

5-14-2010

## Emotion Socialization, Emotional Competence, and Social Competence and Maladjustment in Early Childhood

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Emotion Socialization, Emotional Competence, and Social Competence and Maladjustment in  
Early Childhood

A Dissertation

Submitted to the Graduate Faculty of the  
University of New Orleans  
in partial fulfillment of the  
requirements for the degree of

Doctor of Philosophy  
in  
Psychology 

By

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May 2010

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## Abstract

In this study of preschool children and parents (N=64), we examined relations between two facets of parents' emotion socialization: direct and indirect socialization; three facets of children's emotional competence: emotion expression, regulation, and understanding; and their relations with children's social and emotional adjustment. Few associations were observed between indicators of parents' emotion socialization and among indicators of children's emotional competence, suggesting that these constructs are better understood as multi-faceted, rather than unitary processes. Additionally, aspects of children's emotional competence linked—both directly and indirectly—parents' emotion socialization behaviors and children's social and emotional adjustment. Results are discussed with regard to the role of parents' emotion socialization and children's emotional competence, especially emotion regulation, in children's adjustment during preschool.

Keywords: Emotion socialization, emotional competence, emotion expression, emotion regulation, emotion understanding, measure contamination, preschoolers, social competence, maladjustment.

## Emotion Socialization, Emotional Competence, and Social Competence and Maladjustment in Early Childhood

Children's emotional competence is a key skill-set in early childhood, supporting children's development of social skills and affecting their risk for maladjustment. Emotional competence in early childhood consists of children's ability to express and regulate emotion consistent with parental/societal expectations and children's ability to understand the causes and consequences of their own and others' emotions (Saarni, Campos, Camras, & Witherington, 2006). Social competence in early childhood is best understood as children's ability to engage in social interaction, attain social goals, make and maintain friendships, and achieve peer acceptance (Rubin, Bukowski, & Parker, 2006). Emotional competence underpins children's social competence in that successful social interaction and friendship formation requires that children express and regulate their emotions appropriately while applying their knowledge of emotions to respond properly to peers' emotions and behaviors (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Saarni, 1990). Conversely, delays or disruptions in children's development of emotional competencies have serious, negative implications for children's transition to peer contexts like elementary school (e.g., Campbell, Pierce, March, Ewing & Szumowski, 1994; Winsler, Diaz, Atencio, McCarthy, & Chabay, 2000). Children with poor emotional competence and who lack social skills have more difficulty forming peer relationships and benefit less from the educational environment of school than do children with stronger emotional and social skills (e.g., Kaiser, Hancock, Cai, Foster & Hester, 2000; Parker & Gottman, 1989).

Parent-child relationships are the first context in which children learn about emotions and serve as a rehearsal stage for children's developing emotional skills. An abundance of empirical

work has linked children's social, emotional, and behavioral adjustment—both in terms of competencies and maladjustment—with the quality of parenting received during the early childhood period. For instance, warm, responsive, and sensitive parenting promotes children's emotional, social, and even cognitive development during the preschool period (e.g., Landry, Smith, Miller-Loncar, & Swank, 1998; Landry, Smith, Swank, Assel, & Vellet, 2001). Whereas supportive discipline (e.g., approval, synchrony, and induction) in a positive affective environment predicts lower levels of externalizing problems, unresponsive and rejecting parenting is strongly tied to poor socio-emotional development and externalizing problems (Rothbaum & Weisz, 1994). Responsive, sensitive parenting and consistent, supportive discipline are frequently studied dimensions of parenting, though such general parenting practices are poor predictors of children's emotional competencies (e.g., Gottman, Katz, & Hooven, 1996). Although parents' responses to children's emotions may be part of their general parenting style, such emotion-related parenting behaviors are typically conceptualized as part of parents' emotion socialization. Parents socialize children's emotions through their responses to children's emotions, their discussion of emotion, and by providing models of how to express and regulate emotions (Morris, Silk, Steinberg, Sessa, Avenevoli et al., 2002). Quite possibly, parenting that specifically teaches children emotional competence both promotes social competence and reduces children's risk for emotional/behavioral maladjustment by teaching children how to understand and adaptively manage/express emotions in a variety of situations. Alternately, parents who fail to foster children's emotional competence are likely to have children with poorer social skills and greater emotional/behavioral maladjustment.

During the preschool period, emotional competence involves the ability to recognize and understand one's emotions and the emotions of others as well as the ability to regulate, express,

and use one's emotions in socially appropriate, adaptive ways (Saarni et al., 2006). If children's emotional competence mediates the impact of parents' emotion-related socialization practices on children's social competence and emotional/behavioral maladjustment, then intervention efforts that enhance both emotion-related parenting and children's emotional competence may be most successful in promoting children's social competence and reducing risk for emotional/behavioral problems.

Figure 1 depicts the theoretical model guiding the present investigation and specifies how parents' socialization of emotional competence, children's emotional competence, and children's adjustment are theoretically related. Specifically, parents who model emotional competence, who use supportive and encouraging strategies in response to their children's emotions, and who help their children understand emotions are expected to have more socially competent children with fewer emotional/behavioral problems (see Figure 1, path A). Conversely, parents who respond to children's emotions by punishing and minimizing their children's emotions and who model poor emotional competence are expected to have children who demonstrate less social competence and more emotional/behavioral problems. Importantly, children's own emotional competence is expected to mediate the link between parents' socialization efforts and children's adjustment (see Figure 1, paths B and C). Parents who socialize adaptive emotional expression, emotion regulation skills, and emotional understanding are expected to have children who demonstrate greater emotional competence (see Figure 1, path B). Higher levels of emotional competence are expected to support children's social competence, such that emotionally competent children should be better able to compromise, share, and maintain positive interactions with peers and have fewer adjustment problems (see Figure 1, path C).

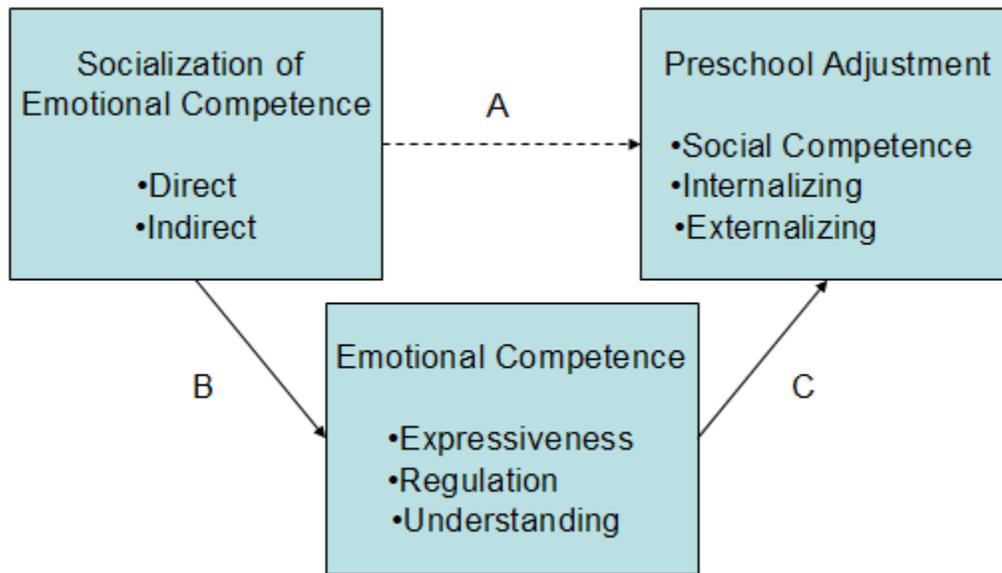


Figure 1.

The goals of the present study are to test the three-part structure of emotional competence and to empirically evaluate the theoretical model depicted in Figure 1. The following introduction will first consider the significance of social competence and emotional/behavioral maladjustment during the preschool years. Second, the developmental significance of emotional competence during the preschool years will be discussed. Third, empirical research regarding the role of parents in socializing emotional competence will be reviewed. Finally, the specific hypotheses tested in the present study will be described.

*Importance of Social Competence and Emotional and Behavioral Maladjustment*

The preschool period is marked by a number of cognitive, motor, and language achievements that coincide with greater expectations from parents for autonomous regulation of emotion and behavior (Cicchetti, Ganiban, & Barnett, 1991; Kopp, 1989; Kopp & Neufeld, 2003). Although developing rapidly, preschoolers' communicative and regulatory skills are

relatively rudimentary and unsophisticated. During stressful interactions, such as conflict with peers, preschool-aged children often find it difficult to adaptively regulate their emotions and behaviors (Denham, Blair, DeMulder, Levitas, Sawyer et al., 2003). Children's patterns of failed or maladaptive emotion regulation are theoretically and empirically linked to early maladjustment (Calkins & Dedmon, 2000; Gilliom, Shaw, Beck, Schonberg, & Lukon, 2002; Keenan 2000).

Social competence has been defined as children's ability to engage in social interaction, attain social goals, make and maintain friendships, and achieve peer acceptance (Rubin et al., 2006). Acquiring social competence skills during early childhood enhances children's success in social situations outside of the home. For instance, socially competent children often gain easy access to peer groups which provide critical opportunities for children to acquire a range of adaptive emotional and social skills (Denham & Holt, 1993; Egeland, Kaloske, Gottesman, & Erickson, 1990; Harris, 1995; Hartup, 1996; Rubin, Bukowski, & Parker, 1998, 2006). Importantly, children who develop social competence during early childhood may be less likely to develop emotional/behavioral adjustment problems, like internalizing and externalizing problems (e.g., Blechman, Tinsley, Carella & McEnroe, 1985; Olson & Hoza, 1993; Sanson, Hemphill & Smart, 2004; Vaughn, Hogan, Lancelotta, Shapiro, & Walker 1992).

Internalizing problems begin to emerge during the preschool period, although very young children's ability to express anxiety and depression is limited (Pihlakoski, Sourander, Aromaa, Rautava, Helenius et al., 2006). Truly expressing depressive symptoms requires relatively advanced socio-cognitive processes, such as self-reflection and self-understanding (Kovacs & Devlin, 1998). Early internalizing difficulties are significant risk factors for later maladjustment. For example, internalizing behaviors at two years of age have been found to significantly predict

children's later school performance and academic difficulties (Bub, McCartney, & Willett, 2007). Thus, internalizing behaviors constitute an important facet of children's early emotional/behavioral maladjustment.

Like internalizing problems, elevated levels of externalizing problems during the preschool period are strongly associated with later maladjustment. Relative levels of early externalizing problems, particularly aggressive and destructive behaviors, are stable during early childhood (e.g., Cummings, Iannotti, & Zahn-Waxler, 1989; Olweus, 1979); however, absolute levels of oppositional, aggressive, and other overt conduct problem behaviors generally decline gradually during this period (Cummings et al., 1989; Shaw, Gilliom, Ingoldsby, & Nagin, 2003). Despite general decreases in absolute levels, early externalizing behavior is strongly associated with levels of similar behavior one to two years later (Cummings et al., 1989) and moderately associated with externalizing behavior over longer periods (Campbell & Ewing, 1990; Egeland et al., 1990; Pihlakoski et al., 2006).

A growing body of evidence suggests that children's emotions and emotion-related processes influence emerging social competencies and emotional/behavioral maladjustment. For instance, socially competent children demonstrate appropriate levels of positive affect during social exchanges, and such positive affect facilitates the initiation of social exchanges and friendship formation (Denham, McKinley, Couchoud, & Holt, 1990). Additionally, children who are able to adaptively regulate negative emotions and balance their expression of positive and negative affect maintain social relationships better (Fabes & Eisenberg, 1992) and are viewed as friendlier, less aggressive, and less sad by their teachers (Denham & Burger, 1991). Emotionally competent children also are better liked by their peers (Denham et al., 1990) and are more likely to respond prosocially to peers' emotions (Denham, 1986; Denham et al., 1990; Denham,

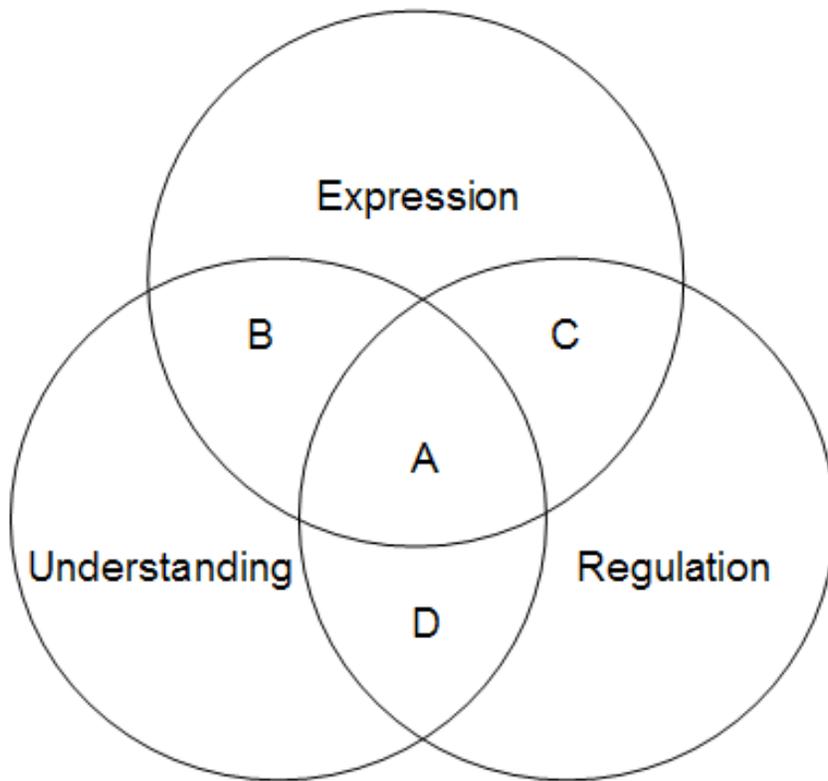
Renwick, & Holt, 1991; Eisenberg, Fabes, Bernzweig, Karbon, Poulin et al., 1993). In contrast, children who experience difficulties controlling their expression of negative emotion tend to have difficulty managing their anger during conflict situations, making them poor play partners (Denham et al., 2003). Likewise, children who express high levels of negative emotions are rated by teachers as less socially competent (Fabes, Leonard, Kupanoff, & Martin, 2001; Sallquist, Eisenberg, Spinrad, Reiser, Hofer et al., 2009) and are more likely to experience peer rejection (Denham et al., 2003). Clearly, children's emotions and emotional competence play a significant role in their relationships with peers.

*Clarifying Relationships among the Components of Emotional Competence  
during the Preschool Years*

In general, emotional competence involves the ability to recognize and understand ones' own emotions and the emotions of others as well as the ability to regulate, express, and use one's emotions in socially appropriate and adaptive ways (Saarni et al., 2006). Emotional competence is distinct from social competence and emotional/behavioral maladjustment in that emotional competence encompasses the expression, management, and understanding of emotions, particularly during social situations. Emotional competence develops extensively during early childhood and continues throughout adolescence, increasing in complexity as children age (Saarni et al., 2006).

As depicted in Figure 2, emotional competence during the preschool period includes three overlapping components. First, emotional expressiveness refers to the frequency, intensity, latency, and duration of expression of both negative (e.g., anger, fear, sadness) and positive emotions (e.g., happiness, contentment; Denham, 2007; Dougherty, 2006). Second, emotion regulation includes changes in valence, intensity, and timing of emotions that occur as a result of

intra-individual or inter-individual processes (Thompson, 1991, 1994). Finally, children's emotional understanding involves the ability to recognize and name emotions and understand the causes and consequences of emotions (Saarni et al., 2006).



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*Figure 2.*

Although various emotionally competent behaviors (e.g., expression of socially appropriate emotions) often rely on the activation of only one or two domains, theoretically it is the overlap of all three domains (see Figure 2, area A) that defines emotional competence. Consider the example of children gathered for a birthday party, with one child opening gifts as the guests observe. The child opening gifts understands that certain emotional expressions (e.g.,

smiling or laughing) convey their pleasure or excitement. In this case, children's emotional expression skills and emotion understanding are working in tandem (see Figure 2, area B) to produce socially appropriate, adaptive behaviors.

Alternately, consider a situation in which the birthday-child is disappointed with a certain gift, yet keeps that disappointment from showing. This case illustrates the overlap between children's expression and regulation of their emotions (see Figure 2, area C). The pinnacle of emotional competence entails the activation of all three domains—understanding, regulation, and expression (see Figure 2, area A). A highly emotionally competent child, knowing the social consequences of expressing negative emotions, may restrict their expression of sadness and/or express unfelt contentment or joy in order to maintain positive social interactions and relations with peers.

Given the theoretical interrelatedness among components of emotional competence, deficits in one domain likely undermine children's overall emotional competence. For instance, children who frequently experience negative emotions likely have more difficulty regulating their emotions and may miss opportunities to learn about the social consequences of expressing negative emotion socially (e.g., Fabes et al., 2001). Similarly, children who cannot express their feelings verbally may become more frustrated, or more emotionally expressive, and experience more difficulty managing their emotions or eliciting appropriate assistance in managing their emotion. In sum, emotional competence likely relies upon the coordinated use of all three sub-domains, and failures in any domain likely undermine children's ability to act competently in emotionally evocative situations.

As depicted in Figure 2, one critical component of emotional competence is emotional expression. The preschool period is marked by children's tendency to intensively express

emotions such as happiness, sadness, anger, fear, surprise, and interest (Denham, 2007). Such increases in emotional expression also coincide with increases in learning rules associated with emotional expression, including the situations in which different emotions can be displayed and the appropriateness of displaying emotions (Denham, 2007). Indeed, children's ability to both display positive emotions and modulate the expression of negative emotions is critical for building and maintaining relationships with peers (Denham et al., 1997; Fabes, Eisenberg, Jones, Smith, Guthrie et al., 1999).

In addition to expressing emotions, children skills in autonomously regulating emotions increase during the preschool period. Emotionally well-regulated children are able to modulate their emotional experience and expression to fit contextual demands and their own goals (Grolnick, Bridges, & Connell, 1996). Children's ability to effectively modulate emotional expression depends on the repertoire of emotion regulation skills at their disposal. That is, emotionally competent children likely know a variety of strategies to regulate emotional expression (Eisenberg, Cumberland, & Spinrad, 1998). As children become proficient in their use of simpler strategies (e.g., comforting and support seeking) and become capable of cognitively representing and understanding emotions, they are expected to transition to more advanced strategies such as cognitive distraction and cognitive restructuring (e.g., Murphy, Eisenberg, Fabes, Shepard, & Guthrie, 1999). While children's repertoire of regulatory skills may become more sophisticated over time, not all regulatory strategies are equally effective in reducing distress.

A variety of strategies are generally ineffective in reducing emotional distress. Avoidance is considered ineffective in reducing distress because children do not directly cope with their emotions (e.g., Krohne, Pieper, Knoll, & Breimer, 2002). Additionally, responding to distress by

focusing attention on the source of distress—excluding focusing as a means of information gathering—is considered to be an ineffective emotion regulation strategy (Gaensbauer, Connell, & Schulz, 1983; Gilliom et al., 2002; Grolnick et al., 1996). Strict attentional focusing, in the absence of information gathering, ineffectively regulates emotions because children simply increase their attention to a distressing stimulus while failing to address or change the distressing situation. Aggression and venting strategies are perhaps the least effective regulatory strategies; such strategies fail to reduce and may even amplify children’s distress (Eisenberg, Fabes, Nyman, Bernzweig, & Pinuelas, 1994). At the opposite end of the expressive spectrum, some children try to blunt or suppress their emotions. Although effective in the short term at reducing emotional expression, emotional suppression leads to increases in physiological arousal, strains interpersonal relations, and impairs memory (Gross, 2002).

In contrast, strategies like distraction, self-soothing, and comfort-seeking behaviors tend to re-direct children’s focus away from the source of their distress and are generally effective in reducing children’s negative emotionality (e.g., Calkins, Gill, Johnson, & Smith, 1999; Grolnick et al., 1996). Children’s information gathering behavior, such as finding out how long they must wait before they can have a desired object, effectively reduces distress because children understand the parameters associated with an event (Gilliom et al., 2002). Finally, children’s constructive coping—attempts to directly address the source of their distress—and more cognitively driven strategies such as symbolic self-soothing or cognitive restructuring are expected to be among the most effective regulatory strategies (e.g., Eisenberg et al., 1998; Eisenberg et al., 1994; Fabes & Eisenberg, 1992; Murphy et al., 1999). Developmentally, children are expected to transition to the more advanced strategies during early childhood. The use of less sophisticated strategies by older children may signal a delay or failure in the

development of adaptive emotion regulation. In sum, early childhood is marked by children's acquisition and use of a variety of emotion regulation skills which vary in their effectiveness in modulating the experience and expression of emotions.

Finally, emotional competence also involves children's understanding of emotions (see Figure 2). Emotional understanding includes children's ability to recognize and name emotions and understand the causes and consequences of emotions (Saarni et al., 2006). Emotion understanding abilities increase from age three to six years (Fabes, Eisenberg, Nyman, & Michealieu, 1991). Understanding the causes and consequences of emotion facilitates social interaction, especially with peers and caregivers (Denham, Zoller, Couchoud, 1994; Halberstadt, Denham, & Dunsmore, 2001). As children and their peers develop and enter more complex social groups, children must use their emotion understanding skills primarily to recognize their peers' emotions and to recognize discrepancies between what their peers say and how they truly feel (Miller, Gouley, Seifer, Zakariski, Eugia et al., 2005). Children who misread peers' emotional cues may miss opportunities to learn and practice important social and emotional skills such as affective perspective taking and empathy (Schultz, Izard & Ackerman, 2000).

In addition to being able to recognize and identify emotions, children become increasingly adept at verbally reflecting on the antecedents, consequences, and behavioral correlates of emotionally salient situations (Bretherton, Fritz, Zahn-Waxler & Ridgeway, 1986). Through access to an emotion lexicon, or an emotion vocabulary, children are able to verbally communicate their emotional experience and organize and integrate various emotional experiences into unique emotional concepts (e.g., sadness, anger, joy; Saarni et al., 2006). Saarni and colleagues (2006) describe the emotion lexicon as a pivot for other skills; through access to emotion language, children learn to predict their own and others' emotional responses,

communicate about their emotional state, and become capable of empathic and sympathetic emotional responses to others. In sum, children's emotion understanding provides children with the tools to understand their own and others' emotional states as well as the ability to communicate this understanding in order to enlist and provide emotional support during social interactions.

In conclusion, children's emotional competence during early childhood is best understood as a set of overlapping domains that involve children's emotional expression, regulation, and understanding. Each component has received considerable empirical attention, though few studies have considered the totality of emotional competence and the role of emotional competence in promoting children's social competence and minimizing emotional/behavioral maladjustment. Parents are children's first socializers of emotional competence and likely play a significant role in children's acquisition of emotional competence.

#### *Parent Socialization of Emotional Competence: Direct and Indirect Influences*

Parents guide and assist their children's earliest efforts to understand and manage both positive and negative emotions. Parents socialize children's emotional competence by labeling and defining emotions, discussing the significance of emotions and their regulation, modeling emotion-related behaviors including emotion expression and emotion regulation, and creating an emotional climate within the home (Eisenberg et al., 1998; Morris et al., 2002; Parke, 1994). Interestingly, multiple theorists (e.g., Eisenberg et al., 1998; Klimes-Dougan & Zeman, 2007) propose that these domains of emotion socialization may be categorized as either *direct* attempts to socialize emotional competence (i.e., labeling, defining, and discussing emotions) or *indirect* socialization influences (i.e., parental modeling and emotional climate).

Parents' *direct* emotion socialization efforts likely occur in response to children's emotional reactions to every-day events (e.g., getting ready in the morning, meeting new people, waiting in line at the grocery store, bed time) as well as less frequently occurring emotionally distressful situations (e.g., the loss of a family member or pet). Parents' direct socialization includes two processes: emotion discussion and responses to children's emotions. First, emotion discussions occur during or following emotion-laden situations and provide parents with opportunities to teach children about emotions (Bretherton et al., 1986; Brown & Dunn, 1992). Such discussions typically involve labeling the emotion and describing the causes and consequences of emotions (e.g., Bretherton et al., 1986; Denham, 1998; Denham & Auerbach, 1995; Dunn, Brown, Slomkowski, Tesla & Youngblade, 1991). Emotion discussions teach children when emotions should or should not be expressed and the consequences of expressing or not expressing emotions (Dunn & Brown, 1994; Gottman, Katz, & Hooven, 1997). By discussing emotions with their children, parents' help children understand their own (Dunn, 2003) and others' emotions (Denham, Cook, & Zoller, 1992) and help children build an emotion lexicon (Denham & Auerbach, 1995). Further, parents' emotion-related discussions promote children's positive expressivity (Denham et al., 1992) and use of adaptive emotion regulation strategies (Garner, 2006).

Second, parents who respond to children's emotion by encouraging them to express emotions promote children's effective emotion regulation (Gottman et al., 1997), emotion decoding ability (i.e., emotion recognition and labeling; Halberstadt, 1986), perspective taking and empathy (Bryant, 1987), and complex thinking about emotions (Saarni, 1989). Parents' moderate levels of expressive encouragement are most adaptive (Roberts & Strayer, 1987); children who receive too much expressive encouragement from their parents may express

emotions more frequently or more intensely than is socially acceptable. Although there may be situational or contextual constraints on when parents feel it is appropriate to encourage their children to express emotions (Eisenberg et al., 1998), relatively little research has addressed this possibility. A notable exception is the work of Eisenberg and colleagues regarding parents' restrictiveness of children's emotional expression in situations where such expression may be harmful to others (e.g., staring at a disfigured person), in which such parental restrictiveness was positively related to older (i.e., mid- to late-elementary school age) children's reports of dispositional and situational sympathy (Eisenberg, Fabes, Schaller, Miller, Carlo et al., 1991). Parents' problem-focused responses (i.e., dealing with the problem causing the emotion) and emotion-focused responses (i.e., dealing with the emotional response itself) to children's emotions are supportive, adaptive strategies in that they promote children's ability to label emotions (Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002) and to regulate emotions (i.e., regulate anger expression during peer conflict) (Eisenberg & Fabes, 1994). In sum, parents' emotion discussion, encouragement, and emotion- and problem-focused responses promote children's emotional understanding and adaptive emotion expression and regulation. Consistent with the work of Fabes and colleagues (2002), these parenting behaviors are together referred to as parents' supportive direct emotion socialization.

Not all parents' direct socialization efforts are adaptive. Parents also may directly teach their children about emotion by punishing or minimizing children's emotional expressions. Punishing and minimizing parental responses teach children to suppress the expression of negative affect (Fabes et al., 2002). Emotional suppression only regulates the external display of emotion—not the internal experience of emotion—and limits what children learn from emotionally evocative situations (Richards, 2004; Richards & Gross, 2000). Indeed, parents who

punish children's expression of negative emotions have children with higher levels of emotional distress (Eisenberg, Fabes, Carlo, & Karbon, 1992). Additionally, parental discouragement of children's emotions (e.g., "stop that crying!") deters children from thinking about emotional events and severely limits the growth of their emotion understanding (Denham et al., 1997; Garner, Jones, & Miner, 1994). Following the precedent set by Fabes and colleagues (2002), parents' punitive and minimizing responses to children's emotions are referred to collectively as unsupportive direct emotion socialization.

In contrast to direct socialization, parents also socialize their children's emotional competence indirectly by modeling emotional expressiveness in their everyday lives. Theoretically, emotionally competent parents model adaptive emotional expression during their interactions with their spouse, children, and support networks. Inasmuch as children are present during emotionally salient situations, children are likely to learn about emotions by watching how parents handle their own emotions (Denham, 2007). Indeed, parents' emotional expressiveness, regardless of valence, is positively related to young children's understanding of others' emotions (Eisenberg et al., 1998).

Like direct socialization efforts, indirect socialization is not always adaptive. Parents indirectly socialize poor emotional competence when they frequently model unregulated negative emotion. Through the processes of emotion contagion and imitation, children may come to express negative emotion in ways similar to their parents (e.g., Eisenberg et al., 1998). Empirical work is largely consistent with these expectations. Generally, familial expressiveness of strong negative emotions (e.g., anger) is associated with children's poor emotional competence (Denham et al., 1994; Dunn & Brown, 1994; Fabes et al., 2002; Garner, 1995; Halberstadt, Crisp, & Eaton, 1999).

While children are expected to express emotion in ways similar to those modeled by their parents, parents' moderate emotional expressivity may provide the most adaptive model for children's own expressivity and general emotional competence. Indeed, parents' expression of moderate, non-overwhelming negative emotions in the home promotes children's emotion understanding (Garner et al., 1994) and regulatory skills (e.g., Halberstadt et al., 1999) by providing children with adaptive models of negative expressivity. While little theoretical or empirical work addresses the benefits of parents' moderate levels of positive expressivity, it is likely that parents who provide models of highly intense or unregulated positive affect may undermine their children's emotional and social competence. Indeed, children who are highly exuberant and who fail to regulate their positive emotion are at high risk for exhibiting externalizing behaviors (Rydell, Berlin, & Bohlin, 2003). For these reasons, parents' moderate levels of expressivity—of both positive and negative emotions—are expected to provide children with the most adaptive models of emotional competence.

Taken together, parents socialize emotional competence both directly, through interactions and conversations with their children, and indirectly, by creating a family emotional climate in which parents model their own emotional competence or incompetence. As children transition to the preschool environment and must interact with peers, their learned styles of emotion regulation and expression and their ability to understand their own and others' emotions are expected to significantly impact their social and emotional/behavioral adjustment. Specifically, children's own emotional competence is expected to mediate relationships between parents' direct and indirect emotion socialization strategies and children's adjustment.

*Parents' Socialization and Children's Adjustment: Emotional Competence as a Mediator*

As depicted in Figure 1, the quality of parent-child interactions, specifically emotion-related interactions, indirectly influences children's social competence and emotional/behavioral maladjustment through their emotional competence. Considerable theoretical and empirical work considers direct effects between parents' emotion socialization and children's early social adjustment. Aspects of parents' supportive emotion socialization, both direct and indirect, have been linked to increases in children's social competence, such as peer social status (Laird, Pettit, Mize, Brown, & Lindsey, 1994), empathic involvement with peers (Denham & Grout, 1992; Denham, Renwick-DeBardi, & Hewes, 1994; Denham, Zoller, & Couchoud, 1994), and prosocial behaviors (Denham & Grout, 1992; Garner et al., 1994). Conversely, parents' unsupportive emotion socialization seems to impede social competence (e.g., Denham, 1993; Fabes et al., 2002) and has been linked to children's use of less negotiation during conflict situations (Dunn & Brown, 1994), less positive ratings by peers (Boyum & Parke, 1995), and low levels of prosocial behavior and sympathy (Denham & Grout, 1992; Eisenberg, Fabes, Carlo, Troyer, Speer, et al., 1992).

Parents' unsupportive, punitive, and minimizing strategies also seem to undermine children's capacity for effective emotional and behavioral regulation in the short term (Denham et al., 1997; Fabes et al., 2001, 2002) and up to six years later (Eisenberg, Fabes, Shepherd, Guthrie, Murphy et al., 1999). Converging lines of research suggest that parents' unsupportive indirect socialization, such as modeling poor emotion regulation during marital conflict and displaying relatively low levels of positive emotion, are significantly linked to children's concurrent and subsequent internalizing and externalizing problems (Bayer, Sanson, & Hemphill, 2006; Eisenberg, Gershoff, Fabes, Shepard, Cumberland et al., 2001; Marchand &

Hock, 2003; Katz & Gottman, 1993). Although such direct associations between parents' socialization and children's adjustment are informative, they paint an incomplete picture. In all likelihood, children's emotional competence mediates the link between parents' socialization of emotion and children's adjustment.

Parents' patterns of emotion socialization impact children's adjustment by supporting or undermining children's development of emotional competence. Parents who create an emotional environment in which they respond supportively and with encouragement to children's emotional experiences serve as models of appropriate emotional expression and regulation and foster children's understanding of their own and others' emotions (e.g., Fabes et al., 2002). Conversely, parents who are overly emotional or excessively restricted in their own affect expression and who respond with such emotional extremes to their children's emotions promote children's emotional dysregulation and limit what children learn about emotions and emotional situations (e.g., Denham et al., 1994). Subsequently, children's patterns of emotion expression and regulation and their knowledge of emotions learned in the home are expected to carry over into the peer arena. Children's expression of positive emotion is widely described as an aid to initiating and maintaining positive peer relationships (e.g., Denham et al., 1990), whereas children's expression of negative emotion, particularly anger, is highly problematic for children's peer relationships and social competence (Denham et al., 1990; Fabes et al., 2001; Rubin & Clark, 1983). Children who are able to modulate their expressivity according to social demands and who better understand their own and others' emotions are expected to be more competent in peer interactions (Denham, 2007). Conversely, children who are highly dysregulated and who understand little about their own or others' emotions are likely unable to elicit appropriate social and emotional support from caregivers and peers. Further, such children

are likely unable to effectively regulate their emotions and associated behaviors, as manifested by increased rates of emotional/behavioral maladjustment.

### *Parental Socialization of Emotion and Child Gender*

Child gender has repeatedly been found to influence parents' emotion socialization efforts during early childhood (Boyum & Parke, 1995; Carson & Parke, 1996; Cassano, Perry-Parish, & Zeman, 2007; Denham et al., 1997; Fivush, 1989; Fivush, Brotman, Buckner, & Goodman, 2000). Parents seem to pressure their preschool aged sons to inhibit "feminine" emotions, such as sadness and fear, more than their daughters, while being more accepting of anger in sons than in daughters (Birnbaum & Croll, 1984). Conversely, girls typically receive more affective support in distressing situations than do boys (Fabes, Eisenberg, Karbon, Bernzweig, Speer, & Carlo, 1994). Likewise, parental gender differences in emotion socialization are largely bound to traditional gender stereotypes. Fathers are more likely than mothers to respond to children's sadness with minimization, whereas mothers are more likely to use expressive encouragement and problem-focused approaches (Cassano et al., 2007). One consistently found gender difference in children's emotional competence, specifically their expression of emotion, is that girls are less likely to express anger and more likely to express sadness than are boys (Brody, 1999; Saarni, 1984). Aside from differences in emotional expression and despite evidence indicating child- and parent-gender differences in parents' emotion socialization, relatively little evidence suggests children's overall emotional competence varies systematically by gender during early childhood (e.g., Colwell & Hart, 2006; for review see Denham, 2007).

While the emotional competence literature shows few consistent gender differences in children's expression, regulation, and understanding of emotions, the research literature

concerning children's temperament is likely highly relevant to the question of gender differences in emotion-related skills and behaviors. Whereas children's pattern of emotional expressivity is frequently studied as an aspect of emotional competence, children's quality and quantity of expressed emotion also is studied frequently by researchers of children's temperament.

Likewise, the concepts of emotion regulation and effortful control—a process frequently studied by temperament researchers—share similarities in that both involve the regulation of emotions and/or their related behaviors in the service of a goal (e.g., Eisenberg, Spinrad, & Morris, 2002).

For these reasons, the literature on children's temperament is likely informative when considering gender differences in children's emotional competence. A recent meta-analysis of gender differences in temperament concludes that toddler- and preschool-aged boys are more emotionally expressive than girls, although girls do express more fearfulness than boys (Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006). Else-Quest and colleagues (2006) also conclude that girls have significantly higher levels of effortful control during early childhood. Although gender differences in effortful control are large, gender differences in emotionality are often relatively small, which may account for their virtual absence in the emotional competence literature. In sum, despite consistent gender differences in various theoretically-related processes (i.e., emotionality and effortful control), there are few if any consistently found gender differences in emotional competence during early childhood.

#### *Goal of Proposed Study*

The goals of the proposed study are two-fold: the first goal is to test the structure of children's emotional competence during the preschool period, as depicted in Figure 2. The second goal is to consider the role of children's emotional competence as a mediator of the association between parents' emotion socialization and children's social competence and

emotional/behavioral maladjustment during early childhood. The following hypotheses are proposed.

1) Children's emotional competence can be represented as a latent factor consisting of children's emotional expressiveness, emotion regulation, and emotion understanding.

2) Parents' socialization behaviors will be significantly related to children's social competence and emotional/behavioral maladjustment; specifically, parents' supportive socialization behaviors will be 2a) positively related to children's social competence and 2b) negatively related to children's internalizing problems and 2c) externalizing problems.

3) Parents' supportive emotion socialization behaviors will be positively related to children's emotional competence.

4) Children's emotional competence will be 4a) positively related to children's social competence and 4b) negatively related to children's internalizing and 4c) externalizing problems.

5) Children's emotional competence will mediate relationships between parents' socialization behaviors and children's 5a) social competence, 5b) internalizing problems, and 5c) externalizing problems.

## Method

### *Participants*

Sixty-four three- to five-year-old children (mean age = 49.9 months, 52.5% boys) and one parent (mean age = 35.8 years, 89% mothers) were recruited from 20 day care centers, schools, and preschools across the New Orleans metropolitan area (see Table 1; for a list of participating centers, please see Appendix A). Children's teachers/daycare workers also were recruited. Although teachers/daycare workers were supportive during the pilot data collection phase, only 48% provided data for participating children in their classroom. Thirty-two daycare

centers and schools across the greater New Orleans area were contacted. Four centers/schools failed to return phone calls, four were unable or unwilling to meet with the investigator to discuss the project, four declined after such meetings, and twenty chose to participate in the study. While daycare centers and schools in all areas of the city were approached to solicit their support, relatively few daycare centers and schools in predominantly minority and/or low-income neighborhoods chose to cooperate. As a result the sample of participants is mainly White/Caucasian (87.5%), with few African American (7.8%), Hispanic (4.7%), Asian (3.1%), and Middle Eastern (1.6%) families participating. Most parents reported a highest level of education completed as a four-year college degree (35.9%) or an advanced degree program (40.6%). Family size averaged 3.6 individuals and family per capita income averaged \$23,460 per year.

Table 1

*Demographic Information of Participating Families*

	<i>M (SD)</i>	Range
Parent Age	35.8 (6.1) years	22 – 54 years
Child Age	50.25 (8.9) months	36 – 71 months
Household Size	3.6 (.99)	2 - 6
Per capita income	\$23,460 (\$29,607)	\$520 - \$183,820
Race/Ethnicity (Percent in each group)		
White	87.5%	
African American	7.8%	
Hispanic or Latina	4.7%	
Asian	3.1%	
Indian/Middle Eastern	1.6%	
Family Composition (Percent in each group)		
Married	79.7%	
Single, never married	12.5%	
Separated	1.6%	
Widowed	1.6%	
Divorced/unmarried	1.6%	

### *Recruitment Procedures*

Study participants were recruited in several steps. First, the investigator contacted directors and principals of area daycare centers and preschools to schedule a meeting to discuss the project. During the initial meeting the investigator explained the project and answered any questions. Second, once the director/principal agreed to assist the investigator, the investigator met with all teachers of three- to five-year old children and explained the project to them. Initially, only classrooms in which the teacher had agreed to participate were used to recruit participants. Given that the vast majority of teachers were concerned about the added work demands their participation would place upon them, most teachers (83%) declined to participate. In response to teachers' concerns, the investigator modified the recruitment strategy such that teacher cooperation would be sought only after parental consent to participate was obtained. In this way, teachers would know exactly what the demands on their time would be because the number of children participating from their classroom would be known at the time of recruitment. After the modification to the recruitment procedures, 42% of teachers agreed to participate. Consequently, while 66 parents and children participated, only 28 teachers participated. Given the small numbers of teachers who participated, teacher-reported data were not used in the present analyses.

Recruitment began during the late fall of 2008 and was completed in May of 2009. Parents were recruited by sending "parent packets" home with all children in the classroom and through limited face-to-face meetings with parents at the schools and daycare centers. Parent packets contained a pamphlet describing the study, a letter of introduction, an informed consent form, and the questionnaire packet. Compensation for parents consisted of a chance to win a \$75 gift card to the local business of their choice. Participating parents were instructed to return

completed packets and consent forms to their child's teacher or daycare center director or principal, who then returned the packet to the investigator. Upon receipt of a completed parent packet, the investigator scheduled and conducted the child-interview at the school or daycare center and sought the participation of the child's teacher/care provider. The child interviews lasted between 5 and 10 minutes and typically occurred in a quiet classroom at the school or daycare center.

Directors or principals from 20 schools and daycare centers provided approval of the study, granting access to approximately 1100 children between the ages of three and five years. Initially, the parent packet was 24 pages long and took approximately 1.5 hours to complete. The parent response rate to the initial parent packet was approximately 3.8%. In response to the low completion rate, the investigator shortened the parent packets by removing nonessential measures with known reliability and/or validity problems. The response rate doubled with the shorter questionnaire version; however, the response rate was still very low at 8%.

### *Procedures*

Parent and teacher reported questionnaire data were collected from area daycare centers and schools. The investigator distributed questionnaire packets to parents of children between the ages of three and five years through the directors, principals, and/or teachers and through limited face-to-face meetings with parents during pick-up and drop-off hours. Parents completed the questionnaires and then returned completed packets to their child's teacher or daycare worker. Teachers and daycare workers returned packets to principals and directors, who then returned packets to the investigator. Teacher packets were distributed through face-to-face meetings with teachers/daycare workers and were collected directly from teachers/daycare workers or from principals/directors.

Children completed a puppet activity designed to measure children's emotion understanding (Denham, 1986; Denham et al., 1994; see Appendix B). The puppet activity has three components: emotion naming, emotion pointing (nonverbal), and a vignette-based emotion matching section. In the emotion naming portion, children were shown puppets depicting four standard emotional expressions—happy, sad, angry, and afraid—and were asked to name the emotions. Next, children completed the emotion pointing task. In the emotion pointing task, children were presented with the same puppet stimuli and were asked to point to the happy, sad, angry, and afraid puppets, in that order.

Finally, during the emotion vignette portion of the task, children were read 16 short hypothetical vignettes about emotion-eliciting events. For instance, children were read short statements about the puppet character getting a new bike/tricycle, being laughed at by other children, or having a bad dream. Children were asked how the puppet would feel in each situation. Children could verbally name the emotion or point to the specific emotion puppet. Children's verbal and pointing responses were recorded.

### *Measures*

Parents completed questionnaires assessing: 1) the strategies they used to socialize emotional competence, 2) children's current emotional competence, and 3) children's social competence and maladjustment. Children were interviewed directly to assess their emotion understanding, one component of their emotional competence. Procedures for addressing missing data are described. Finally, concerns about measurement overlap between children's emotional competence and their emotional/behavioral maladjustment are addressed.

### *Socialization of Emotional Competence*

Parents' socialization of emotional competence was conceptualized to include parents' direct and indirect socialization practices. Two questionnaires were used to measure socialization of emotional competence: the Coping with Children's Negative Emotions Scale (CCNES; Fabes, Eisenberg, & Bernzweig, 1990) and the Self-Expressiveness in the Family Questionnaire (SEFQ; Halberstadt, Cassidy, Stifter, Parke, & Fox, 1995).

*Direct socialization.* Parents' direct socialization of emotional competence includes parents' discussions about emotion and their behavioral and/or verbal responses to children's emotions. Discussion of emotion and responses to emotion are operationally defined as parents' use of encouraging/supportive strategies, like expressive encouragement and emotion- and problem-focused reactions (e.g., Eisenberg & Fabes, 1994; Eisenberg et al., 1992; Fabes et al., 2002; Gottman et al., 1996, 1997), as well as punitive and minimizing reactions to children's emotions (e.g., Denham et al., 1997; Eisenberg et al., 1999). Five subscales from the CCNES were used to measure direct socialization: *Expressive Encouragement*, *Emotion Focused Reactions*, *Problem Focused Reactions*, *Punitive Reactions*, and *Minimization Reactions*. The CCNES is one of the most widely used parent-report instruments that measures how parents respond to their children's negative emotions. The CCNES has good internal and test-retest reliability and good concurrent and construct validity (Eisenberg & Fabes, 1994; Fabes et al., 2002). Published scale reliabilities (i.e., Cronbach's alphas) range from .69 to .85 for the individual scales (Fabes et al., 2002). Cronbach's alpha coefficients in the present study ranged from .69 for *Punitive Reactions* to .89 for *Expressive Encouragement* (see Table 2).

Table 2

*Descriptions of Measures of Parents' Emotion Socialization*

	<i>M</i> ( <i>SD</i> )	Range (possible)	Range (actual)	Reliability
Supportive Direct Socialization <sup>a</sup>	0.00 (1.00)	n/a	-2.70 – 1.81	$\alpha = .75$
Expressive Encouragement	4.88 (.98)	1 – 7	2.08 – 6.58	$\alpha = .89$
Emotion-focused Reactions	5.61 (.74)	1 – 7	3.42 – 6.92	$\alpha = .74$
Problem-focused Reactions	5.65 (.70)	1 – 7	3.33 – 6.83	$\alpha = .77$
Unsupportive Direct Socialization <sup>a</sup>	0.00 (1.00)	n/a	-1.73 – 2.84	$\alpha = .74$
Punitive Reactions	2.22 (.59)	1 – 7	1.17 – 3.75	$\alpha = .69$
Minimization Reactions	2.49 (.83)	1 – 7	1.17 – 5.00	$\alpha = .80$
Indirect Socialization				
Positive Expressivity	7.00 (.81)	1 – 9	5.00 – 8.52	$\alpha = .85$
Positive Expressivity Transformed	-.65 (.46)	n/a	-2.00 – 0.00	n/a
Negative Expressivity	4.12 (1.00)	1 – 9	1.88 – 6.59	$\alpha = .86$
Negative Expressivity Transformed	-.78 (.59)	n/a	-2.40 – 0.00	n/a
Total Expressivity	11.12 (1.46)	2 – 18	6.88 – 14.63	$\alpha = .88$
Total Expressivity Transformed	-1.13 (.88)	n/a	-4.30 – 0.00	n/a

<sup>a</sup> Standardized score.

To complete the CCNES, parents rate how likely they are to react in specific ways to 12 different scenarios in which their child is upset or angry (e.g., “If my child becomes angry because he/she is sick or hurt and can’t go to his/her friend’s birthday party, I would...”). Each

item is rated on a seven point Likert scale ranging from 1 (very unlikely) to 7 (very likely). Each scale consists of 12 items. *Expressive Encouragement* measures the degree to which parents validate children's expression of emotion and encourage children to discuss their emotions (e.g., "encourage my child to express his/her feelings of anger and frustration"). *Emotion Focused Reactions* assesses parents' use of strategies designed to help the child feel better (e.g., "soothe my child and do something fun with him/her to make him/her feel better about missing the party"). *Problem Focused Reactions* measures parents' use of strategies which help the child solve the problem that caused the child's distress (e.g., "help my child think about ways that he/she can still be with friends"). *Punitive Reactions* evaluates the degree to which parents respond punitively, decreasing their exposure to or need to deal with the negative emotions of their children (e.g., "send my child to his/her room"). *Minimization Reactions* measures parents' minimizing the situation or devaluing the child's problem or distress (e.g., "tell my child not to make a big deal out of missing the party").

Scoring of the CCNES involved summing and averaging parents' responses on each scale (see Table 2 for means, standard deviations, and reliability coefficients). All CCNES scales were expected to correlate modestly with one another. To test this expectation, all scale scores were correlated (see Table 3). Statistically significant and moderately strong correlations were found only among scales representing supportive direct socialization (e.g., *Expressive Encouragement*, *Emotion Focused Reactions*, and *Problem Focused Reactions*) and among scales representing unsupportive direct socialization (*Punitive Reactions* and *Minimizing Reactions*), with only one statistically significant correlation between a supportive direct scale and an unsupportive direct scale (*Problem Focused* and *Minimizing*,  $r = .26$ ,  $p < .05$ ).

Table 3

*Correlations Among CCNES Scale Scores Representing Direct Emotion Socialization*

	1	2	3	4	5
1. Expressive Encouragement	--				
2. Emotion Focused	.43**	--			
3. Problem Focused	.56**	.59**	--		
4. Punitive	.06	.16	.11	--	
5. Minimizing	-.07	.21	.26*	.62**	--

*Note.* +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$  (2-tailed).

Fabes and colleagues (2002) report a nearly identical pattern of correlations among the scales of the CCNES, including only one significant correlation between a supportive scale and an unsupportive scale (*Problem Focused* and *Punitive*,  $r = -.24$ ,  $p < .05$ ). Additionally, the means, standard deviations, and ranges of scale scores reported by Fabes and colleagues (2002) are highly consistent with the descriptive statistics of the CCNES scales reported in Table 2. Given the similarity between the descriptive statistics and intercorrelations reported by Fabes and colleagues (2002) and those reported in the present study, the data reduction approach described by Fabes and colleagues was adopted. That is, two indicators of direct socialization were created—one supportive and one unsupportive—by summing then standardizing the respective component scales (see Table 2). Supportive direct emotion socialization consists of parents' *Expressive Encouragement*, *Emotion Focused Reactions*, and *Problem Focused Reactions*; unsupportive direct emotion socialization consists of parents' *Punitive Reactions* and *Minimizing Reactions*.

*Indirect socialization.* Parents' indirect socialization was defined as parents' level of emotional expressivity within the home. Importantly, moderate levels of positive and negative emotional expressivity are expected to promote emotional competence; whereas parents' extremely high levels or very low levels of positive or negative emotional expressivity are expected to undermine children's developing emotional competence. Parents' emotional expressivity was measured using the SEFQ (Halberstadt, et al., 1995). The SEFQ is a 40 item questionnaire in which parents rate how frequently they express themselves during different family situations. Items are rated on a nine point Likert scale ranging from 1 (never) to 9 (very frequently). The SEFQ includes two subscales: *Positive Expressivity* (23 items) and *Negative Expressivity* (17 items). Sample items include: "Exclaiming over a beautiful day (positive expressivity)," "Showing contempt for another's actions (negative expressivity)," "Crying after an unpleasant disagreement (negative expressivity)," and, "Expressing gratitude for a favor (positive expressivity)."

Halberstadt and colleagues (1995) report good internal consistencies (Cronbach's alphas ranged from .90 to .94 for *Positive Expressivity* and from .82 to .92 for *Negative Expressivity*). Comparable reliability estimates emerged in the present study; the Cronbach alpha coefficient for the *Positive Expressivity* and *Negative Expressivity* subscales were .85 and .86, respectively (see Table 2). Halberstadt and colleagues (1995) also provide evidence for construct validity through significant correlations between overall expressiveness and other measures of affect intensity ( $r = .55; p < .001$ ), trait anger ( $r = .50; p < .001$ ), and anger expression ( $r = .57; p < .001$ ).

*Positive Expressivity* and *Negative Expressivity* subscales were computed by averaging all items on the respective scales. The subscales correlated at  $r = .30 (p < .05)$ . Given the expectation that moderate levels of overall parental emotional expressiveness promote emotional

competence in children, a total expressivity score was calculated by first summing the *Positive Expressivity* and *Negative Expressivity* subscales to create a total expressivity score. Next the total expressivity score was centered; then all positive values were recoded as negative values (e.g., a score of 7 is recoded as -7). The resulting score (Total Expressivity Transformed, see Table 2) reflects the distance from the mean level of total emotional expressivity with higher scores indicating more moderate levels of expressivity. Descriptive data for parents' SEFQ scale scores and the transformed score are presented in Table 2.

### *Children's Emotional Competence*

Children's emotional competence was operationally defined to include three related components: emotional expressiveness, emotion regulation, and emotion understanding. These three domains of emotional competence were measured using parent reports and child interviews. Parents completed the Child Emotion Expressiveness Questionnaire (CEEQ; Mirabile, 2008a) and the Child Emotion Regulation Questionnaire (CERQ; Mirabile, 2008b). Children completed the emotion understanding puppet task (Denham, 1986).

*Children's emotional expressiveness.* Children's emotional expressiveness was measured with parent reports on the Child Emotion Expressiveness Questionnaire (CEEQ; Mirabile, 2008a). The CEEQ was developed by the investigator based on a teacher-report measure described by Halberstadt, Fox, and Jones (1993) which assesses children's frequency, duration, intensity, and latency (i.e., quickness) to express happiness, sadness, anger, and fear. Identical in structure to the Halberstadt and colleagues (1993) measure, the CEEQ contains 16 items (four for each emotion), rated on a 1 (never) to 7 (always) Likert scale, with higher scores indicating more frequency, longer duration, greater intensity, and faster quickness to express emotions (see Appendix C for a copy of the full measure). Sample items include, "My child is frequently

happy,” “When my child is sad, s/he stays sad for a long time,” and “When my child is angry, s/he gets very, very angry.” Halberstadt and colleagues (1993) did not report internal consistencies of their measure, though convergent and criterion validity for the original measure is demonstrated through similar patterns of associations between trained observer-coded versus teacher-reported child emotional expressiveness and mothers’ self-reports of their own emotional expressiveness.

Frequency, duration, intensity, and latency scores for each emotion were summed to create composite indicators of children’s expressivity of happiness, sadness, anger, and fear. These indicators demonstrated moderate to high levels of internal consistency (Cronbach’s alphas ranged from .57 for sadness to .81 for anger, see Table 4). Given moderately strong correlations among the composite scores for anger, fear, and sadness ( $r$ s ranged from .51 to .78; average  $r = .61$ , all  $ps < .001$ ), the anger, fear, and sadness scores were summed and standardized to create a single indicator of children’s negative expressivity with higher scores indicating greater levels of negative expressivity. Likewise, children’s positive expressivity score was standardized; higher scores indicate greater levels of positive expressivity. Researchers have identified different patterns of associations between positively versus negatively valenced emotions and children’s adjustment (e.g., Sallquist et al., 2009); thus the present investigation separates children’s positive expressivity from negative expressivity to better evaluate their unique roles in children’s adjustment.

Table 4

*Descriptions of Measures of Children's Emotional Competence*<sup>a</sup>

	<i>M (SD)</i>	Range (possible)	Range (actual)	Reliability
Child Emotion Understanding	20.62 (3.75)	0 – 24	2 – 24	$\alpha = .64$
Child Emotion Naming	7.52 (1.65)	0 – 4	0 – 8	$\alpha = .91$
Child Emotion Pointing	7.57 (.85)	0 – 4	4 – 8	$\alpha = .18$
Child Emotion Vignette	13.10 (2.61)	0 – 16	2 – 16	$\alpha = .76$
Child Positive Expression (Happy)	22.85 (3.03)	4 – 28	14 – 28	$\alpha = .76$
Child Negative Expression	26.5 (9.21)	16 – 63	16 – 55	$\alpha = .81$
Sadness	8.61 (3.05)	4 – 28	4 – 16	$\alpha = .57$
Anger	9.53 (4.34)	4 – 28	4 – 23	$\alpha = .81$
Fear	8.58 (3.44)	4 – 28	4 – 17	$\alpha = .75$
Adaptive Emotion Regulation	1.87 (.43)	0 – 4	.38 – 2.66	$\alpha = .87$
Maladaptive Emotion Regulation	1.50 (.47)	0 – 4	.60 – 2.85	$\alpha = .85$

<sup>a</sup> For ease of interpretation, nonstandardized scores are reported here.

*Children's emotion regulation.* Children's ability to regulate emotions was measured using parent-reports on the Child Emotion Regulation Questionnaire (CERQ; Mirabile, 2008b), a measure designed for this study. The Child Emotion Regulation Questionnaire was developed to provide a parent report of children's use of specific emotion regulation strategies (see Appendix C for a copy of the full measure). The CERQ assesses parents' perceptions of children's use of a range of regulatory behaviors, including some strategies which are difficult to observe but of

which parents may be knowledgeable. For instance, parents may be aware of children's efforts to suppress emotion even though this activity involves little observable behavior.

After reviewing relevant theoretical and empirical work and existing observational coding systems used to measure emotion socialization and regulation (e.g., Calkins et al., 1999; Cole, Zahn-Waxler, Fox, Usher, & Welsh, 1996; Cole, Zahn-Waxler, & Smith, 1994; Denham et al., 1997; Eisenberg et al., 1994, 1998; Eisenberg & Fabes, 1994; Eisenberg, Guthrie, Fabes, Shepard, Losoya et al., 2000; Gilliom et al., 2002; Grolnick et al., 1996; Gross, 1999; Murphy et al., 1999; Ramsden & Hubbard, 2002; Stifter & Braungart, 1995), 13 unique regulatory behaviors are consistently identified: self-directed speech/symbolic self-soothing, constructive coping/instrumental coping, information gathering, focus on the distressing object, venting, aggression, social/verbal distraction, self/object distraction, physical comforting/self soothing, proximity/comfort seeking, support seeking, avoidance, and suppression. Parents rated the degree to which they agree with each statement concerning children's use of the 13 behavioral categories in response to the four primary emotions—happy, sad, angry, and afraid—using a 0 (none) to 4 (very much) Likert-type scale. Sample items include “She expresses her anger by crying, yelling, or screaming,” “He tries to hold his sadness inside and/or does not want to show how he feels,” and, “He is able to calm himself by talking through the problem.” The questionnaire contains 52 questions; respondents answer questions for each of the 13 behavioral categories four times, once for each emotion.

Regulatory strategies were grouped into adaptive versus maladaptive scales based on previously reported findings linking each strategy with either changes in children's expressed emotion or with aspects of children's social competence or emotional/behavioral maladjustment (e.g., Calkins et al., 1999; Eisenberg & Fabes, 1994; Eisenberg et al., 1994; Gilliom et al., 2002;

Grolnick et al., 1996; Gross, 1999; Murphy et al., 1999; Ramsden & Hubbard, 2002; Stifter & Braungart, 1995). The adaptive emotion regulation scale consists of children's self-directed speech/symbolic self-soothing, constructive/instrumental coping, information gathering, verbal distraction, self/object oriented distraction, self soothing, comfort seeking, and support seeking (Cronbach's alpha of .87). The maladaptive emotion regulation scale consists of children's focus on the distressing object, venting, aggression, avoidance, and suppression (Cronbach's alpha of .85). Scores within each scale were averaged to create component indicators of children's use of adaptive and maladaptive regulatory styles (for descriptive statistics, see Table 4).

*Children's emotion understanding.* Children's ability to recognize and name basic emotions and their ability to understand common causes of emotions were assessed through the puppet task (Denham, 1986). Denham and colleagues report moderate internal consistency coefficients for the puppet task (Cronbach's alphas of .73 for the naming items, .73 for the pointing items, and .82 for the vignette items; Denham & Couchoud, 1990). Cronbach's alphas for the puppet task in present study were strong (.91 for naming items and .76 for vignette items), with the exception of the emotion pointing task, which had a very low alpha of .18 (see Table 4) and was dropped from further analyses. Regarding the criterion validity of the puppet task, Denham and colleagues have found significant positive relations between children's emotion understanding and their social competence (Denham et al., 2003).

Administration and scoring guidelines described by Denham (1986) are as follows: If children's first attempt results in an incorrect response, children are corrected and then allowed to try again. Children's second try is recorded verbatim, regardless of whether the answer is correct or not, and scored for valence. If children's first attempt is correct, their answer is recorded verbatim and scored for valence. Happy is recorded as a positive valence, while angry,

sad, and afraid are scored as a negative valence. For example, when asked to name the emotion on the sad puppet, the response “afraid,” has a negative valence and is worth one point. Verbal responses are later scored for correctness. Correct responses earn two points; incorrect responses with correct valence earn one point; incorrect responses with incorrect valence earn zero points. Children’s scores on the emotion naming portion ranged from zero to eight points (mean = 7.52, SD = 1.65).

Scoring of the pointing task is identical to scoring of the naming task. For example, if a child is asked to point to the sad puppet but instead points to the angry puppet, the child receives one point for identifying an emotion of the same valence as sadness rather than two points for correctly pointing to the sad puppet. Children’s scores on the emotion pointing portion ranged from four to eight points (mean = 7.57, SD = .85).

In the emotion vignette task, responses were scored only for correctness of valence, with correct answers receiving one point and incorrect answers receiving a score of zero. For example, a child response of “sad” after the story about dropping an ice cream cone would earn one point. Children’s scores on the emotion vignette portion ranged from two to sixteen points (mean = 13.10, SD = 2.61).

Children’s emotion naming and vignette scores were statistically significantly correlated at  $r = .52$ . Children’s emotion pointing score was dropped from analyses because of very low reliability. Following the suggestion of Denham (1986), children’s emotion naming and emotion vignette scores were summed to create a single indicator of children’s emotion understanding (see Table 4).

Table 5

*Descriptions of Measures of Children's Adjustment*<sup>a</sup>

	<i>M (SD)</i>	Range (possible)	Range (actual)	Reliability
Child Social Competence Composite	0.00 (1.85)	n/a	-5.75 – 4.08	$\alpha = .80$
Prosocial scale of SCS	21.40 (4.07)	6 – 30	12 – 30	$\alpha = .85$
Social Competence scale of SCBE-30	38.98 (6.09)	10 – 60	18 – 51	$\alpha = .85$
Child Internalizing	5.21 (4.07)	0 – 52	0 – 18	$\alpha = .79$
Child Externalizing	7.19 (4.58)	0 – 32	0 – 17	$\alpha = .84$

<sup>a</sup>For ease of interpretation, nonstandardized scores are reported here.

### *Children's Social Competence*

Social competence was operationally defined as children's ability to engage in social interaction and attain personal and social goals through acceptable means. Children's social competence was measured using parent reports on the Social Competence Scale (SCS; Webster-Stratton, 2005) and the Social Competence and Behavior Evaluation–Short Form (SCBE-30; LaFreniere & Dumas, 1996). The SCS assesses parents' perceptions of their child's social competence using 12 statements rated on a 1 (not at all) to 5 (very much) Likert scale. Sample items from the *Prosocial* scale (six items) include: "My child works out problems with others on his own," "My child shares things with others," and "My child is helpful to others." The *Prosocial* scale has shown high levels of internal consistency (Cronbach's alpha = .88; Webster-Stratton, 2005). The Cronbach alpha for the *Prosocial* scale in the present study is .85 (See Table 5). Evidence for concurrent validity is demonstrated through correlations with other

measures of social competence (Gouley, Brotman, Huang, & Shrout, 2008). Evidence for criterion validity is demonstrated through negative associations with children's concurrent externalizing behavior and conduct problems (Gouley et al., 2008; Webster-Stratton & Hammond, 1998) and positive relations with parent-reported child emotion regulation (Gouley et al., 2008).

The SCBE-30 assesses children's patterns of anxiety/withdrawal, anger/aggression, and social competence in early- to middle-childhood (LaFreniere & Dumas, 1995). Items are rated on a Likert scale with responses ranging from one (never) to six (always). Sample items from the *Social Competence* scale (10 items) include: "Accepts compromises," "Cooperates with other children," and, "Works easily in a group." Cronbach's alphas for the *Social Competence* scale range from .86 to .90 across different validation samples (LaFreniere & Dumas, 1996). The Cronbach alpha for the *Social Competence* scale in the present study is .85 (see Table 5). Evidence for construct validity exists in the high correlations between the SCBE-30 scales and the original 80-item SCBE (LaFreniere & Dumas, 1995), which underwent extensive construct validation (Dumas & LaFreniere, 1993; Dumas, LaFreniere, & Serketich, 1995; LaFreniere, Dumas, Capuano, & Dubeau, 1992). Additionally, the *Social Competence* scale has been significantly correlated with children's sociometric standing (Denham et al., 2003).

Scale scores were computed by summing items within each subscale. Parent-reported scores on the *Prosocial* scale of the SCS and the *Social Competence* scale of the SCBE-30 were statistically significantly and strongly correlated ( $r=.72, p<.001$ ). A composite social competence score was created by summing the standardized *Prosocial* scale score and the standardized *Social Competence* scale score (see Table 5).

### *Children's Emotional/Behavioral Maladjustment*

Children's emotional/behavioral problems like anxiety, depression, withdrawal, and aggression were measured using parents' reports on the Achenbach System of Empirically Based Assessment-Child Behavior Checklist (CBCL 1½-5; Achenbach, & Rescorla, 2000). The CBCL contains 99 items, for which parents are asked to rate the degree to which they believe each item is true of their child within the past two months on a scale from 0 (not true) to 2 (very true or often true). The CBCL contains two broad scales. The *Internalizing Problems* scale (36 items) consists of four syndrome subscales (Emotionally Reactive, Anxious/Depressed, Somatic Complaints, and Withdrawn). The *Externalizing Problems* scale (24 items) consists of two syndrome subscales (Attention Problems and Aggressive Behavior). Higher scores indicate greater levels of problem behavior. The *Internalizing* and *Externalizing* scale scores consistently demonstrate strong internal consistencies (i.e., Cronbach's alphas of .89 and .92, respectively; Achenbach & Rescorla, 2000). The CBCL has been used extensively in both clinical and research contexts and has demonstrated considerable content, construct, and convergent validity (Achenbach & Rescorla, 2000; Rescorla, 2005). In the present study, Cronbach's alpha coefficients for the *Internalizing* and *Externalizing* scales were .83 and .89, respectively (see Table 5).

Scale scores were computed by summing the items of each scale. Parent-reported scores on the four *Internalizing Problems* subscales (e.g., Emotionally Reactive, Anxious/Depressed, Somatic Complaints, and Withdrawn) were statistically significantly and moderately correlated ( $r$ s ranged from .41 to .62; average  $r = .54$ , all  $ps < .01$ ); a composite internalizing score was created by summing the four subscales (see Table 5). Parent-reported scores on the two *Externalizing Problems* subscales (e.g., Attention Problems and Aggressive Behavior) were

statistically significantly correlated ( $r = .59, p < .001$ ); a composite externalizing score was created by summing the two subscales (see Table 5).

*Missing data.* Missing data analyses were conducted through the SPSS 17.0 missing data analysis module. Assumptions that data were missing completely at random (MCAR) were verified by a nonsignificant Little's MCAR test (Chi-square = 8.52,  $df = 6267, p > .05$ ). Additionally, less than five percent of data were missing; under this condition most procedures for handling missing data yield similar results (Tabachnick & Fidell, 2001). Given MCAR data, complete case analysis (i.e., listwise deletion) is known to produce unbiased, conservative estimates (West, 2001). Complete case analysis was used for all analyses.

*Power analysis.* All three of the paths in the theoretical model (see Figure 1) have received considerable empirical attention, enough to estimate the power of the present study to find significant results of a given effect size. Based on the previously reviewed research (e.g., Denham et al., 1997, 2003; Fabes et al., 1992, 1999; Miller et al., 2006), correlation estimates among study constructs are expected to range from .10 to .35. Power estimates were calculated using a power-analysis software program (G\*Power; Faul, Erdfelder, Lang, & Buchner, 2007). Using a sample of 64 participants, the current study has a power of .83 or an 83% chance, to find a medium sized effect (e.g.,  $r = .35$ ), a power of .46 to find a medium-to-small effect size (e.g.,  $r = .23$ ), and a power of .12 to find a small sized effect (e.g.,  $r = .10$ ). Thus, the present study is likely under powered.

#### *Addressing Item-level Contamination between Measures of Emotional Competence and Measures of Maladjustment*

Considerable theoretical and empirical work has addressed conceptual- and measurement-level overlap or “contamination” between measures of children’s emotion-related

behaviors, like emotion expression, and adjustment—particularly internalizing and externalizing problems (e.g., Lengua, West, & Sandler, 1998; Sanson, Prior, & Kyrios, 1990). As an example of the problem, terms such as “tantrums” often are included in emotion regulation questionnaires (e.g. the Emotion Regulation Checklist; Shields & Cicchetti, 1998) as an indicator of poor emotion regulation and on measures of externalizing problems (e.g., the CBCL; Achenbach, & Rescorla, 2000). Although the same behavior may reflect problems in two different domains, such item-level overlap is problematic in that the correlation between two constructs may be artificially inflated when both constructs are assessed using conceptually similar items.

To evaluate the extent to which item level overlap in conceptually similar constructs influences the magnitude of the correlation between those constructs, Lengua and colleagues (1998) considered the extent to which item-level overlap between measures of temperament, including emotionality, and measures of child maladjustment influenced the statistical association between the two constructs. Although Lengua and colleagues (1998) found significant measurement overlap between various measures of children’s emotionality and maladjustment, after eliminating item-level overlap between the measures of temperament and symptomatology, the correlations between the two constructs remained statistically significant. Lengua and colleagues (1998) also note that many of the “contaminating” maladjustment items were associated with problem behaviors but were not defining characteristics of those problem behaviors, thus their removal did not adversely impact the strength of the associations between aspects of temperament and maladjustment. Lengua and colleagues (1998) conclude that observed associations between measures of temperament and maladjustment “are not simply an artifact of conceptual or empirical overlap between temperament and symptom scales” (p. 176).

Regarding contamination between measures of emotional competence and maladjustment, item-level overlap is typically ignored. When contamination is addressed, researchers adopt an idiosyncratic approach to dealing with item overlap (e.g., Batum & Yagmurlu, 2007). Batum and Yagmurlu (2007) analyzed the wording of all items of the Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1998) and removed items judged not to assess emotion regulation (e.g., “Is impulsive”) and items which share similar wording as items of measures of child adjustment (e.g., “Is prone to angry outbursts/tantrums easily”). Although such individualized approaches to identifying and reducing contamination are likely beneficial, no approach has gained widespread acceptance.

In order to better understand why measure contamination occurs, it is useful to consider the “level of analysis” concept introduced by Rose-Krasnor (1997) and recently applied to emotional competence by Zeman, Klimes-Dougan, Cassano, and Adrian (2007). Rose-Krasnor (1997) and Zeman and colleagues (2007) describe three discrete levels at which any given concept can be measured. The theoretical level defines constructs (e.g., emotion regulation) in global—and thus difficult to operationalize—terms. The index level defines functional outcomes of specific behaviors. For example index-level measurement of emotion regulation would measure the consequences associated with adaptive or maladaptive regulation (e.g., mood changes, disruptiveness, internalizing or externalizing symptoms) rather than measuring the actual strategies used. Finally, the skills level identifies specific skills associated with various aspects of emotional competence (e.g., actual regulatory strategies or groups of regulatory strategies).

If the levels of analysis framework is applied to the most commonly used measure of child emotion regulation, the ERC, the cause for item-level contamination between the ERC and

measures of child maladjustment is obvious. The ERC operates on the index level, meaning that item content assesses the emotional/behavioral outcomes of emotion regulation, rather than actual regulatory strategies. For example, rather than assessing the strategies which children use to express/regulate their emotions, the ERC uses items which assess the consequences of children's expression/regulation (e.g., "Is prone to *disruptive* outbursts of energy and exuberance," italics added). As described thoroughly in the present review and elsewhere (e.g., Cole, Michel, & Teti, 1996; Frick & Morris, 2004; Shipman, Schneider, & Brown, 2003), children's emotional/behavioral maladjustment is strongly influenced by (i.e., is an outcome of) children's maladaptive emotion regulation. Not surprisingly, any measure of emotion regulation which assesses the construct at the index (i.e., outcome or consequence) level will be necessarily contaminated with measures assessing children's emotional/behavioral maladjustment.

The present study utilizes measures of emotional competence which operate explicitly on the skills level (e.g., the Child Emotion Regulation Questionnaire); no item makes any reference to the consequences—adaptive or otherwise—of any child expressive or regulatory behavior. Additionally, the selected measure of children's emotional/behavioral maladjustment (i.e., the CBCL) operates largely at the index level, producing scores indicating the severity of various problematic behaviors. By using measures of emotional competence which operate at the skills level and measures of adjustment which operate on the index level, the potential for item-level contamination may be reduced.

These anti-contamination considerations notwithstanding, a conservative empirical approach to addressing item-level contamination between measures of children's emotional competence and their maladjustment was adopted. Items from the CBCL which assess children's emotion expression and aggression behaviors were removed from the internalizing (9

items; sample items: “Looks unhappy without good reason,” “sulks a lot,” “Too fearful or anxious”) and externalizing (8 items; sample items: “Gets in many fights,” “Hits others,” “Temper tantrums or hot temper”) subscales. The “decontaminated” internalizing behavior (mean = 5.21,  $SD = 4.07$ ,  $\alpha = .79$ ) and externalizing behavior (mean = 7.19,  $SD = 4.58$ ,  $\alpha = .84$ ) scores were created (removed items are listed in Appendix C). Hypotheses were tested using the original and modified internalizing and externalizing behavior scores. All variables which correlated significantly with the unmodified internalizing or externalizing behavior scores also correlated significantly with the modified internalizing or externalizing behavior scores. The correlation coefficients were not statistically significantly different when compared using a Fisher’s  $r$ -to- $z$  test. One exception to the pattern of similar findings using the unmodified and modified scores did emerge regarding the correlation between parents’ unsupportive direct emotion socialization and children’s externalizing behavior. The previously nonsignificant correlation became statistically significant with the modified externalizing score. Since the goal of this exercise was to describe and utilize a systematic approach for addressing the potential effects of contamination between measures of emotional competence and internalizing and externalizing behaviors, only results for the decontaminated internalizing and externalizing behavior scores are presented.

## Results

### *Preliminary Data Analyses*

Before testing hypotheses, preliminary analyses were conducted to ensure that data meet criteria for use in regression-based analyses. Assumptions of linearity and homoscedasticity were evaluated by use of bivariate scatterplots for combinations of socialization, emotional competence, and adjustment composite scores. These variables failed to relate linearly, in

violation of the assumptions of homoscedasticity; however, this violation does not invalidate results of regression-based analyses (Tabachnick & Fidell, 2001). Data were analyzed for univariate and multivariate outliers using methods suggested by Tabachnick and Fidell (2001). No univariate outliers were found and no cases were identified through Mahalanobis distance scores as multivariate outliers with  $p < .001$ .

*Data Reduction*

*Direct and indirect emotion socialization.* Conceptualizing parents' emotion socialization as including both direct and indirect socialization is relatively novel. These two socialization domains were expected to be statistically and significantly correlated with each other such that a latent socialization construct could be created. Unexpectedly, the two domains were not statistically and significantly correlated (see Table 6) and subsequent analyses were computed separately for parents' supportive direct, unsupportive direct, and indirect socialization scores.

Table 6

*Intercorrelations among Child Emotional Competence Variables<sup>a</sup>*

Variable	1	2	3	4
1. Child Positive Expressivity	.			
2. Child Negative Expressivity	-.13	.		
3. Child Adaptive Emotion Reg.	-.05	-.08	.	
4. Child Maladaptive Emotion Reg.	.03	.37**	.39**	.
5. Child Emotion Understanding	.08	-.16	-.19	-.24+

*Note.* +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$  (2-tailed).

<sup>a</sup> Partial correlations controlling for child age.

### *Potential Confounds*

Prior to hypothesis testing, the effects of child gender and child age on study constructs were evaluated. Since so few fathers completed the questionnaire ( $n = 4$ ), parent gender as a confound could not be evaluated. Regarding child gender, analysis of variance procedures were used to evaluate whether mean level differences in study constructs (i.e., composite scores) existed for boys and girls. No mean-level differences by child gender in any composite variables were statistically significant. Regarding child age, children's age was correlated with all study constructs. Of the 11 correlations computed, only one statistically significant correlation emerged. Children's age was positively correlated with the emotion understanding score ( $r = .49$ ,  $p < .001$ ). All subsequent analyses were conducted controlling for children's age.

### *Hypothesis Testing*

Hypotheses 1 considers the expectation that components of emotional competence are interrelated and may be described as factors of a latent emotional competence construct. Hypotheses 2 through 4 define the expected relationships among parents' emotion socialization, children's emotional competence, and children's social and emotional/behavioral adjustment. Hypotheses 1 through 4 were preliminarily evaluated using correlational analyses to ensure that the constructs were related significantly and in the expected direction. For hypotheses 2 through 4, the statistically significant correlational relationships were further evaluated using regression analyses to verify that the relationships remain statistically significant while controlling for variables that may covary with aspects of children's emotional competence or adjustment. For each hypothesis, results of the correlational analyses will be described first, followed by results of the regression-based analyses, where applicable. All analyses were computing while

controlling for children's age, as children's age significantly correlated with a component of emotional competence, emotion understanding.

*Hypothesis 1: Emotional expressivity, emotion regulation, and emotion understanding are related components of an emotional competence latent construct.*

The first step in statistically evaluating the extent to which emotional expressivity, regulation, and understanding reflect a single domain of emotional competence was to compute the correlations among these domains (see Table 6). Only two of the possible ten correlations were statistically significant, indicating little covariation among these three domains of emotional competence. Given the general lack of statistical covariation, tests of the remaining hypotheses were evaluated separately for each component of children's emotional competence.

*Hypothesis 2: Parents' emotion socialization is significantly related to children's social competence and emotional/behavioral maladjustment.*

Hypothesis 2 received very limited support. Only, three of the expected 18 relationships reached statistical significance (see Table 7). Contrary to expectations, parents' supportive direct emotion socialization failed to correlate with children's social competence, internalizing behavior and externalizing behavior. Given the variability in children's age, all analyses were computed using partial-correlations controlling for children's age. Consistent with expectations, parents' unsupportive direct emotion socialization was statistically significantly correlated with children's externalizing behavior (partial- $r = .32, p < .05$ ). Parents' positive expressivity related significantly to children's social competence (partial- $r = .26, p < .05$ ) and internalizing behaviors (partial- $r = -.37, p < .01$ ). Surprisingly, parents' negative expressivity, total expressivity, and transformed total expressivity (i.e., moderate expressivity) were not statistically significantly correlated with children's social competence, internalizing behavior, or externalizing behavior.

Table 7

*Intercorrelations between Parent Emotion Socialization and Child Adjustment Constructs*<sup>a</sup>

Parent:	Child: Social Competence	Internalizing Behavior	Externalizing Behavior
Supportive Direct Emotion Socialization	-.04	-.17	.02
Unsupportive Direct Emotion Socialization	-.25+	.13	.32*
Positive Expressivity	.26*	-.38**	-.17
Negative Expressivity	-.18	.01	.11
Total Expressivity	.02	-.20	-.02
Total Expressivity Transformed	-.10	-.19	-.02

*Note.* +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$  (2-tailed).

<sup>a</sup> Partial correlations controlling for child age.

To test the expectation that parents' emotion socialization explains unique variance in children's adjustment, three regression equations were computed in which children's age and the adjustment indices (e.g., internalizing and externalizing behavior and social competence) were statistically controlled.

After controlling for children's age, internalizing behavior, and externalizing behavior, parents' positive expressivity did not explain unique variance associated with children's social competence. After controlling for children's age, internalizing problems, and social competence, parents' unsupportive direct emotion socialization was uniquely associated with children's externalizing behavior (see Table 8,  $\Delta R^2 = .04$ ,  $\beta = .20$ ,  $p < .05$ ). After controlling for children's age, externalizing problems, and social competence, parents' positive expressivity explained

unique variance associated with children's internalizing behavior (see Table 8,  $\Delta R^2 = .07$ ,  $\beta = -.28$ ,  $p < .01$ ).

Table 8

*Results of the Hierarchical Regression Analysis Evaluating the Unique Influence of Parents' Emotion Socialization on Aspects of Children's Adjustment*

	Social Competence			Internalizing Behavior			Externalizing Behavior		
Panel A	$\Delta R^2$	$F_{ch}$	$\beta$				$\Delta R^2$	$F_{ch}$	$\beta$
Step 1: Statistical Controls	.17*	4.09*					.58**	27.07**	
Step 2: Parent Unsupportive Emotion Socialization	.02	1.06	-.13				.04*	5.39*	.20
Panel B	$\Delta R^2$	$F_{ch}$	$\beta$	$\Delta R^2$	$F_{ch}$	$\beta$			
Step 1: Statistical Controls	.17*	4.09*		.54**	22.89**				
Step 2: Parent Positive Expressivity	.05+	3.25+	.23+	.07**	10.38**	-.28**			

*Note.* +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$  (2-tailed).

*Hypothesis 3: Parents' emotion socialization is significantly correlated with children's emotional competence.*

Hypothesis 3 received mixed support. Six of the 30 possible relationships reached statistical significance (see Table 9). In contrast to expectations, parents' supportive direct emotion socialization was not statistically significantly correlated with any of the child emotional competence variables. In all correlations, children's age was statistically controlled. Parents' unsupportive direct emotion socialization was positively correlated with children's adaptive and maladaptive emotion regulation (partial- $r = .42, p < .01$ ; partial- $r = .29, p < .05$ , respectively) and negatively with children's emotion understanding (partial- $r = -.26, p < .05$ ). Surprisingly, parents' unsupportive direct emotion socialization was not statistically significantly correlated with children's positive or negative expressivity.

Table 9

*Intercorrelations between Parent Emotion Socialization and Child Emotional Competence Constructs<sup>a</sup>*

Variable	Positive Expressivity	Negative Expressivity	Adaptive Emotion Regulation	Maladaptive Emotion Regulation	Emotion Understanding
Supportive Direct Emotion Socialization	.17	-.06	.21	.15	-.13
Unsupportive Direct Emotion Socialization	-.01	.15	.42**	.29*	-.26*
Positive Expressivity	.45**	-.09	.21	.03	.09
Negative Expressivity	.00	.24+	.16	.33*	-.06
Total Expressivity	.25+	.12	.22	.24+	.01
Total Expressivity Transformed	-.14	-.08	.04	-.04	.35**

*Note.* +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$  (2-tailed).

<sup>a</sup> Partial correlations controlling for child age.

After controlling for children's age, parents' positive expressivity was positively correlated with children's positive expressivity (partial- $r = .45, p < .001$ ) but not with children's negative expressivity, emotion regulation, or emotion understanding (see Table 9). Parents' negative expressivity was positively correlated with children's maladaptive emotion regulation (partial- $r = .33, p < .05$ ), but not with children's positive or negative expressivity, adaptive emotion regulation, or emotion understanding. Parents' total expressivity was not statistically significantly correlated with any indicator of child emotional competence. Finally, parents' total expressivity transformed score was positively correlated with children's emotion understanding (partial- $r = .36, p < .01$ ) but not with children's emotion expressivity or regulation.

Next, regression equations were computed to test the expectation that parents' emotion socialization explains unique variance in domains of children's emotional competence after controlling for children's age and the other domains of emotional competence. Since parents' supportive direct emotion socialization and total expressivity scores were not significantly correlated with any domain of emotional competence, parents' supportive direct emotion socialization and total expressivity were not included in the regression analyses.

Three regression equations were computed to assess the unique associations between parents' unsupportive direct emotion socialization and children's adaptive emotion regulation, maladaptive emotion regulation, and emotion understanding, when controlling for children's age and other components of emotional competence. For each equation, children's emotion regulation, either adaptive or maladaptive, was entered as the dependent variable. Next, children's age and all other emotional competence variables were entered into the first step as statistical controls. Finally, parents' unsupportive emotion socialization was entered into the second step.

First, after controlling for children's age, positive and negative emotional expressivity, maladaptive emotion regulation, and emotion understanding, parents' unsupportive direct emotion socialization was positively associated with children's adaptive emotion regulation (see Table 10,  $\Delta R^2 = .10$ ,  $\beta = .34$ ,  $p < .01$ ). A similar regression equation was recomputed estimating the effects of parents' unsupportive direct emotion socialization on maladaptive emotion regulation. Results indicated that unsupportive direct emotion socialization was not associated with maladaptive emotion regulation after estimating the influence of child age, emotional expressiveness, adaptive emotion regulation, and emotion understanding (see Table 10). Finally, a regression equation was computed estimating the effects of parents' unsupportive direct emotion socialization on children's emotion understanding. Results indicated that unsupportive direct emotion socialization was not associated with children's emotion understanding after estimating the influence of child age and other emotional competence variables.

Table 10

*Results of the Hierarchical Regression Analysis Evaluating the Unique Influence of Parents' Emotion Socialization (ES) on Aspects of Children's Emotional Competence*

	Positive Expressivity			Adaptive Emotion Regulation			Maladaptive Emotion Regulation			Emotion Understanding		
	$\Delta R^2$	$F_{ch}$	$\beta$	$\Delta R^2$	$F_{ch}$	$\beta$	$\Delta R^2$	$F_{ch}$	$\beta$	$\Delta R^2$	$F_{ch}$	$\beta$
Panel A												
Step 1: Statistical Controls	.24*	3.22*		.37**	6.05**		.31**	4.64**				
Step 2: Unsupportive Direct ES	.10**	7.38**	.34**	.00	.12	.04	.02	1.50				-.16
Panel B	$\Delta R^2$	$F_{ch}$	$\beta$									
Step 1: Statistical Controls	.05	.56**										
Step 2: Positive Expressivity	.23**	16.44**	.50**									

(Table 10, cont.)

	Positive Expressivity	Adaptive Emotion Regulation	Maladaptive Emotion Regulation			Emotion Understanding
Panel C			$\Delta R^2$	$F_{ch}$	$\beta$	
Step 1: Statistical Controls			.37**	6.05**		
Step 2: Negative Expressivity			.03	2.27**	.17	
Panel D						$\Delta R^2$ $F_{ch}$ $\beta$
Step 1: Statistical Controls						.31**   4.64**
Step 2: Total Expressivity						.10**   8.89**   .33**
Transformed						

Note. +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$  (2-tailed).

Regarding parents' positive expressivity, one regression equation was computed to estimate the unique effect of parents' positive expressivity on children's positive expressivity, after controlling for other domains of emotional competence. Results indicated that parents' expression of positive emotion explains unique variance in children's positive expressivity, even after controlling for children's age, negative expressivity, emotion regulation, and emotion understanding ( $\Delta R^2 = .23$ ,  $\beta = .50$ ,  $p < .001$ ).

Regarding parents' negative expressivity, one regression equation was computed to estimate the unique effect of parent's negative expressivity on children's maladaptive emotion regulation while controlling for children's age and other components of emotional competence. Results indicated that parents' negative expressivity was not associated with children's maladaptive emotion regulation after estimating the influence of child age, emotional expressiveness, adaptive emotion regulation, and emotion understanding.

Regarding parents' transformed total expressivity score, two separate analyses were computed. First, the presence of a non-linear relationship between parents' emotion expression and children's emotion knowledge was evaluated. Second, the strength and direction of the relationship between parents' emotional expressivity and children's emotion understanding was estimated.

First, a regression equation was computed to detect the presence of a non-linear relationship between parents' total expressivity and children's emotion understanding. Children's emotion understanding was entered as the dependent variable, and parents' total expressivity score was entered in the first block. Parents' total expressivity score was squared and entered into the second block of the regression equation. A nonsignificant first block and significant second block indicates that the relationship between the two variables is not linear but

is curvilinear. The squared total expressivity score explained significant variance in children's emotion understanding ( $\Delta R^2 = .09, p < .05$ ), indicating the presence of a curvilinear relationship.

Given evidence for a curvilinear relationship between parents' total emotion expression and children's emotion understanding, a second regression was computed to estimate the unique effect of parents' moderate expressivity (i.e., transformed total score) on children's emotion understanding. Children's age and all other emotional competence variables were entered into the first step. Parents' transformed total expressivity score was entered into the second step. Results indicated that parents' moderate emotional expressivity explained significant variance in children's emotion understanding ( $\Delta R^2 = .10, \beta = .33, p < .01$ ) even after accounting for the influence of children's age and other emotional competence variables ( $\Delta R^2 = .31, p < .01$ ).

*Hypothesis 4:* Children's emotional competence is correlated with children's social competence and emotional/behavioral maladjustment.

Again, mixed empirical support for this hypothesis emerged. Six of the 15 expected correlations reached statistical significance (see Table 11). Surprisingly, children's positive expressivity was not statistically significantly associated with children's social competence, internalizing, or externalizing. Consistent with expectations, children's negative expressivity was negatively correlated with children's social competence (partial- $r = -.28, p < .05$ ) and positively correlated with level of internalizing (partial- $r = .54, p < .001$ ) and externalizing behaviors (partial- $r = .50, p < .001$ ), after controlling for children's age.

Table 11

*Intercorrelations between Child Emotional Competence and Adjustment Constructs*<sup>a</sup>

	Social Competence	Internalizing Behavior	Externalizing Behavior
Positive Expressivity	.13	-.14	-.01
Negative Expressivity	-.28*	.54**	.50**
Adaptive Emotion Regulation	.28*	.05	.21
Maladaptive Emotion Regulation	-.06	.19	.38**
Emotion Understanding	.07	-.29*	-.09

*Note.* +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$  (2-tailed).

<sup>a</sup> Partial correlations controlling for child age.

As expected, children's adaptive emotion regulation was positively correlated with children's social competence (partial- $r = .28, p < .05$ ); however, children's adaptive emotion regulation was not statistically significantly correlated with children's internalizing or externalizing behaviors. Consistent with expectations, children's maladaptive emotion regulation was positively correlated with their externalizing behaviors (partial- $r = .38, p < .01$ ) though not statistically significantly correlated with children's social competence or internalizing behaviors.

Finally, children's emotion understanding correlated negatively with their internalizing behaviors (partial- $r = -.32, p < .05$ ) but was unrelated to children's social competence or externalizing behaviors. Relationships between facets of emotional competence and child adjustment which did not reach statistical significance were dropped from further analyses. For example, children's emotion understanding was unrelated to their social competence and externalizing behaviors; thus these relationships were not further evaluated using regression analyses.

To evaluate the expectation that emotional competence domains explain unique variance in children's behavioral and social adjustment, six regression equations were computed to estimate the unique effects of children's negative expressivity, adaptive emotion regulation, maladaptive emotion regulation, and emotion understanding on children's social competence, internalizing, and externalizing (see Table 12). In each of the six regression equations, the social competence, internalizing, and externalizing variables not entered as the dependent variable were controlled in the first step of the equation. Child age also was entered into the first step of the equation as a statistical control.

Table 12

*Results of the Hierarchical Regression Analysis Evaluating the Unique Influence of Children's Emotional Competence on Adjustment*

	Social Competence			Internalizing Behavior			Externalizing Behavior		
	$\Delta R^2$	$F_{ch}$	$\beta$	$\Delta R^2$	$F_{ch}$	$\beta$	$\Delta R^2$	$F_{ch}$	$\beta$
Panel A									
Step 1: Statistical Controls	.17*	4.09*		.54**	22.89**		.58**	27.07**	
Step 2: Negative Expressivity	.02	0.83	-.15	.04*	5.38*	.23*	.01	0.97	.10
Panel B									
Step 1: Statistical Controls	.17**	4.09*							
Step 2: Adaptive Emotion Regulation	.13**	10.70**	.38**						

(Table 12, cont.)

	Social Competence	Internalizing Behavior	Externalizing Behavior		
Panel C			$\Delta R^2$	$F_{ch}$	$\beta$
Step 1: Statistical Controls			.58**	27.07**	
Step 2: Maladaptive Emotion Regulation			.06**	9.66**	.26**
Panel D		$\Delta R^2$	$F_{ch}$	$\beta$	
Step 1: Statistical Controls		.52**	19.56**		
Step 2: Emotion Understanding		.05**	6.05**	-.26**	

Note. +  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$  (2-tailed).

*Negative expressivity.* Three regression equations were computed to estimate the effect of children's negative expressivity on children's social competence, internalizing, and externalizing behavior. After accounting for the variance explained by the statistical controls, children's negative expressivity did explain additional variance in children's internalizing behaviors ( $\Delta R^2 = .04, p > .05$ ) but did not explain additional variance in children's social competence ( $\Delta R^2 = .02, p > .05$ ) or externalizing behaviors ( $\Delta R^2 = .01, p > .05$ ).

*Adaptive emotion regulation.* One regression equation was computed to estimate the effect of children's adaptive emotion regulation on children's social competence. After accounting for the variance explained by the statistical controls, children's adaptive emotion regulation explained unique variance in children's social competence, ( $\Delta R^2 = .13, \beta = .38, p < .01$ ).

*Maladaptive emotion regulation.* One regression equation was computed to estimate the effect of children's maladaptive emotion regulation on children's externalizing behaviors. After accounting for the variance explained by statistical controls, children's maladaptive emotion regulation explained unique variance in children's externalizing behaviors ( $\Delta R^2 = .06, \beta = .26, p < .01$ ).

*Emotion understanding.* One regression equation was computed to estimate the effect of children's emotion understanding on children's internalizing. After accounting for the variance explained by statistical controls, children's emotion understanding explained unique variance in children's internalizing ( $\Delta R^2 = .05, \beta = -.26, p < .05$ ).

*Hypothesis 5:* Children's emotional competence mediates the relationships between parents' emotion socialization and children's social competence and emotional/behavioral maladjustment.

Two direct associations between parents' emotion socialization and children's adjustment were statistically significant and, therefore, potential targets of mediation for children's emotional competence. When considering potential mediation relationships, two conditions must be met before testing for mediation (Baron & Kenny, 1986): a) the independent variable (e.g., emotion socialization) must relate to the mediator (e.g., child emotional competence); b) the mediator must relate to the dependent variable (e.g., child adjustment). Considering the relationship between parents' positive expressivity and children's internalizing behavior, mediation is not possible because the only potential mediator variable associated with parents' positive expressivity is child positive expressivity, which is unrelated to children's internalizing behaviors.

Regarding the relationship between parents' unsupportive direct emotion socialization and child externalizing behavior, children's maladaptive emotion regulation related significantly to both parents' unsupportive direct emotion socialization and children's externalizing behavior, making child maladaptive emotion regulation the only potential mediator of this relationship in the present study. The relationship between parents' unsupportive direct emotion socialization and children's maladaptive emotion regulation is reduced to non-significance when controlling for children's age and other domains of emotional competence. For this reason no statistical controls were entered into the regression equations testing for mediation. This liberal empirical approach is adopted here for the sake of thoroughness and in recognition of the importance of identifying potential mediators of the relationship between parents' emotion socialization and children's adjustment. Mediation of the relationship between parents' unsupportive direct emotion socialization and children's externalizing behavior was tested according to the procedures described by Baron and Kenny (1986).

One regression equation was computed to estimate the effect of parents' unsupportive direct emotion socialization on children's maladaptive emotion regulation ( $\Delta R^2 = .10$ ,  $\beta = .31$ ,  $p < .05$ ). One regression equation was computed to estimate the effect of children's maladaptive emotion regulation on their externalizing behaviors ( $\Delta R^2 = .18$ ,  $\beta = .43$ ,  $p < .01$ ). Finally, one regression equation was computed to estimate the effect of parents' unsupportive direct emotion socialization on children's externalizing behavior, after controlling for children's maladaptive emotion regulation. After accounting for the variance explained by children's maladaptive emotion regulation ( $\Delta R^2 = .18$ ,  $p < .01$ ), parents' unsupportive direct emotion socialization did not statistically significantly explain unique variance in children's externalizing behavior ( $\Delta R^2 = .03$ ,  $\beta = .18$ ,  $p > .10$ ). The change in the relationship between parents' unsupportive direct emotion socialization and children's externalizing behavior from statistical significance to non-significance when controlling for the effect of children's maladaptive emotion regulation suggests that children's emotion regulation mediates the relationship between parents' unsupportive direct emotion socialization and children's externalizing behavior.

*Indirect Effects.* While the possibility of mediation was limited to only two relationships, the presence of indirect effects of parents' emotion socialization and child emotional competence on children's adjustment also was considered. Although the terms mediated effect and indirect effect are often used synonymously, Holmbeck (1997) and others (e.g., Preacher & Hayes, 2004) draw an important distinction: whereas mediated effects require a direct relationship between the independent and dependent variable (e.g., between parents' unsupportive direct emotion socialization and children's externalizing behavior) which one or more variables explains (i.e., mediates), indirect effects require no such direct path. Groups of variables tested for indirect effects were selected by meeting the following conditions: 1) a statistically significant

relationship exists between a parent emotion socialization variable and a child emotional competence variable; and 2) a statistically significant relationship exists between that same child emotional competence variable and a child adjustment variable. Based on the correlations previously reported (see Tables 7, 9, 11), five potential indirect effects were identified (see Figure 3). Testing for indirect effects was performed through the use of SPSS syntax developed by Preacher and Hayes (2004) which provides indirect effect statistics and statistical significance of those statistics based on the Sobel test.

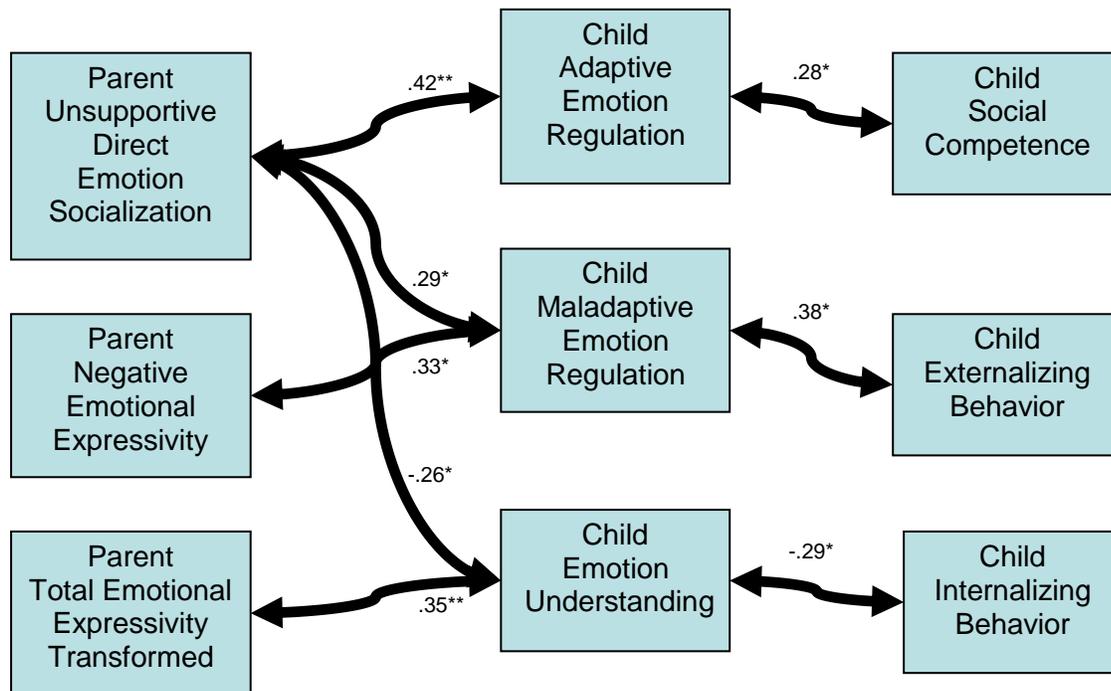


Figure 3.

Only two of the five potential indirect effects depicted in Figure 3 were statistically significant. Considering the effect involving parents' unsupportive direct emotion socialization, children's adaptive emotion regulation, and children's social competence, a Sobel test indicated that 8.5% of the variance in children's social competence is explained by the indirect effect

(effect value = .32,  $p < .05$ ). Considering the effect involving parents' negative expressivity, children's maladaptive emotion regulation, and children's externalizing behavior, a Sobel test indicated that 1.5% of the variance in children's externalizing behavior is explained by the indirect effect (effect value = .78,  $p < .05$ ).

#### *Alternate Analyses*

Given the limited support for study hypotheses, an alternative data reduction method was considered which might generate results more consistent with study hypotheses. Whereas parents' expressivity scores were transformed to produce the indirect emotion socialization score, children's expressivity scores were used without any transformations. Just as parents' moderate levels of expressivity were expected to be most supportive of children's emotional competence, it is possible that children's moderate positive and negative expressivity may be most adaptive. Indeed, because children's positive expressivity is understood as an aid to friendship formation (e.g., Denham et al., 2003), children who express too little positive emotion may have difficulty initiating social exchanges. Conversely, children who express too much exuberance may be at risk for externalizing problems (e.g., Rydell et al., 2003). Similarly, children's moderate negative expressivity may be most adaptive (e.g., Cole, Zahn-Waxler, Fox, Usher, & Welsh, 1996), with very low levels suggesting emotional suppression or over-regulation and very high levels likely contributing to social and behavioral problems. To test the possibility that children's moderate positive and negative emotional expressivity may be related in theoretically consistent ways with study constructs, children's expressivity scores were transformed in the same manner as parents' total expressivity score was transformed, with higher values representing more moderate levels of emotional expressivity. All previously described analyses were recomputed using children's transformed expressivity scores. The transformed

scores were not statistically significantly related to other child emotional competence constructs, nor did they relate significantly to parents' emotion socialization or children's adjustment.

## Discussion

The present investigation was designed to evaluate the structure and function of children's emotional competence during early childhood. The first goal was to consider whether children's emotional competence can be represented as a three-part latent factor consisting of children's emotional expressivity, emotion regulation, and emotion understanding. The second goal was to evaluate the extent to which children's emotional competence mediated expected relationships between parents' emotion socialization and children's social competence and emotional/behavioral maladjustment. In general, results did not support expectations. That is, the three domains of emotional competence were largely unrelated to one another. Moreover, only one relationship between parents' emotion socialization and children's adjustment was mediated by an aspect of emotional competence and only two indirect effects explained statistically significant variance in children's adjustment. Despite the general scarcity of significant findings, children's emotional competence was related in mostly expected ways with parents' emotion socialization and children's adjustment. The results have important implications for the theoretical role of emotional competence during early childhood. The following sections first discuss the implications of the hypothesis testing as well as the theoretical implications of parents' socialization of emotional competence for children's emotional competence and adjustment.

### *Children's Emotional Competence as a Latent Construct*

Based on primarily theoretical (e.g., Denham, 2007; Saarni et al., 2006) and limited empirical work (e.g., Denham et al., 2003; Miller et al., 2006), the components of children's emotional competence in early childhood—emotional expression, emotion regulation, and emotion understanding—were expected to relate significantly with one another and reflect a single construct of emotional competence. Children's emotional expressiveness is expected to be a function of their emotion regulation and shaped by their knowledge of emotions. Similarly, emotion regulation involves the modulation of expressivity and was expected to relate to children's knowledge of the causes and consequences of expressing emotion. Finally, children's emotion understanding involves children's ability to recognize the causes and consequences of their own and others' emotions and is expected to be related to how children express and regulate their emotions. Despite the expectation that all aspect of emotional competence would be interrelated, only a few of the many possible relationships among the domains of emotional competence were statistically significant. The general lack of statistically significant findings was surprising, though not without precedent; the significant associations which emerged are largely consistent with theoretical expectations.

First, consistent with the theoretical expectations of Denham (2007) and Saarni and colleagues (2006), children's maladaptive emotion regulation was related to more negative emotional expressiveness and less emotion understanding (though this relationship reached only marginal statistical significance). Quite possibly, children who experience more negative emotion also have more need to regulate those emotions; but regulating negative emotions may be overwhelming for young children and lead to the use of maladaptive strategies (e.g., Denham et al., 2003). Moreover, children who rely on more maladaptive emotion regulation strategies

were found to know less about emotions, possibly because poor regulation of emotions may cut short social interactions in which children learn about emotions (e.g., Denham et al., 2003; Fabes et al., 2001). The pattern of relationships between children's maladaptive regulation, high negative expressiveness, and low emotion understanding suggests that deficits in one domain (e.g., emotion understanding) may be caused by deficits in other domains (e.g., emotion regulation), though additional research is needed to clarify the direction of these relationships.

Contrary to expectations, children's maladaptive and adaptive emotion regulation were statistically significantly and positively correlated. Previous research consistently reports significant negative associations between adaptive and maladaptive emotion regulation strategies during early childhood using observational methods (e.g., Calkins, Gill, et al., 1999; Grolnick et al., 1996). Differences in study design may explain the failure to replicate this pattern of negative associations. Studies which rely on observational assessments of children's emotion regulation rarely consider the range and variety of regulatory strategies assessed in the present investigation. Observational tasks may be better at measuring a restricted range of regulatory behaviors, rather than children's entire repertoire of regulatory strategies. Moreover, observational activities designed to measure emotion regulation often require children to complete a frustrating task within a limited time period which may limit children's opportunity to use a variety of strategies. Children who use more adaptive strategies during an observed task should be less likely to use maladaptive strategies because the task is time restricted. While a strength of observational tasks is that children's actual behaviors in a specific situation are recorded, such tasks cannot assess the full range of children's regulatory capabilities; thus observational tasks may artificially limit relations between children's use of adaptive and maladaptive regulatory behaviors.

Theoretically, the observed association between adaptive and maladaptive regulation likely reflects a normative stage of emotional development. During early childhood, children have not yet stabilized as adaptive or maladaptive emotion regulators; and even children who know how to use adaptive strategies are still likely to use maladaptive strategies occasionally. Failures of self regulation during which children use less adaptive strategies are expected during early childhood (Denham et al., 2003). Such occasional lapses in regulatory proficiency at least partially explain the modest statistically significant correlation between adaptive and maladaptive emotion regulation observed in the present study.

The broader pattern of non-significant correlations among children's emotional expressiveness, emotion understanding, and adaptive emotion regulation is consistent with research in which children's observed emotional expressiveness and parent-reported measures of children's emotion regulation failed to correlate with child-interview based measures of children's emotion understanding (Arsenio, Cooperman, & Lover, 2000; Denham et al., 2002; Miller et al., 2006). The consistently reported failure of children's emotion expression and regulation to correlate with their emotion understanding may result from the fact that children's emotion knowledge is a relatively static sociocognitive skill-set, whereas children's emotion expressiveness and regulation are dynamic process that are expected to vary greatly by social context (Miller et al., 2006). That is, what children understand about emotions is unlikely to vary across situations; however, how children express and regulate emotions is fundamentally connected with their interactional goals and social context. For example, a child who can access their relatively static emotional knowledge-base in order to identify and discuss emotions during a controlled, calm interaction may have great difficulty regulating or expressing emotions appropriately during a frustrating peer interaction. The expectation that what children know

about emotions should relate to how they express and regulate emotion may be unfounded, especially during early childhood when children are still becoming proficient in adaptively regulating their emotions. It is likely that only after children have achieved a moderate level of emotional control that they can coordinate their emotion understanding, regulation, and expression to facilitate their social interactions.

The limited associations among domains of children's emotional competence provide little support for the expectation that the skills of emotional competence are interrelated during early childhood. The lack of significant relationships among positive expressivity, adaptive emotion regulation, and emotion understanding suggests that these skill-sets reflect largely independent processes during early childhood (e.g., Halberstadt et al., 2001). Conversely—and important for intervention efforts—the relations among children's negative expressivity, maladaptive emotion regulation, and poor emotion understanding suggest that deficits in one domain may cause deficits in other domains. Interventions aimed at improving emotional competence should address skills in all three domains, as problems in one component are likely to be accompanied by problems in other components.

#### *Parents' Emotion Socialization and Children's Emotional Competence*

Parents were hypothesized to socialize emotions directly and indirectly. Direct socialization involves parents' responses to/discussions about children's emotions; indirect socialization consists of parents' own positive and negative emotional expressivity. In keeping with a significant body of theoretical and empirical work (e.g., Denham et al., 1992; Dunn, 2003; Fabes et al., 2002; Garner, 2006; Halberstadt et al., 1999; Saarni et al., 2006) both direct and indirect emotion socialization were expected to contribute to children's emotional competence—

their emotional expression, regulation, and understanding. This expectation received mixed support.

Regarding children's emotional expression, parents' direct and indirect emotion socialization constructs were largely unrelated to children's positive and negative expressivity, with the exception of the relationship between parents' and children's positive expressivity. Children were expected to be more expressive when parents endorsed supportive direct socialization strategies (e.g., expressive encouragement), and children were expected to express emotion in ways similar to those modeled by their parents. Few such relationships emerged. The single significant relationship between parents' and children's positive emotion expressiveness strongly suggests that children are expressing positive emotion in ways similar to those modeled by their parents, though the moderate strength of the association also suggests that children's expressivity is likely multiply determined and is sensitive to multiple factors not assessed in the present study (e.g., temperament, other caregivers, teachers, and peers).

Regarding the largely non-significant relationships between parents' emotion socialization and children's expressivity, previous research which has found such associations has relied on laboratory-based observations and mothers' self reports of their own expressivity (e.g., Eisenberg et al., 1992; Denham & Grout, 1992; Denham, Renwick-De Bardi, & Hewes, 1994; Fabes et al., 2002) in conjunction with physiological measures, laboratory-based observations, and mothers' reports of children's emotionality (e.g., Denham & Grout, 1992; Denham et al., 1994; Eisenberg et al., 1992; Fabes et al., 2002). In the current study, parents completed a new measure of children's expressiveness with limited reliability and validity data. Although the measure was selected for its theoretical approach of conceptualizing children's emotion expression in terms of its frequency, duration, intensity, and latency, the measure

requires additional validation. An observational assessment of children's emotional expressions during caregiver or peer interactions may provide a more accurate, externally valid assessment of children's emotional expressiveness.

Regarding children's emotion regulation, only parents' unsupportive direct emotion socialization (i.e., punitive and minimizing responses to children's emotions) related positively to children's adaptive emotion regulation, an unexpected finding. Perhaps for well-regulated children, parents' minimizing or aversive responses reflect appropriate emotion socialization by signaling to children that episodes of dysregulation are unacceptable. Indeed, Denham (2007) suggests that parents' restrictiveness regarding children's emotional displays may help older children learn when emotional displays are acceptable and when they are not. Denham's (2007) suggestion implies that child age should moderate the associations between parents' emotion socialization and children's emotional competence; however, age did not moderate any of the associations presented. Although not fully supported by the present analyses, Denham's (2007) suggestion receives additional attention below. Future research which replicates this finding is needed in order to better understand whether and why parents' unsupportive emotion socialization relates to children's adaptive emotion regulation.

Finally, regarding children's emotion understanding, only parents' indirect emotion socialization (i.e., their moderate level of total emotional expressivity) significantly explained unique variance in children's emotion understanding. Importantly, parents' moderate expressivity was positively associated with children's emotion understanding, supporting the theoretical expectation that moderate emotional expressivity, not simply total expressivity, promotes children's emotional competence. Additionally, the validity of the novel transformation of the SEFQ scale scores was estimated using regression analysis which

demonstrated a curvilinear relationship between parents' emotional expressivity and children's emotion understanding.

Whereas very low or very high levels of parental emotional expressivity may interfere with children's development of emotional competence (e.g., Cole, Michel, & Teti, 1994; Denham, 1998) and adjustment (e.g., Carson & Parke, 1996; Denham & Grout, 1993), moderate levels of parental emotional expressivity may be most supportive of children's efforts to understand their own and others' emotions. Children exposed to moderate levels of parental affect are able to experiment with and learn about emotions by watching and interacting with parents in an emotionally supportive, non-overwhelming environment (e.g., Denham, 2007). Conversely, emotionally impoverished environments created by emotionally restricted parents are unlikely to provide children sufficient exposure to explore and learn about emotions. Further, highly emotional parents may provide affective environments that are over-arousing, limiting what children can learn from socialization encounters. In keeping with Hoffman's (1983) suggestion that children who are affectively aroused are unlikely to internalize parents' socializing message, the present finding suggests that children may learn about emotions best in a moderately emotional climate.

#### *Children's Emotional Competence and Adjustment*

Children's emotional competence was expected to relate to their social competence and emotional/behavioral maladjustment. Indeed, each aspect of children's emotional competence was related in some way to children's adjustment; however, all but four of the expected relationships were reduced to non-significance when controlling for other indices of children's adjustment. The following sections will describe the four significant relationships.

Despite the expectation that children's high levels of positive expressivity and low levels of negative expressivity would relate to their social competence, children's expressivity was unrelated to their social competence. This finding is consistent with previous research using observational measures of children's expressivity and peer- and teacher-ratings of children's social competence (e.g., Denham et al., 2003; Sallquist et al., 2009). The nonsignificant relationships between children's emotional expressivity and their social competence likely reflect that normative variations in children's emotional expressivity do not yet impact their social competence (Denham et al., 2003). Parents, teachers, and peers expect young children to be emotional; thus children's pattern of emotional expressivity may have to be extreme before it negatively impacts their ability to socialize with peers during early childhood.

Similarly, children's patterns of emotional expressivity were—with one exception—not uniquely associated with children's adjustment. Only children's negative emotional expressivity explained unique variance in children's internalizing behavior. This finding confirms the importance of children's expression of negative emotions in early internalizing behavior (e.g., Suveg & Zeman, 2004). Although children's emotional expressivity may contribute to their emotional/behavioral maladjustment (Zeman, Shipman, & Suveg, 2002), particularly at its extremes (e.g., Lengua et al., 1998), normative variations in children's expressivity may be less important in understanding children's emotional/behavioral maladjustment.

Additionally, the relationship between expressivity and maladjustment is likely non-linear, with children's externalizing problems relating to both very high (e.g., Cole, Zahn-Waxler, Fox, Usher, & Welsh, 1996; Eisenberg, Cumberland, Spinrad, Fabes, Shepard et al., 2001) and very low levels of emotional expression (Cole, Zahn-Waxler et al., 1994, 1996). Although tested for in the present study by analyzing transformed child expressivity scores, such

nonlinear relationships are expected to emerge only very weakly or not at all in traditional regression-based analyses.

As children mature their attempts to regulate expressivity—rather than the expressivity itself—may be more crucial to their adjustment (Denham et al., 2003). Indeed, children's adaptive emotion regulation was positively related to their social competence, suggesting that children who are better able to regulate their everyday experiences of both positive and negative emotion also are better able to interact successfully and cooperatively with their peers. Similarly, children's maladaptive emotion regulation explained unique variance in their externalizing behavior. As suggested by multiple theorists, how children regulate their emotional experiences—particularly their maladaptive emotion regulation—is likely a substantial contributor to their emotional, behavioral, and interpersonal difficulties (e.g., Cole, Zahn-Waxler et al., 1994, 1996; Frick & Morris, 2004; Shipman et al., 2003). Children who respond to their emotions through suppression, venting, aggression, and/or avoidance are likely to use such disruptive or debilitating strategies in the peer context, with potentially disastrous short- and long-term effects.

Finally, children's emotion understanding was negatively related to children's internalizing behavior. Although internalizing problems are often considered to involve difficulties expressing and regulating emotions appropriately (e.g., Suveg & Zeman, 2004; Weems & Silverman, 2006), children's knowledge of emotions also likely plays a key role in the development and trajectory of early internalizing problems (Hannesdottir & Ollendick, 2007). Indeed, early difficulties in emotion understanding have been found to predict internalizing problems by middle childhood (e.g., Fine, Izard, Mostow, Trentacosta, & Ackerman, 2003). Problems understanding one's own and others' emotions may be especially problematic in social

situations in which children's misunderstanding of emotion may cause emotional interactions to become overwhelming (e.g., Fine et al., 2003). When overwhelmed, children are likely to learn little from the arousing encounter and may even withdraw from the emotionally arousing context, further limiting their potential to learn about emotions and their role in social interactions. The negative relationship between children's emotion understanding and their internalizing suggests that children's early ability to recognize and understand the causes of emotions may provide a buffer against the development of internalizing difficulties, possibly by providing children the emotional skills needed to understand and negotiate emotion-laden social interactions.

*Parents' Emotion Socialization and Children's Adjustment: Direct, Mediated, and Indirect Effects*

Previous researchers report both direct (Denham & Grout, 1992; Denham et al., 1991, 1997; Parke, Cassidy, Burks, Carson, & Boyum, 1992) and indirect (Cassidy, Parke, Butkovsky, & Braungart, 1992; Fabes et al., 2001; Garner et al., 1994; Hastings & De, 2008; Pettit, Dodge, & Brown, 1988) associations between parents' emotion socialization and children's adjustment. In the present study, how parents express emotion and respond to their children's emotions was largely unrelated to children's adjustment, with two exceptions. First, parents' positive expressivity related negatively to children's internalizing problems. Second, parents' unsupportive direct emotion socialization related positively to children's externalizing behavior; and this relationship seems to be mediated by children's maladaptive emotion regulation. Finally, multiple indirect effects linking parents' emotion socialization, children's emotional competence, and children's adjustment were evaluated.

### *Direct Effects*

The negative relationship between parents' positive expressivity and children's internalizing behaviors may be understood in a variety of ways. First, internalizing behavior in early childhood is often characterized by the expression of negative emotion (e.g., Denham et al.; Eisenberg et al., 2001; Rydell et al., 2003); indeed, children's negative expressivity was more strongly related to children's internalizing behavior than were any other emotional competence variables. Quite possibly, children with more internalizing behaviors may cause frustrated parents to express fewer positive emotions; and children with fewer internalizing behaviors may present parents with more opportunities to express positive emotion.

Alternately, social learning processes may partially explain the negative relationship between parents' positive expressivity and children's internalizing behavior. Parents who express high levels of positive emotion likely foster a positive emotional climate in which children have less exposure to negative emotion models and greater exposure to more positive models of emotional expressivity. Conversely, parents who express very little positive emotion may serve as models of over-regulation, teaching children that emotions should be contained rather than expressed. Over time, children who habitually suppress emotions are expected to express emotion in highly dysregulated ways (e.g., Buck, 1984; Fabes et al., 2001) and experience greater levels of internalizing behavior problems (e.g., Zeman et al., 2002). Although the present study cannot address such a long-term process, aspects of children's emotional competence—specifically emotion expression and regulation—may mediate longitudinal associations between parents' expressivity and children's adjustment.

### *Mediated Effects*

Although direct associations between parents' emotion socialization and children's adjustment are often reported (e.g., Denham et al., 1997; Eisenberg, Fabes, Carlo, & Karbon, 1992; Eisenberg, Fabes, Carlo, Troyer et al., 1992), identifying potential mediators of such relationships is equally important. Considerable empirical work has linked parents' unsupportive emotion socialization with children's poor emotional competence, specifically poor emotion regulation (e.g., Denham et al., 1997; Eisenberg et al., 1999; Fabes et al., 2001, 2002), and children's poor emotional competence with externalizing difficulties (Calkins & Dedmon, 2000; Cole, Zahn-Waxler, & Smith, 1994; Rubin, Burgess, Dwyer, & Hastings, 2003). Building upon this work, evidence from the present study suggests that children's maladaptive emotion regulation may mediate the association between parents' unsupportive direct emotion socialization and children's externalizing behavior. Such a finding strengthens the importance of considering whether and how individual aspects of children's emotional competence explain associations between how parents respond to children's emotions and children's adjustment. Important for intervention efforts, children's pattern of emotion regulation seems to affect the association between parents' emotion socialization and children's adjustment problems, suggesting that children's emotion regulation strategies may be critical targets of intervention, especially during early childhood when patterns of expressivity and regulation are consolidating.

### *Indirect Effects*

While mediation demonstrates that one variable explains the association between two others, indirect effects indicate that the relationship between two variables depends on the common associations with a third. Thus, mediated effects require a direct relationship between

the variables of interest (e.g., emotion socialization and child adjustment), indirect effects do not. Two indirect effects emerged in the present study.

First, parents' unsupportive direct emotion socialization was related to children's social competence only through children's adaptive emotion regulation. This finding lends support to Denham's (2007) assertion that parents may use unsupportive responses to children's emotions to encourage children to adopt social display rules (i.e., acceptable ways of expressing emotion). That is, parents' unsupportive responses to children's dysregulated emotions or regulatory failures may encourage children to regulate and express emotions more adaptively. Children who use such adaptive regulatory and expressive strategies are expected to have greater social competence (e.g., peer relations).

Next, parents' negative expressivity was related to children's externalizing behavior only through children's maladaptive emotion regulation. Quite possibly, parents who model negative expressivity also are likely failing to model adaptive regulatory strategies. When children are exposed to parents' negative expressivity without learning how to regulate their own emotions, children may be likely to regulate their own emotions poorly (e.g., Eisenberg et al., 2001). Although the size of the present indirect effect is small, its presence highlights the importance of considering the role of parents' own emotional competence (e.g., expressivity and regulation) in children's development of emotional competence and adjustment difficulties (e.g., Cole, Michel, & Teti, 1994). Indeed, parents' own emotional competence is likely a fruitful target of intervention efforts aimed at improving emotion socialization, child emotional competence, and child adjustment.

### *Summary*

Although children's emotional competence likely cannot be represented as a single latent construct, aspects of emotional competence are related in theoretically consistent ways to parents' emotion socialization and children's adjustment. When parents are moderately expressive, children are likely to learn more about emotions; and such emotion understanding may protect them from internalizing problems. Further, children's ability to adaptively regulate emotions enhances their social competence, allowing children to interact successfully with their peers across a variety of emotionally demanding scenarios. Finally, children's maladaptive emotion regulation mediated the link between parents' unsupportive emotion socialization and children's externalizing behavior; and parents' unsupportive direct emotion socialization was linked with children's social competence indirectly, through children's adaptive emotion regulation. These mediation and indirect findings highlight the critical role of children's emotional competence, specifically emotion regulation, in the relationship between parents' socialization of emotions and children's adjustment in early childhood.

### *Strengths and Limitations*

The present study has a number of notable strengths and has made multiple unique contributions to the understanding of emotion socialization and emotional competence. First, measuring all aspects of emotional competence in early childhood is a seldom used approach; thus, the present findings contribute to a still very limited body of research addressing relationships among multiple aspects of emotional competence. Whereas previous research addressing the interrelations among aspects of emotional competence (e.g., Miller et al, 2006) has relied upon measures of emotion regulation with questionable construct and content validity (i.e., the Emotion Regulation Checklist), the present study utilized a novel measure of emotion

regulation which has demonstrated high internal reliability and strong criterion-related validity. That is, the pattern of theoretically consistent relationships between children's adaptive emotion regulation and their social competence and between children's maladaptive emotion regulation and their externalizing behavior provide initial evidence for the validity of a new, comprehensive, skills-based measure of children's emotion regulation behaviors which assesses multiple, distinct regulatory strategies. Utilizing the Child Emotion Regulation Questionnaire in conjunction with more established measures of children's emotion expression and understanding has allowed for a nuanced description of the relations among aspects of emotional competence in early childhood. While previous research has suggested that emotional competencies may be unrelated, the present study has described how failures of emotional competence may correlate with one another in ways that competencies do not. That is, while successes in one domain of emotional competence may not be accompanied by increased skill in other domains, unskilled emotion expression or regulation may undermine emotional competence more broadly, both concurrently and across early childhood.

Second, the present study has demonstrated that the relations observed between children's maladaptive emotion regulation and children's maladjustment are not simply the result of item-level contamination between measures of emotion regulation and adjustment. Whereas previous researchers have ignored or dealt with item-level contamination inconsistently, the present study demonstrates that measures of regulation and adjustment need not be contaminated. Careful measure decontamination can lend strength to observed associations between constructs derived from imperfect measures.

Finally, the current approach to conceptualizing and assessing parents' emotion socialization has two important benefits. First, the finding that parents' moderate expressivity

relates to children's emotion understanding lends initial support to the expectation that moderate levels of expressivity—not simply positive, negative, or total expressivity—are most supportive of children's developing emotional competence. Second, emotion socialization is rarely measured in terms of parents' direct and indirect emotion socialization behaviors; the collection of data on both direct and indirect emotion socialization allows for a fuller exploration of the various relationships among parents' emotion socialization and children's emotional competence and adjustment.

The present study is not without significant limitations. First, although teacher-reported data were expected to be available, a majority of teachers declined to participate, necessitating the use of parent-reported scores for indicators of children's adjustment. The use of parent-reported scores for parental socialization variables, aspects of children's emotional competence, and children's adjustment may have artificially inflated the observed relationships.

Second, a related limitation concerns the possibility that parents, notably mothers, may not be accurate at recognizing their own child's emotions. Most of the available parent-report measures of emotion socialization and children's emotional competence assume that mothers are accurate in distinguishing between children's different affective states. Recent work represents a serious challenge to this assumption (Waters, Meyer, Jochem, Virmani, Raikes et al., 2009) and suggests that parents may not be accurate reporters of their children's emotions and—by extension—how parents respond to children's specific emotions. That is, if parents are inaccurate in discriminating between children's sadness and fear, parents' reports of how they respond to specific emotions are likely similarly inaccurate. Future research is needed to better describe parents' emotion-recognition abilities and the consequences of emotion-recognition

failures for the parent-child emotional relationship and for parents' reports of their own and their child's emotion-related behaviors.

Third, the data were collected from predominantly non-minority, middle to upper-middle class participants. Relatively little comparative research has considered whether and how emotion socialization processes differ across racial/ethnic and income-level groups (Raver, 2004); additional work with more racially/ethnically and economically diverse samples must be undertaken. Fourth, the low participant response rate resulted in a relatively small sample and may have produced a biased sample of individuals who are more concerned about their child's development. The relatively small sample size and limited variability in measures of children's adjustment likely reduced the already low statistical power to detect statistically significant relationships.

Fifth, although the CERQ demonstrated high reliability and some criterion-related validity, further validation work is needed to assess how thoroughly and accurately the CERQ measures children's actual patterns of emotion regulation. Additional work must explore children's emotion regulation at the individual strategy level, as some strategies are likely more predictive of certain outcomes than are others. Finally, teacher reports or peer-nomination/sociometric ratings—rather than parent-reports—may have provided a more accurate assessment of children's abilities to work cooperatively and foster positive relationships with peers. Parents typically have less experience with their children in school/daycare, major peer contexts, making children's own peers and teachers potentially better-informed reporters.

#### *Future Directions*

Theorists have presented opposing positions on whether or not the components of emotional competence should relate to one another during early childhood (e.g., Halberstadt et

al., 2001; Saarni et al., 2006). The limited empirical work addressing the interrelations among aspects of emotional competence in early childhood provides only mixed results (e.g., Denham et al., 2003; Miller et al., 2006). Larger studies using more diverse samples are needed to more clearly delineate relationships among components of emotional competence during early childhood. Additionally, such studies should address how the interrelations—or lack thereof—among components of emotional competence change as children age.

Research which assesses the unique relations between aspects of emotional competence and children's adjustment is needed. For example, children's use of particular emotion regulation strategies (e.g., avoidance, suppression) may be more predictive of specific adjustment difficulties (e.g., internalizing) than children's overall pattern of maladaptive emotion regulation. Further, longitudinal research is needed to determine the extent to which the associations between components of children's emotional competence and aspects of children's adjustment change as children mature. For example, children's emotion regulation skills may be more important in predicting their social competence at a young age, but children's emotion understanding may be a stronger predictor as children age. That is, children's adaptive emotion regulation allows them successful group entry and interaction with peers during early childhood; though children's ability to accurately interpret and respond to peers' emotions likely increases in importance as children's cognitive and social skills develop.

Additional research should evaluate the extent to which parents' direct and indirect emotion socialization provide unique versus interactive influences on children's emotional competence and adjustment. Borrowing from theory and research on the negative impact of inconsistent parental discipline across early childhood to adolescence (e.g., Bierman & Smoot, 1991; Gardner, 1989; Patterson, Dishion, & Bank, 1984; Patterson & Stouthamer-Loeber, 1984),

it is plausible that parental inconsistency in emotion socialization may be similarly damaging to children's emotional competence and adjustment. For instance, is children's emotional competence undermined when parents endorse restrictive display rules concerning children's emotions while parents themselves model emotional dysregulation? Inconsistency in parental emotion socialization is an understudied phenomenon which, if at all similar to inconsistency in parental discipline, may prove to be a useful construct in better understanding how parents impact children's emotional development.

Finally, parents' emotion socialization may interact with aspects of children's emotional competence in predicting children's adjustment. For example, some parental emotion socialization strategies are likely more or less effective/adaptive depending on children's level of negative emotionality (e.g., Eisenberg et al., 1998; Mirabile, Scaramella, Sohr-Preston, & Robison, 2009). Future research must evaluate these still largely theoretical expectations.

### *Conclusion*

Emotional competence is a richly complex theoretical construct with potentially great utility in organizing research across different areas of children's social, emotional, and behavioral development and in understanding children's developing social competencies and emotional and behavioral maladjustment. The theoretical dispute concerning interrelations among aspects of emotional competence is likely to persist for some time. While some aspects of children's emotional competence were found to relate significantly, it is unclear whether the general lack of significant relationships reflects the actual independence of the constructs or was due to methodological limitations of the current study (e.g., small sample, novel measures). Similarly, the expectation that emotional competence mediates relationships between parents'

emotion socialization and children's adjustment received only limited support, as few significant direct or indirect paths were observed.

Despite such shortcomings, the current study builds upon the considerable body of theoretical and empirical work by describing numerous relationships among parents' emotion socialization, children's emotional competence, and children's adjustment. Of particular importance are the findings that parents' moderate emotional expressivity relates to children's understanding of emotions; children's emotion understanding relates to children's lower levels of internalizing problems; and children's emotion regulation links—through mediation and indirect effects—parents' emotion socialization and children's adjustment. These findings highlight the potential importance of parents' emotion socialization practices and children's emotional competence as foci of intervention efforts aimed at fostering children's social competence and preventing children's development of emotional/behavioral maladjustment. The centrality of children's emotional competence for their broader social and emotional development is well accepted, though much more research is needed to clarify how children become emotionally competent and how emotional competence underpins their broader adjustment.

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## Appendix A – List of Participating Centers

Center	Director	Eligible children
Audubon Primary Academy	Jewel Stafford	20
Crescent City Christian School	Deborah Miranda	110
Cub Corner of Mt. Carmel Academy	Elizabeth Coe	12
Jewish Community Center	Adrian Schulman	68
John Calvin Presbyterian Playschool	Sally Hoffmann	166
Kidopolis (Tulane University Hospital)	Dr. Laurie Richter	20
Lakeview Presbyterian School	Dale Davis	33
Les Enfants (Trinity Episcopal Church)	Amanda Cabral	67
Little Red Schoolhouse	Connie Richardson	90
Little School	Michelle Beauchamp	42
Metairie Park Country Day School	Marsha Biguenet	25
Newcomb Child Care Center (Tulane University)	Dr. Elaine Joseph	62
Parkview Baptist Daycare Center	Bea Mcelroy	15
Parkway Presbyterian	Marlene Cooke	130
Starbright Children’s Center	Sherrie Turner	9
St. Paul Lutheran School	Chuck Schiller	40
Stuart Hall	Dr. Cissy LaForge	70
University Montessori	Teddi Locke	40
University of New Orleans Children’s Center	Lisa Carlson	50
Wee Friends Pre-Kinder	Mary Porrier	30

Appendix B - Interview Materials for Puppet Task

**Part 1: Emotion Naming (4 minutes)** (doubles as the interviewer score sheet)

1. (To M if present): **For this activity, you can work on your questionnaire while I show [TC's name] some drawings and read some short stories to [TC's name]. Please remember that it's OK for you to watch but try to stay as uninvolved as possible.**

Give M a moment to move out of the task area, then proceed with the following instructions.

2. Show the character drawings in set order: happy, sad, mad, afraid. Record both the child's verbatim response and the positive vs. negative valance of the descriptor the child uses (e.g., "good" "nice" "friendly" are positive; "mean" "upset" "confused" are negative).

(To C):

**This is Pat.** (show happy) **How does Pat feel here?** \_\_\_\_\_ Pos Neg

**This is Pat.** (show sad) **How does Pat feel here?** \_\_\_\_\_ Pos Neg

**This is Pat.** (show mad) **How does Pat feel here?** \_\_\_\_\_ Pos Neg

**This is Pat.** (show afraid) **How does Pat feel here?** \_\_\_\_\_ Pos Neg

3. If TC makes a mistake and misidentifies the emotion of a character, correct TC by saying: **Good try! But s/he is feeling [correct answer]. Let's try again; how is s/he feeling?** Record and score second attempt.

**Part 2: Emotion Pointing (4 minutes)** (doubles as the interviewer score sheet)

1. (To C) **Now, show me again, which is the happy person? Point to it.**  
[record: right or wrong]  
If wrong, which picture \_\_\_\_\_, then correct: **I think this is the happy one**
  2. (To C) **What's something that makes you feel happy?**
- 

3. (To C) **Where is the sad person?**  
[record: right or wrong]  
If wrong, which picture \_\_\_\_\_, then correct: **I think this is the sad person**
  4. (To C) **What's something that makes you feel sad?**
- 

5. (To C) **Point to the person who is mad/angry.**  
[record: right or wrong]  
If wrong, which picture \_\_\_\_\_, then correct: **I think this is the mad person**
  6. (To C) **What is something that makes you feel angry?**
- 

7. (To C) **Which person is frightened/afraid/scared?** (use child's words)  
[record: right or wrong]  
If wrong, which picture \_\_\_\_\_, then correct: **I think this is the scared person**
  8. (To C) **What is something that makes you feel frightened?**
-

**Part 3: Emotion Stories and Matching (7 minutes)** (doubles as the interviewer score sheet)

Puppet Script: Position the scripts and Interviewer Scoring Sheet alongside yourself so that they are not easily accessible to TC. Read each sentence aloud in an engaging, dynamic manner.

Record responses verbatim and score for valence.

(To TC): **Thanks for trying so hard on that for me; now I have something else for you. I'm going to tell you some short stories about Pat and I want you to tell me how he/she would feel? Happy, Sad, Mad, or Afraid/Scared** (point to the four character-pictures in turn)

Story	Emotion	+	-
How would Pat feel if he/she got a new trike/bike.		1	0
How would Pat feel if he/she couldn't play a game very well, and some of the kids laughed at him or her.		1	0
How would Pat feel if he/she dreamed a monster was chasing her/him?		1	0
How would Pat feel if her/his brother and sister took his/her toy.		1	0
How would Pat feel if she/he had a big birthday party with lots of cake and fun games to play, and presents too.		1	0
How would Pat feel if he/she wanted a bike/trike for her/his birthday, but he/she didn't get one		1	0
How Pat would feel if he/she just built a tower of blocks and YOU knocked it down.		1	0
How would Pat feel if your mom makes YOU give her/him your favorite toy?		1	0
How would Pat feel if he/she dropped his or her ice cream cone.		1	0
How would Pat feel if you wouldn't let her/him play with you		1	0
How would Pat feel if YOU got a great new trike/bike and he/she didn't		1	0
How would Pat feel if you dressed up like a monster and ran after her/him in the dark.		1	0
How would Pat feel if your whole class/school went to Disney World, but he/she was sick and he/she couldn't go.		1	0
How would Pat feel if you acted like you were going to push him/her off a HIGH slide.		1	0
How would Pat feel if you had a big birthday party but he/she couldn't come		1	0
How would Pat feel if she got a prize and you didn't?		1	0

Appendix C – CEEQ

Your Child’s Emotions (continued)  
(CEEQ; Mirabile, 2008; based on Halberstadt, Fox, & Jones, 1993)

The following questions concern how your child expresses their emotions through their expressions, body-posture, and words. Circle the number that best describes your child.

1	2	3	4	5	6	7
Never	A little	Sometimes	Half of the time	Usually	Very often	Always
<b>1. Happy</b>						
a. My child is frequently happy or excited.						1 2 3 4 5 6 7
b. When my child is happy, s/he stays happy for a long time.						1 2 3 4 5 6 7
c. When my child is happy, s/he gets very, very happy.						1 2 3 4 5 6 7
d. When something good happens, my child gets happy or excited very quickly.						1 2 3 4 5 6 7
<b>2. Sad</b>						
a. My child is frequently sad or “blue.”						1 2 3 4 5 6 7
b. When my child is sad, s/he stays sad for a long time.						1 2 3 4 5 6 7
c. When my child is sad, s/he gets very, very sad.						1 2 3 4 5 6 7
d. When something bad happens, my child gets sad very quickly.						1 2 3 4 5 6 7
<b>3. Angry</b>						
a. My child is frequently angry, upset, or mad.						1 2 3 4 5 6 7
b. When my child is angry, s/he stays angry for a long time.						1 2 3 4 5 6 7
c. When my child is angry, s/he gets very, very angry.						1 2 3 4 5 6 7
d. When something bad happens, my child gets angry very quickly.						1 2 3 4 5 6 7
<b>4. Afraid</b>						
a. My child is frequently afraid or scared of things.						1 2 3 4 5 6 7
b. When my child is afraid, s/he stays afraid for a long time.						1 2 3 4 5 6 7
c. When my child is afraid, s/he gets very, very afraid.						1 2 3 4 5 6 7
d. When something scary happens, my child gets scared very quickly.						1 2 3 4 5 6 7

Appendix C – CERQ

Your Child’s Emotions (continued)  
(CERQ; Mirabile, 2008)

Listed below are a number of statements which parents, caregivers, and teachers use to describe how children respond to different feelings. Please read each statement and respond as honestly as you can. There are no right or wrong answers. Circle the number to show how much each question is true for your child.

None	A little	Some	A lot	Very Much
0	1	2	3	4

Think about when your child gets **ANGRY** (for example, when s/he wants something but can’t have it, when s/he has to wait for something they want), and please rate how often they do the following behaviors when they get angry.

- |                                                                                                                                                                                                       |   |   |   |   |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 5. S/he is able to calm him/herself by talking through the problem (e.g., “I’m a big boy;” “I just have to wait a little longer”).                                                                    | 0 | 1 | 2 | 3 | 4 |
| 6. S/he tries to get the object s/he can’t have.                                                                                                                                                      | 0 | 1 | 2 | 3 | 4 |
| 7. S/he asks questions about the forbidden object or why s/he cannot have it (e.g., “When do I get my present?”, “When can I have the candy?”, “Why can’t I have the cookie?”)                        | 0 | 1 | 2 | 3 | 4 |
| 8. S/he watches or stares at the forbidden object (e.g., a candy or toy).                                                                                                                             | 0 | 1 | 2 | 3 | 4 |
| 9. S/he expresses his/her anger by crying, yelling, or screaming.                                                                                                                                     | 0 | 1 | 2 | 3 | 4 |
| 10. S/he shows his/her anger by banging, kicking, throwing things, or hitting things or people.                                                                                                       | 0 | 1 | 2 | 3 | 4 |
| 11. S/he ignores his/her anger and talks to me about something else.                                                                                                                                  | 0 | 1 | 2 | 3 | 4 |
| 12. S/he ignores whatever is making him/her angry and finds a toy to play with, sings, dances, runs around, or finds something else to do.                                                            | 0 | 1 | 2 | 3 | 4 |
| 13. S/he comforts him/herself by thumb sucking, playing with his/her hair, looking at or playing with parts of his/her body or clothes (e.g., fingers, buttons, zippers), or uses a teddy or blanket. | 0 | 1 | 2 | 3 | 4 |
| 14. S/he comes to me for comfort (e.g., reaches up to me, asks me for a hug, climbs into my lap, wants to be held).                                                                                   | 0 | 1 | 2 | 3 | 4 |
| 15. S/he asks me for help in fixing the problem (e.g., getting another child to share).                                                                                                               | 0 | 1 | 2 | 3 | 4 |
| 16. S/he asks, threatens, or does run away from what is making him/her angry, leaves the room, or looks away from it.                                                                                 | 0 | 1 | 2 | 3 | 4 |

17. S/he tries to hold his/her anger inside and/or does not want to show how s/he feels.  
**0                    1                    2                    3                    4**
- Think about when your child gets **SAD** (for example, when s/he wants something but can't have it, when s/he has to wait for something they want), and please rate how often they do the following behaviors when they get sad.
18. S/he is able to calm him/herself by talking through the problem (e.g., "I'm a big girl," "I can find my lost toy").  
**0                    1                    2                    3                    4**
19. S/he tries to get the object s/he can't have anyway.  
**0                    1                    2                    3                    4**
20. S/he asks questions about the object s/he can't have or why s/he cannot have it (e.g., "When do I get my present?", "When can I have the candy?", "Why can't I have the cookie?")  
**0                    1                    2                    3                    4**
21. S/he watches or stares at the object s/he can't have (e.g., a candy or toy).  
**0                    1                    2                    3                    4**
22. S/he shows his/her sadness by crying or pouting.  
**0                    1                    2                    3                    4**
23. S/he shows his/her sadness by banging, kicking, throwing things, or hitting things or people.  
**0                    1                    2                    3                    4**
24. S/he ignores his/her sadness and talks to me about something else.  
**0                    1                    2                    3                    4**
25. S/he ignores his/her sadness and finds a toy to play with, sings, dances, runs around, or finds something else to do.  
**0                    1                    2                    3                    4**
26. S/he comforts him/herself by thumb sucking, playing with his/her hair, looking at or playing with parts of his/her body or clothes (e.g., fingers, buttons, zippers), or uses a teddy or blanket.  
**0                    1                    2                    3                    4**
27. S/he comes to me for comfort (e.g., reaches up to me, asks me for a hug, climbs into my lap, wants to be held).  
**0                    1                    2                    3                    4**
28. S/he asks me for help in fixing the problem (e.g., fixing a broken toy, getting another ice cream cone).  
**0                    1                    2                    3                    4**
29. S/he asks, threatens, or does run away from what is making him/her sad, leaves the room, or looks away from it.  
**0                    1                    2                    3                    4**
30. S/he tries to hold his/her sadness inside and/or does not want to show how s/he feels.  
**0                    1                    2                    3                    4**

Think about when your child gets **AFRAID** or **SCARED** (for example, when s/he is watching a scary movie, meets an unfamiliar person or animal) and please rate how often they do the following behaviors when they get afraid or scared.

- |                                                                                                                                                                                                              |          |          |          |          |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|
| <b>31.</b> S/he is able to calm him/herself by talking through the problem (e.g., “I’m a big boy;” “This is just pretend”).                                                                                  | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>32.</b> S/he tries to face the situation and deal with it.                                                                                                                                                | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>33.</b> S/he asks questions about the event or object (e.g., “Will it hurt me?” or “Is this pretend or make-believe?” or “It’s just TV/a movie, right?”)                                                  | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>34.</b> S/he watches or stares at what makes him/her afraid.                                                                                                                                              | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>35.</b> S/he shows his/her fear by crying, yelling, or screaming.                                                                                                                                         | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>36.</b> S/he shows his/her fear by banging, kicking, throwing things, or hitting things or people.                                                                                                        | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>37.</b> S/he ignores whatever makes him/her afraid and talks to me about something else.                                                                                                                  | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>38.</b> S/he ignores whatever makes him/her afraid and finds a toy to play with, sings, dances, runs around, or finds something else to do.                                                               | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>39.</b> S/he comforts him/herself by thumb sucking, playing with his/her hair, looking at or playing with parts of his/her body or clothes (e.g., fingers, buttons, zippers), or uses a teddy or blanket. | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>40.</b> S/he comes to me for comfort (e.g., reaches up to me, asks me for a hug, climbs into my lap, wants to be held).                                                                                   | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>41.</b> S/he asks me for help in fixing the problem (e.g., asking to turn off a scary movie, put away a scary toy, leave a scary place).                                                                  | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>42.</b> S/he asks, threatens, or does run away from what makes him/her afraid, leaves the room, or looks away from it.                                                                                    | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| <b>43.</b> S/he tries to hold his/her fear inside and/or does not want to show how s/he feels.                                                                                                               | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |

Think about when your child gets very **HAPPY** or **EXCITED** (for example, when s/he is at a birthday party or is playing with a best friend) and needs to calm down because they are **TOO EXCITED** and please rate how often they do the following behaviors when they are too happy or excited.

44. S/he calms him/herself down by talking to him/herself (e.g., “I need to slow down”).  
**0                    1                    2                    3                    4**
45. S/he puts away or stops playing with whatever is making him/her too excited.  
**0                    1                    2                    3                    4**
46. S/he asks questions like “Why do I have to calm down?”  
**0                    1                    2                    3                    4**
47. S/he keeps watching or playing with whatever is making him/her excited.  
**0                    1                    2                    3                    4**
48. S/he shows his/her excitement by screaming, shouting, or running around.  
**0                    1                    2                    3                    4**
49. S/he shows his/her excitement by banging, kicking, throwing things, or hitting things or people.  
**0                    1                    2                    3                    4**
50. S/he is able to ignore whatever makes him/her too excited afraid and can talk to me about something else instead.  
**0                    1                    2                    3                    4**
51. S/he ignores whatever makes him/her too excited and finds a different toy to play with, or finds something else to do.  
**0                    1                    2                    3                    4**
52. S/he calms down by thumb sucking, playing with his/her hair, looking at or playing with parts of his/her body or clothes (e.g., fingers, buttons, zippers), or uses a teddy or blanket.  
**0                    1                    2                    3                    4**
53. S/he comes to me for comfort or to help calm down (e.g., reaches up to me, asks me for a hug, climbs into my lap, wants to be held).  
**0                    1                    2                    3                    4**
54. S/he asks me for help calming down (e.g., asking you to put away a fun toy).  
**0                    1                    2                    3                    4**
55. S/he asks, threatens, or does run away from whatever is making him/her too excited, leaves the room, or looks away from it.  
**0                    1                    2                    3                    4**
56. S/he tries to hold his/her excitement inside and/or tries not to show how s/he feels.  
**0                    1                    2                    3                    4**

Appendix C – Items removed from the CBCL 1½-5

Contaminated “aggression” items removed from the CBCL:

- 35. Gets in many fights
- 40. Hits others
- 53. Physically attacks people

Contaminated “expressivity” items removed from the CBCL

- 29. Easily frustrated
- 37. Gets too upset when separated from parents
- 43. Looks unhappy without good reason
- 44. Angry moods
- 47. Nervous, highstrung, or tense
- 51. Shows panic for no good reason
- 66. Screams a lot
- 68. Self-conscious or easily embarrassed
- 79. Rapid shifts between sadness and excitement
- 81. Stubborn, sullen, or irritable
- 83. Sulks a lot
- 85. Temper tantrums or hot temper
- 87. Too fearful or anxious
- 90. Unhappy, sad, or depressed
- 99. Worries

**University Committee for the Protection  
of Human Subjects in Research  
University of New Orleans**

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*Campus Correspondence*

**Laura Scaramella  
Scott Mirabile  
Kristin Callahan  
University of New Orleans  
Department of Psychology, GP2001,  
New Orleans, LA 70148**

October 10, 2007

RE: IRB\_Application 9.4.07

Based on your submission of 10/2/07 in response to committee concerns regarding IRB# Application 9.4.07, the project is approved as revised.

Please remember that approval is only valid for one year from the approval date. Any changes to the procedures or protocols must be reviewed and approved by the IRB prior to implementation. Use the IRB number listed on this letter in all future correspondence regarding this proposal.

If an adverse, unforeseen event occurs (e.g., physical, social, or emotional harm), you are required to inform the IRB as soon as possible after the event.

Best of luck with your project!

Sincerely,



Richard B. Speaker, Jr., Ph.D.  
Associate Chair  
University Committee for the Protection of Human Subjects in Research

## Vita

Scott Mirabile was born in New Orleans, Louisiana and received his B.A. in psychology from Clemson University and M.S. in psychology from the University of New Orleans. Scott is currently an Assistant Professor of Psychology at St. Mary's College of Maryland in St. Mary's City, Maryland.