

DIFFERENTIAL PARENTING AND PARENTS' PERCEPTIONS OF THEIR CHILDREN:  
CAN ATTACHMENT HELP EXPLAIN THIS RELATIONSHIP?

by

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## ABSTRACT

Research has suggested that the differential experiences of children in the same family were often greater than those of children across different families. Although studies identified potential moderators (e.g., age, gender) associated with differential parenting, there has been less investigation of mediators. The current study examined attachment as a mediator in the relationship between differential parenting and parents' perceptions of their children. As part of this study, 132 culturally diverse mothers with children who ranged in age from 2- to 10-years rated how differently they treat their own children, their children's attachment, their parenting characteristics, and their children's functioning (i.e., temperament and emotional and behavioral functioning). Meditational and hierarchical regression analyses suggested the importance of examining both parenting characteristics as well as attachment variables in understanding how mothers rated both their older and younger children. In particular, results demonstrated that the parent-child attachment relationship is particularly important for older children in families with a younger sibling present. For younger siblings, this study corroborated existing research and found that punitive parenting was especially important in predicting parents' ratings of these children's emotional and behavioral functioning. These findings are particularly helpful for professionals working with families with multiple children and with parents who are reporting troubling behaviors in these children.

## TABLE OF CONTENTS

LIST OF FIGURES.....	vi
LIST OF TABLES.....	vii
CHAPTER ONE: INTRODUCTION.....	1
Parenting Behaviors.....	2
Differential Parenting.....	5
Children’s Understanding of Differential Parenting .....	9
Effects of Differential Parenting.....	11
The Mediating Role of Attachment.....	14
Attachment in the Parent-Child Relationship.....	15
Attachment Across the Lifespan .....	17
Young Child Outcomes.....	20
The Present Study .....	22
CHAPTER TWO: METHODOLOGY .....	26
Participants .....	26
Procedure.....	27
Measures.....	28
Demographics.....	28
Differential Parenting.....	28
Parenting Behavior.....	29
Attachment.....	30
Children’s Temperament.....	31
Children’s Behavior Problems.....	32
CHAPTER THREE: RESULTS .....	33
Descriptive Statistics .....	33
Differences in Mothers’ Ratings of Their Older and Younger Children .....	34
Correlations.....	35
Mediations .....	37
Differential Parenting, Attachment, and Children’s Internalizing and Externalizing Problems.....	37

Children’s Temperament, Parenting Behaviors, and Children’s Internalizing and Externalizing Problems. ....	42
Hierarchical Regression Analyses.....	47
Differential Parenting, Attachment, and Behavior Problems. ....	47
Children’s Temperament, Parenting, and Children’s Behavior Problems. ....	49
CHAPTER FOUR: DISCUSSION.....	52
APPENDIX A: TABLES.....	59
APPENDIX B: DEMOGRAPHICS QUESTIONNAIRE.....	78
APPENDIX C: SIBLING INVENTORY OF DIFFERENTIAL EXPERIENCE.....	82
APPENDIX D: ALABAMA PARENTING QUESTIONNAIRE- PRESCHOOL VERSION.....	84
APPENDIX E: EXPERIENCE IN CLOSE RELATIONSHIPS SCALE.....	86
APPENDIX F: EMOTIONALITY ACTIVITY SOCIABILITY TEMPERAMENT SURVEY.....	91
APPENDIX G: CHILD BEHAVIOR CHECKLIST.....	93
APPENDIX H: IRB HUMAN SUBJECTS PERMISSION LETTER.....	102
REFERENCES.....	104

## LIST OF FIGURES

Figure 1: Mediation Model 1 .....	38
Figure 2: Mediation Model 2 .....	43

## LIST OF TABLES

Table 1: Descriptive Statistics .....	59
Table 2: Correlations Among Parents' Differential Treatment, Parenting Behaviors, Attachment, and Young Child Outcomes.....	62
Table 3. Mediational Regression Analyses for Differential Affection, Attachment, and Older Children's Internalizing Problems .....	64
Table 4. Mediational Regression Analyses for Differential Parenting, Attachment, and Older Children's Externalizing Problems .....	65
Table 5. Meditational Regression Analyses for Children's Temperament, Parenting Behaviors, and Older Children's Internalizing Problems .....	66
Table 6. Meditational Regression Analyses for Children's Temperament, Parenting Behaviors, and Younger Internalizing Problems .....	67
Table 7. Meditational Regression Analyses for Children's Temperament, Parenting Behaviors, and Older Children's Externalizing Problems .....	68
Table 8. Meditational Regression Analyses for Children's Temperament, Parenting Behaviors, and Younger Externalizing Problems .....	69
Table 9. Hierarchical Regression Analyses for Differential Parenting, Older Children's Attachment, and Internalizing Behaviors .....	70
Table 10. Hierarchical Regression Analyses for Differential Parenting, Younger Children's Attachment, and Internalizing Behaviors .....	71
Table 11. Hierarchical Regression Analyses for Differential Parenting, Older Children's Attachment, and Externalizing Behaviors .....	72
Table 12. Hierarchical Regression Analyses for Differential Parenting, Younger Children's Attachment, and Externalizing Behaviors .....	73
Table 13. Hierarchical Regression Analyses for Older Children's Temperament, Parenting Behaviors, and Internalizing Behaviors .....	74
Table 14. Hierarchical Regression Analyses for Younger Children's Temperament, Parenting Behaviors, and Internalizing Behaviors .....	75
Table 15. Hierarchical Regression Analyses for Older Children's Temperament, Parenting Behaviors, and Externalizing Behaviors.....	76
Table 16. Hierarchical Regression Analyses for Younger Children's Temperament, Parenting Behaviors, and Externalizing Behaviors.....	77

## CHAPTER ONE: INTRODUCTION

Parenting long has been regarded as the most crucial component in shaping the development of children and adolescents, with the family being the context in which young children learn to navigate socialization (Thomas & Chess, 1977). In an attempt to understand optimal development, researchers studied differences across families as well as the effects of these differences on a myriad of outcome variables. More recently, the focus shifted to within-family differences. This shift coincided with an increased interest in the nonshared environment and its influence on development (see Daniels & Plomin, 1985; Plomin & Daniels, 1987). The nonshared environment can be defined as the environmental features that differ for children in the same family and that contribute to differential outcomes. These features can be either real or perceived, and a combination of these factors (including interactions with parents, interactions with siblings, and individual events) results in a different environmental experience for children in the same family (Dunn & Plomin, 1990). Further, the differential experiences of children in the same family are often greater than those of children across different families (Plomin & Daniels, 1987). Given that studies on parenting now are recognizing just how different the same family environment can be for siblings, further understanding of these differences is needed.

Although more research is being conducted on the differential experiences of siblings and the effects that such differential experiences can have on development, few studies focused on parents' perceptions of their children's emotional and behavioral functioning as they relate to



these differential experiences. Recently, research focused on children's perceptions of their parents' styles and behaviors (see Ablow, Measelle, Cowan, & Cowan, 2009; Kowal, Kramer, Krull, & Crick, 2002; Yahav, 2007) but not on parents' perceptions of their own behaviors. As a result, the present study attempted to add to the literature regarding the relationship between parents' differential treatment of their children and their perceptions of these children's emotional and behavioral functioning. Further, this study examined children's attachment to their parents as a potential mediator of this relationship. To provide a context for the inclusion of these variables in this study, each of these variables will be discussed here.

### Parenting Behaviors

Parenting behaviors often were classified into two constellations. One constellation of parenting behaviors consisted of positive characteristics (e.g., warmth, engagement, support, responsiveness, consistency, stimulation). The other constellation consisted of negative characteristics (e.g., hostility, punitiveness, inconsistency, harshness; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). Positive parenting behaviors were associated with higher levels of child competence in areas such as cognitive functioning and behavioral regulation. Conversely, negative parenting behaviors were associated with the development of emotional and behavioral problems (Patterson, 1982). Many important facets of children's development (e.g., emotional and behavioral functioning, intellectual achievement, social competence) were associated directly with parenting behaviors (Belsky, 1984).

Until recently, the majority of studies regarding parenting behaviors focused on the differences between authoritarian, authoritative, and permissive parenting styles and the effects of these parenting styles on children (Baumrind, 1971). According to Baumrind (1971),

authoritative parents set clear standards for their children, encouraged children's individuality and independence, and enforced rules firmly but fairly. In contrast, authoritarian parents emphasized obedience, respect for authority, and tradition while discouraging verbal give-and-take. Finally, parents who used a permissive style were relatively non-controlling, used minimal punishment, and made few demands on their children.

The most frequent and well-documented findings from this parenting rubric indicated that children of authoritative parents (i.e., parents who are both firm and encouraging) experienced the most positive outcomes, including better performance in high school (Boon, 2007; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Heaven & Ciarrochi, 2008; Steinberg, Lamborn, Dornbusch, & Darling, 1992), more effective coping strategies (Chan, 2011; Dusek & Danko, 1994; Kritzas & Grobler, 2005), and better interpersonal relationships (Hall & Bracken, 1996; Milevski, Schlechter, & Machlev, 2011). Steinberg and colleagues (1992) attributed these children's better academic performance to their authoritative parents' encouragement to succeed and become more involved in academic pursuits. Chan (2011) also suggested that authoritative parents' supportive responses to their children's emotional expressions promoted effective coping strategies. Further, Kristal (2005) found that children of authoritative parents were better adjusted and enjoyed a more positive self-concept. Also, authoritative parenting fostered secure attachment relationships between children and parents and a greater sense of autonomy (Karavasilis, Doyle, & Markiewicz, 2003). These authors indicated that authoritative parents' encouragement of their children's autonomy coupled with behavior monitoring was related to these children's secure attachment.

Meanwhile, children of authoritarian parents (i.e., parents who emphasize obedience and allow little communication) showed both positive and negative outcomes in the literature. With regard to positive outcomes, Lamborn, Mounts, Steinberg, and Dornbusch (1991) found that these children performed well in school and were less likely than their peers to engage in deviant behavior. These authors also found, however, that children of authoritarian parents lacked self-confidence and reported low levels of social and academic abilities (Lamborn et al., 1991). Additionally, elementary-aged Chinese children who were treated harshly by their parents exhibited both proactive and reactive aggression (Xu, Farver, & Zhang, 2009). These authors described proactive aggressive as being purposeful and reward-driven, whereas reactive aggression was conceptualized as hostile and frustrated behavior in response to a threat.

Finally, children of permissive parents (i.e., parents who make few demands) also exhibited negative symptoms and behaviors. For example, Kristal (2005) found that these children displayed more externalizing and immature behaviors than children of authoritative or authoritarian parents. In a study of internalizing and externalizing behaviors from early childhood through adolescence, Williams and colleagues (2009) found that preschoolers with permissive parents demonstrated more internalizing problems than other children. Additionally, these authors demonstrated that adolescents with permissive parents were more likely to engage in deviant activities (e.g., school misconduct, substance use). Further, children with permissive parents showed poor impulse control and were more demanding than their peers (Kristal, 2005).

Much of the parenting literature focused on Baumrind's (1971) classifications and their relationship to children's outcomes. Although these classifications were associated consistently with children's outcomes, the parenting behaviors that comprised each classification deserve to

be investigated further. In order to better understand children's outcomes (especially regarding their emotional and behavioral functioning), examining specific parenting behaviors was necessary (Darling & Steinberg, 1993). Further, researchers now focused more on how parenting behaviors can differ across children within the same family unit as opposed to examining between family differences. Thus, more work needed to be done to examine differential parenting within the family. This study examined how parents' perceptions of differential treatment of their children related to these children's emotional and behavioral functioning.

### Differential Parenting

Regardless of the parenting behaviors that parents use, they do not always treat their individual children in exactly the same way, a concept labeled as differential parenting. For the purposes of this study, differential parenting was defined as the way in which parents treat two or more children in the same family differently (Turkheimer & Waldron, 2000). The concept of differential parenting is not a new one. For example, Alfred Adler's individual psychology focused on an individual's position relative to others. Specifically relevant to the current study, Adler examined children's relationships to their siblings as a predictor of psychosocial outcomes. He posited that parents' differential treatment of siblings resulted in jealousy and rivalry in the sibling relationship; these characteristics affected later life choices and personality development (Booth, Crouter, Bianchi, & Seltzer, 2008). A more recent view of the origin of differential parenting came from the family systems perspective. This theory posited that differential treatment of siblings in the same family stemmed from individual child characteristics (e.g., age, gender, temperament) that differed across siblings (Jeon, 2008; McHale & Pawletko, 1992;

Salmon, Shackelford, & Michalski, 2012). Family systems theory further suggested that conflicts within the family (e.g., divorce, illness) created alliances between parents and children, thereby affecting parents' relationship with their other children and resulting in differential treatment (Brody, Stoneman, & McCoy, 1994; Frank, 2007; Wolf, Fisman, Ellison, & Freeman, 1998; Young & Ehrenberg, 2007).

When considering individual child characteristics that were related to differential treatment of siblings, the most widely studied child characteristic was gender. For example, Dunn, Bretherton, and Munn (1987) found that mothers discussed feelings more frequently with their 18-month old girls than with their 18-month old boys. Further, Cervantes and Callanan (1998) observed that mothers were likely to use emotional explanations (e.g., 'he feels sad because he hurt himself') with their preschool sons but only emotional labels (e.g., 'he feels sad') with their preschool daughters. Another line of research indicated that parents, particularly fathers, spent more time with same-sex children (Crouter, Manke, & McHale, 1995; Tucker, McHale, & Crouter, 2003). This increased time could lead to differential treatment.

Another child characteristic that was hypothesized to influence parents' treatment of children within the same family was child age. Research in this area was mixed. Some studies indicated that younger siblings were favored (Furman & Buhrmester, 1985; Harris & Howard, 1985), whereas other research suggested that older siblings enjoyed more privileges due to their increased responsibilities (Hilton, 1967). Furman and Lanthier (2002) also demonstrated that first born children were more susceptible to parental influence than later born children.

Attempting to understand family dynamics, Feinberg, Neiderhiser, Simmens, Reiss, and Hetherington (2000) posited that older siblings compared their treatment with younger siblings to

secure their place of dominance, whereas younger siblings compared to obtain privileges similar to those enjoyed by older siblings.

Another line of research explored children's personality traits as potential moderators of parents' differential treatment (see Aunola & Nurmi, 2005; Lengua & Kovacs, 2005; McGuire, Dunn, & Plomin, 1995). These studies demonstrated that children's behavior problems predicted more negative parenting behaviors (Caspi & Moffit, 1995; Pettit, Laird, Dodge, Bates, & Criss, 2001). Further, irritability in infancy and toddlerhood also was associated with negative parenting practices, such as unresponsiveness, harsh control (Bates, Pettit, Dodge, & Ridge, 1998), and inconsistent discipline (Lengua & Kovacs, 2005). This line of research posited that children's temperament (and behavior problems, in particular) led parents to demonstrate differential treatment.

Thomas, Chess, and Birch (1968) defined temperament as the "characteristic tempo, rhythmicity, adaptability, energy expenditure, mood, and focus of attention of a child, independent of the context of any specific behavior" (p. 4). Research showed that temperament was a relatively stable construct that was biologically based and influenced by the environment and individual experiences (Bates, 1989; Rothbart, Ahadi, & Evans, 2000). Thomas and Chess' (1977) finding that temperament was established considerably by 2- to 3-months of age supported its biological basis. Kristal (2005) demonstrated that children's temperament affected their development and behavior as well as the behavior of those around them. Thus, children's temperament may play a role in the parent-child relationship by eliciting certain parenting behaviors.

Although many models of temperament were proposed, all models eventually described three constellations of temperament. Individuals with an *Easy Temperament* demonstrated a positive approach response to novel stimuli, adapted easily to changes in their environment, and had a mild to moderately intense mood (Thomas & Chess, 1977). Individuals with a *Slow-To-Warm-Up Temperament* reacted mildly to positive and negative events and were slow to adjust to changes in their environment. Finally, those with a *Difficult Temperament* withdrew from novel stimuli, displayed predominantly negative and intense mood, and showed rigidity with regard to change (Thomas & Chess, 1977). Further, Thomas and Chess (1977) stated that children's temperament influenced children's reactions to parental practices and helped to shape parents' feelings toward the children themselves. Although the current study did not address temperament specifically, more research will be needed to determine temperament's potential role in explaining differential parenting and parents' perceptions of their children's behaviors.

Thus, overall, research showed that parents interacted differently with each of their children and that these discrepancies in treatment predicted differences in siblings' social and emotional development (Barrett-Singer & Weinstein, 2000; Brody, Stoneman, & MacKinnon, 1986; Dunn, Stocker, & Plomin, 1990). The literature in this area suggested that higher levels of positivity (e.g., positive affect and non-biased responsiveness) in the parent-child relationship were associated with higher levels of self-esteem, positive affectivity, and prosocial behavior in the sibling relationship. Conversely, research suggested that higher levels of parental negativity, control, and intrusiveness were associated with more internalizing and externalizing behaviors and conflict between siblings. These findings were demonstrated in children ranging from

preschool to college age (Brody, Copeland, Sutton, Richardson, & Guyer, 1998; Dunn et al., 1990; Kramer & Kowal, 2005; Volling & Belsky, 1992).

### Children's Understanding of Differential Parenting

Regardless of the origin of differential parenting, its implications for children deserved to be examined. In discussing the causes and consequences of sibling relationship quality, Brody (1998) suggested that, based on all theories of differential parenting, differential treatment creates negativity in the sibling relationship by introducing anger and a sense of rivalry. Research in this area confirmed this suggestion, concluding that sibling relationships were characterized by less positivity and more negativity when parents showed unequal quantities of positive and negative affect, responsiveness, and intrusiveness to their different children (Brody et al., 1986; McHale, Crouter, McGuire, & Updegraff, 1995; Stocker, Dunn, & Plomin, 1989). Although differential parenting can create negativity and a sense of rivalry in the sibling relationship, there were instances where effective parenting required differential treatment.

For example, Brody (1998) suggested that differential treatment of children was not always negative but, in fact, can be a sensitive practice. For example, 10-year old and 15-year old children would be at different developmental levels and, thus, would require differing levels of structure and guidance from their parents. Further, children with physical disabilities may need more parental resources than their typically developing siblings. As these examples illustrate, differential parenting actually may be appropriate in many instances. The harm that was associated commonly with parents' differential treatment comes with children's perception of unfairness regarding this treatment, however (Brody, 1998). When children perceived that their parents were employing differential treatment, they may feel less valued or that their



parents were less concerned for them in comparison to their siblings. Further, children may question their self-perceptions, and sibling relationships may be strained (Kowal & Kramer, 1997). Kowal and Kramer (1997) found that children who reported being treated differently than their siblings but perceived this treatment as fair enjoyed more positive sibling relationships. This finding suggested that children's attributions about their parents' differential treatment (i.e., the legitimacy and fairness of the treatment) may explain how children were affected (McHale & Pawletko, 1992).

In fact, research demonstrated that children were extremely perceptive about their family environment and often were very accurate in their perceptions (Brody et al., 1986; Stocker, Dunn, & Plomin, 1989). Further, Festinger's (1954) seminal work on social comparisons concluded that humans used comparisons of others' opinions and abilities to gain information about themselves. More recent research on social comparisons indicated that individuals preferred to compare themselves with similar others (Wills, 1991). Thus, it was reasonable to expect that siblings would compare themselves to each other, as they share genetic material and environmental experiences. If children were treated differently relative to their siblings and they perceived this differential treatment as being unfair, children's adjustment may be compromised. To illustrate this point, McHale, Updegraff, Jackson-Newsom, Tucker, and Crouter (2000) found that children's fairness ratings of differential treatment (as opposed to the presence or absence of perceived differential treatment) were tied systematically to outcomes, such as self-esteem and positivity in the sibling relationship. Similarly, Kowal and colleagues (2002) found that, although differential parental control was associated with more externalizing problems in 11- and 14-year old siblings, these siblings experienced lower levels of internalizing problems and

greater self-worth when they reported that this differential treatment was fair. Thus, children's perceptions played an important role in the development of negative symptoms in the context of parents' differential treatment.

### Effects of Differential Parenting

Given these findings, it was important to consider just how parents' differential treatment may be related to children's difficulties in multiple domains. Many studies were conducted that focused on the detrimental effects of parents' differential treatment on siblings' relationships (see Brody et al., 1994; McHale, Crouter, McGuire, & Updegraff, 1995). These studies indicated that children could harbor feelings of anger and resentment when they felt that their parents were responding in more positive ways to their siblings relative to themselves. Further, higher levels of positivity in parent-child relationships were linked to more prosocial behavior and positive affectivity in the sibling relationship. Conversely, negativity in parent-child relationships was associated with more self-protective, aggressive behaviors between siblings (Brody et al., 1994).

In addition to straining sibling relationships, parents' differential treatment negatively impacted parent-child relationships. As noted above, children's perceptions of the fairness and justifiability of parents' differential treatment predicted their responses to this treatment (McHale & Pawletko, 1992). Kowal, Krull, and Kramer (2004) corroborated this finding and showed that the magnitude of parents' differential treatment was associated with more negativity in parent-child relationships, but only when children perceived this treatment as unfair. These authors stressed the importance of obtaining all family members' perceptions of differential treatment and recommended that families have open discussions regarding potential reasons for such treatment. In such family meetings, parents could provide children with plausible reasons for

their differential treatment, allowing children to understand, challenge, or accept these behaviors. The fact remained that some children perceived differential treatment from their parents as unfair and subsequently experienced negative consequences.

In a longitudinal study, McGuire and colleagues (1995) examined mothers' perceptions of their own differential treatment of their 4-year old children and these children's externalizing problems three years later. Higher reports of differential treatment (including differential attention and discipline) were associated significantly with mother and teacher reports of children's externalizing problems. Volling and Elins (1998) also found that preschool children exhibited greater internalizing and externalizing problems when their mothers and fathers disciplined them more frequently and harshly than their younger siblings. Negative consequences, including more negativity, also were noted for children who ranged in age from 5- to 10-years and who perceived parents' differential treatment as unfair (Boyle, Jenkins, Georgiades, Cairney, Duku, & Racine, 2004; Brody, Stoneman, & McCoy, 1992; Stocker et al., 1989) and fewer prosocial interactions (Atzaba-Poria & Pike, 2008; Bryant & Crockenberg, 1980) in the sibling relationship. Thus, the literature in this area confirmed that perceptions of parents' differential treatment were associated with emotional and behavioral difficulties in early and middle childhood.

More recently, research focused on more long-lasting effects of parents' differential treatment. Investigators examined how being treated differently relative to a sibling was related to academic success, emotional well-being, and other psychological variables. Specifically, Tamrouti-Makkink, Semon-Dubas, Gerris, and van Aken (2004) studied adolescents' perceptions of parents' differential treatment and found that adolescents who reported experiencing more

discipline and less warmth than their siblings reported lower levels of self-esteem and greater internalizing problems. These authors noted that their design was cross-sectional, however. Richmond, Stocker, and Rienks (2005) conducted a longitudinal analysis examining the effects of parents' differential treatment on sibling relationship quality and externalizing factors over time. These authors found that, as adolescents were less favored than their siblings over the course of a six-year period, their externalizing problems increased. Additionally, those siblings whose relationships improved over time reported lower levels of depressive symptoms (Richmond et al., 2005).

It followed logically that parents' differential treatment would continue to affect adolescents as they go through college. The transition to college can be challenging for adolescents, as it can serve as a time of growing autonomy and added responsibility (Arnett, 2000). College students' perceptions of differential treatment were studied and were related significantly to negative outcomes. For example, Barrett-Singer and Weinstein (2000) examined Asian American and European American college students' perceptions of their parents' differential affection and control. They found that the students who reported more differentially favorable treatment (i.e., more affection and less control) also reported greater academic achievement, intellectual ability, and global self-worth.

Brody and colleagues (1998) also studied psychological symptoms in relation to parents' favoritism in a group of college students. Brody and colleagues (1998) defined favoritism as "a family process in which parents treat, or are perceived to treat, one or some of their children more positively than they do their other children" (p. 269). Thus, disfavored children were those who were singled out for differential negative treatment. These authors found that disfavored

college students reported more fear in response to interpersonal vignettes and more shame on the Personal Feelings Questionnaire 2 (PFQ2; Harder & Zalma, 1990) than favored students. Brody and colleagues (1998) stated that these findings highlighted disfavored late adolescents' risk for internalizing problems. They hypothesized that these individuals internalized the view that they were in some way bad or that they deserved to be disfavored. Overall, research showed that parents' differential treatment was related to children's negative outcomes (especially when it was perceived as unfair) from preschool to college.

### The Mediating Role of Attachment

Given the breadth of research demonstrating the negative relationship between differential treatment and negative outcomes, investigators were interested in *how* parents' differential treatment can be detrimental to children and adolescents. Factors such as age (McHale et al., 2000; Mills & Rubin, 1992; Roskam & Meunier, 2009), gender (Block, 1983; Vandenberg-Hopler, Roskam, & Pirot, 2006), and children's personality traits (Aunola & Nurmi, 2005; Lengua & Kovacs, 2005; McGuire et al., 1995) were examined with mixed results. Although it may hold that children's characteristics (e.g., temperament, gender) were related to the degree of parents' differential treatment, this study investigated how parents' perceptions of their differential treatment were associated with their perceptions of their children's internalizing and externalizing problems. Further, many studies focused on parents' differential treatment, its effects on psychological well-being, and potential moderators (i.e., child characteristics). Nonetheless, there was a relative lack of investigation into potential mediators of this relationship. The present study examined attachment as a possible mechanism by which parents'

differential treatment was related to their perceptions of their children's internalizing and externalizing problems.

### [Attachment in the Parent-Child Relationship](#)

John Bowlby's attachment theory provided a sound framework for investigating parent-child relationships and was considered a vital theory for personality and social-emotional development (Colin, 1996; Weinfield, Sroufe, Egeland, & Carlson, 1999). Bowlby (1969) asserted that infants' attempts to maintain proximity to their caregivers provided an indication of attachment. Caregivers provided infants with a sense of comfort and support while also serving as a *secure base* (i.e., a source from which the infant could separate and explore while being able to return when necessary; Bowlby, 1978). Attachment behaviors did not only serve to maintain proximity to caregivers but also taught young children about themselves and about the world in which they live (Bowlby, 1988a).

Internal working models were created from the information that children received when interacting with their caregivers. These working models then dictated how children viewed themselves and their environments (Bowlby, 1988a). Individuals' internal working models changed throughout the course of their lives, and attachment behaviors continued to be exhibited into adulthood (Bowlby, 1988b). Bowlby further hypothesized that attachment relationships were associated with psychological symptoms (e.g., depression, anxiety) when caregivers were not providing a secure base (Bowlby, 1978).

Extending the seminal work of John Bowlby, Mary Ainsworth sought to classify infants into attachment categories when using direct observations. Ainsworth and colleagues worked with mothers and their babies in Uganda and Baltimore, Maryland, to understand individual

differences in attachment patterns (Ainsworth, 1967). Infant behaviors, such as crying, clinging to the mothers, and disinterest, as well as mothers' behaviors toward their infants were coded to classify infants who were attached securely, attached insecurely, and who did not yet show clear attachment patterns. Ainsworth, Blehar, Waters, and Wall (1978) refined their observational technique and developed the *Strange Situation*, an efficient way to measure attachment security. Briefly, the *Strange Situation* involved a laboratory procedure in which caregivers and their infants participated in play, separation, and reunion sequences.

Based on classifications from the paradigm, children with a secure attachment style showed distress upon separation from their caregiver but were able to be comforted easily upon reunion (Ainsworth et al., 1978). In contrast, children with an anxious-avoidant attachment style (i.e., one type of insecure attachment) showed no distress when separated from their caregiver and interacted readily with a stranger (i.e., a confederate). These children did not exhibit emotion when reunited with their caregivers (Ainsworth et al., 1978). Finally, children who were characterized as having a resistant or ambivalent attachment style (i.e., another type of insecure attachment) experienced great distress upon separation from their caregiver and were not able to be calmed or soothed even though they sought close physical proximity upon reunion (Ainsworth et al., 1978). Adding to the seminal work of John Bowlby and then Mary Ainsworth, Main and Solomon (1986) proposed that some children did not fit into the aforementioned classifications; these children displayed a mix of behaviors. Further, these children were described as being in a daze and appeared confused or apprehensive in the presence of caregivers (Main & Solomon, 1986). According to these authors, these 'disorganized' or 'disoriented'

children's attachment behaviors were thought to be due in part to their caregivers' inconsistencies.

Research showed that most children enjoyed a secure attachment relationship but that some exhibited insecure styles. Even fewer children experienced the more distressing disorganized style, sometimes known as dysregulated attachment. The *Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision (DSM-IV-TR*; American Psychiatric Association, 2000) included a Reactive Attachment Disorder diagnosis to describe those children who experienced distressed attachment, but many in the field were dissatisfied with this classification and consequently created alternative descriptions (Boris, Zeanah, Larrieu, Scheeringa, & Heller, 1998). Studies were conducted currently to disentangle the mechanisms behind dysregulated and insecure attachment styles given the propensity of these styles to carry over into future relationships (Bowlby, 1988b).

### [Attachment Across the Lifespan](#)

Since researchers such as Bowlby, Ainsworth, and others introduced the main tenets of attachment theory, studies were conducted to examine the effects of parent-infant relationship quality on infants' development into childhood, adolescence, and adulthood. Beginning in infancy, those classified as secure enjoyed more adaptive outcomes (relative to those classified as insecure or dysregulated). Schore (2001) indicated that infants with a secure attachment relationship learned effective coping strategies from the consistent, predictable interactions that they had with their caregivers. These organized, consistent interactions led to increased emotion regulation in infants and the development of adaptive, emotional communication between infants and their caregivers (Schore, 2001). Further, when infants experienced consistency from their



caregivers, they gained a sense of security while learning simultaneously that curiosity was encouraged (Grossman, Grossman, & Zimmerman, 1999). Research in this area demonstrated that the primary attachment figure was fundamental in determining infants' attachment style.

As mentioned above, Bowlby (1988a) proposed that infants forged internal working models based on their interactions with their primary caregivers and that this model provided information about the self as well as the environment. If infants learned through experience that their caregivers were available and responsive whenever necessary, they built a certain confidence in that figure. Bowlby (1988a) suggested that this confidence built throughout infancy, childhood, and adolescence and was carried into adulthood. Further, the internal working models that were created based on interactions with caregivers translated to other relationships as well (e.g., peers and romantic partners; Bowlby, 1973). In fact, one of attachment theory's principal tenets was that internal working models transformed into social information processing patterns. These models were either favorable or unfavorable (based on the security of the attachment relationship) and led to either adaptive or maladaptive social information processing patterns (Dykas & Cassidy, 2011).

Attachment theory (about the development of internal working models of the self, the attachment figure, and relationships) was conceptualized as a 'bridge' between infants' experience of sensitive or insensitive care and subsequent beliefs and expectations regarding later relationships (Dweck & London, 2004; Thompson, 2008). Bowlby (1973) argued that internal working models were sophisticated. They were tested by evidence gained from experience, examined for inconsistencies, and used to make predictions for future relationships.

Thompson (2008) also posited that individuals formed new relationships and subsequently behaved in ways that were consistent with (and helped to confirm) their internal working models.

For example, children with secure attachments may expect friendliness and responsiveness from unfamiliar children based on how they have internalized their interactions with their caregivers. Because children with secure attachments were likely to enter into relationships in a positive manner, unfamiliar children were more likely to reciprocate this behavior and confirmed the expectations of securely attached children. Conversely, children with insecure attachments may be aloof and apprehensive when interacting with unfamiliar children and subsequently prompt the expected level of unfriendliness from unfamiliar children. Bowlby did not use the term ‘schema’ when referring to how internal working models come to predict future behavior. Nonetheless, he suggested that individuals had a tendency to perceive their world (especially their social world) in ways that were consistent with the information that they gathered from their primary attachment relationship (Bowlby, 1973).

In recent decades, attention turned to the importance of attachment across the life span. Using Bowlby’s concept of a secure base, Feeney and Thrush (2010) suggested that adults supported a relationship partner’s exploration, goal-driven behavior, and personal growth by providing a secure base. These authors stated that the secure base must be available in the event that it was needed, must not interfere unnecessarily with exploration, and must encourage and accept exploration. Because research demonstrated that early attachment relationships with caregivers had important consequences for future relationships (see Hazan & Shaver, 1987), it was essential to measure attachment security in adulthood.

The Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) was the most widely used and validated assessment of adult attachment and focused on the coherence of adults' portrayals of their childhood relationships with their parents. Research demonstrated that adults' attachment style (as measured by the AAI) was associated with the quality of their romantic relationships (Holland & Roisman, 2010; Treboux, Crowell, & Waters, 2004). In addition to predicting functioning in attachment-related interpersonal contexts, adults' attachment classifications predicted functioning in other areas. For example, adults and adolescents classified as secure enjoyed higher quality first-time interactions with peers (Feeney, Cassidy, & Ramos-Marcuse, 2008) and had higher quality peer relationships in general (Allen, Moore, Kuperminc, & Bell, 1998; Zimmerman, Maier, Winter, & Grossmann, 2001). Attachment remained important across the lifespan. In this study, attachment was proposed to mediate the relationship between parents' differential treatment of their children and their perceptions of their children's internalizing and externalizing problems.

### Young Child Outcomes

As detailed above, the effects of parents' differential treatment can be pervasive and long-lasting. The current study investigated young children's internalizing and externalizing problems by asking parents to provide ratings of their young children's emotional and behavioral functioning. Internalizing problems were considered to be those behaviors that were directed inward and included withdrawal, anxiety, psychosomatic complaints, low self-worth, and social regression (Achenbach, 1978; Achenbach & Rescorla, 2001). Externalizing problems were considered to be those behaviors that were directed outward and included aggression, irritability, hyperactivity, and temper tantrums (Achenbach, 1978; Achenbach & Rescorla, 2001).

Children's perceptions of their parents also were important in the development of socioemotional well-being. When children perceived that their parents were rejecting them (i.e., expressing overt hostility and aggression or ignoring them), they developed low self-esteem and experienced difficulty with establishing relationships with others (Betts, Gullone, & Allen, 2009). A meta-analysis by Khaleque and Rohner (2002) demonstrated that parental rejection had consistently negative effects on the emotional and behavioral functioning of children across cultures. Further, parental rejection was identified as a vulnerability factor in the development of adolescent depression (Muris, Schmidt, Lambrichs, & Meesters, 2001; Robertson & Simons, 1989). Research showed that children's perceptions of parental rejection were associated with negative socioemotional consequences.

Just as rejecting parenting practices were related to negative child outcomes, parental overprotection also was associated with such outcomes. Overprotective parenting was described as parents' having an unnecessary concern for their child, close physical and emotional proximity, and denial of independence-seeking behavior (Thomasgard, Metz, & Edelbrock, 1995). This type of parenting included protective behavior that was considered excessive given a child's developmental level (Thomasgard et al., 1995). In a study of Dutch early adolescents, Oldehinkel, Veenstra, Ormel, de Winter, and Verhulst (2006) found that these adolescents' perceptions of parental overprotection were associated positively with depressive symptoms. In addition to depression, overprotective parenting was linked consistently to social anxiety (Bruch, Heimberg, Berger, & Collins, 1989; Greco & Morris, 2002; Spokas & Heimberg, 2009). Similarly, DeHart, Pelham, and Tennen (2006) demonstrated that young adult children who endorsed experiencing more parental overprotection also reported lower levels of self-esteem.

Overprotective parenting also was associated with increased internalizing problems in young children, including inhibited temperament and shyness (Barrett, Rapee, Dadds, & Ryan, 1996; McShane & Hastings, 2009). Overprotective parenting and children's internalizing problems could co-occur because children were prevented from exploring and experiencing novel stimulation, thereby inhibiting the development of coping strategies (Bayer, Sanson, & Hemphill, 2006).

Another parenting practice that was associated with child outcomes and was relevant to this study was parental favoritism. As mentioned above, favoritism was conceptualized as a family process in which parents treated, or were perceived to treat, one or some of their children more positively than other children (Brody et al., 1998). Like differential parenting, parental favoritism was influenced by multiple factors (e.g., child gender, birth order). Brody and colleagues (1998) posited that perceiving oneself as the 'disfavored' sibling put adolescents at risk for internalizing problems. Disfavored siblings questioned their self-worth when they saw their parents engaging in more positive interactions with favored siblings. Taken together, research in this area demonstrated that parenting behaviors were related to children's emotional and behavioral functioning. This study examined those parenting behaviors that differed within the family and that predicted young children's emotional and behavioral problems.

### [The Present Study](#)

Research demonstrated that parents treated their individual children differently and that this differential treatment was related to children's social and emotional development (Barrett-Singer & Weinstein, 2000; Brody et al., 1986; Dunn, Stocker, & Plomin, 1990). Research also showed that children were consciously aware of their parents' differential treatment and viewed

the treatment more negatively if such treatment also was perceived as unfair (McHale & Pawletko, 1992; Kowal & Kramer, 1997). Recently, research focused on the long-term effects of differential parenting and found that it was related to multiple domains of functioning, such as academic success (Barrett-Singer & Weinstein, 2000), sibling rivalry (Boyle et al., 2004; Brody, Stoneman, & McCoy, 1992; Stocker et al., 1989), and self-esteem (Sheehan & Noller, 2002; Tamrouti-Makkink et al., 2004).

Many studies examined potential moderators associated with differential parenting (e.g., age, gender), but there was much less examination of mediating variables. Sheehan and Noller (2002) studied adolescent Australian twins' attachment style as a mediator between their perceptions of differential parenting treatment and their adjustment. These authors indicated that more research in this area was necessary, particularly with non-twin siblings and with a more culturally diverse sample. Early attachment relationships were crucial for children and continued to be important in social relationships across the lifespan (Bowlby, 1973; Dykas & Cassidy, 2011; Hazan & Shaver, 1987). As a result, the present study attempted to fill this gap in the literature regarding potential mediating variables that could explain the relationship between differential parenting and parents' perceptions of their children's emotional and behavioral functioning. By examining parents' differential treatment, attachment relationships, and parents' perceptions of their children's emotional and behavioral functioning, this study advanced our understanding of the relationship among these variables.

In particular, attachment was examined as a potential mediator in the relationship between differential parenting and children's emotional and behavioral functioning. It was expected that parents' level of differential treatment (broken down into dimensions of affection

and control) would predict significantly parent-child attachment quality (measured as model of self and model of others). Higher scores on the model of self represented more anxious attachment beliefs, whereas higher scores on the model of others represented avoidant attachment beliefs. Specifically, it was expected that higher levels of differential parental affection and control would be associated positively and significantly with parent-child attachment quality. In turn, it was expected that parent-child attachment quality would predict significantly parents' perceptions of their children's emotional and behavioral functioning (i.e., their ratings of their children's internalizing and externalizing problems). It also was anticipated that parents with a more secure attachment relationship would report lower levels of internalizing and externalizing problems in their children.

Further, a hierarchical regression analysis was used to examine the relative contributions of parents' differential treatment and the parent-child attachment relationship in predicting their children's emotional and behavioral functioning. Thus, parents' levels of differential affection and control were entered in Block 1, and attachment quality was entered in Block 2 to predict parents' ratings of their children's internalizing and externalizing problems. By investigating how these variables were related, this study furthered the understanding of factors that were associated with parents' perceptions of their children's internalizing and externalizing problems. It was hypothesized that the parent-child attachment relationship would mediate the relationship between parents' differential treatment and their ratings of their older and younger children's emotional and behavioral functioning.

Additionally, child temperament and parenting behaviors were examined in relation to parents' perceptions of their children. It was hypothesized that child temperament (i.e., levels of

emotionality, activity, and sociability) would predict significantly parenting behaviors (i.e., positive, inconsistent, and punitive parenting). Specifically, it was hypothesized that higher levels of emotionality and activity and lower levels of sociability would be related significantly and positively with inconsistent and punitive parenting. It also was anticipated that higher levels of emotionality and activity and lower levels of sociability would be related significantly and negatively with positive parenting. In turn, it was hypothesized that higher levels of inconsistent and punitive parenting and lower levels of positive parenting would be related significantly and positively with parents' perceptions of their older and younger children's internalizing and externalizing problems. A hierarchical regression analysis was used to examine the relative contributions of these variables to children's internalizing and externalizing problems. Thus, facets of child temperament (i.e., emotionality, activity, and sociability) were entered in Block 1, and parenting behaviors (i.e., positive, inconsistent, punitive) were entered in Block 2 to predict parents' perceptions of their children's internalizing and externalizing problems. It was hypothesized that parenting behaviors would mediate the relationship between child temperament and parents' perceptions of their children.



## CHAPTER TWO: METHODOLOGY

### Participants

Data for the proposed study were collected from 143 parents who had two children between the ages of 2- and 10-years. Parents were recruited from the community surrounding a large Southeastern university from Facebook (via posted announcements) and from Craigslist and Backpage (via posts in volunteer pages in various cities). In particular, 85.4% were recruited from Craigslist, 11.1% were recruited from Backpage, and 3.5% were recruited from Facebook. Across these sites, 1,254 parents opened the survey online, and 138 completed it. Further, eight packets of study materials were sent to parents via postal mail, and five packets were completed and returned. Given that only 11 fathers participated in this study, they were removed from the sample. The suggested sample size for a regression analysis ( $p < .05$ ) with 14 predictor variables and statistical power of .80 was 130 participants for this study. This approximate sample size was necessary to detect a medium ( $R = .36$ ) effect size (Cohen, 1992).

Consistently, 132 mothers from various regions of the United States participated in this study. Their mean age was 31.98-years ( $SD=5.01$ -years). The majority of the mothers was Caucasian (77.3%), but mothers from a broad range of ethnic and racial backgrounds also were sampled (i.e., 9.8% were African American, 8.3% were Hispanic, 2.3% were Asian American, and 2.3% were Native American). The majority of mothers in this study reported being married (65.9%), with fewer mothers reporting being single (12.1%), living with their partner (9.1%),

being divorced (5.3%), being remarried (3.8%), being separated (2.3%), or being widowed (0.8%).

With regard to educational background, the plurality of mothers reported completing some college (38.6%). The remaining mothers reported a wide range of educational attainment (i.e., 3.0% completed some high school, 16.7% received a high school diploma, 5.3% reported vocational training, 24.2% received a college degree, 9.8% completed some post graduate training, and 2.3% reported a doctorate degree). Pertaining to yearly income, the majority of mothers were from families that made more than \$70,000 (20.9%). The remainder of the mothers endorsed that their families fell within other income brackets (i.e., 12.4% made less than \$10,000 yearly, 7.8% made \$10,000-\$20,000 yearly, 14.0% made \$20,000-\$30,000 yearly, 10.9% made \$30,000-\$40,000 yearly, 16.3% made \$40,000-\$50,000 yearly, 10.1% made \$50,000-\$60,000 yearly, and 7.8% made \$60,000-\$70,000 yearly). Regarding the children being rated, 50.8% of older children and 48.1% of younger children were male. The mean age of the older children was 6.98-years ( $SD=2.27$ ), and the mean age of the younger children was 4.36-years ( $SD=2.16$ ).

### Procedure

Following IRB approval from the University of Central Florida, advertisements were posted on Facebook and on the volunteer pages of Craigslist.com and Backpage.com. Parents then were able to participate in this study via an online survey or were asked to contact the Young Child and Family Research Clinic if they would like to participate. Participants who chose to complete the study online were provided with a link that allowed them access to the study materials. Once on the website, participants read a consent form and agreed to participate.

They then accessed all questionnaires included in the study. Following their participation, participants read a debriefing statement informing them of the study's purpose. For parents who could not complete the questionnaire online, a paper version of the research packet of questionnaires was sent via postal mail. Participation in the study required approximately one hour for parents to complete all study materials. Finally, all data were analyzed in group format, and no individual packet was singled out for examination.

### Measures

**Demographics.** Parents first filled out a demographics questionnaire with information pertaining to themselves and their children. If parents had more than two children between the ages of 2- and 10-years, they were asked to report on their eldest two children within that age range. Demographic variables of interest included age, gender, ethnicity, occupation, birth order of children, and other characteristics. See *Appendix B* for the demographics questionnaire.

**Differential Parenting.** In order to assess parents' perceptions of differential treatment given to their children, they were asked to complete the *Sibling Inventory of Differential Experience (SIDE; Daniels & Plomin, 1985)*. The SIDE measures sibling differential experience in the domains of sibling interaction, parental treatment, peer characteristics, and events specific to the individual. The domain of interest to this study was parents' differential treatment. This domain consists of four subscales: differential maternal affection, differential maternal control, differential paternal affection, and differential paternal control. Since the SIDE was developed for children, this scale was modified for parents' use. Parents rated items on a scale ranging from 1 (*Toward Younger Child Much More*) to 5 (*Toward Older Child Much More*). They were instructed to report on differential treatment that occurred for their two identified children over

the last year. All subscales of the SIDE (comprising 73 total items) were found to have high two-week test-retest reliabilities ranging from .77 to .93 in a previous study (Daniels & Plomin, 1985). For this study, maternal affection and maternal control were examined. Internal consistency was lower for maternal affection (.55) but good for maternal control (.70). See *Appendix C* for the SIDE.

**Parenting Behavior.** The *Alabama Parenting Questionnaire-Preschool Revision* (APQ-PR; Clerkin, Marks, Policaro, & Halperin, 2007) was used to measure parenting behaviors. The APQ-PR was derived from the original *Alabama Parenting Questionnaire* (APQ; Frick, 1991; Shelton, Frick, Wootton, 1996), a 42-item self-report measure of parenting behavior. The APQ-PR was utilized in this study because its three-factor structure was more robust than the five-factor structure of the APQ (Clerkin et al., 2007). Further, the APQ-PR eliminated items that only applied to older children. Given that the age range in this study extended down to 2-years of age, the APQ-PR was utilized. This measure is made up of three factors: Positive Parenting (i.e., parents' warmth, support, involvement, and positive reinforcement), Negative/Inconsistent Parenting (i.e., parents' poor monitoring/supervision and inconsistent discipline), and Punitive Parenting (i.e., parents' ignoring, yelling, and corporal punishment). Items were rated on a 5-point continuum ranging from 1 (*Never*) to 5 (*Always*). Higher scores on the three factors indicated more positive parenting behaviors, more negative/inconsistent parenting behaviors, and more punitive parenting behaviors, respectively. Reliability was high in previous studies, with Cronbach alphas of .82 for Positive Parenting, .73 for Negative/Inconsistent Parenting, and .63 Punitive Parenting.

In this study, the overall composite scores for each of the three factors (i.e., Positive Parenting, Negative/Inconsistent Parenting, and Punitive Parenting) were used. In this study, for the older child, internal consistency was good for Positive Parenting (.74) and Negative/Inconsistent Parenting (.80) but lower for Punitive Parenting (.54). With regard to scores for the younger children, internal consistency was good for Positive Parenting (.84) and Negative/Inconsistent Parenting (.80) but lower for Punitive Parenting (.53). Internal consistency for Punitive Parenting may have been lower than the other two factors because its items were more varied and less likely to be endorsed as occurring. For example, the Punitive Parenting scale included items such as “You ignore your child when he/she is misbehaving” and “You yell or scream at your child when he/she has done something wrong.” Further, it was possible that some parents would utilize some punitive parenting practices but not others, leading to lower internal consistency. See *Appendix D* for the APQ-PR.

**Attachment.** In order to determine the quality of parent-child attachment, participants completed the *Experience in Close Relationships* scale (ECR; Brennan, Clark, & Shaver, 1998). This questionnaire consisted of 36 items that were rated on a 7-point Likert scale ranging from 1 (*Disagree Strongly*) to 7 (*Agree Strongly*). The ECR is made up of two 18-question subscales: “model of self” and “model of others.” Higher scores on the model of self subscale represented anxious attachment beliefs (i.e., more anxiety about being rejected by others, feeling unworthy in personal relationships), whereas higher scores on the model of others subscale represented avoidant attachment beliefs (i.e., avoidance of closeness with others, more distrust of others). Because the Experience in Close Relationships scale was developed to measure romantic attachment, it was modified for parents’ use. For example, “I prefer not to show a partner how I

feel deep down” was modified to “My child prefers not to show me how he/she feels deep down.” Participants were asked to fill out this questionnaire twice; they responded once about their older child and once about their younger child. Internal consistency for the two subscales of the ECR was reported as .91 and .94 for anxiety and avoidance, respectively; test-retest reliability was reported as .91 and .90 for anxiety and avoidance, respectively (Brennan et al., 1998; Fraley, Waller, & Brennan, 2000). Both subscales (i.e., model of self and model of others) were examined in this study. Internal consistency for scores generated for the older child was excellent for anxiety (.90) and for avoidance (.95). Internal consistency for scores generated for the younger children also was good for anxiety (.86) and for avoidance (.87). See *Appendix E* for the ECR.

**Children’s Temperament.** The *Emotionality Activity Sociability Temperament Survey* (EAS; Buss & Plomin, 1984) was used to assess child temperament. Parents were asked to rate their children on three dimensions of temperament: emotionality (i.e., how easily a child becomes upset or distressed), activity level (i.e., their child’s total energy output), and sociability (i.e., the tendency for the child to prefer the presence of others to being alone; Buss & Plomin, 1984). The EAS consisted of 20 items and required parents to endorse items with a Likert scale that ranges from 1 (*Not typical of my child*) to 5 (*Very typical of my child*). Cronbach alphas ranged from .58 (sociability) to .83 (emotionality) in a previous study (Buss & Plomin, 1984). Internal consistency was good for emotionality (.83), acceptable for activity (.66), and good for sociability (.81) of the older child. Internal consistency was good for emotionality (.84), activity (.70), and sociability (.78) of the younger child. See *Appendix F* for the EAS.

**Children's Behavior Problems.** To assess children's emotional and behavioral functioning, participants completed the *Child Behavior Checklist (CBCL)* (Achenbach & Rescorla, 2000, 2001). Parents filled out a CBCL designed for children aged 1.5- to 5-years or 6- to 18-years, depending on the ages of the children whom they were rating. Both CBCL questionnaires contain more than 100 items and required parents to endorse 2 (*Very or Often True*), 1 (*Somewhat or Sometimes True*), or 0 (*Not True*) to questions regarding their children over the past two months. Raw scores on the CBCL were converted to *T* scores. Because this study was aimed at understanding parents' perceptions of their children's emotional and behavioral difficulties, the Internalizing Problems and Externalizing Problems scales were used to measure children's current emotional and behavioral functioning. The Internalizing Problems scale score was indicative of problems such as anxiety, depression, somatic complaints, emotional reactivity, and withdrawal from social contacts. The Externalizing Problems scale score captured problems such as attention and aggression.

The CBCL is used widely and demonstrated good validity and reliability. Achenbach and Rescorla (2000) reported a Cronbach alpha of .89 for the Internalizing Problems scale and .92 for the Externalizing Problems scale. Internal consistency was excellent for Internalizing Problems (.92) and good for Externalizing Problems (.85) as measured in the older child. Internal consistency was good for Internalizing Problems (.89) and excellent for Externalizing Problems (.90) as measured in the younger child. See *Appendix G* for the CBCL 1.5-5 and 6-18.

## CHAPTER THREE: RESULTS

### Descriptive Statistics

To provide a context for interpreting the endorsements on each of the study variables, descriptive statistics (i.e., means and standard deviations) first were calculated and examined. See Table 1. Regarding differential parenting behaviors, mothers in this study reported low levels of differential affection ( $M=1.41$ ,  $SD=1.82$ , with possible scores ranging from 0 to 8) and differential control ( $M=1.83$ ,  $SD=1.80$ , with possible scores ranging from 0 to 8). These scores suggested that mothers endorsed items more toward their younger children. With regard to parenting practices, mothers reported using positive parenting practices frequently with their older ( $M=53.06$ ,  $SD=4.54$ ) and younger ( $M=53.08$ ,  $SD=6.09$ ) children, as scores were able to range from 12 to 60. They reported moderate amounts of inconsistent parenting practices with their older ( $M=18.16$ ,  $SD=4.85$ ) and younger ( $M=17.61$ ,  $SD=5.00$ ) children, as scores were able to range from 7 to 35, and relatively few punitive parenting practices for their older ( $M=6.05$ ,  $SD=2.16$ ) and younger ( $M=6.29$ ,  $SD=2.09$ ) children, as scores were able to range from 5 to 25.

With regard to attachment variables, mothers reported that their older ( $M=46.38$ ,  $SD=19.91$ ) and younger ( $M=43.88$ ,  $SD=15.97$ ) children displayed moderate attachment anxiety, as scores were able to range from 18 to 90. Similarly moderate ratings were provided for attachment avoidance for older ( $M=32.47$ ,  $SD=18.00$ ) and younger ( $M=28.79$ ,  $SD=11.43$ ) children, as scores were able to range from 18 to 90.



With regard to the child temperament measure used in this study, mothers' endorsements suggested that older ( $M=18.35$ ,  $SD=9.09$ ) and younger ( $M=18.54$ ,  $SD=9.25$ ) children's emotionality was moderate, as scores were able to range from 7 to 35. Mothers rated their older ( $M=24.91$ ,  $SD=5.75$ ) and younger ( $M=26.35$ ,  $SD=5.37$ ) children's activity level as somewhat high, as scores were able to range from 7 to 35. Finally, mothers rated their older ( $M=22.38$ ,  $SD=6.02$ ) and younger ( $M=22.23$ ,  $SD=6.06$ ) children's sociability somewhat highly, as scores were able to range from 6 to 30.

In terms of children's emotional and behavioral functioning, mothers reported Nonclinical levels of internalizing problems ( $M=52.09$ ,  $SD=12.17$ ) and externalizing problems ( $M=51.21$ ,  $SD=12.66$ ) on average for their older children. Ratings also were in the Nonclinical range for younger children's internalizing problems ( $M=48.72$ ,  $SD=11.77$ ) and externalizing problems ( $M=50.36$ ,  $SD=12.02$ ) on average.

#### Differences in Mothers' Ratings of Their Older and Younger Children

With regard to parenting practices, mothers reported using positive parenting practices with their older child and younger child to a similar degree,  $t(104)=.14$ ,  $p<.89$ . Mothers also rated their inconsistent parenting practices with their older child and their younger child to a similar degree,  $t(112)=1.63$ ,  $p<.11$ . Finally, mothers rated punitive practices with their older child and younger child similarly,  $t(125)= -.50$ ,  $p<.62$ . With regard to attachment, mothers reported similar levels of anxious attachment in their older child and their younger child,  $t(105)=-1.46$ ,  $p<.15$ . In contrast, they reported significantly more avoidant attachment behaviors for their older child than for their younger child,  $t(98)= -2.28$ ,  $p<.03$ .

With regard to children's temperament, mothers rated their older child and younger child's emotionality,  $t(120) = .39, p < .70$ , and sociability,  $t(119) = .12, p < .68$ , similarly. In contrast, mothers rated their older child's activity as significantly lower than that of their younger child,  $t(123) = -2.05, p < .05$ . Finally, with regard to children's emotional and behavioral functioning, mothers reported significantly higher internalizing symptoms in their older child than in their younger child,  $t(122) = -2.94, p < .01$  (although mean scores for both groups fell within the Nonclinical range). Mothers reported similar levels of externalizing problems in their older child and younger child,  $t(122) = -.74, p < .46$ , however (with all of these mean scores falling within the Nonclinical range).

### Correlations

To examine the relationships among mothers' differential affection and control; positive, inconsistent, and punitive parenting styles; mother-child attachment characteristics; children's temperament; and children's emotional and behavioral functioning, correlational analyses were conducted. These correlations can be found in Table 2. Correlations that were of particular interest to this study were discussed here.

With regard to mothers' differential parenting practices and parent-child attachment characteristics, mothers' differential affection was related significantly and positively to anxiety ( $r = .19, p < .05$ ) and avoidance ( $r = .24, p < .02$ ) in the attachment relationship between mothers and their older child (as hypothesized). Contrary to hypotheses, mothers' differential affection was not associated significantly with anxiety ( $r = .12, p < .19$ ) or avoidance ( $r = .03, p < .78$ ) in the attachment relationship between mothers and their younger child, however. Regarding differential parental control, the relationships between differential control and the mother-child

relationship were non-significant. Specifically, mothers' differential control was not associated significantly with anxiety ( $r=.13, p<.14$ ) or avoidance ( $r=.04, p<.64$ ) in the mother-older child relationship. Similarly, mothers' differential control was not associated significantly with anxiety ( $r=.09, p<.30$ ) or avoidance ( $r= -.00, p<.99$ ) in the mother-younger child relationship.

With regard to attachment and children's behavior problems, attachment anxiety in the mother-older child relationship was related significantly and positively with mothers' ratings of internalizing problems ( $r=.46, p<.001$ ) and externalizing problems ( $r=.42, p<.001$ ) in their older child. Attachment avoidance in the mother-older child relationship was related significantly and positively with mothers' ratings of internalizing problems ( $r=.31, p<.01$ ) and externalizing problems ( $r=.44, p<.001$ ) in their older child. Attachment anxiety in the mother-younger child relationship was related significantly and positively with mothers' ratings of internalizing problems ( $r=.52, p<.001$ ) and externalizing problems ( $r=.27, p<.01$ ) in the younger child. Attachment avoidance in the mother-younger child relationship also was related significantly and positively with mothers' ratings of internalizing problems ( $r= .41, p<.001$ ) and externalizing problems ( $r=.29, p<.01$ ) in their younger child.

As hypothesized, with regard to parenting and children's temperament, inconsistent parenting practices with the older child was correlated significantly with the older child's emotionality ( $r=.29, p<.01$ ). Punitive parenting practices with the younger child were correlated significantly with the younger child's activity level ( $r= .19, p<.04$ ) and with the younger children's emotionality ( $r=.18, p<.04$ ). Additionally, with regard to parenting and children's behavior problems, inconsistent parenting with the older child was correlated significantly and positively with mothers' ratings of externalizing problems ( $r=.29, p<.01$ ) in the older child.

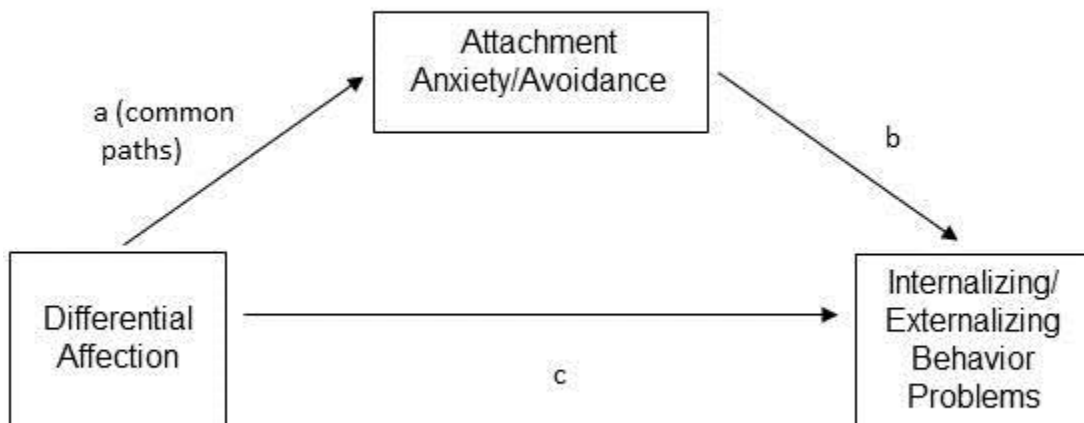
Inconsistent parenting with the younger child was correlated significantly and positively with mothers' ratings of internalizing problems ( $r=.27, p<.01$ ) and externalizing problems ( $r=.23, p<.02$ ) in the younger child. Additionally, punitive parenting with the younger child was correlated significantly and positively with mothers' ratings of internalizing problems ( $r=.27, p<.01$ ) and externalizing problems ( $r=.29, p<.01$ ) in the younger child.

As hypothesized, many of this study's variables were related. Mothers' differential affection was correlated with attachment quality for older children but not for younger children. Contrary to hypotheses, mothers' differential control was not correlated with attachment for older or younger children. Attachment anxiety and attachment avoidance were correlated with mothers' ratings of their children's emotional and behavioral functioning, however. In general, inconsistent parenting practices were correlated with difficulties for older children, whereas punitive parenting practices were correlated with difficulties for younger children.

### Mediations

Differential Parenting, Attachment, and Children's Internalizing and Externalizing Problems. It was hypothesized that children's attachment security would mediate the relationship between differential parenting and mothers' ratings of their children's internalizing and externalizing problems. To test this hypothesis, mediational analyses were conducted. These analyses followed Baron and Kenny's (1986) approach to mediational analysis. According to this approach, mothers' differential parenting must predict mother-child attachment security (path a) as well as mothers' ratings of their children's internalizing or externalizing problems (path c). In an additional regression equation, mother-child attachment security must predict mothers' ratings of their children's internalizing or externalizing problems (path b). Further, when both

differential parenting and mother-child attachment security are examined collectively, the relationship between mothers' differential treatment and their children's internalizing or externalizing problems must decrease to non-significance, demonstrating the mediational role of attachment. It should be noted, however, that MacKinnon (2008) suggested that path c is not necessary, citing that mediation may still be possible even if the relationship between the independent and dependent variables is non-significant. As a result, this caveat also was examined.



**Figure 1: Mediation Model 1**

*Common Paths.* To test path a (differential parenting predicting attachment), regression analyses revealed that mothers' ratings of their differential affection predicted significantly their older children's attachment anxiety,  $F(1, 115) = 4.17, p < .05$ , and their older children's attachment avoidance,  $F(1, 110) = 6.52, p < .02$ . In contrast, mothers' ratings of their differential affection did not predict significantly their younger children's attachment anxiety,

$F(1, 115) = 1.72, p < .20$ , or avoidance,  $F(1, 110) = .08, p < .79$ . Further, mothers' ratings of their differential control did not predict significantly their older children's attachment anxiety,  $F(1, 115) = 1.50, p < .24$ , or avoidance  $F(1, 110) = 0.13, p < .92$ . Similarly, mothers' ratings of their differential control did not predict significantly their younger children's attachment anxiety,  $F(1, 115) = 1.29, p < .26$ , or avoidance  $F(1, 110) = 0.45, p < .71$ . Given these initial regression analyses for path a, further paths were examined only for the relationships among differential affection, attachment, and older children's behavior problems.

*Internalizing Problems.* Regarding path b (attachment anxiety predicting internalizing behaviors, see Figure 1), regression analyses demonstrated that older children's attachment anxiety predicted significantly mothers' ratings of their older children's internalizing behavior problems,  $F(1, 108) = 28.79, p < .001$ . In testing path c (differential parenting predicting internalizing problems), regression analyses demonstrated that mothers' ratings of their differential affection did not predict significantly mothers' ratings of their older children's internalizing problems,  $F(1, 123) = 2.40, p < .13$ . Although differential affection did not predict significantly older children's internalizing problems, MacKinnon (2008) suggested that path c was not necessary in establishing mediation. As a result, mothers' differential affection and attachment anxiety were examined collectively as predictors of older children's internalizing problems.

Thus, when examined collectively, mothers' ratings of differential affection and their older child's attachment anxiety predicted significantly their ratings of their older child's internalizing problems,  $F(2, 108) = 14.57, p < .001$ . In particular, differential affection was not a significant predictor ( $p < .50$ ), whereas mothers' ratings of their older child's attachment anxiety

was a significant predictor ( $p < .001$ ). Thus, this pattern of findings suggested that mothers' ratings of their older child's attachment anxiety mediated the relationship between their ratings of differential affection and their older child's internalizing problems. The mediational value of attachment anxiety was confirmed with a significant Sobel Test ( $z = -2.37, p < .004$ ).

With regard to attachment avoidance predicting internalizing behaviors (alternate path b, see Figure 1), regression analyses revealed that older children's attachment avoidance predicted significantly mothers' ratings of their older children's internalizing behavior problems,  $F(1, 104) = 10.89, p < .002$ . As noted above, in testing path c (differential parenting predicting internalizing problems), regression analyses demonstrated that mothers' ratings of their differential affection did not predict significantly mothers' ratings of their older children's internalizing problems,  $F(1, 123) = 2.40, p < .13$ .

When examined collectively, mothers' ratings of differential affection and their older child's attachment avoidance predicted significantly their ratings of their older child's internalizing problems,  $F(2, 103) = 5.73, p < .01$ . In particular, differential affection was not a significant predictor ( $p < .44$ ), whereas mothers' ratings of their older child's attachment anxiety was a significant predictor ( $p < .01$ ). Thus, this pattern of findings suggested that mothers' ratings of their older child's attachment avoidance mediated the relationship between their ratings of differential affection and their older child's internalizing problems. The mediational value of attachment anxiety was confirmed with a significant Sobel Test ( $z = -2.19, p < .005$ ). See Table 3.

*Externalizing Problems.* Regarding path b (attachment anxiety predicting externalizing behaviors), regression analyses demonstrated that older children's attachment anxiety predicted

significantly mothers' ratings of their older children's externalizing problems,  $F(1,108) = 23.50$ ,  $p < .001$ . In testing path c (differential parenting predicting externalizing problems), regression analyses demonstrated that mothers' ratings of their differential affection did not predict significantly mothers' ratings of their older children's externalizing problems,  $F(1, 123) = 0.83$ ,  $p < .37$ .

When examined collectively, mothers' ratings of differential affection and their older child's attachment anxiety predicted significantly their ratings of their older child's externalizing behavior problems,  $F(2, 108) = 11.64$ ,  $p < .001$ . In particular, differential affection was not a significant predictor ( $p < .97$ ), whereas mothers' ratings of their older child's attachment anxiety was a significant predictor ( $p < .001$ ). Thus, mothers' ratings of their older child's attachment anxiety mediated the relationship between their ratings of differential affection and their older child's externalizing problems. The mediational value of attachment anxiety was confirmed with a significant Sobel Test ( $z = -2.63$ ,  $p < .003$ ).

With regard to attachment avoidance predicting externalizing behaviors (alternate path b), regression analyses demonstrated that older children's attachment avoidance predicted significantly mothers' ratings of their older children's externalizing problems,  $F(1,103) = 24.42$ ,  $p < .001$ . In testing path c (differential parenting predicting externalizing problems), regression analyses demonstrated that mothers' ratings of their differential affection did not predict significantly mothers' ratings of their older children's externalizing problems,  $F(1, 123) = 0.83$ ,  $p < .37$ .

Then, collectively, mothers' ratings of differential affection and their older child's attachment avoidance predicted significantly their ratings of their older child's externalizing

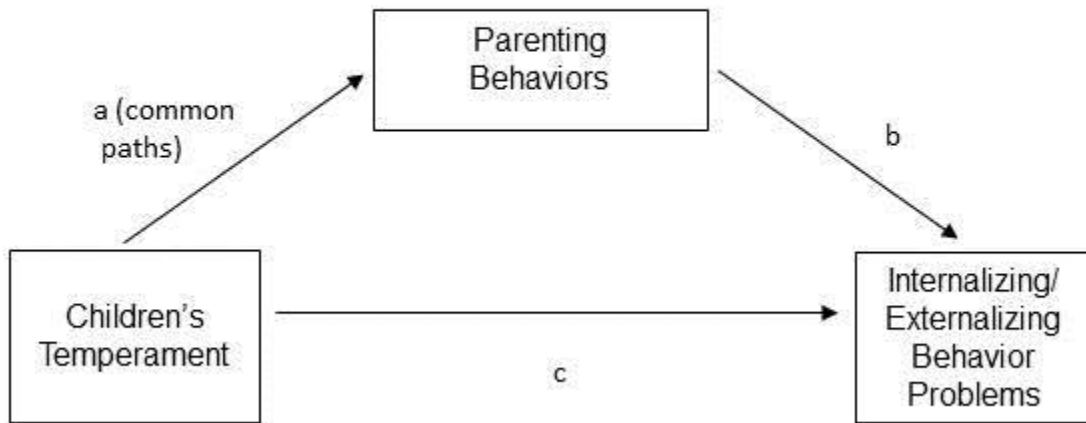


behavior problems,  $F(2, 103) = 12.12, p < .001$ . In particular, differential affection was not a significant predictor ( $p < .83$ ), whereas mothers' ratings of their older child's attachment avoidance was a significant predictor of externalizing problems ( $p < .001$ ). Thus, mothers' ratings of their older child's attachment avoidance mediated the relationship between their ratings of differential affection and their older child's externalizing problems. The mediational value of attachment avoidance was confirmed with a significant Sobel Test ( $z = -2.59, p < .003$ ). See Table 4.

[Children's Temperament, Parenting Behaviors, and Children's Internalizing and Externalizing Problems](#). It was hypothesized further that parenting behaviors (i.e., positive, inconsistent, and punitive parenting) would mediate the relationship between children's temperament and mothers' ratings of their children's internalizing and externalizing problems.

To test this hypothesis, mediational analyses were conducted. These analyses followed Baron and Kenny's (1986) approach to mediational analysis. According to this approach, children's temperament must predict parenting behaviors (path a) as well as mothers' ratings of their children's internalizing or externalizing problems (path c). In an additional regression equation, parenting behaviors must predict mothers' ratings of their children's internalizing or externalizing problems (path b). Further, when both children's temperament and parenting behaviors are examined collectively, the relationship between children's temperament and internalizing or externalizing problems must decrease to non-significance, demonstrating the mediational role of parenting behaviors. It should be noted, however, that MacKinnon (2008) suggested that path c is not necessary, citing that mediation may still be possible even if the

relationship between the independent and dependent variables is non-significant. As a result, this caveat also was examined.



**Figure 2: Mediation Model 2**

*Common Paths.* To test path a (children's temperament predicting parenting behaviors), regression analyses revealed that older children's emotionality predicted significantly inconsistent parenting,  $F(1, 121) = 8.76, p < .01$ , but did not predict significantly positive,  $F(1, 113) = 0.05, p < .84$ , or punitive,  $F(1, 124) = 0.09, p < .78$ , parenting. Older children's activity level did not predict significantly positive,  $F(1, 114) = 0.12, p < .73$ , inconsistent,  $F(1, 122) = 2.74, p < .11$ , or punitive,  $F(1, 126) = 2.13, p < .15$ , parenting. Also, older children's sociability did not predict significantly positive,  $F(1, 114) = 0.82, p < .37$ , inconsistent,  $F(1, 121) = 1.26, p < .27$ , or punitive,  $F(1, 124) = 3.18, p < .08$ , parenting. Younger children's emotionality predicted significantly punitive parenting,  $F(1, 130) = 4.36, p < .04$ , but did not predict significantly positive,  $F(1, 106) = 0.03, p < .96$ , or inconsistent,  $F(1, 111) = 1.27, p < .27$ , parenting. Younger children's activity level also predicted significantly punitive parenting,  $F(1,$

121) = 6.37,  $p < .02$ , but also did not predict significantly positive,  $F(1, 108) = 0.37, p < .55$ , or inconsistent,  $F(1, 113) = 0.01, p < .98$ , parenting. Younger children's sociability did not predict significantly positive,  $F(1, 105) = 1.68, p < .20$ , inconsistent,  $F(1, 111) = 1.26, p < .61$ , or punitive,  $F(1, 120) = .26, p < .62$ , parenting. Given these initial regression analyses for path a, further paths were examined only for the relationships among older children's emotionality, inconsistency, and behavior problems and younger children's emotionality and activity level, punitive parenting, and behavior problems.

*Internalizing Problems.* Regarding path b (inconsistent parenting predicting internalizing behaviors), regression analyses demonstrated that inconsistent parenting predicted significantly mothers' ratings of their older children's internalizing problems,  $F(1,117) = 4.15, p < .05$ . In testing path c (older children's emotionality predicting internalizing problems), regression analyses demonstrated that older children's emotionality predicted significantly mothers' ratings of their older children's internalizing problems,  $F(1, 118) = 39.60, p < .001$ .

Then, when examined collectively, older children's emotionality and inconsistent parenting predicted significantly their ratings of their older children's internalizing behavior problems,  $F(2, 108) = 14.57, p < .001$ . However, older children's emotionality drove the relationship ( $p < .001$ ), and inconsistent parenting did not prove to be a mediator ( $p < .24$ ). See Table 5.

With regard to punitive parenting predicting internalizing behaviors (alternate path b, see Figure 2), regression analyses demonstrated that punitive parenting predicted significantly mothers' ratings of their younger children's internalizing behavior problems,  $F(1,118) = 5.79, p < .02$ . In testing path c (younger children's emotionality and activity level predicting

internalizing problems), regression analyses demonstrated that younger children's emotionality predicted significantly mothers' ratings of their younger children's internalizing problems,  $F(1, 116) = 23.82, p < .001$ . Younger children's activity level did not predict significantly mothers' ratings of younger children's internalizing problems,  $F(1, 117) = 0.28, p < .60$ .

Then, when examined collectively, younger children's emotionality and punitive parenting predicted significantly mothers' ratings of their younger children's internalizing behavior problems,  $F(2, 112) = 13.09, p < .001$ . Younger children's emotionality drove the relationship ( $p < .001$ ), and punitive parenting did not prove to be a mediator ( $p < .13$ ).

Also, when examined collectively, younger children's activity level and punitive parenting predicted significantly mothers' ratings of their younger children's internalizing behavior problems,  $F(2, 113) = 4.14, p < .02$ . In particular, younger children's activity level was not a significant predictor ( $p < .30$ ), whereas punitive parenting was a significant predictor of internalizing problems ( $p < .01$ ). Thus, punitive parenting mediated the relationship between younger children's activity level and mothers' ratings of their younger children's internalizing behavior problems. The mediational value of punitive parenting was confirmed with a significant Sobel Test ( $z = -2.44, p < .004$ ). See Table 6.

*Externalizing Problems.* Regarding path b (inconsistent parenting predicting externalizing behaviors), regression analyses demonstrated that inconsistent parenting predicted significantly mothers' ratings of their older children's externalizing behavior problems,  $F(1, 117) = 10.48, p < .01$ . In testing path c (older children's emotionality predicting externalizing problems), regression analyses demonstrated that older children's emotionality predicted significantly mothers' ratings of their older children's externalizing problems,  $F(1, 118) = 41.29, p < .001$ .

Then, when examined collectively, older children's emotionality and inconsistent parenting predicted significantly mothers' ratings of their older children's externalizing behavior problems,  $F(2, 114) = 24.64, p < .001$ . Older children's emotionality remained significant ( $p < .001$ ; not following a mediational pattern), and inconsistent parenting also was a significant predictor ( $p < .01$ ). See Table 7.

With regard to punitive parenting predicting externalizing behaviors (alternate path b), regression analyses demonstrated that punitive parenting predicted significantly mothers' ratings of their younger children's externalizing problems,  $F(1, 118) = 10.23, p < .01$ . In testing path c (younger children's emotionality and activity level predicting externalizing problems), regression analyses demonstrated that younger children's emotionality predicted significantly mothers' ratings of their younger children's externalizing problems,  $F(1, 116) = 18.98, p < .001$ . Younger children's activity level also predicted significantly mothers' ratings of their younger children's externalizing problems,  $F(1, 117) = 5.13, p < .03$ .

Then, when examined collectively, younger children's emotionality and punitive parenting predicted significantly mothers' ratings of their younger children's externalizing behavior problems,  $F(2, 112) = 14.22, p < .001$ . Younger children's emotionality remained significant ( $p < .001$ ; not following a mediational pattern), and punitive parenting also was a significant predictor ( $p < .02$ ).

Also, when examined collectively, younger children's activity level and punitive parenting predicted significantly mothers' ratings of their younger children's externalizing problems,  $F(2, 113) = 6.96, p < .01$ . In particular, younger children's activity level was not a significant predictor ( $p < .11$ ), whereas punitive parenting was a significant predictor ( $p < .01$ ).

Thus, punitive parenting mediated the relationship between younger children's activity level and mothers' ratings of their younger children's externalizing behavior problems. The mediational value of punitive parenting was confirmed with a significant Sobel Test ( $z = -2.25, p < .005$ ). See Table 8.

### Hierarchical Regression Analyses

For these analyses, it should be noted that mothers rated two of their children, and these children would be likely to be more similar than two randomly sampled children. Because independence of observation is an assumption common to most statistical analyses, modifications were necessary for this study. Hierarchical linear modeling (HLM) was utilized to address the non-independence of mothers' ratings of their children. Such modeling allowed for the examination of both within and between group differences.

*Differential Parenting, Attachment, and Behavior Problems.* Hierarchical regression analyses were conducted to determine which variables were most important in predicting children's internalizing and externalizing problems. For these analyses, mothers' differential affection and control as well as mother-child attachment security (measured by the model of self and model of others subscale of the ECR) served as predictor variables, and mothers' ratings of their children's internalizing and externalizing problems served as the criterion variables. These analyses helped to elucidate the relationships among mothers' differential treatment, the mother-child attachment relationship, and mothers' perceptions of their children's emotional and behavioral functioning.

*Internalizing Problems.* For these analyses for older children, maternal differential affection and control were entered in Block 1, and attachment (anxiety and avoidance) was entered in Block 2 so that incremental variance could be examined. Maternal differential

affection and control did not predict significantly mothers' ratings of their older children's internalizing behavior problems,  $F(2, 94) = 1.00, p < .38, R^2 = .02$ , in Block 1. When older children's attachment anxiety and avoidance were entered into Block 2, the regression equation reached significance,  $F(4, 94) = 8.03, p < .001, R^2 = .26$ . Attachment anxiety ( $p < .001$ ) served as a significant individual predictor of older children's internalizing behavior problems. See Table 9.

With regard to younger children, maternal differential affection and control were entered in Block 1, and attachment (anxiety and avoidance) was entered in Block 2 so that incremental variance could be examined. Maternal differential affection and control did not predict significantly mothers' ratings of their younger children's internalizing behavior problems,  $F(2, 93) = 1.82, p < .17, R^2 = .04$ , in Block 1. When younger children's attachment anxiety and avoidance were entered into Block 2, the regression equation reached significance,  $F(4, 93) = 12.90, p < .001, R^2 = .37$ . Attachment anxiety ( $p < .001$ ) as well as attachment avoidance ( $p < .03$ ) served as significant individual predictors of younger children's internalizing behavior problems. See Table 10.

*Externalizing Problems.* For these analyses for older children, maternal differential affection and control were entered in Block 1, and attachment (anxiety and avoidance) was entered in Block 2 so that incremental variance could be examined. Maternal differential affection and control did not predict significantly mothers' ratings of their older children's externalizing behavior problems,  $F(2, 94) = 0.58, p < .57, R^2 = .01$ , in Block 1. When older children's attachment anxiety and avoidance were entered into Block 2, the regression equation reached significance,  $F(4, 94) = 8.37, p < .001, R^2 = .27$ . Attachment anxiety ( $p < .01$ ) as well as

attachment avoidance ( $p < .01$ ) served as significant individual predictors of older children's externalizing behavior problems. See Table 11.

With regard to younger children, maternal differential affection and control were entered in Block 1, and attachment (anxiety and avoidance) was entered in Block 2 so that incremental variance could be examined. Maternal differential affection and control did not predict significantly mothers' ratings of their younger children's externalizing behavior problems,  $F(2, 93) = 0.40, p < .70, R^2 = .09$ , in Block 1. When younger children's attachment anxiety and avoidance were entered into Block 2, the regression equation reached significance,  $F(4, 93) = 3.45, p < .02, R^2 = .13$ . Younger children's attachment anxiety ( $p < .02$ ) and avoidance ( $p < .02$ ) served as significant individual predictors of younger children's externalizing behavior problems. See Table 12.

*Children's Temperament, Parenting, and Children's Behavior Problems.* Hierarchical regressions also were conducted to determine the incremental variance of children's temperament (i.e., levels of emotionality, activity, and sociability) and parenting behaviors (i.e., positive, inconsistent, and punitive) in predicting mothers' perceptions of their children's internalizing and externalizing problems. In particular, child temperament variables were entered in Block 1, and parenting behaviors were entered in Block 2 so that incremental variance could be examined.

*Internalizing Problems.* For these analyses, with respect to older children, older children's temperament predicted mothers' ratings of these children's internalizing problems,  $F(3, 95) = 14.62, p < .001, R^2 = .32$ , in Block 1. In this block, older children's emotionality ( $p < .001$ ) served as an individual significant predictor. When parenting behaviors were entered into Block 2, the



regression equation remained significant and more variance was explained,  $F(6, 95) = 10.39, p < .001, R^2 = .41$ . In this block, older children's emotionality ( $p < .001$ ) as well as mothers' positive ( $p < .01$ ) and inconsistent ( $p < .04$ ) parenting served as individual predictors of older children's internalizing behavior problems. See Table 13.

With respect to younger children, younger children's temperament predicted mothers' ratings of their younger children's internalizing problems,  $F(3, 82) = 5.14, p < .01, R^2 = .16$ , in Block 1. In this block, younger children's emotionality ( $p < .001$ ) served as a significant individual predictor. When parenting behaviors were entered into Block 2, the regression equation remained significant,  $F(6, 82) = 4.77, p < .001, R^2 = .27$ . In this block, younger children's emotionality ( $p < .001$ ) as well as mothers' punitive parenting of the younger child ( $p < .04$ ) served as individual predictors of younger children's internalizing problems. See Table 14.

*Externalizing Problems.* For these analyses, with respect to older children, older children's temperament predicted mothers' ratings of these children's externalizing problems,  $F(3, 95) = 10.36, p < .001, R^2 = .25$ , in Block 1. In this block, older children's emotionality ( $p < .001$ ) served as an individual predictor. When parenting behaviors were entered into Block 2, the regression equation remained significant and more variance was explained,  $F(6, 95) = 6.74, p < .001, R^2 = .31$ . Older children's emotionality ( $p < .001$ ) remained the only significant individual predictor. See Table 15.

With respect to younger children, younger children's temperament predicted mothers' ratings of these children's externalizing problems,  $F(3, 82) = 4.69, p < .001, R^2 = .15$ , in Block 1. In this block, younger children's emotionality ( $p < .04$ ) served as an individual predictor. When

parenting behaviors were entered into Block 2, the regression equation remained significant and more variance was explained,  $F(6, 82) = 4.39, p < .01, R^2 = .26$ . In particular, young children's emotionality ( $p < .04$ ) as well as mothers' punitive parenting ( $p < .04$ ) served as an individual predictor of younger children's externalizing problems. See Table 16.

## CHAPTER FOUR: DISCUSSION

This study aimed to further elucidate the relationships among differential parenting, parenting variables, the parent-child attachment relationship, and young child outcomes. This study was unique in that it examined attachment as a mediator in the relationship between differential parenting of younger versus older children in the same family and children's emotional and behavioral functioning. Previous research indicated the importance of parenting in the development of young children (Thomas & Chess, 1977), and recent studies focused on within-family differences (instead of the more heavily investigated between-family differences; Daniels & Plomin, 1985; Turkheimer & Waldron, 2000). Although previous studies investigated potential moderators (e.g., age, gender) as they relate to within-family differences, there was a lack of investigation of potential mediators. Consequently, this study sought to further this line of research by combining variables including differential parenting, parenting behaviors, the parent-child attachment relationship, children's temperament, and children's emotional and behavioral functioning. Results of this study indicated that there were significant relationships among these variables.

With regard to differential parenting, it was hypothesized that higher levels of differential affection and control would be associated positively and significantly with parent-child attachment quality (i.e., lower model of self and others). This hypothesis was supported only partially, in that differential parental affection was related significantly and positively with

anxiety as well as avoidance in the attachment relationship between parents and their older children. In contrast, differential parental affection was not associated significantly with anxiety or avoidance in the attachment relationship between parents and their younger children. This finding highlighted the unique importance of the parent-child attachment relationship when a younger sibling was present. This finding was consistent with previous research showing that mothers showed less warmth and became more controlling of their firstborn children after the birth of a second child (Bryant & Crockenberg, 1980; Teti, Sakin, Kucera, & Corns, 1996). Teti and colleagues (1996) reported further that firstborns became more clingy, anxious, and withdrawn and experienced more bedwetting and toileting problems after a sibling was born. These findings as well as results from the current study suggested that older children were sensitive to the effects of differential parenting when there was a younger child in the family. Differential control was not associated with anxiety or avoidance in the attachment relationship between parents and their older or younger children. Mothers reported low levels of differential control in general, potentially explaining these insignificant findings.

It was hypothesized further that parent-child attachment quality would predict significantly parents' perceptions of their children's emotional and behavioral functioning (i.e., their ratings of their children's internalizing and externalizing problems). It also was anticipated that parents with a more secure attachment relationship would report lower levels of internalizing and externalizing behavior problems in their children. As predicted, attachment anxiety and avoidance in the parent-younger child relationship were related significantly and positively with parent ratings of internalizing and externalizing behavior problems in the younger child. These relationships were significant for the older child in the family as well. These results were

consistent with studies suggesting that anxious and avoidant attachment styles were predictive of behavior problems in middle childhood (Kochanska & Kim, 2013) and adolescence (Nataranjan, 2013; Pace & Zappulla, 2011).

Further, it was hypothesized that the parent-child attachment relationship would mediate the relationship between parents' differential treatment and their ratings of their older and younger children's emotional and behavioral functioning. This hypothesis was supported partially. Older children's attachment anxiety as well as avoidance mediated the relationship between differential parental affection and parents' ratings of their older children's internalizing behavior problems. These relationships did not prove significant for younger children, however. These findings further stressed the unique importance of a healthy attachment relationship between parents and their children, especially when there was a younger child present.

As hypothesized, it was found that child temperament was associated significantly with parenting behaviors. In particular, older children's emotionality was correlated significantly and positively with inconsistent parenting practices of the older child. Further, younger children's activity level and emotionality were correlated significantly and positively with punitive parenting practices of the younger child. These findings aligned with previous research showing that parenting behaviors had a large influence on children's emotional and behavioral functioning (Kochanska, 1993). Putnam, Sanson, and Rothbart (2002) highlighted the interaction between child temperament and parenting behaviors in yielding different developmental outcomes. It was noted that children with "easy" temperaments (i.e., those who exhibited less emotionality, were quick to establish routines) elicited more positive parenting behaviors (Kyrios & Prior, 1990). In turn, children with "difficult" temperaments (i.e., those

who were highly active, less routinized) elicited less responsive and more adversarial parenting behaviors (van den Boom & Hoeksma, 1994). The causal processes of child temperament and parenting behaviors complicate research in this area (Putnam et al., 2002), however, as it is likely that there are bidirectional relationships that shape both children's temperament and parenting behaviors. The results of this study indicated that inconsistent parenting practices were related specifically with older children's emotionality, whereas punitive parenting was related with younger children's activity level and emotionality.

It was hypothesized further that higher levels of inconsistent and punitive parenting and lower levels of positive parenting would be related significantly and positively with parents' perceptions of their older and younger children's internalizing and externalizing problems. Consistent with these hypotheses, inconsistent parenting of the older child was correlated significantly and positively with parent ratings of externalizing problems in the older child. Inconsistent parenting of the younger child also was correlated significantly and positively with parent ratings of internalizing and externalizing problems in the younger child. Additionally, punitive parenting of the younger child was correlated significantly and positively with parent ratings of internalizing and externalizing problems in the younger child. These findings were consistent with a large body of literature showing that inconsistent and punitive parenting was linked with the emergence of oppositional and aggressive behaviors in children (Danforth, Barkley, & Stokes, 1991; Stormshak, Bierman, McMahon, & Lengua, 2000). Interestingly, and contrary to the current study's hypotheses and previous research, positive parenting was not associated with parents' ratings of their children's emotional and behavioral functioning. It may

be that inconsistent and punitive parenting were uniquely important in the understanding of parents' ratings of their children's problems.

Further, it was hypothesized that parenting behaviors (i.e., positive, inconsistent, and punitive parenting) would mediate the relationship between children's temperament and parents' ratings of their children's emotional and behavioral functioning. These hypotheses were supported only partially; punitive parenting mediated the relationship between younger children's activity level and mothers' ratings of their younger children's internalizing and externalizing behavior problems. Again, it was found that punitive parenting was associated uniquely with younger children's temperament (in this case, activity level) and parents' ratings of these younger children's internalizing and externalizing problems.

Taken together, the results of this study added to the literature regarding differential parenting, parenting behaviors, parent-child attachment, children's temperament, and parents' perceptions of their children's emotional and behavioral functioning. In particular, results demonstrated that the parent-child attachment relationship is particularly important for older children in families with a younger sibling present. Insecurity in the parent-older child relationship fully mediated the relationship between differential parenting and parents' perceptions of their older children's internalizing behavior problems. Adjusting to a new sibling can be challenging for children (Teti et al., 1996), and future research is needed to determine how to ensure security in the parent-older child relationship. With regard to younger siblings, this study corroborated existing research and found that punitive parenting was especially important in predicting parents' ratings of these children's emotional and behavioral functioning. Previous research demonstrated that younger children were more likely to experience punitive

parenting than older children, potentially due to their smaller size (Dietz, 2000). Thus, future research should investigate protective factors that may ensure more positive outcomes for these children.

The results gleaned from the current study should be interpreted within the context of its limitations, however. First, this study utilized parent self-report, and social desirability could have influenced these ratings. Despite the anonymity assured to parents, they still may not have been willing to disclose less than desirable feelings and behaviors. Further, it may be the case that mothers' responses may have been influenced by events that occurred with their children just prior to participation (e.g., the older versus the young child having difficulty). Second, this study's participants were mainly married, Caucasian mothers, many of whom had completed at least some college. Additionally, the majority of mothers in this study fell within relatively high income brackets. This homogeneity decreased this study's external validity and generalizability to other populations. Results should be replicated in more heterogeneous samples in future studies. It should also be noted that mothers did not report their total number of children but that they were asked to rate their eldest two children between the ages of 2- and 10-years. This study did not investigate differences between mothers with only two children and those who had additional children. Additionally, previously researched moderators, such as gender and age of the children or mothers' marital and co-parenting status, were not investigated primarily in this study. Future studies should continue to explore these variables as moderators or covariates in order to better understand differential parenting.

Nonetheless, this study added to the literature investigating parenting and child outcomes. Consistent with previous literature, this study demonstrated that many variables should be



examined to best understand parents' perceptions of their children. Regarding differential parenting, previous research demonstrated that such differential treatment can lead to negative child outcomes (Brody et al., 1986; McHale et al., 1995). This study added to this area of research and showed that the attachment relationship between parents and older children in particular was essential in understanding how differential parenting was related to parents' perceptions of these children. Attachment was found to be a significant mediator in this relationship, helping to fill the gap of such potential mediators in the literature. In addition, this study corroborated previous findings that punitive parenting was uniquely important when examining younger children's behaviors and outcomes. Results highlighted the importance of examining older and younger children in the same family and the specific parenting behaviors that were most important in predicting outcomes for each.

## **APPENDIX A: TABLES**

**Table 1: Descriptive Statistics**

Variable	M	SD	Possible Range
Differential Paternal Affection	1.41	1.82	0-8
Differential Paternal Control	1.83	1.80	0-8
Inconsistent Parenting of Older Child	18.16	4.85	7-35
Punitive Parenting of Older Child	6.25	2.05	5-25
Positive Parenting of Older Child	53.06	4.54	12-60
Inconsistent Parenting of Younger Child	17.61	5.00	7-35
Punitive Parenting of Younger Child	6.29	2.09	5-25
Positive Parenting of Younger Child	53.08	6.09	12-60
Older Child Attachment Anxiety	46.38	19.91	18-90
Older Child Attachment Avoidance	32.47	18.00	18-90
Younger Child Attachment Anxiety	43.88	15.97	18-90
Younger Child Attachment Avoidance	28.79	11.43	18-90
Older Child Emotionality	18.35	9.09	7-35
Older Child Activity	24.91	5.75	7-35
Older Child Sociability	22.38	6.02	6-30

Table 1

Variable	M	SD	Possible Range
Younger Child Emotionality	18.54	9.25	7-35
Younger Child Activity	26.35	5.37	7-35
Younger Child Sociability	22.23	6.06	6-30
Older Child Internalizing	52.09	12.17	23-100
Older Child Externalizing	51.21	12.66	23-100
Younger Child Internalizing	48.72	11.77	23-100
Younger Child Externalizing	50.36	12.02	23-100

**Table 2:** Correlations Among Parents' Differential Treatment, Parenting Behaviors, Attachment, and Young Child Outcomes

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Differential Parental Affection	-												
2. Differential Parental Control	.29**	-											
3. Inconsistent Parenting of Older Child	.07	.09	-										
4. Punitive Parenting of Older Child	-.04	.09	.41***	-									
5. Positive Parenting of Older Child	-.28**	-.19*	-.10	-.21	-								
6. Inconsistent Parenting of Younger Child	.07	.11	.74***	.41***	.19	-							
7. Punitive Parenting of Younger Child	-.03	.08	.35***	.86***	-.21*	.42***	-						
8. Positive Parenting of Younger Child	-.26**	-.29**	-.11	-.34***	.65***	-.11	-.26**	-					
9. Older Child Attachment Anxiety	.19*	.11	.31**	.16	-.23*	.53***	.17	-.27**	-				
10. Older Child Attachment Avoidance	.24*	.01	.16	.14	-.34**	.15	.07	-.09	.15	-			
11. Younger Child Attachment Anxiety	.12	.11	.39***	.30**	-.07	.45***	.31**	-.16	.63***	.15	-		
12. Younger Child Attachment Avoidance	.03	-.04	.21*	.25**	-.21*	.22*	.20*	-.28**	.47***	.37***	.32**	-	
13. Older Child Emotionality	.00	.11	.26**	-.03	.02	.20*	.01	.01	.27**	.16	.42***	.18	-

Table 2

Variables	14	15	16	17	18	19	20	21	22
1. Differential Parental Affection	-.20*	-.05	.14	-.15	.03	.14	.09	-.01	-.03
2. Differential Parental Control	.03	.03	.04	.04	.06	.03	.03	-.11	-.08
3. Inconsistent Parenting of Older Child	.15	.10	.12	.08	-.07	.19*	.29**	.19*	.14
4. Punitive Parenting of Older Child	.13	.16	.16	.14	-.06	-.12	.15	.19*	.09
5. Positive Parenting of Older Child	.03	-.09	.03	-.01	-.09	-.22*	-.13	-.16	-.04
6. Inconsistent Parenting of Younger Child	.10	.15	-.00	-.17*	.11	.18	.22*	.23*	.22*
7. Punitive Parenting of Younger Child	.10	.11	.20*	.23*	.05	.04	.18*	.22*	.28**
8. Positive Parenting of Younger Child	-.09	-.14	-.01	.06	-.05	-.08	-.05	-.04	.00
9. Older Child Attachment Anxiety	-.04	.04	.16	-.01	-.02	.46***	.42***	.42***	.23*
10. Older Child Attachment Avoidance	-.10	-.14	.04	-.08	.08	.31**	.44***	.27**	.08
11. Younger Child Attachment Anxiety	.11	.10	.37**	.05	-.05	.24*	.38***	.52***	.27**
12. Younger Child Attachment Avoidance	.06	.01	.08	-.07	.08	.20*	.19	.41***	.29**
13. Older Child Emotionality	.03	.03	.07	.04	.06	.50***	.51***	.15	.24*

**Table 3. Mediation Regression Analyses for Differential Affection, Attachment, and Older Children's Internalizing Problems**

<b>Regression/Variables</b>	<b>Beta</b>	<b>t</b>	<b>p</b>
<i>Mediators: Older Children's Attachment Anxiety and Avoidance</i>			
Differential Affection and Anxiety: $F(1, 115) = 4.17, p < .05, r^2 = .04$			
Differential Affection	.19	2.04	.04*
Anxiety and Internalizing Problems: $F(1, 108) = 28.79, p < .001, r^2 = .21$			
Anxiety	.46	5.37	.001***
Differential Affection and Internalizing Problems: $F(1, 123) = 2.40, p < .13, r^2 = .02$			
Differential Affection	-.14	1.55	.12
Differential Affection, Anxiety, and Internalizing Problems: $F(2, 108) = 14.57, p < .001, r^2 = .22$			
Differential Affection	.06	.69	.49
Anxiety	.45	5.06	.001***
Differential Affection and Avoidance: $F(1, 110) = 6.52, p < .01, r^2 = .06$			
Differential Affection	.24	2.55	.01**
Avoidance and Internalizing Problems: $F(1, 103) = 10.89, p < .002, r^2 = .10$			
Avoidance	.31	3.30	.001**
Differential Affection and Internalizing Problems: $F(1, 123) = 2.40, p < .13, r^2 = .02$			
Differential Affection	-.14	1.55	.124
Differential Affection, Avoidance, and Internalizing Problems: $F(2, 103) = 5.73, p < .005, r^2 = .10$			
Differential Affection	.08	.78	.44
Avoidance	.29	2.97	.004**

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 4. Mediation Regression Analyses for Differential Parenting, Attachment, and Older Children's Externalizing Problems**

<b>Regression/Variables</b>	<b>Beta</b>	<b>t</b>	<b>p</b>
<i>Mediators: Older Children's Attachment Anxiety and Avoidance</i>			
Differential Affection and Anxiety: $F(1, 115) = 4.17, p < .05, r^2 = .04$			
Differential Affection	.19	2.04	.04*
Anxiety and Externalizing Problems: $F(1, 108) = 23.50, p < .001, r^2 = .18$			
Anxiety	.42	4.85	.001***
Differential Affection and Externalizing Problems: $F(1, 123) = 0.83, p < .37, r^2 = .01$			
Differential Affection	.08	.91	.37
Differential Affection, Anxiety, and Externalizing Problems: $F(2, 108) = 11.64, p < .001, r^2 = .18$			
Differential Affection	.00	.05	.96
Anxiety	.42	4.69	.001***
Differential Affection and Avoidance: $F(1, 110) = 6.52, p < .01, r^2 = .06$			
Differential Affection	.24	2.55	.01**
Avoidance and Externalizing Problems: $F(1, 103) = 24.42, p < .001, r^2 = .19$			
Avoidance	.44	4.44	.001***
Differential Affection and Externalizing Problems: $F(1, 123) = 0.83, p < .37, r^2 = .01$			
Differential Affection	.08	.910	.37
Differential Affection, Avoidance, and Externalizing Problems: $F(2, 103) = 12.12, p < .001, r^2 = .19$			
Differential Affection	-.02	-.22	.82
Avoidance	.45	4.80	.001***

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



**Table 5.** Meditational Regression Analyses for Children’s Temperament, Parenting Behaviors, and Older Children’s Internalizing Problems

<b>Regression/Variables</b>	<b>Beta</b>	<b><i>t</i></b>	<b><i>p</i></b>
<i>Mediator: Inconsistent Parenting</i>			
Older Emotionality and Inconsistent Parenting: $F(1, 122) = 8.76, p < .01, r^2 = .07$			
Older Emotionality	.26	2.96	.004**
Inconsistent Parenting and Internalizing Problems: $F(1, 117) = 4.15, p < .05, r^2 = .04$			
Inconsistent Parenting	.19	2.04	.04*
Older Emotionality and Internalizing Problems: $F(1, 118) = 39.60, p < .001, r^2 = .25$			
Older Emotionality	.50	6.29	.001***
Older Emotionality, Inconsistent Parenting, and Internalizing Problems: $F(2, 114) = 19.27, p < .001, r^2 = .26$			
Older Emotionality	.48	5.76	.001***
Inconsistent Parenting	.10	1.20	.23

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 6.** Meditational Regression Analyses for Children’s Temperament, Parenting Behaviors, and Younger Internalizing Problems

<b>Regression/Variables</b>	<b>Beta</b>	<b><i>t</i></b>	<b><i>p</i></b>
<i>Mediators: Younger Children’s Punitive Parenting</i>			
Younger Activity and Punitive Parenting: $F(1, 121) = 6.37, p < .02, r^2 = .05$			
Younger Activity	.23	2.52	.01**
Punitive Parenting and Internalizing Problems: $F(1, 118) = 5.79, p < .02, r^2 = .05$			
Punitive Parenting	.22	2.41	.02*
Younger Activity and Internalizing Problems: $F(1, 117) = 0.28, p < .60, r^2 = .00$			
Younger Activity	-.05	-.53	.60
Younger Activity, Punitive Parenting, and Internalizing Problems: $F(2, 113) = 4.14, p < .02, r^2 = .07$			
Younger Activity	-.11	-1.14	.26
Punitive Parenting	.27	2.83	.006**
Younger Emotionality and Punitive Parenting: $F(1, 210) = 4.75, p < .04, r^2 = .04$			
Younger Emotionality	.20	2.18	.03*
Punitive Parenting and Internalizing Problems: $F(1, 118) = 5.79, p < .02, r^2 = .05$			
Punitive Parenting	.22	2.41	.02*
Younger Emotionality and Internalizing Problems: $F(1, 116) = 23.82, p < .001, r^2 = .17$			
Younger Emotionality	.41	4.88	.001***
Younger Emotionality, Punitive Parenting, and Internalizing Problems: $F(2, 112) = 13.09, p < .001, r^2 = .19$			
Younger Emotionality	.38	4.34	.001***
Punitive Parenting	.14	1.55	.12

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 7.** Meditational Regression Analyses for Children’s Temperament, Parenting Behaviors, and Older Children’s Externalizing Problems

<b>Regression/Variables</b>	<b>Beta</b>	<b><i>t</i></b>	<b><i>p</i></b>
<i>Mediator: Inconsistent Parenting</i>			
Older Emotionality and Inconsistent Parenting: $F(1, 122) = 8.76, p < .01, r^2 = .07$			
Older Emotionality	.26	2.96	.004**
Inconsistent Parenting and Externalizing Problems: $F(1, 117) = 10.48, p < .01, r^2 = .08$			
Inconsistent Parenting	.29	3.24	.002**
Older Emotionality and Externalizing Problems: $F(1, 118) = 41.29, p < .001, r^2 = .26$			
Older Emotionality	.51	6.42	.001***
Older Emotionality, Inconsistent Parenting, and Externalizing Problems: $F(2, 114) = 24.64, p < .001, r^2 = .31$			
Older Emotionality	.47	5.89	.001***
Inconsistent Parenting	.21	2.65	.009**

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 8.** Meditational Regression Analyses for Children’s Temperament, Parenting Behaviors, and Younger Externalizing Problems

<b>Regression/Variables</b>	<b>Beta</b>	<b><i>t</i></b>	<b><i>p</i></b>
<i>Mediators: Younger Children’s Punitive Parenting</i>			
Younger Activity and Punitive Parenting: $F(1, 121) = 6.37, p < .02, r^2 = .05$			
Younger Activity	.23	2.52	.01**
Punitive Parenting and Externalizing Problems: $F(1, 118) = 10.23, p < .01, r^2 = .08$			
Punitive Parenting	.28	3.20	.002**
Younger Activity and Externalizing Problems: $F(1, 117) = 5.13, p < .03, r^2 = .04$			
Younger Activity	.21	2.26	.03*
Younger Activity, Punitive Parenting, and Externalizing Problems: $F(2, 113) = 6.96, p < .01, r^2 = .11$			
Younger Activity	.15	1.64	.10
Punitive Parenting	.27	2.90	.004**
Younger Emotionality and Punitive Parenting: $F(1, 210) = 4.75, p < .04, r^2 = .04$			
Younger Emotionality	.20	2.18	.03*
Punitive Parenting and Externalizing Problems: $F(1, 118) = 10.23, p < .01, r^2 = .08$			
Punitive Parenting	.28	3.20	.002**
Younger Emotionality and Externalizing Problems: $F(1, 116) = 18.98, p < .001, r^2 = .14$			
Younger Emotionality	.38	4.36	.001***
Younger Emotionality, Punitive Parenting, and Externalizing Problems: $F(2, 112) = 14.22, p < .001, r^2 = .21$			
Younger Emotionality	.35	3.97	.001***
Punitive Parenting	.22	2.46	.02*

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 9.** Hierarchical Regression Analyses for Differential Parenting, Older Children's Attachment, and Internalizing Behaviors

<b>Variables</b>	<b><i>B</i></b>	<b><i>SE B</i></b>	<b><i>B</i></b>
Block 1. $F(2, 94) = 1.00, p < .38, R^2 = .02$			
Differential Affection	1.02	.74	.15
Differential Control	-.10	.75	-.01
Block 2. $F(4, 94) = 8.03, p < .001, R^2 = .26$			
Differential Affection	.05	.68	.01
Differential Control	-.05	.67	-.01
Attachment Anxiety	.28	.06	.43
Attachment Avoidance	.13	.08	.17

**Table 10.** Hierarchical Regression Analyses for Differential Parenting, Younger Children's Attachment, and Internalizing Behaviors

<b>Variables</b>	<b><i>B</i></b>	<b><i>SE B</i></b>	<b><i>β</i></b>
Block 1. $F(2, 93) = 1.82, p < .17, R^2 = .04$			
Differential Affection	.39	.67	.06
Differential Control	-1.29	.68	-.20
Block 2. $F(4, 93) = 12.90, p < .001, R^2 = .37$			
Differential Affection	.15	.68	.01
Differential Control	-1.34	.60	-.21
Attachment Anxiety	.33	.07	.47
Attachment Avoidance	.23	.10	.21

**Table 11.** Hierarchical Regression Analyses for Differential Parenting, Older Children's Attachment, and Externalizing Behaviors

<b>Variables</b>	<b><i>B</i></b>	<b><i>SE B</i></b>	<b><i>β</i></b>
Block 1. $F(2, 94) = .58, p < .57, R^2 = .01$			
Differential Affection	.79	.77	.11
Differential Control	-.47	.78	-.07
Block 2. $F(4, 94) = 8.37, p < .001, R^2 = .27$			
Differential Affection	-.37	.70	-.05
Differential Control	-.29	.68	-.04
Attachment Anxiety	.23	.07	.39
Attachment Avoidance	.25	.08	.32

**Table 12.** Hierarchical Regression Analyses for Differential Parenting, Younger Children's Attachment, and Externalizing Behaviors

<b>Variables</b>	<b><i>B</i></b>	<b><i>SE B</i></b>	<b><i>β</i></b>
Block 1. $F(2, 93) = .36, p < .70, R^2 = .01$			
Differential Affection	.10	.70	.02
Differential Control	-.60	.71	-.09
Block 2. $F(4, 93) = 3.45, p < .02, R^2 = .13$			
Differential Affection	-.09	.66	-.01
Differential Control	-.57	.68	-.09
Attachment Anxiety	.16	.08	.22
Attachment Avoidance	.24	.19	.22



**Table 13.** Hierarchical Regression Analyses for Older Children’s Temperament, Parenting Behaviors, and Internalizing Behaviors

<b>Variables</b>	<b><i>B</i></b>	<b><i>SE B</i></b>	<b><i>β</i></b>
Block 1. $F(3, 95) = 14.62, p < .001, R^2 = .32$			
Older Children’s Emotionality	.74	.12	.54
Older Children’s Activity Level	-.32	.20	-.15
Older Children’s Sociability	-.04	.19	-.02
Block 2. $F(6, 95) = 10.39, p < .001, R^2 = .41$			
Older Children’s Emotionality	.69	.12	.50
Older Children’s Activity Level	-.28	.19	-.13
Older Children’s Sociability	-.15	.19	-.07
Positive Parenting	-.58	.22	-.23
Inconsistent Parenting	.53	.24	.21
Punitive Parenting	-.38	.54	-.06

**Table 14.** Hierarchical Regression Analyses for Younger Children’s Temperament, Parenting Behaviors, and Internalizing Behaviors

<b>Variables</b>	<b><i>B</i></b>	<b><i>SE B</i></b>	<b><i>β</i></b>
Block 1. $F(3, 82) = 5.14, p < .01, R^2 = .16$			
Younger Children’s Emotionality	.50	.13	.39
Younger Children’s Activity Level	.04	.23	.02
Younger Children’s Sociability	-.22	.20	-.19
Block 2. $F(6, 82) = 4.77, p < .001, R^2 = .27$			
Younger Children’s Emotionality	.37	.13	.29
Younger Children’s Activity Level	.00	.23	.00
Younger Children’s Sociability	-.24	.20	-.13
Positive Parenting	.04	.20	.02
Inconsistent Parenting	.95	.64	.18
Punitive Parenting	.55	.26	.24

**Table 15.** Hierarchical Regression Analyses for Older Children’s Temperament, Parenting Behaviors, and Externalizing Behaviors

<b>Variables</b>	<b><i>B</i></b>	<b><i>SE B</i></b>	<b><i>β</i></b>
Block 1. $F(3, 95) = 10.36, p < .001, R^2 = .25$			
Older Children’s Emotionality	.75	.14	.50
Older Children’s Activity Level	.14	.23	.06
Older Children’s Sociability	.23	.22	.10
Block 2. $F(6, 95) = 6.74, p < .001, R^2 = .31$			
Older Children’s Emotionality	.68	.14	.45
Older Children’s Activity Level	.12	.23	.05
Older Children’s Sociability	.13	.22	.06
Positive Parenting	-.23	.26	-.08
Inconsistent Parenting	.55	.28	.20
Punitive Parenting	.34	.64	.05

**Table 16.** Hierarchical Regression Analyses for Younger Children’s Temperament, Parenting Behaviors, and Externalizing Behaviors

<b>Variables</b>	<b><i>B</i></b>	<b><i>SE B</i></b>	<b><i>β</i></b>
Block 1. $F(3, 82) = 4.69, p < .001, R^2 = .15$			
Younger Children’s Emotionality	.40	.13	.32
Younger Children’s Activity Level	.28	.23	.14
Younger Children’s Sociability	.15	.20	.08
Block 2. $F(6, 82) = 4.39, p < .01, R^2 = .26$			
Younger Children’s Emotionality	.29	.13	.23
Younger Children’s Activity Level	.19	.22	.09
Younger Children’s Sociability	.14	.19	.08
Positive Parenting	.22	.19	.12
Inconsistent Parenting	1.41	.27	.27
Punitive Parenting	.33	.15	.15

## **APPENDIX B: DEMOGRAPHICS QUESTIONNAIRE**

1. Your gender: M F
2. Your age: \_\_\_\_\_
3. Your Ethnicity: Caucasian Hispanic African-American Asian-American Native American Other: \_\_\_\_\_
4. Your marital status: Married Divorced Separated Widowed Single  
Living with Partner Remarried (if so, how many previous marriages \_\_\_\_\_)
5. Does your children's other parent live with you? Yes No
6. Please list the age and gender of your two oldest children and whether or not they live with you.

Age	Gender	Live with you?
_____	M F	Y N
_____	M F	Y N

7. Do you live with any extended family members or friends? Y N
8. If yes, who? \_\_\_\_\_
9. Did you use fertility treatments with any of your children? Y N
10. If yes, which one(s)? Specify age(s) of children: \_\_\_\_\_
11. Your level of education:

Post Doctorate	Vocational Training
Graduate Professional Training	High School Diploma
College Degree (Bachelor's)	Some High School
Some College	Less than High School

12. Your occupation: \_\_\_\_\_

13. Your children's other parent's level of education:

Post Doctorate	Vocational Training
Graduate Professional Training	High School
Diploma College Degree (Bachelor's)	Some High School
Some College	Less than High School

14. Your children's other parent's occupation: \_\_\_\_\_

15. Estimated Yearly Household Income (please circle

one): Less than \$10,000	\$40,000 - \$50,000
\$10,000 - \$20,000	\$50,000 - \$60,000
\$20,000 - \$30,000	\$60,000 - \$70,000
\$30,000 - \$40,000	More than \$70,000

Think of a typical day during the work week and a typical day during the weekend. For the questions below, please estimate how much time in hours (if less than 1 hour, please use

minutes) that you spend with your older and younger child. Please DO NOT include time during the night when you are both sleeping. Please note whether you are using hours or minutes for your estimated time.

16. Direct interaction with your **OLDER** child (e.g., talking, playing a game):

AVERAGE WEEKDAY TIME: \_\_\_\_\_ min/hours

AVERAGE WEEKEND DAY TIME: \_\_\_\_\_ min/hours

17. Direct interaction with your **YOUNGER** child (e.g., talking, playing a game):

AVERAGE WEEKDAY TIME: \_\_\_\_\_ min/hours

AVERAGE WEEKEND DAY TIME: \_\_\_\_\_ min/hours

18. Accessibility to your **OLDER** child (i.e., when you are in the same location as the child, but you are not actively engaged in conversation or any other type of interaction...such as when you watch t.v. together without talking or when you are in the house at the same time, but you are involved in separate activities):

AVERAGE WEEKDAY TIME: \_\_\_\_\_ min/hours

AVERAGE WEEKEND DAY TIME: \_\_\_\_\_ min/hours

19. Accessibility to your **YOUNGER** child (i.e., when you are in the same location as the child, but you are not actively engaged in conversation or any other type of interaction...such as when you watch t.v. together without talking or when you are in the house at the same time, but you are involved in separate activities):

AVERAGE WEEKDAY TIME: \_\_\_\_\_ min/hours

AVERAGE WEEKEND DAY TIME:  
\_\_\_\_\_ min/hours



## **APPENDIX C: SIBLING INVENTORY OF DIFFERENTIAL EXPERIENCE**

Sibling Inventory of Differential Experience  
(SIDE) Modified for Parent use

Toward Younger Child	Child			Toward Older	
Much More	Same			Much More	
1	2	3	4	5	
1. I am strict with my child	1	2	3	4	5
2. I am proud of the things my child has done	1	2	3	4	5
3. I enjoy doing things with my child	1	2	3	4	5
4. I am sensitive to what my child thinks and feels	1	2	3	4	5
5. I punish my child for his/her misbehavior	1	2	3	4	5
6. I show interest in the things my child likes to do	1	2	3	4	5
7. I blame my child for things that other family members do	1	2	3	4	5
8. I tend to favor one child over another	1	2	3	4	5
9. I discipline my child	1	2	3	4	5

**APPENDIX D: ALABAMA PARENTING QUESTIONNAIRE- PRESCHOOL  
VERSION**

*Alabama Parenting Questionnaire-Preschool Version (APQ-PR)*

*Please indicate how often you do/feel each of the following behaviors/feelings.*

*Scores range from 1 (never) to 5 (always).*

1. \_\_\_\_ You have a friendly talk with your child.
2. \_\_\_\_ You volunteer to help with special activities that your child is involved in.
3. \_\_\_\_ You play games or do other fun things with your child.
4. \_\_\_\_ You ask your child about his/her day in school.
5. \_\_\_\_ You help your child with his/her homework.
6. \_\_\_\_ You compliment your child when he/she does something well.
7. \_\_\_\_ You praise your child if he/she behaves well.
8. \_\_\_\_ You hug or kiss your child when he/she has done something well.
9. \_\_\_\_ You talk to your child about his/her friends.
10. \_\_\_\_ You tell your child that you like it when he/she helps around the house.
11. \_\_\_\_ You calmly explain to your child why his/her behavior was wrong when he/she misbehaves.
12. \_\_\_\_ You let your child know when he/she is doing a good job with something.
13. \_\_\_\_ You threaten to punish your child and then do not actually punish him/her.
14. \_\_\_\_ Your child talks you out of being punished after he/she has done something wrong.
15. \_\_\_\_ You feel that getting your child to obey you is more trouble than it's worth.
16. \_\_\_\_ You let your child out of a punishment early (e.g., lift restrictions earlier than you originally said).

**APPENDIX E: EXPERIENCE IN CLOSE RELATIONSHIPS SCALE**

Please read each sentence and circle the number to show how much you agree or disagree in regards to your relationship with your youth now or in the past six months.

1                    2                    3                    4                    5                    6                    7

**Disagree Strongly**

**Neutral/Mixed**

**Agree Strongly**

1. My child prefers not to show me how he/she feels deep down.

1                    2                    3                    4                    5                    6                    7

2. When my child is away from me, he/she feels anxious and afraid.

1                    2                    3                    4                    5                    6                    7

3. My child is very comfortable being close to me.

1                    2                    3                    4                    5                    6                    7

4. If my child can't get me to show interest in him/her, he/she gets upset or angry.

1                    2                    3                    4                    5                    6                    7

5. My child finds it difficult to depend on me.

1                    2                    3                    4                    5                    6                    7

6. My child worries about being away from me.

1                    2                    3                    4                    5                    6                    7

7. My child needs a lot of reassurance that he/she is loved by me.

1                    2                    3                    4                    5                    6                    7

8. My child worries that I don't care about him/her as much as he/she cares about me.

1                    2                    3                    4                    5                    6                    7

9. My child worries about being abandoned by me.

1                    2                    3                    4                    5                    6                    7

10. My child isn't comfortable opening up to me.

**1                    2                    3                    4                    5                    6                    7**

11. Just when I start to get close to my child I find him/her pulling away from me.

**1                    2                    3                    4                    5                    6                    7**

12. My child gets frustrated when I am not around as much as he/she would like.

**1                    2                    3                    4                    5                    6                    7**

13. My child is comfortable sharing his/her private thoughts and feelings with me.

**1                    2                    3                    4                    5                    6                    7**

14. My child gets uncomfortable when I want to be close to him/her.

**1                    2                    3                    4                    5                    6                    7**

15. My child wishes that my feelings for him/her were as strong as his/her feelings for me.

**1                    2                    3                    4                    5                    6                    7**

16. My child feels comfortable depending on me.

**1                    2                    3                    4                    5                    6                    7**

17. My child feels really bad about him/herself when I disapprove of him/her.

**1                    2                    3                    4                    5                    6                    7**

18. My child tries to avoid getting too close to me.

**1                    2                    3                    4                    5                    6                    7**

19. My child worries a lot about his/her relationship with me.

**1                    2                    3                    4                    5                    6                    7**

20. My child tells me just about everything.

**1                    2                    3                    4                    5                    6                    7**

21. Often my child wants to be really close to me and this makes me feel like backing away.

**1                    2                    3                    4                    5                    6                    7**

22. Whenever we get close, my child pulls back from me.

**1                    2                    3                    4                    5                    6                    7**

23. My child resents it when I spend time away from him/her.

**1                    2                    3                    4                    5                    6                    7**

24. My child usually discusses his/her problems and concerns with me.

**1                    2                    3                    4                    5                    6                    7**

25. My child finds it relatively easy to get close to me.

**1                    2                    3                    4                    5                    6                    7**

26. Sometimes my child tries to force me to show that I care about him/her.

**1                    2                    3                    4                    5                    6                    7**

27. My child doesn't mind asking me for comfort, advice, or help.

**1                    2                    3                    4                    5                    6                    7**

28. My child's desire to be very close sometimes scares people away.

**1                    2                    3                    4                    5                    6                    7**

29. My child worries a fair amount about losing me.

**1                    2                    3                    4                    5                    6                    7**

30. My child turns to me for many things, including comfort and reassurance.

**1                    2                    3                    4                    5                    6                    7**

31. My child prefers not to be too close to me.

**1                    2                    3                    4                    5                    6                    7**

32. My child gets frustrated if I am not available when he/she needs me.

**1                    2                    3                    4                    5                    6                    7**

33. My child is comforted by turning to me in times of need.

**1                    2                    3                    4                    5                    6                    7**



34. My child feels that I don't want to get as close as he/she would like.

**1**                    **2**                    **3**                    **4**                    **5**                    **6**                    **7**

35. My child doesn't often worry about being abandoned.

**1**                    **2**                    **3**                    **4**                    **5**                    **6**                    **7**

36. My child gets nervous when I get very close to him/her.

**1**                    **2**                    **3**                    **4**                    **5**                    **6**                    **7**

**APPENDIX F: EMOTIONALITY ACTIVITY SOCIABILITY TEMPERAMENT  
SURVEY**

Please rate how characteristic each item is of your child. Scores range from 1 (*not typical of my child*) to 5 (*very typical of my child*)

1. \_\_\_\_\_ Tends to be shy
2. \_\_\_\_\_ Cries easily
3. \_\_\_\_\_ Likes to be with people
4. \_\_\_\_\_ Is always on the go
5. \_\_\_\_\_ Prefers playing with others rather than alone
6. \_\_\_\_\_ Tends to be somewhat emotional
7. \_\_\_\_\_ When child moves about, he/she moves slowly
8. \_\_\_\_\_ Makes friends easily
9. \_\_\_\_\_ Is off and running as soon as he/she wakes up
10. \_\_\_\_\_ Finds people more stimulating than anything else
11. \_\_\_\_\_ Often fusses and cries
12. \_\_\_\_\_ Is very sociable
13. \_\_\_\_\_ Is very energetic
14. \_\_\_\_\_ Takes a long time to warm up to strangers
15. \_\_\_\_\_ Gets upset easily
16. \_\_\_\_\_ Is something of a loner
17. \_\_\_\_\_ Prefers quiet, inactive games to more active ones
18. \_\_\_\_\_ When alone, child feels isolated
19. \_\_\_\_\_ Reacts intensely when upset
20. \_\_\_\_\_ Is very friendly with strangers

## **APPENDIX G: CHILD BEHAVIOR CHECKLIST**

Please print. Be sure to answer all items.

### CHILD BEHAVIOR CHECKLIST FOR AGES 1½ - 5

For office use only  
ID # \_\_\_\_\_

CHILD'S FULL NAME	First _____ Middle _____ Last _____	
CHILD'S GENDER	CHILD'S AGE	CHILD'S ETHNIC GROUP OR RACE
<input type="checkbox"/> Boy <input type="checkbox"/> Girl	_____	_____
TODAY'S DATE	CHILD'S BIRTHDATE	
Mo. _____ Date _____ Yr. _____	Mo. _____ Date _____ Yr. _____	

PARENTS' USUAL TYPE OF WORK, even if not working now. Please be specific—for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.

FATHER'S TYPE OF WORK: \_\_\_\_\_

MOTHER'S TYPE OF WORK: \_\_\_\_\_

THIS FORM FILLED OUT BY: (print your full name)  
\_\_\_\_\_

Please fill out this form to reflect *your* view of the child's behavior even if other people might not agree. Feel free to write additional comments beside each item and in the space provided on page 2. **Be sure to answer all items.**

Your relationship to child:

Mother  Father  Other (specify): \_\_\_\_\_

Below is a list of items that describe children. For each item that describes the child *now or within the past 2 months*, please circle the 2 if the item is **very true** or **often true** of the child. Circle the 1 if the item is **somewhat** or **sometimes true** of the child. If the item is **not true** of the child, circle the 0. Please answer all items as well as you can, even if some do not seem to apply to the child.

0 = Not True (as far as you know)      1 = Somewhat or Sometimes True      2 = Very True or Often True

- |       |   |       |  |
|-------|---|-------|--|
| 0 1 2 | 1. Aches or pains (without medical cause; <b>do not</b> include stomach or headaches) | 0 1 2 | 30. Easily jealous   |
| 0 1 2 | 2. Acts too young for age   | 0 1 2 | 31. Eats or drinks things that are not food— <b>don't</b> include sweets (describe): _____ |
| 0 1 2 | 3. Afraid to try new things   | 0 1 2 | 32. Fears certain animals, situations, or places (describe): _____                         |
| 0 1 2 | 4. Avoids looking others in the eye   | 0 1 2 | 33. Feelings are easily hurt   |
| 0 1 2 | 5. Can't concentrate, can't pay attention for long                                    | 0 1 2 | 34. Gets hurt a lot, accident-prone  |
| 0 1 2 | 6. Can't sit still, restless, or hyperactive  | 0 1 2 | 35. Gets in many fights  |
| 0 1 2 | 7. Can't stand having things out of place   | 0 1 2 | 36. Gets into everything   |
| 0 1 2 | 8. Can't stand waiting; wants everything now  | 0 1 2 | 37. Gets too upset when separated from parents   |
| 0 1 2 | 9. Chews on things that aren't edible   | 0 1 2 | 38. Has trouble getting to sleep   |
| 0 1 2 | 10. Clings to adults or too dependent   | 0 1 2 | 39. Headaches (without medical cause)  |
| 0 1 2 | 11. Constantly seeks help   | 0 1 2 | 40. Hits others  |
| 0 1 2 | 12. Constipated, doesn't move bowels (when not sick)                                  | 0 1 2 | 41. Holds his/her breath   |
| 0 1 2 | 13. Cries a lot   | 0 1 2 | 42. Hurts animals or people without meaning to   |
| 0 1 2 | 14. Cruel to animals  | 0 1 2 | 43. Looks unhappy without good reason  |
| 0 1 2 | 15. Defiant   | 0 1 2 | 44. Angry moods  |
| 0 1 2 | 16. Demands must be met immediately   | 0 1 2 | 45. Nausea, feels sick (without medical cause)   |
| 0 1 2 | 17. Destroys his/her own things   | 0 1 2 | 46. Nervous movements or twitching (describe): _____                                       |
| 0 1 2 | 18. Destroys things belonging to his/her family or other children                     | 0 1 2 | 47. Nervous, highstrung, or tense  |
| 0 1 2 | 19. Diarrhea or loose bowels (when not sick)  | 0 1 2 | 48. Nightmares   |
| 0 1 2 | 20. Disobedient   | 0 1 2 | 49. Overeating   |
| 0 1 2 | 21. Disturbed by any change in routine  | 0 1 2 | 50. Overtired  |
| 0 1 2 | 22. Doesn't want to sleep alone   | 0 1 2 | 51. Shows panic for no good reason   |
| 0 1 2 | 23. Doesn't answer when people talk to him/her  | 0 1 2 | 52. Painful bowel movements (without medical cause)  |
| 0 1 2 | 24. Doesn't eat well (describe): _____  | 0 1 2 | 53. Physically attacks people  |
| 0 1 2 | 25. Doesn't get along with other children   | 0 1 2 | 54. Picks nose, skin, or other parts of body (describe): _____                             |
| 0 1 2 | 26. Doesn't know how to have fun; acts like a little adult                            |       |  |
| 0 1 2 | 27. Doesn't seem to feel guilty after misbehaving                                     |       |  |
| 0 1 2 | 28. Doesn't want to go out of home  |       |  |
| 0 1 2 | 29. Easily frustrated   |       |  |

**Be sure you have answered all items. Then see other side.**

Please print your answers. Be sure to answer all items.

0 = Not True (as far as you know)      1 = Somewhat or Sometimes True      2 = Very True or Often True

- |  |  |
|--|--|
| <p>0 1 2 55. Plays with own sex parts too much</p> <p>0 1 2 56. Poorly coordinated or clumsy</p> <p>0 1 2 57. Problems with eyes (without medical cause)<br/>(describe): _____</p> <p>0 1 2 58. Punishment doesn't change his/her behavior</p> <p>0 1 2 59. Quickly shifts from one activity to another</p> <p>0 1 2 60. Rashes or other skin problems (without medical cause)</p> <p>0 1 2 61. Refuses to eat</p> <p>0 1 2 62. Refuses to play active games</p> <p>0 1 2 63. Repeatedly rocks head or body</p> <p>0 1 2 64. Resists going to bed at night</p> <p>0 1 2 65. Resists toilet training (describe): _____</p> <p>0 1 2 66. Screams a lot</p> <p>0 1 2 67. Seems unresponsive to affection</p> <p>0 1 2 68. Self-conscious or easily embarrassed</p> <p>0 1 2 69. Selfish or won't share</p> <p>0 1 2 70. Shows little affection toward people</p> <p>0 1 2 71. Shows little interest in things around him/her</p> <p>0 1 2 72. Shows too little fear of getting hurt</p> <p>0 1 2 73. Too shy or timid</p> <p>0 1 2 74. Sleeps less than most children during day and/or night (describe): _____</p> <p>0 1 2 75. Smears or plays with bowel movements</p> <p>0 1 2 76. Speech problem (describe): _____</p> <p>0 1 2 77. Stares into space or seems preoccupied</p> <p>0 1 2 78. Stomachaches or cramps (without medical cause)</p> | <p>0 1 2 79. Rapid shifts between sadness and excitement</p> <p>0 1 2 80. Strange behavior (describe): _____</p> <p>0 1 2 81. Stubborn, sullen, or irritable</p> <p>0 1 2 82. Sudden changes in mood or feelings</p> <p>0 1 2 83. Sulks a lot</p> <p>0 1 2 84. Talks or cries out in sleep</p> <p>0 1 2 85. Temper tantrums or hot temper</p> <p>0 1 2 86. Too concerned with neatness or cleanliness</p> <p>0 1 2 87. Too fearful or anxious</p> <p>0 1 2 88. Uncooperative</p> <p>0 1 2 89. Underactive, slow moving, or lacks energy</p> <p>0 1 2 90. Unhappy, sad, or depressed</p> <p>0 1 2 91. Unusually loud</p> <p>0 1 2 92. Upset by new people or situations<br/>(describe): _____</p> <p>0 1 2 93. Vomiting, throwing up (without medical cause)</p> <p>0 1 2 94. Wakes up often at night</p> <p>0 1 2 95. Wanders away</p> <p>0 1 2 96. Wants a lot of attention</p> <p>0 1 2 97. Whining</p> <p>0 1 2 98. Withdrawn, doesn't get involved with others</p> <p>0 1 2 99. Worries</p> <p>100. Please write in any problems the child has that were not listed above.<br/>_____<br/>_____<br/>_____</p> |
|--|--|

*Please be sure you have answered all items.  
Underline any you are concerned about.*

Does the child have any illness or disability (either physical or mental)?  No  Yes—Please describe:

What concerns you most about the child?

Please describe the best things about the child:

**LANGUAGE DEVELOPMENT SURVEY FOR AGES 18-35 MONTHS**

For office use only  
ID #

The Language Development Survey assesses children's word combinations and vocabulary. By carefully completing the Language Development Survey, you can help us obtain an accurate picture of your child's developing language. *Please print your answers. Be sure to answer all items.*

- I. Was your child born earlier than the usual 9 months after conception?  
 No     Yes—how many weeks early? \_\_\_\_\_ weeks early.
  
- II. How much did your child weigh at birth? \_\_\_\_\_ pounds \_\_\_\_\_ ounces or \_\_\_\_\_ grams.
  
- III. How many ear infections did your child have before age 24 months?  
 0-2     3-5     6-8     9 or more
  
- IV. Is any language beside English spoken in your home?  
 No     Yes—please list the languages: \_\_\_\_\_  
\_\_\_\_\_
  
- V. Has anyone in your family been slow in learning to talk?  
 No     Yes—please list their relationships to your child; for example, brother, father:  
\_\_\_\_\_
  
- VI. Are you worried about your child's language development?  
 No     Yes—why? \_\_\_\_\_
  
- VII. Does your child spontaneously say words in any language? (not just imitates or understands words)?  
 No     Yes—if yes, please complete item VIII and page 4.
  
- VIII. Does your child combine 2 or more words into phrases? For example: "more cookie," "car bye-bye."  
 No     Yes—please print 5 of your child's longest and best phrases or sentences.  
For each phrase that is not in English, print the name of the language.  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_  
5. \_\_\_\_\_

*Be sure you have answered all items. Then see other side.*

Please circle each word that your child says SPONTANEOUSLY (not just imitates or understands). If your child says non-English versions of words on the list, circle the English word and write the first letter of the language (e.g., S for Spanish). Please include words even if they are not pronounced clearly or are in "baby talk" (for example: "baba" for bottle).

FOODS	ANIMALS	ACTIONS	HOUSEHOLD	MODIFIERS	OTHER
1. apple	55. bear	107. bath	163. bathtub	216. all gone	264. any letter
2. banana	56. bee	108. breakfast	164. bed	217. all right	265. away
3. bread	57. bird	109. bring	165. blanket	218. bad	266. booboo
4. butter	58. bug	110. catch	166. bottle	219. big	267. byebye
5. cake	59. bunny	111. clap	167. bowl	220. black	268. excuse me
6. candy	60. cat	112. close	168. chair	221. blue	269. here
7. cereal	61. chicken	113. come	169. clock	222. broken	270. hi, hello
8. cheese	62. cow	114. cough	170. crib	223. clean	271. in
9. coffee	63. dog	115. cut	171. cup	224. cold	272. me
10. cookie	64. duck	116. dance	172. door	225. dark	273. meow
11. crackers	65. elephant	117. dinner	173. floor	226. dirty	274. my
12. drink	66. fish	118. doodoo	174. fork	227. dry	275. myself
13. egg	67. frog	119. down	175. glass	228. good	276. nightnight
14. food	68. horse	120. eat	176. knife	229. happy	277. no
15. grapes	69. monkey	121. feed	177. light	230. heavy	278. off
16. gum	70. pig	122. finish	178. mirror	231. hot	279. on
17. hamburger	71. puppy	123. fix	179. pillow	232. hungry	280. out
18. hotdog	72. snake	124. get	180. plate	233. little	281. please
19. ice cream	73. tiger	125. give	181. potty	234. mine	282. Sesame St.
20. juice	74. turkey	126. go	182. radio	235. more	283. shut up
21. meat	75. turtle	127. have	183. room	236. nice	284. thank you
22. milk		128. help	184. sink	237. pretty	285. there
23. orange	<b>BODY PARTS</b>	129. hit	185. soap	238. red	286. under
24. pizza	76. arm	130. hug	186. spoon	239. stinky	287. welcome
25. pretzel	77. belly button	131. jump	187. stairs	240. that	288. what
26. raisins	78. bottom	132. kick	188. table	241. this	289. where
27. soda	79. chin	133. kiss	189. telephone	242. tired	290. why
28. soup	80. ear	134. knock	190. towel	243. wet	291. woofwoof
29. spaghetti	81. elbow	135. look	191. trash	244. white	292. yes
30. tea	82. eye	136. love	192. T.V.	245. yellow	293. you
31. toast	83. face	137. lunch	193. window	246. yucky	294. yumyum
32. water	84. finger	138. make			295. any number
	85. foot	139. nap	<b>PERSONAL</b>	<b>CLOTHES</b>	<b>PEOPLE</b>
<b>TOYS</b>	86. hair	140. open	194. brush	247. belt	296. aunt
33. ball	87. hand	141. outside	195. comb	248. boots	297. baby
34. balloon	88. knee	142. patty cake	196. glasses	249. coat	298. boy
35. blocks	89. leg	143. peekaboo	197. key	250. diaper	299. daddy
36. book	90. mouth	144. peepee	198. money	251. dress	300. doctor
37. crayons	91. neck	145. push	199. paper	252. gloves	301. girl
38. doll	92. nose	146. read	200. pen	253. hat	302. grandma
39. picture	93. teeth	147. ride	201. pencil	254. jacket	303. grandpa
40. present	94. thumb	148. run	202. penny	255. mittens	304. lady
41. slide	95. toe	149. see	203. pocketbook	256. pajamas	305. man
42. swing	96. tummy	150. show	204. tissue	257. pants	306. mommy
43. teddy bear		151. shut	205. tooth brush	258. shirt	307. own name
	<b>VEHICLES</b>	152. sing	206. umbrella	259. shoes	308. pet name
<b>OUTDOORS</b>	97. bike	153. sit	207. watch	260. slippers	309. uncle
44. flower	98. boat	154. sleep		261. sneakers	310. name of TV
45. house	99. bus	155. stop	<b>PLACES</b>	262. socks	or story
46. moon	100. car	156. take	208. church	263. sweater	character
47. rain	101. motorcycle	157. throw	209. home		
48. sidewalk	102. plane	158. tickle	210. hospital		
49. sky	103. stroller	159. up	211. library		
50. snow	104. train	160. walk	212. park		
51. star	105. trolley	161. want	213. school		
52. street	106. truck	162. wash	214. store		
53. sun			215. zoo		
54. tree					

Other words your child says, including non-English words:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





Please print

# CHILD BEHAVIOR CHECKLIST FOR AGES 6-18

For office use only  
ID # \_\_\_\_\_

CHILD'S FULL NAME First _____ Middle _____ Last _____			PARENTS' USUAL TYPE OF WORK, even if not working now. <i>(Please be specific — for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)</i>	
CHILD'S GENDER <input type="checkbox"/> Boy <input type="checkbox"/> Girl	CHILD'S AGE _____	CHILD'S ETHNIC GROUP OR RACE _____	FATHER'S TYPE OF WORK _____	
TODAY'S DATE Mo. _____ Date _____ Yr. _____		CHILD'S BIRTHDATE Mo. _____ Date _____ Yr. _____	MOTHER'S TYPE OF WORK _____	
GRADE IN SCHOOL _____	Please fill out this form to reflect <i>your</i> view of the child's behavior even if other people might not agree. Feel free to print additional comments beside each item and in the space provided on page 2. <b>Be sure to answer all items.</b>		THIS FORM FILLED OUT BY: (print your full name) _____	
NOT ATTENDING SCHOOL <input type="checkbox"/>			Your gender: <input type="checkbox"/> Male <input type="checkbox"/> Female	
			Your relation to the child: <input type="checkbox"/> Biological Parent <input type="checkbox"/> Step Parent <input type="checkbox"/> Grandparent <input type="checkbox"/> Adoptive Parent <input type="checkbox"/> Foster Parent <input type="checkbox"/> Other (specify) _____	

**I. Please list the sports your child most likes to take part in.** For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.  
 None

Compared to others of the same age, about how much time does he/she spend in each?

Compared to others of the same age, how well does he/she do each one?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

Less Than Average	Average	More Than Average	Don't Know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Below Average	Average	Above Average	Don't Know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**II. Please list your child's favorite hobbies, activities, and games, other than sports.** For example: stamps, dolls, books, piano, crafts, cars, computers, singing, etc. (Do *not* include listening to radio or TV.)  
 None

Compared to others of the same age, about how much time does he/she spend in each?

Compared to others of the same age, how well does he/she do each one?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

Less Than Average	Average	More Than Average	Don't Know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Below Average	Average	Above Average	Don't Know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**III. Please list any organizations, clubs, teams, or groups your child belongs to.**  
 None

Compared to others of the same age, how active is he/she in each?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

Less Active	Average	More Active	Don't Know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**IV. Please list any jobs or chores your child has.** For example: paper route, babysitting, making bed, working in store, etc. (Include both paid and unpaid jobs and chores.)  
 None

Compared to others of the same age, how well does he/she carry them out?

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

Below Average	Average	Above Average	Don't Know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Be sure you answered all items. Then see other side.**

Please print. Be sure to answer all items.

V. 1. About how many close friends does your child have? (Do not include brothers & sisters)

None  1  2 or 3  4 or more

2. About how many times a week does your child do things with any friends outside of regular school hours?

(Do not include brothers & sisters)

Less than 1  1 or 2  3 or more

VI. Compared to others of his/her age, how well does your child:

	Worse	Average	Better	
a. Get along with his/her brothers & sisters?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Has no brothers or sisters
b. Get along with other kids?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Behave with his/her parents?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Play and work alone?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VII. 1. Performance in academic subjects.

Does not attend school because \_\_\_\_\_

Check a box for each subject that child takes	Failing	Below Average	Average	Above Average
a. Reading, English, or Language Arts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. History or Social Studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Arithmetic or Math	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other academic subjects—for example: computer courses, foreign language, business. Do not include gym, shop, driver's ed., or other nonacademic subjects.

2. Does your child receive special education or remedial services or attend a special class or special school?

No  Yes—kind of services, class, or school:

3. Has your child repeated any grades?  No  Yes—grades and reasons:

4. Has your child had any academic or other problems in school?  No  Yes—please describe:

When did these problems start? \_\_\_\_\_

Have these problems ended?  No  Yes—when?

Does your child have any illness or disability (either physical or mental)?  No  Yes—please describe:

What concerns you most about your child?

Please describe the best things about your child.

Please print. Be sure to answer all items.

Below is a list of items that describe children and youths. For each item that describes your child **now or within the past 6 months**, please circle the **2** if the item is **very true or often true** of your child. Circle the **1** if the item is **somewhat or sometimes true** of your child. If the item is **not true** of your child, circle the **0**. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know)			1 = Somewhat or Sometimes True			2 = Very True or Often True		
0	1	2	1. Acts too young for his/her age	0	1	2	32. Feels he/she has to be perfect	
0	1	2	2. Drinks alcohol without parents' approval (describe): _____	0	1	2	33. Feels or complains that no one loves him/her	
0	1	2	3. Argues a lot	0	1	2	34. Feels others are out to get him/her	
0	1	2	4. Fails to finish things he/she starts	0	1	2	35. Feels worthless or inferior	
0	1	2	5. There is very little he/she enjoys	0	1	2	36. Gets hurt a lot, accident-prone	
0	1	2	6. Bowel movements outside toilet	0	1	2	37. Gets in many fights	
0	1	2	7. Bragging, boasting	0	1	2	38. Gets teased a lot	
0	1	2	8. Can't concentrate, can't pay attention for long	0	1	2	39. Hangs around with others who get in trouble	
0	1	2	9. Can't get his/her mind off certain thoughts; obsessions (describe): _____	0	1	2	40. Hears sounds or voices that aren't there (describe): _____	
0	1	2	10. Can't sit still, restless, or hyperactive	0	1	2	41. Impulsive or acts without thinking	
0	1	2	11. Clings to adults or too dependent	0	1	2	42. Would rather be alone than with others	
0	1	2	12. Complains of loneliness	0	1	2	43. Lying or cheating	
0	1	2	13. Confused or seems to be in a fog	0	1	2	44. Bites fingernails	
0	1	2	14. Cries a lot	0	1	2	45. Nervous, highstrung, or tense	
0	1	2	15. Cruel to animals	0	1	2	46. Nervous movements or twitching (describe): _____	
0	1	2	16. Cruelty, bullying, or meanness to others	0	1	2	47. Nightmares	
0	1	2	17. Daydreams or gets lost in his/her thoughts	0	1	2	48. Not liked by other kids	
0	1	2	18. Deliberately harms self or attempts suicide	0	1	2	49. Constipated, doesn't move bowels	
0	1	2	19. Demands a lot of attention	0	1	2	50. Too fearful or anxious	
0	1	2	20. Destroys his/her own things	0	1	2	51. Feels dizzy or lightheaded	
0	1	2	21. Destroys things belonging to his/her family or others	0	1	2	52. Feels too guilty	
0	1	2	22. Disobedient at home	0	1	2	53. Overeating	
0	1	2	23. Disobedient at school	0	1	2	54. Overtired without good reason	
0	1	2	24. Doesn't eat well	0	1	2	55. Overweight	
0	1	2	25. Doesn't get along with other kids	56. Physical problems <b>without known medical cause:</b>				
0	1	2	26. Doesn't seem to feel guilty after misbehaving	0	1	2	a. Aches or pains ( <b>not</b> stomach or headaches)	
0	1	2	27. Easily jealous	0	1	2	b. Headaches	
0	1	2	28. Breaks rules at home, school, or elsewhere	0	1	2	c. Nausea, feels sick	
0	1	2	29. Fears certain animals, situations, or places, other than school (describe): _____	0	1	2	d. Problems with eyes ( <b>not</b> if corrected by glasses) (describe): _____	
0	1	2	30. Fears going to school	0	1	2	e. Rashes or other skin problems	
0	1	2	31. Fears he/she might think or do something bad	0	1	2	f. Stomachaches	
				0	1	2	g. Vomiting, throwing up	
				0	1	2	h. Other (describe): _____	

PAGE 3 Be sure you answered all items. Then see other side.

Please print. Be sure to answer all items.

0 = Not True (as far as you know)      1 = Somewhat or Sometimes True      2 = Very True or Often True

0 1 2	57. Physically attacks people	0 1 2	84. Strange behavior (describe): _____
0 1 2	58. Picks nose, skin, or other parts of body (describe): _____	0 1 2	85. Strange ideas (describe): _____
0 1 2	59. Plays with own sex parts in public	0 1 2	86. Stubborn, sullen, or irritable
0 1 2	60. Plays with own sex parts too much	0 1 2	87. Sudden changes in mood or feelings
0 1 2	61. Poor school work	0 1 2	88. Sulks a lot
0 1 2	62. Poorly coordinated or clumsy	0 1 2	89. Suspicious
0 1 2	63. Prefers being with older kids	0 1 2	90. Swearing or obscene language
0 1 2	64. Prefers being with younger kids	0 1 2	91. Talks about killing self
0 1 2	65. Refuses to talk	0 1 2	92. Talks or walks in sleep (describe): _____
0 1 2	66. Repeats certain acts over and over; compulsions (describe): _____	0 1 2	93. Talks too much
0 1 2	67. Runs away from home	0 1 2	94. Teases a lot
0 1 2	68. Screams a lot	0 1 2	95. Temper tantrums or hot temper
0 1 2	69. Secretive, keeps things to self	0 1 2	96. Thinks about sex too much
0 1 2	70. Sees things that aren't there (describe): _____	0 1 2	97. Threatens people
0 1 2	71. Self-conscious or easily embarrassed	0 1 2	98. Thumb-sucking
0 1 2	72. Sets fires	0 1 2	99. Smokes, chews, or sniffs tobacco
0 1 2	73. Sexual problems (describe): _____	0 1 2	100. Trouble sleeping (describe): _____
0 1 2	74. Showing off or clowning	0 1 2	101. Truancy, skips school
0 1 2	75. Too shy or timid	0 1 2	102. Underactive, slow moving, or lacks energy
0 1 2	76. Sleeps less than most kids	0 1 2	103. Unhappy, sad, or depressed
0 1 2	77. Sleeps more than most kids during day and/or night (describe): _____	0 1 2	104. Unusually loud
0 1 2	78. Inattentive or easily distracted	0 1 2	105. Uses drugs for nonmedical purposes ( <i>don't</i> include alcohol or tobacco) (describe): _____
0 1 2	79. Speech problem (describe): _____	0 1 2	106. Vandalism
0 1 2	80. Stares blankly	0 1 2	107. Wets self during the day
0 1 2	81. Steals at home	0 1 2	108. Wets the bed
0 1 2	82. Steals outside the home	0 1 2	109. Whining
0 1 2	83. Stores up too many things he/she doesn't need (describe): _____	0 1 2	110. Wishes to be of opposite sex
		0 1 2	111. Withdrawn, doesn't get involved with others
		0 1 2	112. Worries
		0 1 2	113. Please write in any problems your child has that were not listed above:
		0 1 2	_____
		0 1 2	_____
		0 1 2	_____

## **APPENDIX H: IRB HUMAN SUBJECTS PERMISSION LETTER**



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

## Approval of Exempt Human Research

From: **UCF Institutional Review Board #1  
FWA00000351, IRB00001138**

To: **Meagan J. McSwiggan and Co-PI: Kimberly D Renk**

Date: **April 25, 2013**

Dear Researcher:

On 4/25/2013, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination  
Project Title: Differential Parenting and Parents' Perceptions of Their Children:  
Can Attachment Help Explain the Relationship?  
Investigator: Meagan J McSwiggan  
IRB Number: SBE-13-09336  
Funding Agency:  
Grant Title:  
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 04/25/2013 11:01:06 AM EDT

A handwritten signature in black ink that reads 'Joanne Muratori'.

IRB Coordinator

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