mothers: $\beta = .60$, $SE = .54$, $p < .01$; and for fathers, $\beta = .49$, $SE = .05$, $p < .01$. Mothers' and fathers' education were also correlated, $\beta = .58$, $SE = .05$, $p < .01$.

We additionally tested indirect effects from mothers' expressive encouragement and ego-resiliency to children's prosocial behavior via empathy using Rmediation because simulations show that bootstrap confidence intervals can result in undercoverage for smaller samples (Tofighi & MacKinnon, 2011). The confidence interval for the indirect effect of ego-resiliency predicting prosocial behavior via the intercept of empathy did not contain zero, 95% CI [0.005, 0.186]. The confidence interval for the indirect effect of mothers' expressive encouragement predicting prosocial behavior via the intercept of empathy also did not contain zero, 95% CI [0.008, 0.115]. Thus, there was evidence for mediation for both these paths.

[2]We would have liked to control for prior levels of prosocial behavior when predicting 72/84-month prosocial behavior from the empathy intercept and slope; however, we did not have data for the Prosocial Behavior Scale with peers at an earlier age.

Discussion

The goals of this study were to examine socialization and dispositional predictors of early individual differences in empathy, to explore if change in empathy was related to prosocial behavior, and to test whether empathy mediated the relations of ego-resiliency and emotion socialization to prosocial behavior later in childhood. Children's ego-resiliency and mothers' expressive encouragement at 18 months both uniquely predicted children's level of empathy at 24 months. Mothers' emotion-focused reactions did not significantly predict empathy in the model, although it was significantly correlated with empathy in the zero-order correlations at every time point. Children's ego-resiliency additionally had a near significant positive relation with the linear slope suggesting that children with higher levels of ego-resiliency had steeper increases in empathy. In turn, we found that both the linear growth and initial levels of empathy were associated with children's prosocial behavior at 72/84 months. We also found that the intercept of empathy mediated the relation between ego-resiliency and prosocial behavior as well as the relation between mothers' expressive encouragement and prosocial behavior. Additionally, boys had significantly lower initial levels of empathy but showed greater increases in empathy. Finally, our results suggested that empathy increases early in toddlerhood and then stabilizes. Together, these findings suggest that toddlerhood may be an important developmental period for fostering empathy.

Our findings contribute to an understanding of how parents' emotional socialization strategies might affect the development of children's empathy. Researchers have found associations between children's empathy and parenting that is empathic and sensitive to their children needs (e.g., Eisenberg, Fabes, Carlo, & Troyer, 1992; Hoffman, 2000; Knafo et al., 2008), responsive to child's distress (e.g., Davidov & Grusec, 2006), involves emotion coaching (e.g., Brophy-Herb et al., 2011), and encourages children to take the perspectives of others (e.g., Farrant, Devine, Maybery, & Fletcher, 2012). However, few investigators have examined associations between parents who encourage their child's expression of emotion and empathy, although studies have found that emotional expressiveness is associated with empathy (Roberts & Strayer, 1996). Children who are encouraged to express their emotions may have opportunities to learn and understand their own emotions, which in turn allows them to better understand and empathize with others' emotions. Consistent with this idea, Eisenberg, Fabes, Carlo, and Speer (1993) found that mothers' reports of helping their school-age children talk about negative emotions, mothers' understanding of why her child felt badly, and mothers' listening to their children when they were anxious or upset, were associated with girls' comforting of an infant.

The findings in this study contribute to the aforementioned body of work suggesting that emotion socialization plays a role in the development of empathy. Moreover, parental support for emotional expression is likely part of a larger pattern of parenting that is responsive to children's emotional needs. Interestingly, although maternal reported emotion-focused responding to children's negative emotions was significantly related in zero-order correlations to children's empathy at all ages, it did not provide any unique prediction of empathy after controlling for the effects of maternal encouragement of expression. Thus, maternal encouragement of the expression of emotion appeared to be the stronger unique predictor—more relevant than mere comforting—for children's development of empathy.

However, it should be noted that our data are correlational and other possible causal variables that we did not test might explain the relation between maternal emotion socialization and empathy. For example, researchers have found evidence of shared genetic effects between mothers and children's empathic concern (e.g., Knafo et al., 2008). In particular, candidate genes that affect oxytocin and dopamine receptors have been associated with empathy (for a review, see Walter, 2012) and could contribute to both maternal empathic parenting practices and children's empathy.

Researchers have found positive relations between empathy and ego-resiliency in children (Block & Block, 1980; Strayer & Roberts, 1989); however, the present study provides evidence that ego-resiliency during toddlerhood is near significantly associated with change in empathy across early childhood. Importantly, these associations remained while accounting for mothers' emotion socialization strategies. Our findings provide support for the hypothesis that ego-resilient children, who are more flexible and better able to adapt their reactions to stressors, may also be able to better modulate, respond to, and understand the emotions of others (Strayer & Roberts, 1989). Contrary to previous work that found positive relations between parenting quality and ego-resiliency (Block & Block, 1980; Roberts, 1999; Stams, Juffer, Van Ijzen-doorn, & Hocksbergen, 2001), we did not find any relation between ego-resiliency and maternal emotion socialization. Perhaps this relation develops over time. Alternatively, mothers of children low in ego-resiliency may sometimes avoid encouraging their child's expression of negative emotion because of concerns about their regulating that emotion.

Consistent with the commonly found relation between empathy and prosocial behavior (see Eisenberg et al., 2006, 2010), both initial level and linear growth of empathy were associated with individual differences in children's prosocial behavior with peers. An important strength of the present study was that we tested these relations using growth curve modeling across multiple time points. Our findings suggest that fostering children's empathy-related skills, even at a young age, might improve children's prosocial behaviors with their peers; thus, our findings have potential implications for intervention research. Of note, empathy also mediated the relations of parenting and ego-resiliency to prosocial behavior. Because neither ego-resiliency nor maternal encouragement of expression at 18 months directly predicted children's later prosocial behavior, these relations suggest that the effects of these constructs on prosocial behavior are largely due to their positive relation on the development of empathy.

The finding that boys had significantly lower initial levels of empathy is consistent with much other work (Eisenberg et al., 2006; Eisenberg & Lennon, 1983), although our data suggest that the gender gap may change with age. The finding that empathy increased early in toddlerhood and then stabilized is consistent with Knafo et al.'s (2008) finding that empathy increased largely between 14 and 20 months and became increasingly stable in mean level around 3 years of age.

Limitations of the present study include using only reports and not observational data. However, we used multiple reporters whenever possible (for prosocial behavior [teachers differed over time] and for ego-resiliency). We were also unable to control for earlier

prosocial behavior. The alpha for mother reports of ego-resiliency was also lower than we would have liked, although the combined reporter scale was higher. Furthermore, the alpha improves with age (see Taylor et al., 2013), and is comparable to studies with parent reports of ego-resiliency in older children (e.g., Cumberland-Li et al., 2004). These results should be replicated with more ethnically diverse samples and in cultures varying in beliefs about emotions. Last, the explained variance in the models predicting the intercept and linear slope of empathy was very low. Despite these limitations, our findings provide evidence of factors relevant to the development of empathy during early childhood and its relation to children's later prosocial behavior.

Acknowledgments

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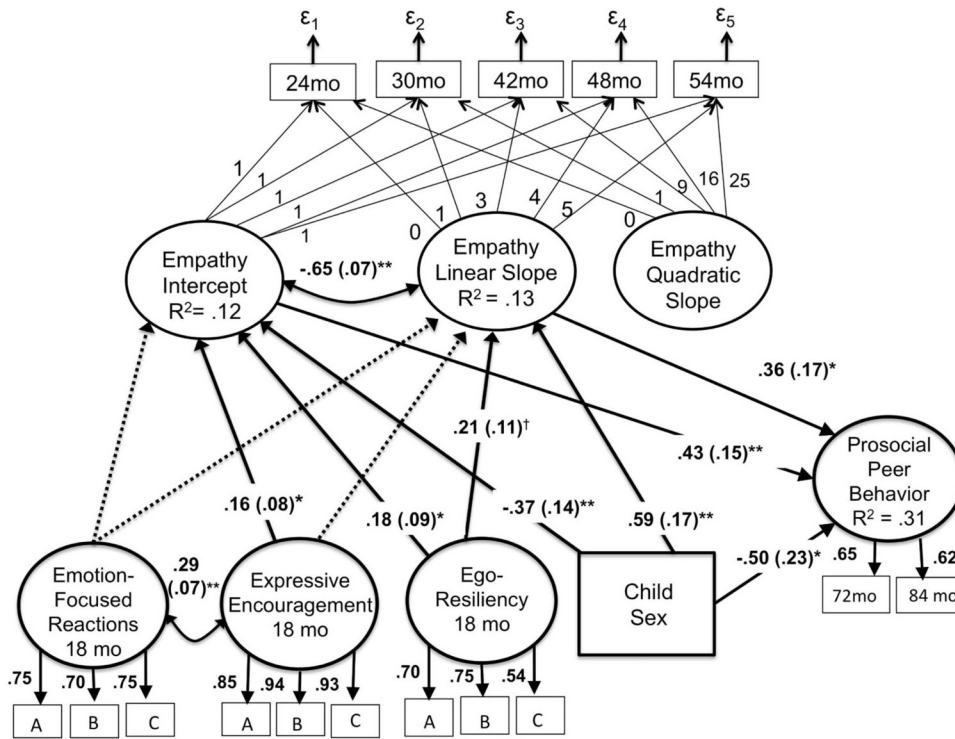
Figure 1.

Results from the structural equation model. Note: $\chi^2(141, N = 242) = 159.09$, $p > .05$; CFI = .987; TLI = .983; RMSEA = .023; SRMR = .052. $^{**}p < .01$, $^{*}p < .05$. $^{\dagger} p < .10$. Factor loadings for the latent variables are all significant at $p < .01$. Standardized (stdyx) coefficients are presented with the exception of paths from child sex (stdy). Ego-resiliency = combined mother and nonparental caregiver reports; Emotion-Focused Reactions (EFR, CTNES) = mother report; Expressive Encouragement, (EE, CTNES) = mother report; Empathy = mother report; Prosocial Peer Behavior = teacher report. Dotted lines are nonsignificant paths. The variance of the quadratic slope was fixed at zero, as there was no variability; therefore, predictor variables were not included. Nonsignificant paths (not shown in the model for simplicity, but included in the analyses) were ego-resiliency with EFR, EE, and child sex; child sex with EFR and EE; ego-resiliency, EFR, and EE to prosocial behavior. The path from ego-resiliency to the slope of empathy was marginally significant ($p = .054$).

Table 1

Zero-Order Correlations Among Latent and Control Variables, N = 242

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ER 18	1.00												
2. EE 18	.05	1.00											
3. EFR 18	.09	.25**	1.00										
4. Child sex	−.01	.04	.00	1.00									
5. EMP 24	.14†	.15*	.16*	−.12	1.00								
6. EMP 30	.21**	.20**	.23**	−.12†	.70**	1.00							
7. EMP 42	.20**	.25**	.25**	−.02	.52**	.62**	1.00						
8. EMP 48	.23**	.23**	.25**	.08	.49**	.53**	.57**	1.00					
9. EMP 54	.35**	.16*	.17*	.06	.43**	.56**	.65**	.68**	1.00				
10. PB 72/84	.18*	.13	.10	−.10	.25**	.29**	.23**	.32**	.28**	1.00			
11. Income 18	.03	−.07	.03	.13*	.00	−.08	−.01	.07	−.05	.09	1.00		
12. Fa. Ed. 18	.02	.01	.05	.04	−.02	−.01	−.10	.12	−.05	.27**	.49**	1.00	
13. Mo. Ed. 18	.09	.03	.05	.05	.05	.04	.03	.15†	.04	.14†	.60**	.60**	1.00
M	6.76	4.78	5.95	.54	2.22	2.35	2.49	2.48	2.49	3.74	4.08	4.19	4.28
SD	(.72)	(1.23)	(.62)	(.50)	(.44)	(.40)	(.38)	(.35)	(.36)	(.72)	(1.74)	(1.21)	(1.07)

Note. ER = ego-resiliency (mother/caregiver reports combined); EE = mothers' expressive encouragement; EFR = mothers' emotion-focused reactions; EMP = mothers report of child empathy; PB = child prosocial behavior with peers (teacher report); Fa. Ed. = fathers' education; Mo. Ed. = mothers' education; Child sex (0 = girls, 1 = boys). *M* = mean; *SD* = standard deviation.

†
p < .10.

*
p < .05.

**
p < .01.