# Activative Fathering, Children's Self-Regulation, and Social Skills

by

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ABSTRACT

This study investigated father-child Activation Theory and the impact of activative fathering on children's dysregulation and social skills. The sample followed 145 families of typically developing children across ages 4 to 6. Fathering and mothering behaviors were coded via naturalistic observations at child age 4, children's dysregulation was coded during a laboratory puzzle task at age 5, and children's social skills were rated by parents and teachers at age 6. Results found support for a constellation of activative fathering behaviors unique to father-child interactions. Activative fathering, net of mothering behaviors, predicted decreased behavioral dysregulation one year later. Support was not found for moderation of the relation between activative fathering and children's dysregulation by paternal warmth, nor was support found for children's dysregulation as a mediator of the relation between activative fathering and children's social skills. These results suggest that parenting elements of father-child activation are unique to fathering and may be more broadly observable in naturalistic contexts not limited to play activities alone. Additionally, activative fathering appears to uniquely influence children's self-regulatory abilities above and beyond identical mothering behavior. In the present work, paternal warmth was not a necessary for activative fathering to positively contribute to children's regulatory abilities nor did children's dysregulation link activative fathering to social skills.

# DEDICATION

To my parents, Mark and Liz Stevenson. Also to my sister Kasha and brother Chris Stevenson who continue to make me proud with their own efforts and accomplishments.

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# INTRODUCTION

## Overview

Although the field of fathering research has greatly advanced in recent decades (Lamb, 2004), it has been criticized for lacking a unifying theory of fatherhood on which to build more complex and nuanced models of fathers as parents. Indeed, a recent review of research on father involvement with young children (ages 0-6) that covers research published from 1990-2005 identified a total of 90 empirical, peer-reviewed articles, of which about half did not include a guiding theoretical framework (Downer, Campos, McWayne, & Gartner, 2008). If fathers are thought to have unique influences on their children, it is crucial for the field to build and test a foundational theory of fatherhood in order to provide a rationale for more innovative and accurate scientific inquiry.

An emerging theory by Paquette (2004) draws from attachment theory and empirical research with human and primate males to provide a basis for establishing the distinct nature of the father-child relationship. This theory posits that father-child attachment should be viewed as an "activation" relationship, promoting exploration, whereby fathers provide their children with more excitatory, destabilizing and challenging environments than do mothers. Through a variety of specific behaviors, such as employing play objects in unusual ways (Labrell, 1996), using words beyond the scope of the child's vocabulary (Ratner, 1988), and engaging in more vigorous physical play (Power & Parke, 1983), fathers are proposed to uniquely activate children's self-regulatory systems, encourage appropriate risk-taking, and increase self-confidence in

unfamiliar situations. However, no research has been conducted to date that directly tests this theory using observational methods and longitudinal design.

If the father-child activation relationship holds true, then fathers ought to have a strong influence on their offspring's development of self-regulatory abilities and social skills. Parenting has been associated with the successful development of children's emotion and behavior regulation across a large body of literature (Eisenberg et al., 1998; Morris, Silk, Steinberg, Aucoin & Keyes, 2007; Cummings & Davies, 1996), and through a variety of specific parenting behaviors such as reactions to emotions (Eisenberg et al., 1998), teaching of emotion regulation strategies (Morris, Silk, Steinberg, Myers, & Robinson, 2007), and social referencing (Parke, 1994). Although as yet unsubstantiated, the destabilizing and activative interactive style characteristic of fathers should give children a chance to practice responding appropriately in a social relationship when stimulated and challenged. Thus fathers who engage their children by placing strain on their regulatory system(s), within the proper limits and context, may provide an optimal zone for children to develop regulatory strategies that provide appropriate and effective down- or up-regulation of arousal. Self-regulation is proposed to mediate the relation between activative fathering and children's social ability (Paquette, 2004), such that children who gain (and practice) improved self-regulatory abilities in the context of arousing fathering are better able to regulate their emotions and behaviors in social contexts.

However, the destabilizing and excitatory nature of the father-child relationship does not imply that it always leads to improvements in children's self-regulatory systems. Research on fathering suggests that fathers who are warm and sensitive with their

children while engaging in physical play have children who display less aggressive behaviors and are more socially accepted (Mize & Pettit, 1997; Hart et al., 2000). When fathers engage in controlling behavior and display authoritarian characteristics, children are more likely to display increased externalizing, internalizing, and social problems (Parke et al., 2004; Marsiglio, Amato, Day & Lamb, 2000). Thus, whereas the father-child activation relationship may improve children's self-regulatory skills, it would likely do so only under conditions in which fathers are also warm and sensitive. In this sense fathers may challenge their children through physical play, unusual use of language toys, or push their children beyond a comfort zone in an activity to the point where the child is slightly overstimulated, but only so much so that the presence of warmth, trust and sensitivity provided by the father aids the child to better their self-regulatory skills. When fathers do not provide a warm and sensitive environment in the presence of increased excitement and destabilization, the activation of children's self-regulatory systems may simply be overwhelming and lead to maladaptive emotion and behavior dysregulation.

The proposed study explores activative fathering, children's self-regulatory abilities and social skills with four explicit aims:

1. To create a measure of activative fathering, using naturalistic observations and confirmatory factor analysis, following underlying theory on the father-child activation relationship.
2. To address the predictive relations between early activative fathering and children's later emotion and behavior dysregulation, and children's social skills.
3. To examine moderation of the relation between activative fathering and children's later emotion and behavior dysregulation by warm and sensitive fathering.

4. To investigate mediation of the relation between activative fathering and social skills by children's emotion and behavior dysregulation.

**Background**

Research on fatherhood has made great advances in recent years, yet there exists no accepted theoretical perspective that identifies the qualities that make a "good" father and his mechanisms of influence on children's development. Indeed, the field's lack of a theoretical underpinning with which to guide research on fathering has been sharply criticized (Downer, Campos, McWayne, & Gartner, 2008). However, broad theories of human relationships provide some foundation on which fathers can be considered as active agents in children's development. Ecological systems theory (Bronfenbrenner, 1979, 1986) views the father as part of the family microsystem, which itself exists in an expanding network of systems known as the mesosystem, exosystem, macrosystem, as well as the chronosystem which places all systems within the history of prior change in systems and the evolving developmental course of the child. Distinguishing between different ecological levels highlights the fact that fathers can influence their children in multiple domains: face-to-face interactions, through the quality of their coparenting and relationship with their spouse, as well as through providing monetary support, involvement in children's community activities, and providing children with connections to the community (especially peers) and society at large. Indeed, Belsky's (1984) determinants of parenting fits well within the overarching ecological system theory, as does recent refinement of the conceptualization of father involvement (Lamb, Pleck, Charnov, & Levine, 1985; Pleck, 2010). Initial theoretical work on parental involvement considered three domains: paternal engagement, accessibility and responsibility (Lamb et

al., 1985). In his recent chapter, Pleck (2010) expands this conceptualization of father involvement to include five domains: 1. Positive engagement 2. Warmth-responsiveness 3. Control 4. Indirect care 5. Process responsibility. Positive engagement refers to providing a context of contact that enables warmth and responsiveness to be expressed along with control to form an optimal authoritative parental style. Indirect care adds father's role in fostering peer relations, arranging goods and services, and fostering non-peer community connections. Process responsibility refers to the father's ability to monitor 1-4, and make adaptive changes in his behavior to best maintain healthy involvement. Others have defined father involvement in terms of cognitive, affective, and behavioral domains, each of which involves multiple dimensions of time, degree, observability, salience, directness, and proximity (Palkovitz, 2002). Both Palkovitz (2002) and Pleck's (2010) theories also fall within the domain of social capital theory (Coleman, 1988). Social capital theory holds that parents promote optimal child development through financial capital and social capital. Financial capital consists of providing food, shelter, access to goods and services, and education to children. Social capital is further broken down into family social capital, or parental facilitation of cognitive development and socialization, and community social capital, or providing children with links to the outside world as well as advocating for children, and sharing networks and knowledge. Another long-standing theoretical orientation, Attachment theory, views the development of secure relationships with caregivers as crucial to successful development and survival (Bowlby, 1969; Ainsworth, 1972; Bretherton, 1985). These close relationships provide children with a secure base that enables them to explore the world and over time, and this parent-child bond forms the bases for internal

working models of the self in relation to others. Thus, children develop adaptive or maladaptive ways in which to respond to others, socially, and form attachment relationships with significant others and their own children later in life. However, current conceptualizations of attachment theory have been criticized for being too narrow in scope to fully encompass fathers' influences on children as they grow older, and the unique ways fathers interact with their children (Pleck, 2007).

Recent theoretical work, generally thought to fall within the attachment theoretical domain, has suggested that the quality of fathers' relationships with their children may provide a unique "activation relationship", creating a destabilizing and stimulating environment for children (Paquette, 2004). Although research has documented the positive effects of involved fathers on their children in numerous domains, in particular decreasing children's psychopathology and improving their social skills (Lamb, 2004; Marsiglio et al., 2000), few studies have obtained measures of fathering in a naturalistic setting without activity restrictions imposed by a laboratory setting. The specific qualities of parenting provided by activative fathering are proposed to be particularly influential in the development of children's emotional and behavioral regulatory skills, especially when measured in a home environment. Indeed, a large body of literature suggests that parenting is associated with children's emotion and behavior (dys)regulatory skills (Eisenberg et al., 2001; Eisenberg et al., 1993; Cole, Michel, & Teti, 1994).

**The Father-Child Activation Relationship**

The past few decades have seen an increasing amount of research devoted specifically to investigating fathers' influences on the family (Lamb, 2004; Lamb &

Tamis-Lemonda, 2004). While fathers still spend less time than mothers with their children, fathers have recently increased the amount of time they spend in direct engagement with their children to more than two thirds that of mothers (Pleck, 1997; Yeung, Sandberg, Davis-KIean, & Hofferth, 2001). In addition, fathers now provide more daily physical and emotional care to their children (Goldscheider & Waite, 1991; Pleck & Pleck, 1997), suggesting changes in basic childcare roles in the family. These changes in the father's role have occurred in the context of societal role expectations that are less strict than that of mothers, which some argue, make the father's role in the family more varied, culturally sensitive, and multiply determined (Lupton & Barclay, 1997; Marsiglio *et al.,* 2000). Despite the increased attention, much of the research on fathering has focused simply on the quantity of father's involvement, lacking a unifying theory of fatherhood on which to build more complex and accurate models of fathers as parents. A review of research on father involvement with young children (ages 0-6), covering research published from 1990-2005 identified a total of 90 empirical, peer-reviewed articles, of which 48.9% did not include a guiding theoretical framework (Downer, Campos, McWayne and Gartner, 2008). Thus, there is a need in the field for strong theory on which to guide empirical investigation on the unique qualities of the father-child relationship.

According to attachment theory (Bowlby, 1969; Ainsworth, 1972) children benefit most when they have a strong attachment to their primary caregiver and are thus able to and encouraged to explore their environment. The attachment system is generally viewed as having two important parts that influence a child's later social abilities: 1. the extent to which parents provide a secure base, and 2. the extent to which parents

encourage the child to explore (Bowlby, 1979). There is no current consensus in the literature, yet many scholars are beginning to view the father's role as more central to the exploration system, seen to compliment the mother's role as more central to providing a secure base (Grossmann, Grossmann, Fremmer-Bombik, Kindler, Scheurer-Englisch, & Zimmerman, 2002; Pleck, 2007). Indeed, recent research has suggested that there may be important differences between mothers and fathers in the attachment relationships they provide. For example, mothers tend to provide security in times of distress whereas fathers tend to provide challenging support as a play companion (Grossmann et al., 2002). Fathers are also more physical, stimulating and unpredictable, using fewer objects in interactions with infants, whereas mothers are more verbal, didactic, and use more visual play with objects when interacting with their infants (Power & Parke, 1983; Yogman, 1981). A recent theoretical argument by Paquette (2004) builds on the foundational work of attachment theory and empirical work with humans and primates to propose that father-child attachment should be differentiated from mother-child attachment. Paquette argues that the father-child attachment relationship should be considered an 'activation' relationship, such that fathers provide more excitatory, destabilizing and challenging environments, facilitating the process of opening children to the world in contrast to the safety provided by the mother-child attachment. Activative fathering, then, uniquely activates children's self-regulatory systems, encourages risk taking and increases self-confidence particularly in unfamiliar situations. Fathers are thought to accomplish this through the use of specific behaviors such as using objects in unusual ways – often as a reason to engage in physical play with the child - and teasing to challenge children emotionally and cognitively in play (Labrell, 1996; 1997). Fathers also

tend to encourage children to take risks (Kromelow, Harding & Touris, 1990). In addition, fathers also stimulate children verbally by using words beyond the scope of the child's vocabulary (Ratner, 1988), by using more complex sentences, imperatives and attention-getting phrases (Rondal, 1980). Lastly, fathers spend a greater proportion time with their children in physical play than do mothers (Lamb, 1977; Power & Parke, 1983), and also engage in more vigorous physical play with their children during playtime (MacDonald & Parke, 1986). These behaviors may allow the child practice in dealing with a less predictable play partner and gain self-confidence in unfamiliar situations.

Much of father-child activation theory is focused on how fathers interact with their children during play (although activation theory is not limited to play contexts only; Paquette, 2004). In particular, the theory has specific implications for the most common form of father-child physical play after the first year, known as *rough-and-tumble play* (RTP), which includes behaviors such as kicking, wrestling, grappling, and tumbling (Pellegrini & Smith, 1998). Paquette (2004) highlights the importance of RTP between fathers and their offspring in the development of child obedience, possibly due to the non-punitive establishment of dominance on the part of the father during play, protection against injury due to imposed rules, encoding own and decoding other's emotional signals, improving the regulation of anger and the expression of anger to prevent aggression, and to promote healthy competition. However, in addition to physically stimulating the child during play, fathers also play an important role in their children's cognitive development. Evidence suggests that father involvement as early as 1 month of child age predicts infants' cognitive functioning at 1 year of age, even when controlling for mother involvement (Nugent, 1991). Other studies have found independent

contributions of supportive fathering to children's cognitive and emotional development at ages 2 and 3 (Cabrera, Shannon, & Tamis-LeMonda, 2007) and increased WISC IQ and social maturity at age 7 (Gottfried, Gottfried, & Bathurst, 1988). Paternal scaffolding has been linked to improvements in independent problem solving in 18mo olds (Labrell, 1996); suggesting fathers may broaden cognitive abilities as early as infancy. A study conducted by the National Institute of Child Health and Human Development Early Child Care Research Network (2008) found that mother's and father's support for their son's (but not daughter's) autonomy at 54 months lead to higher levels of academic achievement, as mediated by self-reliance. However the effects in this study for fathers were mediated by the growth in self-reliance from grades 1-3 while the effects for mothers were mediated only by the mean level of self-reliance at grade 1, suggesting a particularly salient role for fathers in the development of self-reliance. Thus, fathers' activative interactions with their children may serve less to provide a secure base and more to encourage children to explore their environments, broaden and build cognitive abilities, while providing children with an opportunity to practice regulating and responding appropriately in arousing situations. An important direction now is to identify particular fathering behaviors that match Paquette's theoretical arguments, to test this model of father-child attachment, and to expand and refine the father-child activation relationship theory.

Although no empirical studies exist that directly test father-child activation theory, a study by Grossman and colleagues (2002) shows conceptual similarities in its attention to the exploration system and its view of fathers as challenging play partners. This study followed 49 families from birth to age 16, obtaining observations of maternal

and paternal play with children, and developing a new coding system, the Sensitive and Challenging Interactive Play Scale (SCIP) specifically to test hypotheses. The SCIP was designed to capture parental behavior in an unstructured interaction and is based on Ainsworth's concept of sensitivity, cooperation, non-interference, and acceptance (for a complete definition see Grossmann et al., 2002). Although support was found in general for the relation of secure attachment with both mothers and fathers to later attachment security, the most interesting result found higher scores on the SCIP (e.g. more sensitive and mildly challenging behaviors) to be a strong predictor of children's attachment representation at ages 10 and 16 *for fathers but not for mothers*. In contrast, infant-mother attachment quality, but not infant-father attachment quality was related to children's attachment representation at ages 6 and 10. This study provides strong initial validation of the father's role in the attachment system as promoting exploration, particularly during play. The authors speculate that the standard Strange Situation procedure may not capture specific qualities of the father-child ecology by focusing only on infant responses to separation. It is worth noting that the limitations of the Strange Situation for fathers have been recognized by other researchers (Volling & Belsky, 1992), and work is ongoing to develop a comparable alternative procedure, the Risky Situation, specifically for fathers (Paquette & Bigras, 2010). However, more research is needed to determine the predictive validity of activative fathering in relation to theoretically expected outcomes.

**Fathering and Children's Self-Regulation**

One of the most important constructs thought to underlie the development of psychopathology is children's ability to regulate their emotions and behaviors during times of arousal in a manner appropriate to the context. Although the measures, methods and definitions vary widely, a vast body of work has explored the construct of emotion regulation. One widely used definition (Thompson, 1994 pp.27-28) states:

> Emotion regulation consists of the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals.

Dysregulation may indicate the absence of regulation but importantly children who are highly dysregulated often have developed patterns of emotion and behavior regulation that impair functioning, disrupt other processes, and become symptoms of psychopathology (Cole, Michel, & Teti, 1994). It is crucially important to consider fathers' influences on the development of children's self-regulatory abilities, given the strong link between parenting and children's emotion and behavior regulation (Cole, Michel, & Teti, 1994; Eisenberg, Cumberland, & Spinrad, 1998; Cole, Martin, & Dennis, 2004; Eisenberg, Morris, & Spinrad, 2005; Thompson, 1994). Although considerable overlap exists, this proposal will consider emotion and behavior regulation as separate dependent factors. Research indicates that emotion and behavior regulation can provide independent prediction to social competence (Shields, Cicchetti, & Ryan, 1994) and externalizing behaviors (Batum & Yagmurlu, 2007), suggesting there are differences between the regulation of emotion and behavior.

Research has suggested that young children's successful emotion and behavior regulation relies heavily on external influences of parents, and as children mature they begin to rely less on parents and external sources for emotion regulation (Kopp, 1989; Thomspon, 1994). Indeed, a broad range of parental influences have been shown to affect young children's self regulation, including social referencing and modeling (Parke, 1994; Garber, Braafladt, & Zeman, 1991; Silk, Shaw, Skuban, Oland, & Kovacs, 2006), emotion-coaching (Gottman, Katz, & Hooven, 1996, 1997), reactions to emotions (Eisenberg, et. al, 1998; Eisenberg, Gershoff, Fabes, Shepard, Cumberland et al., 2001), parent emotional expressivity (Michalik et al., 2007), use of discipline that promotes learning (Hoffman, 2000; Krevans & Gibbs, 1996), parental teaching of emotion regulation strategies (Morris, Silk, ,Steinberg, Myers, & Robinson, 2007), emotional climate of the family (Cummings & Davies, 1996; Darling & Steinberg, 1993), attachment (Gilliom, Shaw, Beck, Schonber, & Lukon, 2002) and parenting style (Parke & Buriel, 1998; Cohn & Tronick, 1983; Kliewer, Fearnow, & Miller, 1996, Calkins, Smith, Gill, & Johnson, 1998). Children's self-regulatory skills have also been strongly associated with social competencies (Eisenberg, Fabes, Murphy, Maszk, Smith, & Karbon, 1995; Calkins, 1994; Shields, Cicchetti, & Ryan, 1994; Spinrad, Eisenberg, Cumberland, Fabes, Valiente, et al., 2006). Thus there is strong theory and empirical research that links children's emotion and behavior regulation to parenting behaviors. Given this well established association, identifying a relation between activative fathering and children's emotion and behavior regulation would provide greater empirical support for the theorized father-child activation relationship.

**Sensitive and Warm Fathering as a Moderator**

Research suggests that the quality of time spent with children on the part of fathers is more important than the quantity of time (Lamb, 2004). Given that the nature of father-child interaction is typically more physical (Lamb, 1977) and is proposed to be more stimulating and destabilizing (Paquette, 2004), it is particularly important to investigate the presence of paternal warmth and sensitivity as a moderator of the relation between activative fathering and children's emotion and behavior regulation. A study by Le Camus (1995) observed mothers and fathers with their one-year-old infants in swim classes, demonstrating that mothers generally position themselves in front of the child, maintaining visual contact with the child, whereas fathers tended to stand behind their child, directing the child's attention to the social environment. It is this type of encouragement of the child to take risks during a time of emotional arousal that Paquette (2004) proposes requires both warmth and sensitivity on the part of the father be established in the father-child relationship to build trust that enables successful risk-taking.

Although few studies have directly investigated the relation between fathering and children's self-regulation, many studies in related areas implicate emotion and behavior regulation and hold that sensitive and warm fathering is necessary in a stimulating play context in order for children to have positive outcomes. For example, fathers who play with their children using highly physical play, in the context of high levels of positivity, have boys and girls who score the highest in peer popularity ratings at ages 3-4 (MacDonald & Parke, 1984). Likewise, Youngblade & Belsky (1992) found that the quality of father-child interactions at age 3 lead to children being more positive with their

peers at age 5. Research that has investigated mother and father involvement independently found that positive paternal engagement was associated with decreased behavior problems for boys (Aldous & Mulligan, 2002), even when controlling for maternal involvement. A study drawing a large sample from the National Survey of Families and Households (NSFH) found that positive paternal and maternal involvement independently predicted children's behavior problems, and these effects did not differ by biological status (biological fathers, stepfathers) or race (White, Black and Latino) (Amato & Rivera, 1999). In addition, paternal responses to children's emotions such as acceptance and comforting of sadness and anger, and use of reason, emotion and problem-focused strategies (types of parenting strategies often included in sensitivity and warmth) have been related to less aggression, improved coping, and more positive peer relations (Gottman, Katz, & Hooven, 1997; O'Neil, Parke, Isley, & Sosa, 1997). Use of less directive and controlling behaviors by fathers during play has also been linked to peer popularity (Parke et al., 2004), indirectly suggesting that self-regulation skills are fostered by these types of fathering behaviors.

Authoritative fathers have children with less dysregulation and more competencies associated with effective emotion and behavior regulation than do authoritarian fathers. For example, fathers who engage in styles of play that allow mutuality in offering play suggestions, following both father and child suggestions, show patience and understanding have children who display less aggressive behaviors and are more socially accepted (Mize & Pettit, 1997; Hart et al., 1998; Hart et al., 2000). A review conducted by Marsiglio, Amato, Day, & Lamb (2000) revealed that authoritative paternal parenting was associated with decreased internalizing and externalizing problems in children. This

is particularly noteworthy in light of findings that indicated authoritarian fathers use more control, often through physical punishment, to force obedience (Paquette, Bolte, Turcotte, Dubeau, & Bouchard, 2000), and authoritarian attitudes held by fathers were negatively associated with time spent with their children, caregiving activities, and play (Gaertner, Spinrad, Eisenberg, & Greving, 2007). Although some studies have identified types of fathering that differ slightly from the original three categories identified by Baumrind (1971), such as caretakers and playmates-teachers (Jain, Belsky, & Crnic, 1996) and stimulative fathers (Paquette et al., 2000), research nonetheless suggests that the optimal "activation relationship" involves fathers who spend time with children in warm, responsive, stimulating, challenging interactions, appropriately setting limits without engaging in coercive control. Given the importance in the literature of warmth and sensitive fathering, this proposal will consider activative fathering as a construct that is beneficial for children only when fathers are also sensitive and warm in their interactions.

**Fathers' Influences on Children's Social Development**

Along with the increase in research on fatherhood has come an enduring finding: fathers appear to be particularly important to children's social development (Leidy, Schofield, & Parke, in press; Parke & Buriel, 2006). Fathers influence their children's peer relationships in three main domains: 1. the quality of the father-child relationship, 2. controlling access to peers and activities, and 3. direct advice about peer relationships (McDowell & Parke, 2009). Parke and colleagues (2004) have argued that fathers and mothers influence children's development of peer relationships in unique ways. Specifically, playful, physical, affectionate and engaging father-child interactions tend to

relate to later popularity while mother-child verbal interactions tend to relate to popularity. For example, father-child interactions when children are ages 3-4 characterized by high levels of physical play and coupled with positive feelings on the part of the child have been related to higher peer popularity (Macdonald & Parke, 1984). Fathers who engage in play for longer periods of time, and do so with less directive and coercive interaction, have children who are more popular (Parke & O'Neil, 2000; McDowell & Parke, 2009). Children also do better in their transition to elementary school when fathers are effective play partners (Barth & Parke, 1993). In general, father-child mutuality in play is linked to improved peer competence and less aggression on the part of children (Mize & Pettit, 1997). However, father child relationships are important beyond simply play. Father-child attachment relations have been related to children's anxious/withdrawn behavior problems in preschool (Verchueren & Marcoen, 1999), and in later childhood, peer acceptance, sociometric status, and peer nominations of shyness (Verchueren & Marcoen, 2002, 2005). When fathers are more sensitive to their children's emotional states, the same children display higher social competence even three years later (Gottman, Katz, & Hooven, 1997). Positive father-child relationships have also been associated with less negative peer friendships, among children making the transition to school (Youngblade & Belsky, 1992). However, it is important not to forget that when the aforementioned effects are found for fathers, similar results are often found for mothers as well (McDowell & Parke, 2009).

Although fathers impact their children's social development directly, several mediators have been proposed that link father-child interaction to children's social skills. For example, children make cognitive representations of significant relationships with

their parents, as internal working models (attachment; Bowlby, 1969) and scripts (Bugental & Grusec, 2006), and use these cognitive models in their formation of relationships outside the family. Positive father-child interactions have been related to less use of negative strategies and goals by children in solving social issues with peers and, in turn, more peer acceptance (Rah & Parke, 2008). Children's representations of father's social behavior have been related to better social skills as rated by teachers and peers (McDowell, Parke, & Spitzer, 2002). Specifically, fathers who engaged in confrontational strategies in their response to interpersonal conflict vignettes had children who were rated lower on social competence, whereas fathers who displayed relational goals had children who were rated as more liked and less aggressive. Children's self regulatory abilities (broadly construed) have also been proposed as a link between fathering and social competence (Paquette, 2004; Parke, et al., 2002). Attention regulation, or children's ability to focus on relevant information, refocus attention, and maintain attention in a given context (Lazarus & Folkman, 1984), is thought to be particularly important for social development (Rothbart & Bates, 2006). Independent influences have been found for mother-child and father-child relationship quality at 4.5 years on children's later social competence, as mediated by children's ability to maintain attention (NICHD Early Child Care Research Network, 2009). Emotion regulation has also been proposed to be an important mediator of the relation between fathering and children's social skills, particularly due to the highly arousing, more variable, and less-predictable nature of father-child interaction (Paquette, 2004; Parke, 1996). Fathers' emotion and problem focused responses to children's expression of negative emotion have been related to less aggression and disruption in children, as rated by teachers

(Parke & O'Neil, 1997). Paternal positive affect and reduced negative affect in interactions with children has been related to positive coping strategies in children, and paternal control has been related to decreased emotion regulation (McDowell & Parke, 2005). Fathers have also been implicated in teaching children display rules, considered a form of emotion regulation, where children must infer the appropriate display of emotion in a given situation and inhibit an inappropriate response (McDowell & Parke, 2005). Children's ability to adapt to display rules has been linked to social acceptance in multiple studies (McDowell, & Parke, 2000; McDowell & Parke, 2005; McDowell, Kim, O'Neil & Parke, 2002; Parke, McDowell, Kim & Leidy, 2006). Thus fathers influence children's social development both directly and indirectly through multiple mechanisms.

**Summary**

Significant progress has been made in research on fathering; however, few studies have examined the recent theoretical assertion that fathers provide their children with a unique "activation" relationship (Downer, Campos, McWayne and Gartner, 2008). The field is in need of more complex models of fathering that are guided by novel theory specific to the father-child relationship, that utilize methods that avoid shared method variance, and that employ designs that are prospective and longitudinal. It is particularly important to observe fathers as they behave naturally with their child, as studies using father report of engagement are less likely to find associations with child outcomes than are studies that use observations of the quality of father engagement (Ryan, Martin, & Brooks-Gunn, 2006). Recent work has also shown significant discrepancies between mother and father reports of father involvement with their children (Mikelson, 2008); suggesting that biased self and other reports are best avoided through the use of

observational methods. In addition, studies in the laboratory have generally created restricted environments with unintentional choices of toys that may have encouraged maternal-like types of play (Power, 1985), whereas a free-play environment without pre-selected toys may allow fathers to engage in more physical types of play (Frascarolo, 1997). Lastly, careful attention must be paid to the context in which fathers provide activative behaviors, as research implies that paternal sensitivity and positive affect directed towards the child are important moderators that impact the relation between highly arousing fathering behaviors and children's ability to develop effective emotion and behavior regulation. Linking activative fathering to a well-established literature supporting the relation between high-quality parenting and children's social skills, as mediated by children's self regulation, would provide critical validation for the notion of the father-child activation relationship.

**Current Study**

The proposed research is significant from a number of perspectives, and each reflects a major aim of the work. First, there are no empirical studies that have attempted to measure specific fathering behaviors that are tied to the underlying behaviors present in father-child activation relationship. Based on Paquette's (2004) theory this study will create a measure of activative fathering from naturalistic home observations and use confirmatory factor analysis to test whether the underlying theory accurately predicts father's behaviors when interacting with their offspring. Specifically, home observations of fathers' time spent with children (opportunity for interaction), cognitive stimulation, detachedness (negative loading), and intrusiveness will be factor analyzed. If a one factor structure is found the variables will be retained as indicators of a latent variable

representing activative fathering for subsequent analyses. Additionally, the same confirmatory factor analysis will be conducted for matching mother behaviors to determine whether an activative mothering construct can be created as a control.

Second, activative fathering has been proposed here to be a highly influential process in the development of children's emotion and behavior regulatory skills, as fathers naturally challenge, stimulate, and destabilize their children under contexts of high arousal such as play. Demonstrating that this type of fathering is associated with children's emotion and behavior regulation would provide an important predictive validation of father-child activation theory. This study will address the predictive relations between early activative fathering at child age 4 and children's emotion and behavior dysregulation at age 5.

Third, related research implies that activative fathering may only be beneficial to the development of children's emotion and behavior regulation if the father is also providing a warm and sensitive environment, where the father and child can build trust. This study will investigate paternal sensitivity and positive affect as moderators of the relationship between activative fathering and children's emotion and behavior dysregulation. Moderation by paternal sensitivity and positive affect will be tested first via a latent variable interaction model, with sensitivity and positive affect indicating a latent variable *warmth*. Due to significant reductions in power for latent variable interaction models (discussed in depth later) moderation will also be tested by compositing the indicators of activative fathering into one manifest variable and by compositing sensitivity and positive affect into one manifest variable. An interaction term will be created and then all entered into a path model, testing simple linear moderation.

Lastly, research highlights the role of fathers in directly and indirectly influencing children's social skills through the father child relationship and through children's self-regulatory abilities. This study will investigate children's emotion and behavior dysregulation at age 5 as mediators of the relation between activative fathering at age 4 and social skills at age 6. Understanding the mechanisms through which activative fathering operates offers an initial attempt to address the complexity of new fathering models.

# CHAPTER 2

# METHODS

## Design Overview

Data for the proposed study will be drawn from the Collaborative Family Study, A multi-site, longitudinal project that examines the interrelations among children's developmental status, family process, child characteristics, and the emergence of psychopathology in children aged 3 to 9 years. The study takes a multi-method approach to collecting data, utilizing structured parent interviews, independent observations of parent-child interaction in naturalistic and laboratory settings, observations of structured activities in the lab designed to assess emotion and behavior regulation, and questionnaires given to mothers, fathers, and teachers that assess a wide range of constructs relating to child behavior problems, social skills, parent stress and psychopathology, and family functioning. Children's cognitive functioning was assessed when families entered the study. The proposed study will draw subjects from the larger investigation, using only those children who are typically developing. Data will incorporate naturalistic home observations of father-child interaction at child age 4, lab observations of child emotion and behavior regulation at child age 5, and teacher reports of social skills at age 6.

## Participants

As noted above, the participants will include only typically developing children and their families drawn from the larger Collaborative Family Study. At age 3 children were classified as developmentally delayed (N=115) or typically developing (N=145) according to their score on the Mental Development Index (MDI) of the Bayley scales of

Infant Development (BSID-II; Bayley, 1993). Children were classified as developmentally delayed (DD) if their score on the MDI was 85 or below, whereas children with an MDI score above 85 were classified at typically developing (TD). Subjects for the larger study were recruited from community agencies, such as early intervention programs, preschools, family resource centers, daycare centers, and flyers posted in the community. Approximately one-third of the families were recruited from rural and suburban communities in Central Pennsylvania, and two-thirds of the families were recruited from the greater Los Angeles area. Using a multi-site design captured a more geologically and ethnically diverse sample. Families were excluded from the study if a child had a history of abuse, autism, severe neurological impairment, or non-ambulation. Ethnicity was representative of the populations at each site. Participants from the larger Collaborative Family Study were 60% Caucasian, 17% Hispanic, 8% African American, 3% Asian, and 12% multi-racial, according to self-identifications.

The typically developing participants for the present study from age 4 included 128 families with children (66 males, 62 females). Attribution was minimal (15.6%) and represented 20 families who dropped from the study from 48months of child age to 72 months of child age. No differences were found between families who dropped from the study on any of the mother or father parenting variables measured. In addition no differences were found between families who dropped from the study on any demographic variables. Participants from the typically developing sample for this study were 61.7% Caucasian, 9.4% Hispanic, 8.6% African American, 3.9% Asian, and 16.4% multi-racial.

## Procedure

Once identified as potential participants, families were contacted and a home visit was scheduled when the child was approximately 36 months of age. A trained graduate student administered the MDI during the initial visit. Demographic information was also collected from the families including ethnicity, income, parental education level, marital status, and employment status. Following the initial visit separate home and laboratory visits were scheduled. Home observations were conducted every 6 months between the child's third and sixth birthdays. At each home visit the mother and father were each given a booklet of questionnaires to complete, which they returned by mail. Booklets and laboratory sessions were subsequently completed yearly within two weeks of the child's fourth and fifth birthdays. The present study includes longitudinal data collected during naturalistic home visits and laboratory observations across the preschool period and transition to school (ages 4, 5, and 6). Children were visited at home or seen in the lab within two weeks of the child's $4^{th}$, $5^{th}$ and $6^{th}$ birthday.

**Home Observations**. Home observations took place at a time when the entire family was in the home, usually around dinnertime. At child age 4, families were observed for 60 minutes. During the observation, two trained graduate students coded children's, mothers', and fathers' emotional state, child-directed behaviors, and dyadic interactions. Families were instructed to "act as they normally do" during the observation. The two observers stood in an unobtrusive area of the room that gave them a clear view of each of the family member's faces. Eye contact and verbal interaction with family members was avoided so as not to distract them. If the focal child left the room, the observers followed him or her to continue their observation. The child and family were

observed for 6, 10 minute epochs, after which the observer would take five minutes to rate family interactions. Observers were trained through watching videotaped home observations and attending live home observations with an experienced coder until reliability was established. Reliability was defined as 70% exact agreement and 95% agreement within one point on the coding scale with the master coder. Once an observer reached reliability, individual observers conducted home observations. To maintain cross-site reliability (Los Angeles and Central Pennsylvania), a master coder was designated at each site. Reliability was collected regularly within site and across site to ensure that reliability was maintained. This inter-site reliability was based on videotaped home observations, and within-site reliability was assessed using videotapes as well as live home observations. Kappa for both within and inter-site reliability was .6 or higher each year.

**Laboratory visits**. During each annual lab visit, mother-child interactions and independent child behaviors were observed during structured lab tasks designed to assess child regulatory behavior as well as parenting characteristics. Mothers and children were guided through the series of activities by a graduate student experimenter. Lab sessions were videotaped for later coding of child and maternal behaviors. All lab visits followed a standardized protocol. The proposed study will use observational data from the annual lab visit at child age five. The five-year lab activities included a 10-minute free play, a cleanup task (3 minutes), 3 increasingly difficult problem-solving tasks (2-, 3- and 5-minutes respectively), snack time, a waiting task and a cooperative task. The three problem solving tasks were a series of puzzles of increasing complexity designed to assess children's emotion and behavior regulatory skills. The "easy" task was designed to

be finished by children with minimal help from their mothers, the "medium" task was designed to be completed with moderate help from mothers, and the "difficult" task was designed to be impossible to complete individually and even challenging to complete with substantial help from their mothers. Mothers were instructed to first let the child try the task on his or her own, and subsequently provide whatever help they thought was needed for the child to successfully complete the task. Although mothers were able to help their child complete the task, the coding system for emotion and behavior dysregulation codes the child independent of the mother. Thus, if the child has difficulty with the task, gets upset and off-task, and requires the mother to step in and provide help, the dysregulation coding system would score that child higher on emotion and behavior dysregulation because the child was not able to successfully regulate their arousal without external help. Although the child's behavior is never fully independent of maternal influence in these contexts, the express focus of the coding reflects the child's behavior, regardless of the context.

**Measures**

**Parenting**. Naturalistic observations of the family were collected at child age 4, using the Parent-Child Interaction Rating System (PCIRS; Belsky, Crnic & Gable, 1995). Reliability of the measure was maintained at a kappa of .6 or above. As described above, ratings of individual and dyadic behavior were made after each of six 10-min observation periods during each home visit. The average rating across all observations was used in analyses. Ratings consisted of 26 items, which were coded on a five point scale ranging from 1 (low) to 5 (high) noticeable presence of the quality. Specific ratings of father and mother behaviors were used from this coding system: opportunity for interaction (a rating

of how much time the parent spends with the child during the observation period), positive affect, sensitivity, intrusiveness, detachedness, and cognitive stimulation, all coded when directed at the target child. Although mother behaviors are not the focus of the present study they were used as controls, to target the unique influence of activative fathering net of parallel maternal behaviors.

**Child Emotion and Behavior Dysregulation**. The Dysregulation Coding System was used to assess children's level of emotion and behavior dysregulation during the laboratory hard puzzle task at child age 5. This system was designed to capture children's failure to regulate their emotions and behaviors in responses in the context of mildly challenging demands. Research and theory has conceptualized emotion regulation in terms of duration, intensity, frequency, and lability of the behavior or emotion in relation to ongoing contextual demands (Cole, Michel, & Teti, 1994). Based on theory, the dysregulation coding system captures children's emotional and behavioral reactions that are inappropriate to the context through duration, intensity, frequency and lability and recovery time. Scores range from 0 (no presence of dysregulation) to 4 (high amount of dysregulation present), with each task receiving one global score of emotion dysregulation and one global score of behavior dysregulation. Emotion dysregulation was determined by intense, frequent expressions of emotion inappropriate to the situation, considering lability, variability in intensity of emotion, and length of recover. Behavior dysregulation was determined by children's behavior inappropriate to the situation and/or was disruptive of the task, such as extreme fidgeting, attention difficulties, or running around the room. A child receiving a 0 is typically a child who is able to remain on task, following the rules, for the duration of the task regardless of correct completion of the

task, whereas a child receiving a 4 is typically a child who shows pervasive outbursts of emotion or behavior throughout the task, such that the behaviors or emotions are extreme, highly inappropriate, require constant intervention from a parent, and/or occur with enough frequency that the child is virtually unable to regroup or recover from the disruptions. Although the mother was present and able to provide the child with assistance during the three puzzle tasks, this system codes the child's behaviors & expressions only, without taking into account the mother's actions. For example if a child becomes upset and is then successfully comforted and re-oriented to the task by the mother, this coding system scores the child higher on indices of emotion and behavior regulation due to the fact that the child was unable to self-regulate and remain on task. Thus, the scores obtained reflect the child's level of dysregulation without taking into account the results of successful or unsuccessful maternal intervention. To maintain reliability coding teams needed to meet criteria of 70% exact and 95% within 1 point match of a graduate student master coder each week.

**Social Skills**. The Social Skills Rating System, a widely used questionnaire (SSRS; Gresham & Elliot, 1990), was completed by teachers when children were 72 months of age. The Social Skills Standard Score was used in all analyses, which is a broad assessment of social skills, including cooperation, self-control, and assertiveness. The Social Skills Scale has high test-retest reliability (parent $r$ = .84, teacher $r$ =.85) and internal consistency (parent $r$ =.87, teacher $r$ = .94; Gresham & Elliot, 1990).

**Behavior Problems**. The Child Behavior Checklist (CBCL, Achenbach, 1991) was completed by teachers, mothers and fathers when children were 72 months of age. The Total, Externalizing, and Internalizing scales were used for parent report in the

present study. Teachers' reports included the Total, Externalizing, Internalizing, and Aggression subscales, in an effort to target potential behavior problems with peers outside of the home. The CBCL has both sum and T-scores. Sum scores were used for all analyses.

# CHAPTER 3

# RESULTS

## Preliminary Analyses and Data Reduction

Data from the home observations of mother and father behaviors were collected across six sequential 10 minute periods. Ratings were averaged across all six epochs to with respect to opportunity for interaction, intrusiveness, cognitive stimulation, and detachedness for both parents at 48 and 60 months. In order to later test the hypothesis that sensitive and warm fathering would moderate the relation between activative fathering and children's self-regulation, indicator variables for activative fathering (opportunity for interaction, intrusiveness, cognitive stimulation and detachedness) were standardized and then averaged to form a composite variable. The same procedure was conducted for fathers' positivity and sensitivity at 48 months. Then, the two composite variables were multiplied to create an interaction term to test moderation with path analysis.

Table 1 reports demographic characteristics of the sample. Table 2 reports descriptive statistics for all variables. Descriptive analyses revealed all variables to be normally distributed with the exception of 48 month maternal intrusiveness, 72 month teacher report of SSRS: Cooperation, Self-Control, Externalizing, and Internalizing. In addition, several subscales of 72 month teacher CBCL sum score reports were non-normal: Aggression, Internalizing, Externalizing, and Total Problems. All above non-normally distributed variables exhibited low levels of problem behaviors in this population. For all models that included non-normal variables, Maximum Likelihood Robust was used as for estimation procedures. Additionally we tested whether there were

significant mean differences between mothers and father on all parenting variables used to contrast the activative fathering construct. Mothers showed significantly higher mean levels than fathers on Opportunity for Interaction, Cognitive Stimulation, and Intrusiveness. Mothers had a significantly lower mean level of Detachedness than fathers. Correlations are reported in Table 3. In order to make a large correlation table more easily interpretable due to the large number of outcomes used, correlations are only included between activative fathering, income, mother control variables, and child emotion and behavior dysregulation. Correlations of outcomes with other outcomes are omitted to save space, and because no model included more than one outcome at a time. Thus, enough information is presented (correlations, means, standard deviations) that models could be replicated.

**Hypothesis 1: Confirmatory Factor Analyses (CFA) of Activative Fathering**

The first step was to validate the use of fathers' opportunity for interaction, intrusiveness, cognitive stimulation, and detachedness to form a single construct, deemed activative fathering. To test the structure of the activative fathering construct, and a corresponding activative mothering construct as a control, a confirmatory factor analysis was conducted. All structural equation models were run using Mplus 6.11. Missing data was handled using Full Information Maximum Likelihood (FIML) to estimate models, as FIML is a less biased way of handling missing cases than listwise or pairwise deletion procedures (Enders & Bandalos, 2001). Model fit was assessed using $\chi 2$, root mean square error of approximation (RMSEA), comparative fit index (CFI) and standardized root mean square residual (SRMR). The $\chi 2$ test indicates the absolute fit of the model relative to all alternative models and indicates good fit when non-significant. RMSEA

values of <.05 indicate good fit; values of .06-.08 indicate acceptable fit (Browne & Cudeck, 1993). CFI values approximating 0.90 indicate acceptable fit (Bentler, 1990); CFI values approximating 0.95 indicate good fit and SRMR values < .08 indicate good fit (Hu & Bentler, 1999).

In this model paternal child-directed opportunity for interaction, intrusiveness, cognitive stimulation, and detachedness were specified as indicators of a latent construct labeled *activative fathering*. An indicator variable approach was used where factor loadings were fixed to 1.0 for opportunity for interaction, and freely estimated for intrusiveness, cognitive stimulation, and detachedness. Results are presented in Figure 2. Standardized loadings were the following for *activative fathering*: opportunity for interaction ($\lambda$ = .54***), intrusiveness ($\lambda$ = .30**), Cognitive Stimulation ($\lambda$ = .74***), and detachedness ($\lambda$ = -.70***) and model fit was good ($\chi^2$ (2, N = 115) = 3.00, p=.22, CFI = .98, RMSEA = .07, SRMR = .03). This analysis found support for an adequate structure of the activative fathering construct, and thus activative fathering was retained as a predictor for testing subsequent hypotheses.

The same CFA was conducted for mothers as well and factor loadings were the following: opportunity for interaction ($\lambda$ = .30**), cognitive stimulation ($\lambda$ = .73***), detachedness ($\lambda$ = -.82***), and intrusiveness did not significantly load ($\lambda$ = .13). In addition, model fit was not good for mothers ($\chi^2$ (2, 125) = 9.30, p=.01, CFI = .89, RMSEA = .17, SRMR = .06). Results are presented in Figure 3. It appeared that forming a similar activative mothering variable did not fit the data, which is not unexpected given that father-child activation relationship theory suggests that these type of behaviors are unique to fathering. Thus, future analyses retained activative fathering as a latent variable

and did not use a latent variable for activative mothering. Maternal opportunity for interaction, intrusiveness, cognitive stimulation, and detachedness were instead controlled for as separate manifest predictors in order to assess the unique impact of activative fathering net of mothers' behavior.

**Hypothesis 2: Activative Fathering Predicts Later Dysregulation**

To test the hypothesis that activative fathering at 48 months of child age would predict later decreased dysregulation in children one year later (60mo) path analyses were conducted in Mplus. The latent variable *activative fathering* was entered as a predictor of children's later emotion and behavior dysregulation during a frustrating laboratory puzzle task. Family income and all parallel mother variables (opportunity for interaction, intrusiveness, cognitive stimulation, and detachedness) were included as manifest controls from the 48 month period. In addition, 48 month children's emotion and behavior on a similar frustrating laboratory task were also included as predictor variables in order to control for previous levels of dysregulation. Model fit was good ($\chi^2$ (10, $N$ = 127) = 44.33, $p$ = .02, CFI = .92, RMSEA = .06, SRMR = .06.) and results are presented in Figure 4. All subsequent paths presented are fully standardized coefficients. 48 month activative fathering was a significant predictor of 60 month behavior dysregulation only (β = -.26**) but was not a significant predictor of 60 month emotion dysregulation (β = -.06, $p$ = .13). Thus, higher levels of activative fathering predicted later decreases in behavior dysregulation but did not predict the emotion dysregulation. Family income was positively correlated with activative fathering (ψ = .43***), which suggests that fathers in families with higher SES engage in higher levels of activative fathering. Maternal opportunity for interaction (e.g. more time spent interacting with children) was a

significant predictor of later decreased behavior dysregulation (β = -.27**), suggesting that increased mother-child interaction in general served to reduce children's behavior dysregulation. Interestingly the effect sizes were essentially equal for activative fathering and maternal opportunity for interaction (-.26 and -.27 respectively), which may indicate that activative fathering and time spent with mothers carry equal importance in successful development of self-regulatory skills. Alternatively time spent with mothers may simply be a marker variable for a theorized set of unmeasured maternal behaviors promoting security and comfort-soothing that complement the excitatory and risk-taking offered by activative fathering (Paquette, 2004).

In order to make Figure 4 easily interpretable, maternal intrusiveness, cognitive stimulation, and detachedness were excluded because none was a significant predictor of 60 month emotion or behavior dysregulation. However, it is important to note that there were significant correlations between the following 48 month mother behaviors: detachedness and cognitive stimulation (ψ = -.61***), detachedness and opportunity for interaction (ψ = -.29***), opportunity for interaction and intrusiveness (ψ = .24**), cognitive stimulation and intrusiveness (ψ = .24**), cognitive stimulation and opportunity for interaction (ψ = .27***). 48 month behavior dysregulation was negatively correlated with income (ψ = -.20*). In addition the following father behaviors were correlated with their matching mother behaviors: father cognitive stimulation and mother cognitive stimulation (ψ = .52***), father opportunity for interaction and mother opportunity for interaction (ψ = .34***).

As some studies have indicated fathering has differential effects on boys and girls, we tested for moderation by child gender of the significant path from 48 month activative

fathering to 60 month behavior dysregulation. Chi-square difference tests were conducted between a model where each individual path was constrained to be equal across groups and a model where the path from activative fathering to behavior dysregulation was free to vary across groups. The resulting chi-square difference tests gives a value with 1 degree of freedom and, if significant (values of $\chi^2 = 3.84$ for $\alpha = .05$), indicates that the path significantly differs between males and females. Since our model used MLR as an estimator, we used a Satorra–Bentler adjusted chi-square difference test for moderation. Results did not indicate significant moderation by gender ($\chi^2_{diff} = 0.11$, $p = 0.74$). Thus, the association of activative fathering with decreased behavior dysregulation did not differ between boys and girls.

**Hypothesis 3: Moderation**

Activative fathering at 48months was hypothesized to predict reduced children's emotion and behavior dysregulation at 60 months, only when fathers were sensitive and positive in their child-directed behaviors. Initially, moderation was tested using a latent variable interaction between activative fathering and a latent variable with fathers' sensitivity and positivity as indicators. Based on recommendations by Cham, West, Ma, & Aiken (2012) for small sample sizes with normally distributed data, the Latent Moderated Structural Equations (LMS; Klein & Moosbrugger, 2000) approach was used to estimate latent variable interactions. Briefly, the LMS approach to testing moderation with latent variables does not form product terms to represent the latent X latent interaction. LMS partitions the relations between exogenous and endogenous latent variables into linear and nonlinear components including the second-order effect (linear

by linear interaction). If the model is correctly specified, the latent variables are normally distributed, the disturbance variances are normally distributed, and the conditional distribution of the endogenous latent variable on any exogenous latent variables is normal. The nonlinear component (e.g. interaction) is estimated using a mixture model (Kelava, Werner, Schermelleh-Engel, Moosbrugger, Zapf, Ma, et al., 2011). The LMS approach to testing latent variable interactions is incorporated in Mplus.

Moderation is tested by initially fixing the latent variable interaction to zero, and then testing the increase in deviance that occurs when the latent variable interaction is freely estimated. The resulting -2 log likelihood values from each model are compared (analogous to a chi-squared difference test for improvement in model fit). Overall model fit statistics are not available with this approach.

Thus, a model was first run with the latent interaction (activative fathering latent by sensitive & positive fathering latent) fixed to zero. However, the iterative procedure for model estimate was unable to terminate, due to problems inverting the estimated covariance matrix and Fischer information matrix. The model was re-run with the resulting starting values and continually produced the same error. Given the small sample size ($N$ = 127), this is not unexpected when estimating more complicated models with multiple latent variables (Cham, West, Ma, & Aiken, 2012). Additional models were estimated that removed all covariates to simplify the model, but again resulted in the same error and models could not be estimated.

The LMS approach to testing moderation was attempted first in order to take advantage of the reduction in measurement error through the use of latent variables. However, latent variable interactions have also been shown to have a crucial

disadvantage: severe loss of statistical power. In simulation studies conducted by Cham et al. (2012) the *actual* power across all approaches to testing latent variable interactions ranged 0.12 to 0.33 for a theoretical power of 0.7, and the *actual* power ranged from 0.18 to 0.50 for a theoretical power of 0.9. These striking findings suggest that the severe decreases in power, particularly given a sample size of $N = 127$, make this approach to testing moderation overly conservative.

To address the limitations in sample size resulting in an inability to estimate models, and to address the severe drop in power from the LMS approach, the indicators of activative fathering and of warm fathering were standardized and averaged to form one manifest variable of activative fathering and one manifest variable of warm fathering respectively. An interaction term between the two was formed and a SEM model was run conceptually mirroring Figure 1. The 48 month activative fathering composite, warm fathering composite, their interaction term, family income, and the individual mother behavioral controls (opportunity for interaction, intrusiveness, detachedness, and cognitive stimulation) were entered as predictors of 60 month behavior and emotion dysregulation. The model was just-identified and model fit statistics are not reported. Results are presented in Figure 5 (excluding covariates that did not demonstrate significant prediction to emotion or behavior dysregulation). The interaction term was not a significant predictor of 60 month emotion dysregulation ($\beta = .10$, $p = .38$) nor 60 month behavior dysregulation ($\beta = -.10$, $p = .37$), thus moderation was not considered to be significant.

**Hypothesis 4: Mediation**

In order to test the hypothesis that activative fathering at 48mo would lead to decreased emotion and behavior dysregulation in children at 60mo (e.g. improved self-regulatory skills), which in turn would lead to increased social skills in school at 72mo, mediation analyses were conducted with path analysis in Mplus. Mplus uses a product of coefficients methodology in the test of indirect effects. Mediation is assessed by the indirect effect in relation to the z distribution, with the ratio of the product of the (a) and (b) path coefficients over the standard error for that product. In this approach to testing mediation, a z statistic above 1.96 (absolute value) is considered to be statistically significant at the $p < .05$ level. However, the distribution of the product of two coefficients is often non-normally distributed, thus we utilize confidence limits estimated using bootstrapping (MacKinnon, Lockwood, & Williams, 2004). Significance of the indirect effect is indicated if the interval between the upper and lower confidence limits does not contain zero. This approach to testing mediation has higher power and lower type I error rates than other approaches (MacKinnon, et al. 2004; Sobel, 1982). In contrast to the overly conservative Barron & Kenny (1986) approach to testing mediation, the MacKinnon (2008) product of the coefficients approach does not require an association between the predictor and outcome variable (path c) in order to establish mediation. For example mediation can be significant despite a non-significant direct effect when two mediators (one may or may not be measured) have opposing effects (Sheets & Braver, 1999).

It was hypothesized that children's 60 month emotion and behavior dysregulation would mediate the relationship between 48 month activative fathering and 72 month

teacher reports of the Social Skills Rating System standard score. However, conditions for mediation were not met as neither emotion nor behavior dysregulation were predictive of later social skills. Subsequently, mediation tests were run for the following outcomes: teacher reports of SSRS and CBCL subscales, mother reports of SSRS and CBCL subscales, and father reports of SSRS and CBCL subscales. This resulted in 35 separate dependent outcomes measures, each tested as the sole outcome in individual models. No tests of mediation were significant at $\acute{\alpha} = .05$ using bootstrapping to estimate confidence intervals due to non-significant paths between the mediators (emotion and behavior dysregulation) and the various outcomes. Two models had significant paths from 48 month activative fathering to 60 month behavior dysregulation *and* significant paths from 60 month behavior dysregulation to 72 month outcomes. These models are highlighted in the text and in figures as trends of interest. A larger sample size with more statistical power might find tests of mediation significant.

The model for 72 month mother reported SSRS Internalizing approached significance for product of the coefficients test of mediation (unstandardized ab = -0.81, 95% C.I. [-0.97, 0.08]), and had significant a and b paths. Results are reported in Figure 6. In addition the model for 72 month father reported SSRS Social Skills outcome also approached significance for product of the coefficients test for mediation (unstandardized ab = 0.29, 95% C.I. [-0.02, 0.93]), and had significant a and b paths (Figure 7). Given that 30 other models showed no significant tests of mediation using product of the coefficients methodology, and the large total number of models estimated, the two models are presented simply to highlight trends rather than provide support for mediation.

# CHAPTER 4

# DISCUSSION

The present study examined activative fathering behaviors in a naturalistic home setting and their influence on children's self-regulation and social skills. Results offer mixed support for the proposed hypotheses. Confirmatory factor analysis found a one factor model fit four observed fathering behaviors proposed to capture aspects of activative fathering (time spent in interaction, intrusiveness, cognitive stimulation, and detachedness). This same factor structure was not found to fit the same four behaviors for mothers. Thus, activative fathering was uniquely characteristic of fathering, as measured in naturalistic observations of behaviors broadly fitting the conceptual base of activative fathering. Next, activative fathering predicted later decreased behavioral dysregulation despite controlling for family income and identical maternal behaviors. Thus, activative fathering was found to be a unique predictor of children's ability to self-regulate during challenging tasks above and beyond mothering behavior. This pathway confirmed the theoretically proposed association between activative fathering and self-regulatory skills. Results did not find that paternal warmth moderated the relation between activative fathering and children's dysregulation. Although activative fathering predicted later dysregulation, it did so regardless of whether fathers displayed sensitivity and positive affect in conjunction with the destabilizing characteristics of activative fathering. Thus, results were unable to substantiate paternal warmth as a necessary context for activative fathering to positively influence the development of self-regulatory ability. With respect to the proposed influence of activative fathering on improved social skills, results did not find support for children's dysregulation as a mediating link between activative fathering

and children's social skills. Although there was mixed support for the proposed hypotheses, results offer important implications for future research.

Activative fathering has been proposed to be a set of behaviors that are unique to father-child interaction. Drawing from human and primate research, Paquette (2004) points out that fathers engage children through vigorous, rough-and-tumble play (RTP), much more than mothers, which results in father-child interactions that are highly simulative and arousing as well as destabilizing for children. Play is a central context for activative fathering to impact children. Paquette (2004) highlights that fathers spend less total time with infants than mothers, but that fathers spend proportionally more time engaged in play with infants than do mothers (Bronstein, 1984; Keyes & Scoblic, 1982). In addition, fathers play with children in characteristically different ways than do mothers. During play, fathers often use toys as a means to instigate physical contact, use toys in more unconventional ways (e.g. non-everyday usage), and also destabilize children cognitively and emotionally through the use of teasing (Labrell 1996; 1997). Although play is a crucial context for the expression of activative fathering, the function of activative fathering is "opening children to the world" (Paquette, 2004). Thus, activative fathering also incorporates behavior characteristic of fathers outside of play-specific contexts. For example, fathers have more unpredictable use of vocabulary that ranges beyond the child's ability, encourage children to reformulate their thoughts through asking for clarification more often than mothers, give children more problem solving-demands, and make more action demands on tasks (Ratner, 1988; Tomasello, Conti-Ramsden & Ewert, 1990; Marcos, 1995).

The present study attempted to capture several of these salient behavioral aspects of activative fathering in the family's home without restrictions on behavior imposed by laboratory settings. By nature, fathers must spend time interacting with their children in order to express child-directed fathering behavior. The present study coded father-child interactions at home for the Opportunity for Interaction with the child, or the amount of time during each coded observation period that the father remained within visual or verbal proximity to allow for interaction with the target child. This construct represented a check that the father was, in fact, engaged with the child during shared interactions, and also is a marker of father involvement. Father's Detachedness indicated fathers who do not facilitate involvement with people or objects and are unaware of the child's needs. Detached behaviors included not talking to the child, not making eye contact, missing the child's queues for interaction, timing that is not in synchrony with the child's affect and responses, and under-stimulation of the child. Detachedness was a negative loading, designed to capture fathers who were highly engaging and stimulative of the child and had synchrony with the child's requests and behaviors. In order to capture an element of destabilization and overstimulation in father-child interaction, father's Intrusiveness was also included in the activative fathering constellation. Finally, Cognitive Stimulation was included to capture the amount and intensity of fathering behavior that fostered stimulative cognitive development. Example behaviors representative of Cognitive Stimulation included demonstration of a toy or object, attempts to focus the child's attention on perceptual qualities of objects, vocalizations that expand on child's vocalizations, requests that require child problem solving, and encouraging the child to actively participate in an activity or exploration. Together, these constructs represent

several integral components of activative fathering, discussed previously, that include play and non-play contexts.

Results from confirmatory factor analyses using Opportunity for Interaction, Detachedness, Intrusiveness, and Cognitive Stimulation indicated a good fit for a one-factor *activative fathering* solution for fathers. Thus, father involvement, active engagement, awareness of the child's needs, a degree of overstimulation and destabilization, expansions of verbalization and problem solving, and encouraging the child to actively explore the environment were confirmed as components of an overarching activative fathering construct. Of note, these fathering behaviors held together in a naturalistic home setting that did not specifically target father-child play interactions. Results did not indicate that the same constellation of behaviors held together for mothers, which was expected given theoretical arguments that the underlying components of activative fathering are uniquely characteristic of father-child interactions (Paquette, 2004). Results fit with broader research that suggests stylistic differences of fathers: fathers are more verbally unpredictable, challenging, engage in more physical play than mother, and generally encourage the child to engage in more risk taking (Ratner, 1988; Tomasello, Conti-Ramsden & Ewert, 1990; Marcos, 1995; Power & Parke, 1983; Kromelow, Harding & Touris, 1990). Activative fathering appears to be a robust construct, seen in unstructured home settings (Stevenson & Crnic, 2013) and evident in highly structured laboratory tasks (Paquette, 2010; Paquette & Bigras, 2010; Dumont & Paquette, 2013; Gaumon & Paquette, 2013).

According to Paquette (2004), activative fathering influences children's development through challenging parent-child interactions that foster the development of

self-regulatory abilities. This study found activative fathering in non-structured home environments predicted decreased behavioral dysregulation one year later, net of identical maternal behavior and family income. Thus, children exposed to activative fathering showed improved ability to maintain attention and focus, and follow rules during a frustrating and cognitively demanding puzzle task. Validation of the prospective association between activative fathering and children's self-regulation was strengthened by the use of a prospective design, controlling for identical mothering behaviors and family income as predictors, and by utilizing autoregressive paths to control for earlier levels of children's emotion and behavior dysregulation. This study was unusual in that father's intrusiveness, generally thought to have a negative impact on children, was included alongside other variables more typically associated with positive outcomes (involvement, engagement, and cognitive stimulation). Poor and coercive parenting practices have been associated with the development of antisocial behavior in children (Vuchinich, Bank, & Patterson, 1992; Patterson, 1982). While this study cannot rule out that fathers' intrusiveness negatively influenced children, our goal was to capture behavior that was destabilizing and challenging of the child. Fathers showed lower mean levels of intrusive behavior than did mothers in this study and their mean level was 1.3 on a scale ranging from 1 to 4. With fathers' ratings falling in the "minimally intrusive" scale range, it seems likely that this study captured behaviors more consistent with destabilizing and challenging behaviors rather than negative and coercive fathering.

Activative fathering was also positively correlated with family income, which highlights that fathers in higher SES families provided increased challenging and stimulating environments for children. Activation theory proposes that father-child

activation relationships improve children's self-regulation, but also improve children's risk taking assessment, decision making capacity, and increase children's ability to compete with peers throughout life, in service of climbing the social hierarchy and improving one's status as a potential mate. It is possible that men who themselves had activative fathers were better at self-regulating behaviors and competing with peers (without inappropriate aggression leading to delinquency), were more likely to attain higher education and better paying jobs, and passed those traits across multiple generations in service of evolutionarily adaptive characteristics for survival. Intergenerational transmission of attachment has been established (Benoit & Parker, 1994; Ward & Carlson, 1995), but the present data and available empirical evidence on activative fathering remain unable to yet draw the same conclusions. Future research would greatly strengthen father-child activation theory, and its implied evolutionary adaptiveness, if intergenerational transmission of activative fathering were found to exist.

Although activative fathering did predict behavioral dysregulation, it did not predict children's emotional dysregulation in the present work. It is unclear why this relation did not emerge but several possibilities exist that may explain this lack of expected findings. First, it is possible that this study did not measure fathering behaviors at an early critical time period or consider the importance of consistent growth across time. In general, young infants rely almost entirely on external caregivers to regulate emotions, and gradually develop ability to self-regulate over the first few years of life (Kopp & Neufeld, 2003), whereas the present study began measuring father-child interaction at 48 months when more sophisticated and internal means of self-regulation, such as effortful control may have already experience significant gains (Jones, Rothbart,

& Posner, 2003). For example, Cabrera et al. (2007) found supportive fathering behavior was related to toddler's emotion regulation at 24 months of age, whereas the present study began measuring fathering when children were age 4. In addition, another study found that mothers *initial* level of positive involvement related to components of emotion regulation (greater attention, confidence and persistence) whereas for fathers *relative increases* in positive engagement over time related to same outcomes over the course of the first 9 months of the child's life (Lang, Schoppe-Sullivan, Kotila, Feng, Kamp Dush, Johnson, 2014). Empirical studies of father-child activation theory are significantly limited to date and it remains unknown whether there is a critical developmental time period during which activative fathering is most impressionable. The growth and course of activative fathering across child development also remain unknown. As found with positive engagement (Lang et al., 2014), it may be that the change over time of activative fathering needs to be considered in order to uncover its impact on children's emotion regulation. Second, it is possible that activative fathering is necessary to observe in an emotionally arousing context, rather than a naturalistic home context, in order to capture a key context for the development of emotion regulation. For example, highly stimulative play may produce more situation-emotion-specific activative fathering behaviors, corresponding emotion co-regulation, and child reactions that constitute key environments for the translation of activative fathering into emotion self-regulation. Third, the puzzle task children completed during the laboratory observation was designed to be above the child's present developmental ability. This puzzle task presented the child with a cognitively challenging task, which naturally drew upon abilities for sustained focus, mental flexibility, and general intellect. Although children likely experienced some

frustration while completing the puzzle task, it may be a challenge task that directly targets emotional arousal is necessary to observe the impact of activative fathering on emotion regulation.

Emotionally provocative tasks exist that are well-studied in children's self-regulation and temperament. For example, laboratory batteries have been developed to elicit emotional effortful control responses by Kochanska and colleagues (Kochanska, Murray, & Harlan, 2000). These laboratory assessments include paradigms that solicit elements of effortful control such as delay of gratification through a snack delay or wrapped gift, effortful attention with an adapted Stoop task, slowing motor activity, and suppressing/initiating activity to signal with a turn taking task, among others. Researchers have also developed a full battery (with several overlapping tasks) to capture a broad range of emotional responses in the widely used Laboratory Temperament Assessment Battery (LAB-TAB; Goodsmith & Rothbart, 1996). The LAB-TAB can be used pre-locomotor through preschool and slightly different batteries exist for different age ranges. Specific tasks are employed to provoke emotional responses, such as arm restraint to prevent a desire to play, peek-a-boo, the surprise entrance of a scary remote controlled toy, bead sorting, or the introduction of an attractive toy locking in a box. Perhaps utilizing some of these paradigms to specifically target fear, distress, anger, joy, or exuberance responses may have produced more meaningful outcomes for the antecedent of activative fathering.

With respect to warmth on the part of fathers being necessary in order for activative fathering to have a positive influence on children's self-regulatory ability, support was not found for a moderating role of warm fathering. The present study used

unstructured observations in the home where families were told to "act as you normally do." Given that families were aware they were being observed, it seems likely that the range of behavior seen would have been limited to positive and socially desirable interactions. Thus, it may be that fathers artificially raised the levels of positive affect and sensitivity, limiting the predictability of their positive behavior and created a floor effect. It is also possible that the component of warm fathering, with respect to its intersection with activative fathering, is uniquely required for physical rough-and-tumble play contexts. Perhaps paternal warmth in conjunction with activative fathering was not needed for daily living in-home activities, such as eating dinner or completing schoolwork, but the combination becomes salient when fathers and children are engaging in RTP.

The present study included warmth as moderator but did not consider the construct of control. The combination of the dimensions of parental warmth and control has proven a powerful way to understand parenting styles with respect to parental impact on child development (Baumrind, 1971). Perhaps including both father's warmth and control as moderators, or classifying fathers into authoritative, authoritarian, permissive, and neglectful categories would be more informative when considering necessary conditions for the impact of activative fathering on the development of children's self-regulatory ability.

Activative fathering was hypothesized to influence children's social skills through the development of self-regulatory abilities. Activative fathering was found to predict later decreased behavior dysregulation, but full mediation to later social skills was not present. Two models evidenced a trend that might suggest full mediation would be

evident with more statistical power. First, increased children's internalizing, on mother reports of social skills, was predicted by children's behavior dysregulation, which was in turn predicted by activative fathering. Second, children's overall level of social skills, by father report, was negatively predicted by behavior dysregulation, which in turn was negatively predicted by activative fathering. It was expected that increased behavioral dysregulation would be associated with increased internalizing problems and decreased social skills, and both of these outcomes were consistent with theoretical predictions (Paquette, 2004). It was puzzling that the same model that found decreased behavior dysregulation was associated with improved social skills also found that increased emotional dysregulation was associated with improved social skills (although emotion dysregulation was not predicted by activative fathering). One possibility is that our emotion dysregulation coding system captured children who expressed negative emotions, such as frustration or sadness, in an attempt to garner attention and assistance with self-regulation by mothers were present during the task. Although unmeasured for the present study, it is possible that task provided an opportunity for mothers to respond to children's negative emotionality with helpful strategies such as emotion-coaching, positive and non-punitive reactions to emotions, or parental teaching of emotion regulation strategies (Gottman, Katz, & Hooven, 1997; Eisenberg, et. al, 1998; Morris, Silk, Steinberg, Myers, & Robinson, 2007). That said, that poor emotion regulation is generally associated with poor social competence and maladjustment (Eisenberg, Fabes, Shepard, Guthrie, Murphy, & Reiser, 1999; Eisenberg, Spinrad, & Eggum, 2011). Any such conclusions regarding maternal reactions to children's emotionality in the present study remain purely speculative. Given the large number of outcomes examined in

separate models, two models that approached significant mediation, and the surprising finding of increased emotion dysregulation predicting increased social skills fall well within the expected range of statistical Type I and II error. Thus, conclusions cannot reasonably be drawn on a general lack of findings nor from a select few findings in models in the larger context of numerous null models.

**Limitations**

Despite several strengths of this study (longitudinal design, non-shared method variance, naturalistic observation of parenting), the present work is not without limitations. Naturalistic observation of parenting behavior at home reduced the chances of biased reporting on the part of parents, but it remains unknown whether the presence of observers may have induced parents to modify their typical parenting behaviors. It is generally the conclusion of this study, and considered a strength of the present study, that activative fathering is observable outside of play contexts. That said, father child interactions were observed under the instructions to "act as you normally do", so it remains unknown the proportion of observed interactions (if any) that involved play. RTP is central to Activation Theory (Paquette, 2004) and a stronger test of the relation of activative fathering to self-regulation and social skills would involve measuring activative fathering during highly stimulative RTP play contexts. Lastly, although the dysregulation coding system measured children's regulatory behaviors independent of parental intervention, it is important to note that mothers were present during the frustrating puzzle task. Thus, this study cannot rule out the possibility that children's dysregulation was influenced in some form by maternal presence or intervention.

## Future Directions

Findings from the present represent an initial attempt to assess the existence of a style of fathering consistent with father-child Activation Theory (Paquette, 2004) and to assess activative fathering as an antecedent of children's self-regulation and adaptive social outcomes. Empirical research on father-child activation remains virtually nonexistent and as is typical of fields in their infancy, there exist no widely accepted or standardized means by which to define, categorize or measure activative fathering. In consideration of the present work and broader theoretical conceptualizations of father-child activation theory, numerous directions for future research arise.

**Contexts of father-child interaction.** Parents and children interact in a wide variety of contexts, several of which hold special importance for father-child activation. Future work will benefit from observations that include naturalistic interaction along with structured and unstructured play contexts. It is typical of studies conducted in laboratory settings to provide toys and some structure for parent-child interaction, and work that advances the study of activative fathering will need to include unstructured settings and ambiguous instructions to participants. One such example of this type of observation is currently being collected (Paquette, 2010). As part of a larger series of observations, fathers-child and mother-child dyads (separately) are placed in an empty room and parents are asked to "do whatever you normally do to make your child laugh." Although videos are not yet coded, nor has a coding system been developed, early observations of this paradigm indicates that fathers engage in highly emotionally arousing and physical play with infants and toddlers whereas mothers tend to engage more with en-face interaction such as peek-a-boo (Paquette, 2010).

RTP is a context central to activation theory (Paquette, 2004), and future work needs attention to RTP in natural settings (home, park, family outings) and in laboratory settings that provide space and toys amenable to the promotion of RTP. Specifically prompting parents, to the extent that is possible with safety and IRB approval, to engage in roughhousing with children may capture elements of activative fathering not seen in the present study. Providing physical toys and games in the laboratory or including physical activity outside as part of laboratory data collection is also likely to encourage RTP interaction and associated activative fathering.

Paquette (2004) argues that one function of father-child activation is to encourage risk-taking behavior with an accompanying improvement in evaluation and judgment of risk. Although challenging to accomplish, targeting risk taking scenarios with father-child dyadic interaction and children alone is a crucial direction for the field. Examples of risk-taking activities could include children first learning to walk, to swim, to ride a bike, or other such activity that includes risk (or perceived risk). Additionally, a focus on risk taking in family games or more formal laboratory risk-taking tasks would further understanding of activative fathering as an antecedent of risk taking and of our knowledge of children's risk-assessment and risk-taking as outcomes.

**Paradigms to capture activation.** This study took the approach of observing discrete fathering behaviors thought to be associated with father-child activation theory in the same manner that parental sensitivity has been associated with secure attachment (De Wolff & van Ijzendoorn, 1997). If father-child activation is a complimentary (to security provided by mothers) facet of attachment, then it ought to manifest in paradigms beyond observation of discrete parenting behavior. One such paradigm is the recent Risky

Situation (RS) procedure (Paquette & Bigras, 2010) developed to measure activation from 12-18 months that conceptually mirrors the Strange Situation (SS;Ainsworth, Blaher, Waters, & Wall, 1978). A noteworthy departure from simple observations of parent-child interaction, the SS follows a series of structured episodes designed to gradually increase the child's stress and trigger the attachment system along with specific parenting instructions designed to reduce children's immediate reaction to parental behavior and uncover underlying attachment representations. The RS uses different structured episodes to invite the child to take progressive risks in order to trigger the activation system with specific parenting instructions prohibiting parents from encouraging exploration (for more a more detailed description see Paquette & Bigras, 2010). Thus, highly structured laboratory paradigms designed to trigger the activation system, provided activation can be sufficiently differentiated from attachment and from temperament, hold promise for providing supporting evidence for father-child activation.

Another way of advancing the study of activation theory would be to create an observation scale that is anchored within the framework of activation theory and uses theoretical assumptions to rate the parent-child dyad on desired characteristics rather than simply rate discrete behaviors. The Emotional Availability Scales (EAS; Biringen, Robinson, & Emde, 1993; 1998) have been developed within the attachment framework and score parent-child interactions in a dyadic attachment framework. Parent subscales include sensitivity and control of child behavior (hostility, structuring, nonintrusiveness) while child subscales include responsiveness and involvement. A unique feature of the EAS is that all subscales are scored within a dyadic attachment framework, such that maternal sensitivity, for example, cannot receive a high score unless the child is receptive

to maternal efforts. This is thought to better capture the patterned history of EA between parent and child than simple frequencies or individual parent/child discrete behaviors. To the author's knowledge there currently exist no efforts to develop such a system for activation theory. Such a scale could reasonably be developed to include elements of father stimulation, destabilization, warmth, and limit setting and child elements of risk taking, exploration of the environment. A dyadic perspective could also be utilized such that father stimulation and destabilization (among others) would not receive high scores unless the child displayed arousal. Further conceptualization and empirical data would also be needed to establish whether the scope of such a scale would be confined to RTP or applicable to broad contexts. The development and emerging conceptualization of such a scale is a priority for this author's contribution to the field.

Lastly, attachment representations have been successfully captured via interviews in adulthood (AAI; George, Kaplan, & Main, 1985; Main & Goldwyn, 1991) and use of the attachment Q sort (AQS, Waters & Deane, 1985). Similar interview methods or Q-sorts could be developed for activation theory, and help to provide evidence to support the existence of child activation through multi-method approaches and provide evidence that activation is sufficiently distinct from traditional attachment representations.

**Key dyadic interaction constructs for activation theory.** Regardless of the measurement method, activation theory suggests several constructs of parent-child interaction may be ripe areas for investigation to increase understanding of father-child processes. Paquette (2004) focuses on RTP as central domain for the understanding of activation, yet careful examination of activation theory also directly suggests or indirectly implies dyadic constructs that may create a more complete picture of unique aspects of

father-child relationships. Play can involve dominant and non-dominant positions and children and fathers must integrate complex verbal and nonverbal cues in the establishment of dominance and in transfer of dominance. Fathers as dominant play partner may also engage in collaborative rule-making process for games. Fathers who engage in play that allows children to practice role transitions seem likely confer skills that would lead to children who are more socially adept in competitive situations. The degree to which fathers provide stimulation and destabilization also bears further investigation. It seems likely that too little stimulation would result in children who take no risks and do not explore the world, whereas fathers who overstimulate to the degree that children cannot learn organized methods of self-regulation would result in children who take too many risks without evaluations of the environment or proper social boundaries. Paternal challenging of the child, or encouraging the child to take some steps alone to complete a risky goal, seems also a likely place for activative fathering to play a role in approapriate risk taking behavior. Lastly, teasing is more characteristic of father-child interaction than mother-child interaction (Labrell, 1996; 1997). Future studies of activation theory may find teasing a particularly important area where fathers can provide challenging motivation to spur trial attempts at an activity, lessen the impact of failure, or perhaps use teasing in a manner that reduces children's self-confidence and self-efficacy. Future investigation of each of these constructs will enable valuable advancement of both theory development and foundational empirical knowledge for activation theory.

**Conclusion**

Results from the present study indicate that a constellation of discrete fathering behaviors thought to be components of activative fathering is observable in naturalistic

home settings and is unique to fathering. In addition, activative fathering, net of identical maternal behavior and family income, predicted decreased behavioral components of children's dysregulation. Findings suggested that warmth of the part of fathers was not a necessary condition for activative fathering to have a positive impact on the development of children's self-regulation. Lastly, results were unable to conclude whether children's dysregulation mediated the relation between activative fathering and later social skills. Together, results hold promise for uncovering more detailed evidence on activative fathering through novel methods of investigation that draw on paradigms from attachment research.

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Table 1. *Sample Characteristics*

| Variable | (n = 128) |
|---|---|
| Child Gender (% male) | 51.6 |
| Child Race (% Caucasian) | 61.7 |
| Marital Status (% married) | 88.2 |
| Mother's Race (% Caucasian) | 67.2 |
| Mother's Education (% college degree) | 61.4 |
| Biological Mother (%) | 99.2 |
| Father's Race (% Caucasian) | 69.7 |
| Father's Education (% college degree) | 61.4 |
| Biological Father (%) | 96.6 |
| Median Family Income | $50,001 – 70, 000 |

Table 2. *Descriptive Statistics for all Variables*

| Variable | *M* | *SD* | Skew | Kurtosis |
|---|---|---|---|---|
| 48 Month | | | | |
| F Opp. Interaction | 3.56[a] | .97 | -.69 | -.04 |
| M Opp. Interaction | 3.91 | .79 | -.71 | .41 |
| F Intrusiveness | 1.32[a] | .34 | 1.19 | .90 |
| M Intrusiveness | 1.57 | .51 | 2.13 | 7.03 |
| F Detachedness | 2.81[a] | .98 | .14 | -.85 |
| M Detachedness | 2.47 | .96 | .43 | -.74 |
| F Cog. Stimulation | 1.54[a] | .62 | 1.51 | .45 |
| M Cog. Stimulation | 1.70 | .66 | 1.28 | 2.19 |
| Emotion Dysregulation | 1.20 | 1.11 | .89 | .28 |
| Behavior Dysregulation | 1.25 | 1.17 | .82 | -.09 |
| Family Income | 4.87 | 1.82 | -.70 | -.48 |
| F Sensitivity | 2.65 | .95 | .30 | -.67 |
| F Positive Affect | 2.28 | .74 | .34 | -.67 |
| 60 Month | | | | |
| Emotion Dysregulation | .96 | 1.02 | 1.03 | .80 |
| Behavior Dysregulation | .98 | 1.06 | .96 | .19 |

Table continues…

| Variable | *M* | *SD* | Skew | Kurtosis |
|---|---|---|---|---|
| 72 Month | | | | |
| T SSRS Standard Score | 105.20 | 12.21 | -.22 | .26 |
| T SSRS Behavior Problems | 95.34 | 12.72 | .91 | -.15 |
| T SSRS Academic Competence | 102.38 | 10.18 | -.36 | -.61 |
| T SSRS Cooperation | 16.97 | 9.77 | 6.91 | 59.04 |
| T SSRS Self Control | 16.37 | 9.67 | 7.32 | 63.58 |
| T SSRS Externalizing | 2.84 | 10.70 | 8.82 | 78.27 |
| T SSRS Internalizing | 2.83 | 10.63 | 8.82 | 80.59 |
| M CBCL Total | 24.77 | 16.39 | .97 | .74 |
| M CBCL Internalizing | 5.86 | 5.31 | 1.51 | 2.31 |
| M CBCL Externalizing | 7.43 | 5.99 | .98 | .66 |
| F CBCL Total | 22.25 | 18.04 | 1.47 | 2.00 |
| F CBCL Externalizing | 6.18 | 6.29 | 1.77 | 3.98 |
| F CBCL Internalizing | 5.43 | 5.07 | 1.29 | 1.70 |
| T CBCL Total | 14.28 | 18.97 | 2.28 | 6.31 |
| T CBCL Externalizing | 3.23 | 7.05 | 3.17 | 10.74 |
| T CBCL Internalizing | 2.76 | 4.51 | 3.48 | 16.72 |

Table continues…

| Variable | *M* | *SD* | Skew | Kurtosis |
|---|---|---|---|---|
| 72 Month | | | | |
| T CBCL Aggression | 2.54 | 5.81 | 3.12 | 9.81 |
| M SSRS Cooperation | 11.94 | 3.23 | -.72 | .36 |
| M SSRS Assertion | 16.25 | 2.82 | .24 | .39 |
| M SSRS Responsibility | 12.69 | 3.20 | -.70 | .38 |
| M SSRS Self Control | 13.16 | 3.32 | -.26 | -.36 |
| M SSRS Externalizing | 3.75 | 2.31 | .33 | -.27 |
| M SSRS Internalizing | 3.18 | 2.04 | .56 | -.12 |
| M SSRS Hyperactivity | 4.11 | 2.76 | .28 | -.72 |
| M SSRS Social Skills | 101.28 | 16.74 | -.47 | -.46 |
| M SSRS Behavior Problems | 97.87 | 12.74 | .52 | -.81 |
| F SSRS Cooperation | 96.39 | 16.09 | .03 | -.63 |
| F SSRS Assertion | 95.76 | 12.56 | .79 | -.36 |
| F SSRS Responsibility | 11.18 | 2.74 | -.36 | .45 |
| F SSRS Self Control | 15.40 | 2.93 | -.57 | -.54 |
| F SSRS Externalizing | 11.89 | 2.91 | .13 | -.65 |
| F SSRS Internalizing | 12.89 | 3.02 | .26 | -.19 |

Table continues…

| Variable | *M* | *SD* | Skew | Kurtosis |
|---|---|---|---|---|
| 72 Month | | | | |
| F SSRS Hyperactivity | 3.33 | 2.28 | .43 | -.22 |
| F SSRS Social Skills | 2.79 | 1.99 | .77 | .28 |
| F SSRS Behavior Problems | 3.89 | 2.49 | .27 | -.65 |

Note. *M* = Mean. *SD* = Standard Deviation. Mo = month. F = Father. M = Mother. T = Teacher report. Opp = Opportunity. Cog = Cognitive. SSRS = Social Skills Rating System. CBCL = Child Behavior Checklist. [a] = significant mean difference ($p < .05$) between matching father and mother parenting variables.

Table 3. *Correlations between Predictor Variables and Outcomes*

| | 1. | 2. | 3. | 4. | 5. |
|---|---|---|---|---|---|
| 48 Month | | | | | |
| 1. Family Income | -- | | | | |
| 2. F Opportunity for Interaction | .2* | -- | | | |
| 3. F Intrusiveness | .05 | .24** | -- | | |
| 4. F Detachedness | -.35** | -.32** | -.23* | -- | |
| 5. F Cog. Stim. | .08 | .38*** | .16 | -.52*** | -- |
| 6. M Opportunity for Interaction | -.04 | .16 | -.09 | .14 | -.06 |
| 7. M Intrusiveness | -.11 | -.08 | .13 | -.08 | -.08 |
| 8. M Detachedness | -.03 | .14 | .22* | .18 | -.06 |
| 9. M Cognitive Stimulation | -.05 | -.07 | -.20* | -.06 | .43*** |
| 10. Emotion Dysregulation | -.14 | .01 | -.04 | .01 | .02 |
| 11. Behavior Dysregulation | -.20* | .02 | .02 | -.13 | .19* |
| 60 Month | | | | | |
| 12. Emotion Dysregulation | -.04 | -.07 | -.12* | .04 | .11 |
| 13. Behavior Dysregulation | -.07 | -.19* | -.05 | .07 | -.04 |
| 48 Month | | | | | |
| 14. F Sensitivity | .28** | .46*** | .11 | -.77*** | .73** |
| 15. F Positive Affect | .29** | .36*** | -.04 | -.73** | .58*** |
| 72 Month | | | | | |
| 16. T SSRS Standard Score | .05 | -.25* | -.20 | -.18 | -.06 |
| 17. T SSRS Behavior Problems | .11 | .19 | .22 | .01 | .06 |
| 18. T SSRS Academic Competence | .26* | .05 | -.02 | -.18 | .04 |
| 19. T SSRS Cooperation | .07 | -.13 | -.01 | .01 | -.02 |
| 20. T SSRS Self Control | -.04 | .00 | .00 | .03 | -.05 |
| 21. T SSRS Externalizing | .04 | .01 | .10 | .08 | -.02 |
| 22. T SSRS Internalizing | .01 | .05 | .07 | .08 | -.01 |
| 23. M CBCL Total | -.10 | .11 | .06 | .12 | .10 |
| 24. M CBCL Internalizing | -.10 | .03 | -.04 | .20† | .09 |
| 25. M CBCL Externalizing | -.11 | .11 | .09 | .07 | .04 |
| 26. F CBCL Total | -.14 | -.00 | -.17 | -.06 | .20† |
| 27. F CBCL Internalizing | -.11 | .01 | .17 | -.09 | .24* |
| 28. F CBCL Externalizing | -.13 | -.04 | .13 | -.03 | .08 |
| 29. T CBCL Total | .03 | .15 | .15 | .02 | .05 |

Table continues…

| | 6. | 7. | 8. | 9. | 10. |
|---|---|---|---|---|---|
| 48 Month | | | | | |
| 1. Family Income | | | | | |
| 2. F Opportunity for Interaction | | | | | |
| 3. F Intrusiveness | | | | | |
| 4. F Detachedness | | | | | |
| 5. F Cog. Stim. | | | | | |
| 6. M Opportunity for Interaction | -- | | | | |
| 7. M Intrusiveness | .21* | -- | | | |
| 8. M Detachedness | -.21* | -.15 | -- | | |
| 9. M Cognitive Stimulation | .24** | -.01 | -.60*** | -- | |
| 10. Emotion Dysregulation | .01 | .07 | -.06 | .04 | -- |
| 11. Behavior Dysregulation | -.04 | -.04 | .04 | .03 | .62*** |
| 60 Month | | | | | |
| 12. Emotion Dysregulation | .08 | .05 | -.12 | .17 | .33*** |
| 13. Behavior Dysregulation | -.16 | .08 | -.11 | .09 | .35*** |
| 48 Month | | | | | |
| 14. F Sensitivity | -.13 | -.02 | -.05 | .25** | .02 |
| 15. F Positive Affect | .00 | -.06 | .00 | .13 | .02 |
| 72 Month | | | | | |
| 16. T SSRS Standard Score | -.22* | -.03 | -.09 | .04 | .04 |
| 17. T SSRS Behavior Problems | .07 | .00 | .15 | -.04 | .01 |
| 18. T SSRS Academic Competence | -.19 | .06 | .01 | -.10 | -.24* |
| 19. T SSRS Cooperation | .09 | .07 | .01 | .01 | .01 |
| 20. T SSRS Self Control | .06 | .02 | .04 | .01 | .13 |
| 21. T SSRS Externalizing | .13 | .05 | .08 | -.01 | .07 |
| 22. T SSRS Internalizing | .12 | .05 | .10 | -.02 | .07 |
| 23. M CBCL Total | .07 | -.07 | -.03 | .14 | .15 |
| 24. M CBCL Internalizing | .00 | -.04 | -.09 | .27** | .11 |
| 25. M CBCL Externalizing | .08 | -.09 | -.08 | .09 | .16 |
| 26. F CBCL Total | -.13 | -.14 | .10 | -.04 | .04 |
| 27. F CBCL Internalizing | -.05 | -.12 | .10 | .05 | .04 |
| 28. F CBCL Externalizing | -.11 | -.09 | -.02 | -.03 | .11 |
| 29. T CBCL Total | .03 | -.01 | .11 | -.03 | .06 |

Table continues…

| | 11. | 12. | 13. | 14. | 15. |
|---|---|---|---|---|---|
| 48 Month | | | | | |
| 1. Family Income | | | | | |
| 2. F Opportunity for Interaction | | | | | |
| 3. F Intrusiveness | | | | | |
| 4. F Detachedness | | | | | |
| 5. F Cog. Stim. | | | | | |
| 6. M Opportunity for Interaction | | | | | |
| 7. M Intrusiveness | | | | | |
| 8. M Detachedness | | | | | |
| 9. M Cognitive Stimulation | | | | | |
| 10. Emotion Dysregulation | | | | | |
| 11. Behavior Dysregulation | -- | | | | |
| 60 Month | | | | | |
| 12. Emotion Dysregulation | .19* | -- | | | |
| 13. Behavior Dysregulation | .29** | .48** | -- | | |
| 48 Month | | | | | |
| 14. F Sensitivity | .15 | -.04 | -.06 | -- | |
| 15. F Positive Affect | .15 | .01 | -.04 | .82** | -- |
| 72 Month | | | | | |
| 16. T SSRS Standard Score | -.04 | -.04 | .10 | .12 | .21† |
| 17. T SSRS Behavior Problems | .05 | .11 | -.07 | -.01 | -.09 |
| 18. T SSRS Academic Competence | -.25* | -.06 | .02 | .23* | .26* |
| 19. T SSRS Cooperation | -.08 | .06 | -.05 | .06 | .07 |
| 20. T SSRS Self Control | .02 | -.03 | -.05 | .04 | .05 |
| 21. T SSRS Externalizing | -.03 | .06 | -.10 | .01 | -.04 |
| 22. T SSRS Internalizing | -.03 | .02 | -.12 | .01 | -.02 |
| 23. M CBCL Total | .16 | .16 | .11 | -.05 | -.11 |
| 24. M CBCL Internalizing | .02 | .20* | .16 | -.06 | -.14 |
| 25. M CBCL Externalizing | .22* | .10 | .07 | -.05 | -.10 |
| 26. F CBCL Total | -.03 | .19† | -.08 | .12 | .02 |
| 27. F CBCL Internalizing | -.03 | .20† | -.09 | .19† | .10 |
| 28. F CBCL Externalizing | .05 | .22* | .04 | .04 | -.06 |
| 29. T CBCL Total | .08 | .09 | -.04 | .02 | -.13 |

Table continues…

| | 1. | 2. | 3. | 4. | 5. |
|---|---|---|---|---|---|
| 72 Month | | | | | |
| 30. T CBCL Internalizing | .09 | .15 | .08 | .01 | .07 |
| 31. T CBCL Externalizing | .03 | -.01 | .12 | .03 | .07 |
| 32. T CBCL Aggression | .06 | -.02 | .12 | .04 | .08 |
| 33. M SSRS Cooperation | .02 | -.01 | .18 | .10 | -.00 |
| 34. M SSRS Assertion | -.08 | -.10 | .19† | .06 | -.10 |
| 35. M SSRS Responsibility | -.01 | -.25* | .18 | .18† | -.11 |
| 36. M SSRS Self Control | -.03 | -.13 | .10 | .08 | -.09 |
| 37. M SSRS Externalizing | .03 | .10 | -.00 | .02 | .07 |
| 38. M SSRS Internalizing | -.11 | .07 | -.07 | -.01 | .09 |
| 39. M SSRS Hyperactivity | -.03 | .15 | .03 | -.02 | .08 |
| 40. M SSRS Social Skills | -.04 | -.13 | .17 | .14 | -.08 |
| 41. M SSRS Behavior Problems | -.04 | .14 | .02 | .01 | .11 |
| 42. F SSRS Cooperation | .12 | .07 | .00 | -.01 | .07 |
| 43. F SSRS Assertion | -.04 | .03 | .13 | -.07 | .06 |
| 44. F SSRS Responsibility | .13 | .09 | .13 | -.18 | .24* |
| 45. F SSRS Self Control | .05 | -.17 | .04 | .10 | -.07 |
| 46. F SSRS Externalizing | .12 | .07 | .02 | .11 | -.07 |
| 47. F SSRS Internalizing | .20† | .16 | -.10 | -.08 | .06 |
| 48. F SSRS Hyperactivity | .14 | -.05 | .10 | -.06 | -.02 |
| 49. F SSRS Social Skills | -.19† | -.01 | .15 | -.08 | .24* |
| 50. F SSRS Behavior Problems | -.06 | .03 | .03 | -.05 | -.02 |

Table continues…

| | 6. | 7. | 8. | 9. | 10. |
|---|---|---|---|---|---|
| 72 Month | | | | | |
| 30. T CBCL Internalizing | -.01 | .01 | .22* | -.08 | -.07 |
| 31. T CBCL Externalizing | .04 | -.00 | .03 | .06 | -.01 |
| 32. T CBCL Aggression | .04 | -.02 | .05 | .06 | -.03 |
| 33. M SSRS Cooperation | .05 | .07 | .01 | .06 | -.03 |
| 34. M SSRS Assertion | -.06 | -.01 | -.04 | -.03 | -.07 |
| 35. M SSRS Responsibility | .01 | .12 | -.02 | .03 | -.11 |
| 36. M SSRS Self Control | -.04 | .05 | .11 | .03 | -.12 |
| 37. M SSRS Externalizing | .03 | -.15 | -.00 | .08 | .13 |
| 38. M SSRS Internalizing | .08 | .11 | -.08 | .18† | .06 |
| 39. M SSRS Hyperactivity | .03 | -.01 | .03 | -.01 | -.01 |
| 40. M SSRS Social Skills | -.03 | .06 | .05 | .03 | -.11 |
| 41. M SSRS Behavior Problems | .07 | -.02 | -.02 | .09 | .08 |
| 42. F SSRS Cooperation | -.02 | .07 | .07 | .08 | -.06 |
| 43. F SSRS Assertion | -.17 | -.07 | .04 | -.07 | .11 |
| 44. F SSRS Responsibility | -.18† | .08 | -.03 | .14 | -.21* |
| 45. F SSRS Self Control | .14 | .06 | .02 | .14 | .10 |
| 46. F SSRS Externalizing | .13 | .11 | -.02 | .06 | .09 |
| 47. F SSRS Internalizing | -.03 | .10 | .09 | .01 | -.06 |
| 48. F SSRS Hyperactivity | -.14 | -.05 | .06 | -.13 | .06 |
| 49. F SSRS Social Skills | -.08 | -.05 | .05 | .08 | .13 |
| 50. F SSRS Behavior Problems | -.19† | -.07 | .07 | -.15 | .05 |

Table continues…

| | 11. | 12. | 13. | 14. | 15. |
|---|---|---|---|---|---|
| 72 Month | | | | | |
| 30. T CBCL Internalizing | -.10 | -.07 | -.15 | .06 | -.09 |
| 31. T CBCL Externalizing | .01 | .16 | .00 | .02 | -.08 |
| 32. T CBCL Aggression | -.02 | .19† | .02 | .03 | -.07 |
| 33. M SSRS Cooperation | -.17 | -.11 | -.18† | -.06 | -.08 |
| 34. M SSRS Assertion | .01 | -.21* | -.09 | -.12 | -.12 |
| 35. M SSRS Responsibility | -.13 | -.13 | -.05 | -.19† | -.09 |
| 36. M SSRS Self Control | -.14 | -.24* | -.07 | -.09 | -.06 |
| 37. M SSRS Externalizing | .18† | .16 | .04 | .02 | -.09 |
| 38. M SSRS Internalizing | .01 | .11 | .20* | .02 | -.06 |
| 39. M SSRS Hyperactivity | .17† | .11 | .06 | .05 | -.02 |
| 40. M SSRS Social Skills | -.13 | -.22* | -.12 | -.13 | -.11 |
| 41. M SSRS Behavior Problems | .17† | .18† | .13 | .05 | -.06 |
| 42. F SSRS Cooperation | .13 | -.03 | .09 | .13 | .18 |
| 43. F SSRS Assertion | .12 | .21* | .04 | .08 | -.01 |
| 44. F SSRS Responsibility | -.02 | -.04 | -.06 | .28** | .19† |
| 45. F SSRS Self Control | .19† | .07 | .17 | -.07 | .02 |
| 46. F SSRS Externalizing | .18† | .02 | .18† | .02 | .12 |
| 47. F SSRS Internalizing | .07 | -.09 | .01 | .14 | .24* |
| 48. F SSRS Hyperactivity | .06 | .17 | .07 | .01 | -.07 |
| 49. F SSRS Social Skills | .12 | .20† | -.10 | .20† | .11 |
| 50. F SSRS Behavior Problems | .12 | .15 | .07 | .04 | -.05 |

Note. Correlations are omitted between outcomes, because models only included a single outcome, and no outcome measures were present together in a single model. Thus, all models could be re-created with the present data and space is conserved. F = Father report. M= Mother report. T = Teacher report. Cog. Stim. = Cognitive Stimulation. SSRS = Social Skills Rating System. CBCL = Child Behavior Checklist.

* $p < .05$

** $p < .01$

† $p < .10$

Table 4. *Selected Standardized Mediational Paths for all Outcomes*

| Outcome | | Act F. → Beh. Dys | | Act F. → Em. Dys | |
|---|---|---|---|---|---|
| | | β | SE | β | SE |
| T SSRS Social Skills | | -.26 | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=57.53, *p*=.00, CFI=.87, RMSEA=.09, SRMR=.07 | | | |
| T SSRS Behavior Problems | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=45.25, *p*=.04, CFI=.93, RMSEA=.06, SRMR=.06 | | | |
| T SSRS Academic Competence | | -.26 | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=48.97, *p*=.02, CFI=.91, RMSEA=.07, SRMR=.06 | | | |
| T SSRS Cooperation | | -.26 | .11 | -.06 | .14 |
| | Model Fit | $\chi^2$ (30, N=127)=45.29, *p*=.04, CFI=.93, RMSEA=.06, SRMR=.06 | | | |
| T SSRS Self Control | | -.26 | .11 | -.06 | .14 |
| | Model Fit | $\chi^2$ (30, N=127)=43.99, *p*=.05, CFI=.94, RMSEA=.06, SRMR=.06 | | | |
| T SSRS Externalizing | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=45.48, *p*=.03, CFI=.92, RMSEA=.06, SRMR=.06 | | | |
| T SSRS Internalizing | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=44.64, *p*=.04, CFI=.93, RMSEA=.06, SRMR=.06 | | | |
| M CBCL Total | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=47.24, *p*=.02, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| M CBCL Internalizing | | -.26* | .12 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=47.37, *p*=.02, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| M CBCL Externalizing | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=47.40, *p*=.02, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| F CBCL Total | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=49.12, *p*=.02, CFI=.91, RMSEA=.07, SRMR=.06 | | | |
| F CBCL Internalizing | | -.26* | .12 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=48.52, *p*=.02, CFI=.91, RMSEA=.07, SRMR=.06 | | | |

Table continues…

| Outcome | | Act F. → Beh. Dys | | Act F. → Em. Dys | |
|---|---|---|---|---|---|
| | | β | SE | β | SE |
| F CBCL Externalizing | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=46.80, *p*=.03, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| T CBCL Total | | -.26* | .11 | -.06 | .14 |
| | Model Fit | $\chi^2$ (30, N=127)=43.46, *p*=.05, CFI=.93, RMSEA=.06, SRMR=.06 | | | |
| T CBCL Internalizing | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=41.79, *p*=.07, CFI=.94, RMSEA=.06, SRMR=.06 | | | |
| T CBCL Externalizing | | -.26* | .11 | -.06 | .14 |
| | Model Fit | $\chi^2$ (30, N=127)=43.26, *p*=.06, CFI=.93, RMSEA=.06, SRMR=.06 | | | |
| T CBCL Aggression | | -.26* | .11 | -.06 | .14 |
| | Model Fit | $\chi^2$ (30, N=127)=43.19, *p*=.06, CFI=.93, RMSEA=.06, SRMR=.06 | | | |
| M SSRS Cooperation | | -.26* | .12 | -.06 | .14 |
| | Model Fit | $\chi^2$ (30, N=127)=50.91, *p*=.01, CFI=.90, RMSEA=.07, SRMR=.06 | | | |
| M SSRS Assertion | | -.26* | .12 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=50.63, *p*=.01, CFI=.90, RMSEA=.07, SRMR=.06 | | | |
| M SSRS Responsibility | | -.26* | .11 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=45.28, *p*=.00, CFI=.88, RMSEA=.08, SRMR=.07 | | | |
| M SSRS Self Control | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=48.57, *p*=.02, CFI=.91, RMSEA=.07, SRMR=.06 | | | |
| M SSRS Externalizing | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=45.48, *p*=.03, CFI=.92, RMSEA=.06, SRMR=.06 | | | |
| M SSRS Internalizing | | -.27* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=46.17, *p*=.03, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| M SSRS Hyperactivity | | -.26* | .12 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=47.24, *p*=.02, CFI=.92, RMSEA=.07, SRMR=.06 | | | |

Table continues…

| Outcome | | Act F. → Beh. Dys | | Act F. → Em. Dys | |
|---|---|---|---|---|---|
| | | B | SE | β | SE |
| M SSRS Social Skills | | -.26* | .12 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=50.92, *p*=.00, CFI=.90, RMSEA=.07, SRMR=.06 | | | |
| M SSRS Behavior Problems | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=47.11, *p*=.02, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| F SSRS Cooperation | | -.26* | .11 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=45.95, *p*=.03, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| F SSRS Assertion | | -.26* | .12 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=45.88, *p*=.03, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| F SSRS Responsibility | | -.26* | .11 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=45.89, *p*=.03, CFI=.93, RMSEA=.07, SRMR=.06 | | | |
| F SSRS Self Control | | -.26* | .11 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=46.92, *p*=.03, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| F SSRS Externalizing | | -.25* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=46.56, *p*=.03, CFI=.92, RMSEA=.07, SRMR=.06 | | | |
| F SSRS Internalizing | | -.26* | .12 | -.06 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=50.51, *p*=.01, CFI=.90, RMSEA=.07, SRMR=.06 | | | |
| F SSRS Hyperactivity | | -.26* | .11 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=45.60, *p*=.03, CFI=.93, RMSEA=.06, SRMR=.06 | | | |
| F SSRS Social Skills | | -.26* | .12 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=46.11, *p*=.03, CFI=.93, RMSEA=.07, SRMR=.06 | | | |
| F SSRS Behavior Problems | | -.26* | .12 | -.07 | .13 |
| | Model Fit | $\chi^2$ (30, N=127)=46.28, *p*=.03, CFI=.92, RMSEA=.07, SRMR=.06 | | | |

Table continues…

| Outcome | Beh. Dys→Outcome | | Em. Dys→Outcome | |
|---|---|---|---|---|
| | β | SE | β | SE |
| T SSRS Social Skills | .15 | .13 | -.12 | .13 |
| T SSRS Behavior Problems | -.18 | .13 | .21 | .13 |
| T SSRS Academic Competence | .11 | .13 | -.04 | .13 |
| T SSRS Cooperation | -.12 | .10 | .10 | .07 |
| T SSRS Self Control | -.05 | .12 | -.07 | .09 |
| T SSRS Externalizing | -.18 | .13 | .10 | .14 |
| T SSRS Internalizing | -.17 | .13 | .04 | .14 |
| M CBCL Total | .04 | .13 | .10 | .12 |
| M CBCL Internalizing | .06 | .12 | .14 | .11 |
| M CBCL Externalizing | -.01 | .12 | .04 | .12 |
| F CBCL Total | -.15 | .14 | .27* | .13 |
| F CBCL Internalizing | -.14 | .14 | .27* | .13 |
| F CBCL Externalizing | -.06 | .14 | .26* | .13 |
| T CBCL Total | -.13 | .11 | .15 | .14 |
| T CBCL Internalizing | -.13 | .09 | -.02 | .11 |
| T CBCL Externalizing | -.11 | .10 | .23 | .15 |
| T CBCL Aggression | -.09 | .11 | .26† | .16 |
| M SSRS Cooperation | -.17 | .12 | -.07 | .12 |
| M SSRS Assertion | -.05 | .12 | -.20† | .11 |
| M SSRS Responsibility | -.04 | .12 | -.11 | .12 |
| M SSRS Self Control | .04 | .12 | -.26* | .11 |
| M SSRS Externalizing | -.18 | .13 | .10 | .14 |
| M SSRS Internalizing | .24* | .12 | -.02 | .12 |
| M SSRS Hyperactivity | -.03 | .13 | .14 | .12 |
| M SSRS Social Skills | -.07 | .12 | -.20† | .11 |
| M SSRS Behavior Problems | .04 | .12 | .15 | .12 |
| F SSRS Cooperation | .07 | .13 | -.05 | .13 |
| F SSRS Assertion | -.12 | .13 | .28* | .12 |
| F SSRS Responsibility | -.06 | .12 | .09 | .12 |
| F SSRS Self Control | .09 | .13 | -.02 | .13 |
| F SSRS Externalizing | .17 | .13 | -.08 | .13 |
| F SSRS Internalizing | .04 | .13 | -.09 | .13 |
| F SSRS Hyperactivity | -.07 | .13 | .21† | .12 |
| F SSRS Social Skills | -.26* | .13 | .32* | .12 |
| F SSRS Behavior Problems | -.08 | .13 | .22† | .13. |

Table continues…

| Outcome | Beh. Dys→Outcome | | Em. Dys→Outcome | |
|---|---|---|---|---|
| | β | SE | β | SE |
| F SSRS Hyperactivity | -.07 | .13 | .21† | .12 |
| F SSRS Social Skills | -.26* | .13 | .32* | .12 |
| F SSRS Behavior Problems | -.08 | .13 | .22† | .13. |

Note. Act. F = 48mo Activative Fathering latent variable. Beh. Dys. = 60mo Behavior Dysregation. Em. Dys. = 60mo Emotion Dysregulation. T = Teacher. M = Mother. F = Father. SSRS = Social Skills Rating System. CBCL = Child Behavior Checklist.

* $p < .05$.

** $p < .01$.

† $p < .10$.

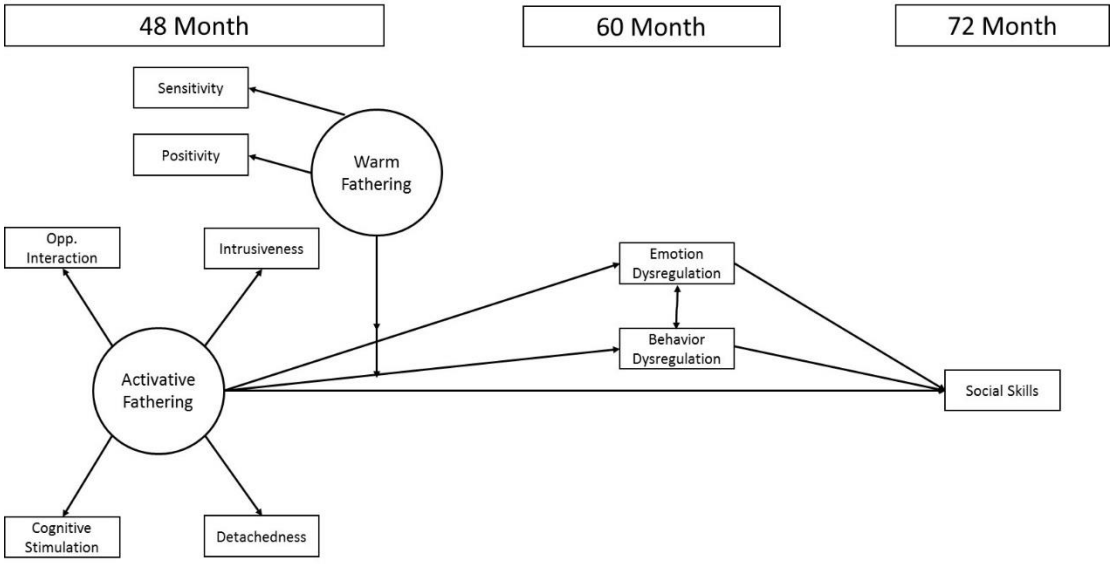


*Figure 1*. Conceptual model of the proposed moderation and mediation relations. Opp = Opportunity for Interaction.

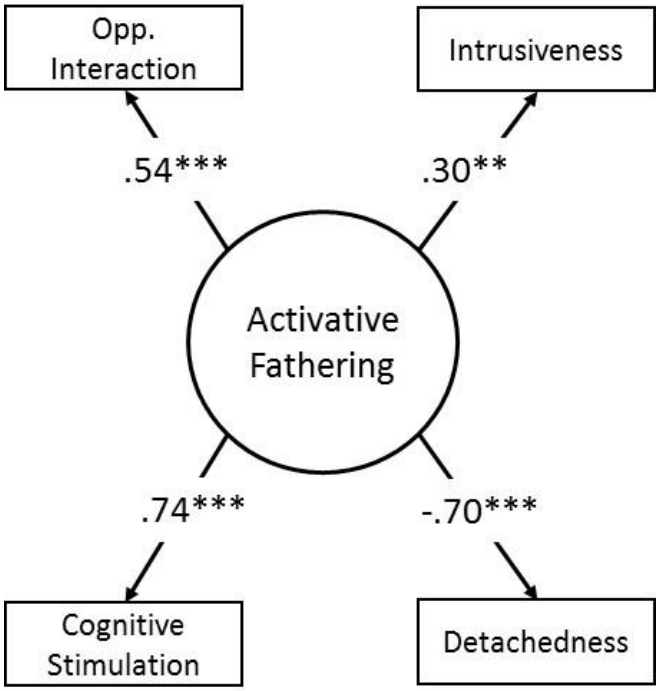


*Figure 2.* Confirmatory factor analysis for 48 month activative fathering. $\chi^2$ (2, N = 115) = 3.00, p=.22, CFI = .98, RMSEA = .07, SRMR = .03. * = $p$ <.05. ** = $p$ <.01. *** = $P$ <.001. Opp. = Opportunity for Interaction. Standardized coefficients are reported.

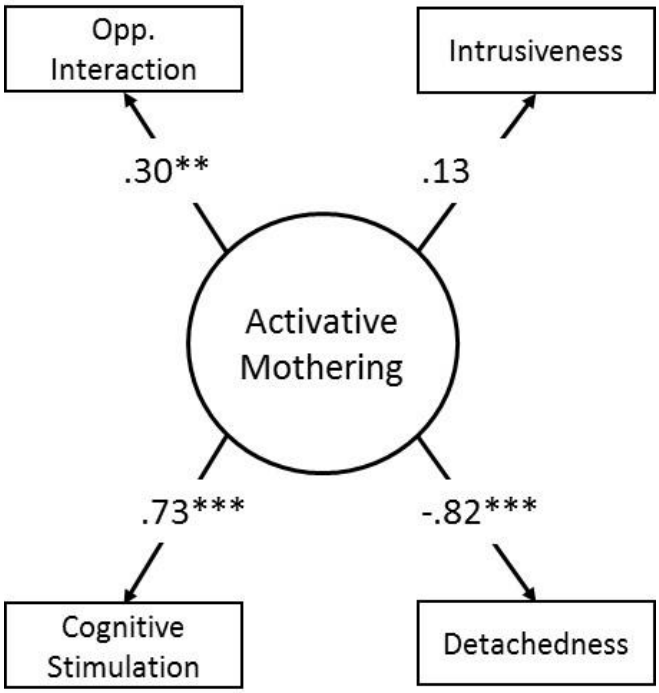


*Figure 3.* Confirmatory factor analysis for 48 month activative mothering. $\chi^2$ (2, 125) = 9.30, p=.01, CFI = .89, RMSEA = .17, SRMR = .06. * = *p* <.05. ** = *p* <.01. *** = *P* < .001.Opp. = Opportunity for Interaction. Standardized coefficients are reported.

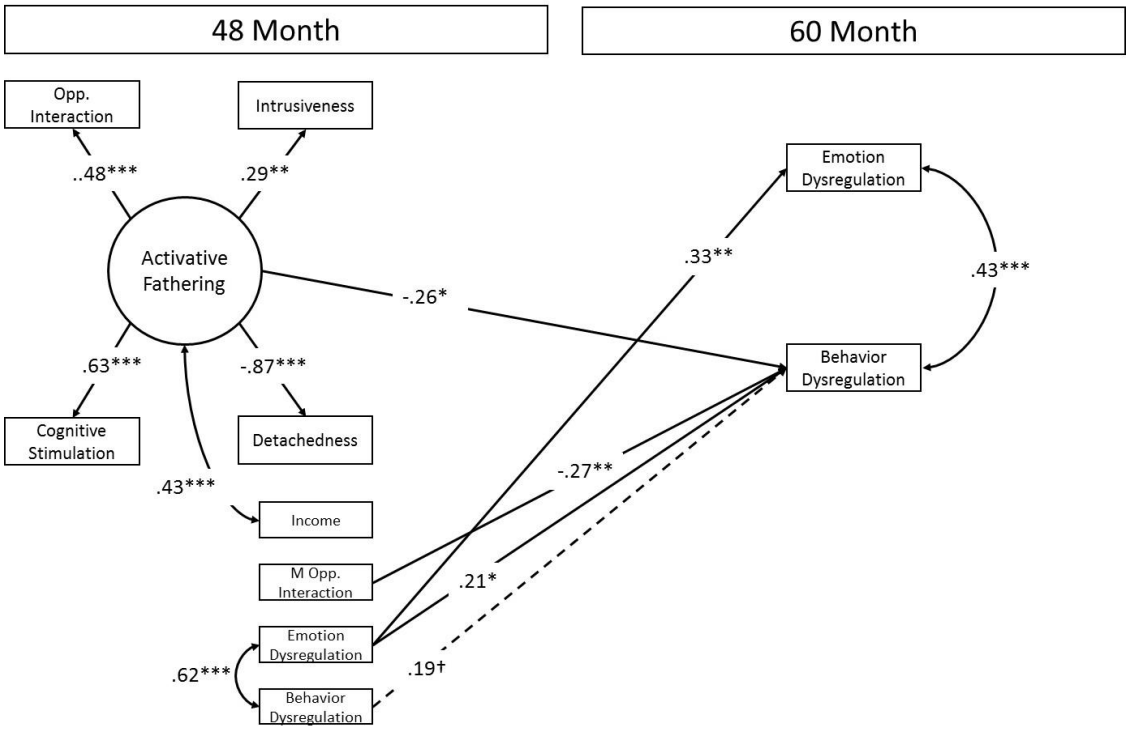


*Figure 4*. SEM model testing Hypothesis 2. $\chi^2$ (10, $N$ = 127) = 44.33, $p$ = .02, CFI = .92, RMSEA = .06, SRMR = .06. * = $p$ <.05. ** = $p$ <.01. *** = $p$ <.001. Opp. = Opportunity for Interaction. M=Mom. Non-significant paths are omitted from the model for ease of interpretation. The following variables were omitted for easy of interpretation due to lack of significant prediction to 60 month outcomes: Maternal intrusiveness, cognitive stimulation, and detachedness. Standardized coefficients are reported.

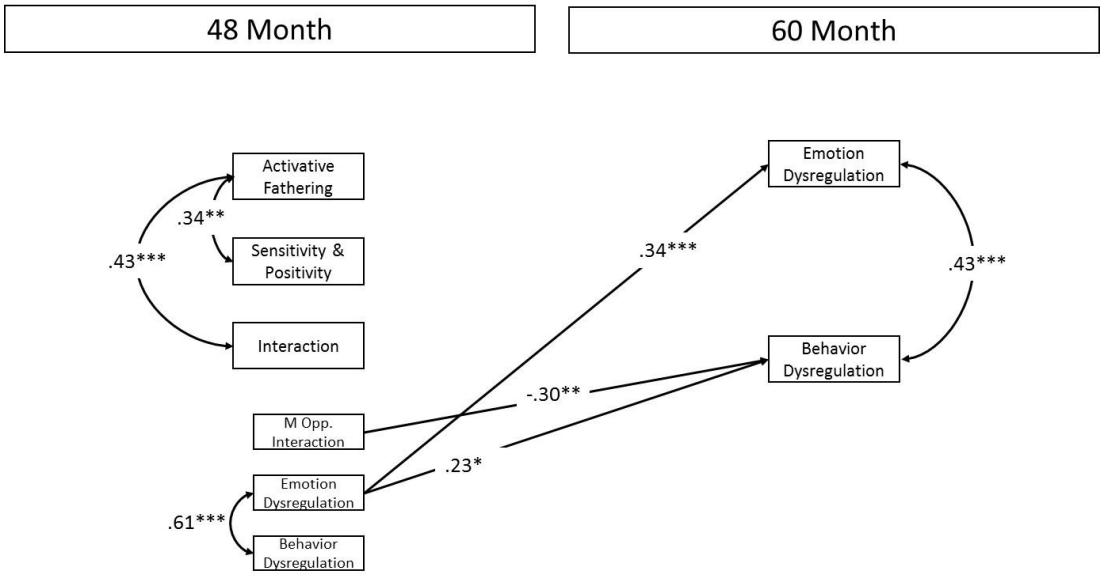


*Figure 5.* SEM model testing Hypothesis 3 (moderation). As the model was just-identified no fit statistics are reported. * = $p$ <.05. ** = $p$ <.01. *** = $p$ <.001. M=Mom. Non-significant paths are omitted from the model for ease of interpretation. The following variables were omitted for easy of interpretation due to lack of significant prediction to 60 month outcomes: Maternal intrusiveness, cognitive stimulation, and detachedness. Standardized coefficients are reported.

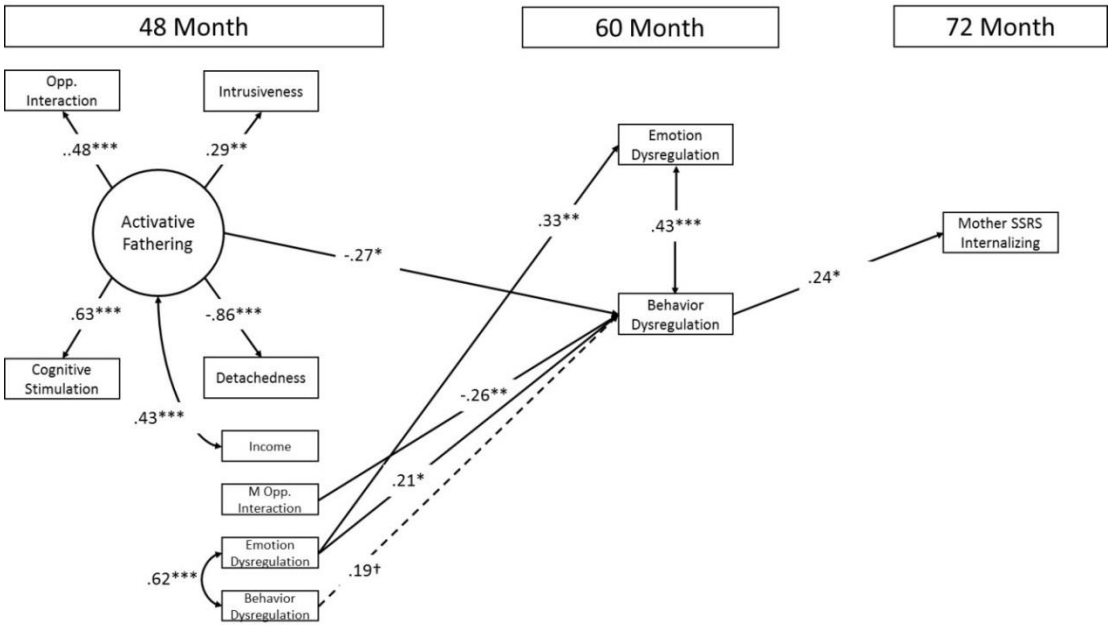


*Figure 6.* Mediation Model for 72 month mother-reported SSRS Internalizing. $\chi^2$ (30, $N$ = 127) = 47.17, $p$ = .03, CFI = .92, RMSEA = .07, SRMR = .06. * = $p$ <.05. ** = $p$ <.01. *** = $p$ <.001. † = $p$ < .10. M = Mother. Opp. = Opportunity for Interaction. Standardized coefficients are reported.

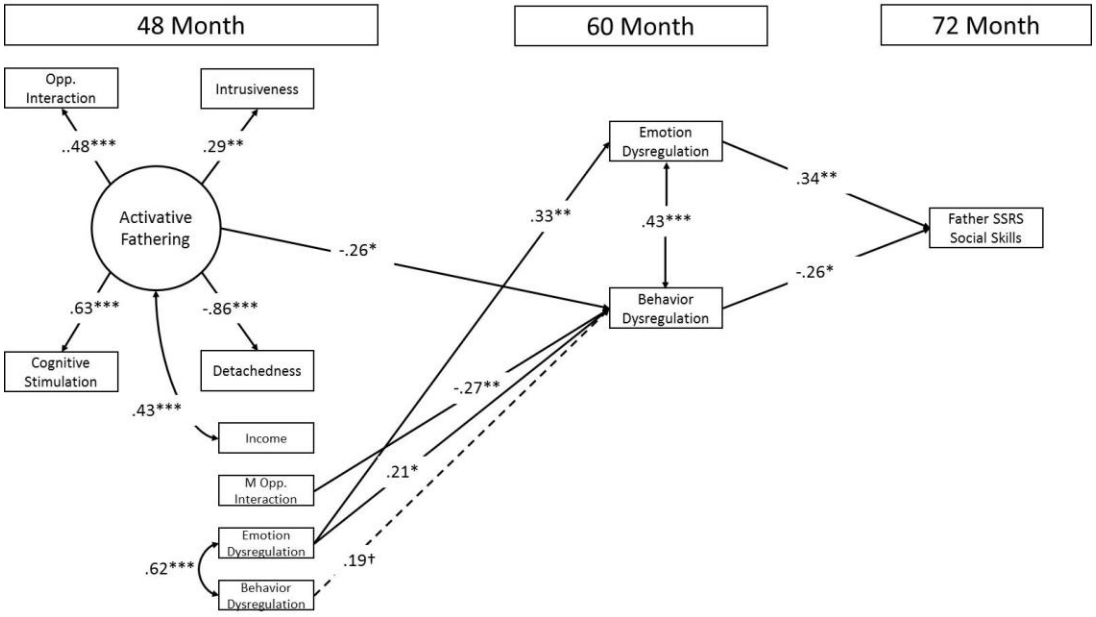


*Figure 7.* Mediation model for 72 month father-reported SSRS Social Skills. $\chi^2$ (30, $N$ = 127) = 46.11, $p$ = .03, CFI = .92, RMSEA = .07, SRMR = .06. * = $p$ <.05. ** = $p$ <.01. *** = $p$ <.001. † = $p$ < .10. M = Mother. Opp. = Opportunity for Interaction. Standardized coefficients are reported.

# APPENDIX A

## PARENT-CHILD INTERACTION RATING SYSTEM

Parent-Child Interaction Rating System (PCIRS; Belsky, Crnic & Gable, 1995)

*Opportunity for Interaction*

This scale measures the amount of time during each 10 minute epoch in which the mother and father have the opportunity to interact with the child in both a visual and verbal sense. That is, does the parent remain in visual proximity of the child and, is the parent within proximity to vocally interact with the child? For example, when families are preparing for the evening meal, it may be the case that mom remains in the kitchen, out of both visual and verbal proximity to the child for the entire 10-minute epoch, while dad stays with the child in another room, in both visual and verbal proximity to the child for the entire 10-minute epoch. This code applies strictly to feasible opportunities for interaction, regardless of the quality of that opportunity (e.g., a mom with her child in her lap for 10 minutes vs. a mom within visual proximity of child for 10 minutes — both receive a rating of 5).

*Opportunity for Interaction Ratings*

**1** = No time spent within visual/verbal proximity to the child; Absolutely no opportunities for interaction with child. *******

**2** = At least one opportunity for interaction occurs, or the parent spends a couple of minutes within visual/verbal proximity to the child.

**3** = Parent spends about half of the 10-minute epoch within visual/verbal proximity to the child.

**4** = Parent spends most of the 10-minute epoch within visual/verbal proximity to the child; parent out of visual/verbal proximity only briefly.

**5** = Parent spends the entire 10-minute epoch within visual/verbal proximity to the child.

******* = if parent receives a rating of 1 for Opportunity for Interaction, no more child-parent ratings are done for that parent for that 10-minute epoch, may still be able to code parent-parent Dyadic Relations.

*Positive Affect*

Expression of positive regard or affect, warmth, affection. The parent's positive feelings toward the child, expressed during interaction with the child, taking into account particularly the intensity of these feelings. Speaks in warm tone of voice, has expressive face, smiles, laughs, with child, is relaxed and at ease, is enthusiastic about child, praises child, seems to enjoy child, listens, watches, remains attentive, looks into child's face when talking to him/her, spontaneity refers to taking advantage of an opportunity for interaction as it is presented. Keep in mind the uniformity of positive affect, and also be aware of a the "brightness" in vocal quality.

*Positivity Ratings*

**1** = Not at all positive -- Parent does not display true positive regard for the child, either in words or expressions. If positive expressions (laughing, smiling) do occur, they appear to be inappropriate to the situation or an inaccurate reflection of the parent's feelings.

**2** = Minimally positive (lukewarm) -- Infrequent or weak signal(s) of positive affect are shown. The intensity and frequency are low.

**3** = Moderately positive -- greater frequency and intensity of positive affect is shown, as compared to the rating of 2, but the parent demonstrates virtually no spontaneity.

**4** = Very positive -- greater frequency and intensity of positive affect is shown, compared to the rating of 3, also evidence of some spontaneity is observed in parent's demonstration of positive affect. What makes this rating different than a score of 5 is that the parent is not characteristically positive; there may be rare moments of flat negative affect.

**5** = Predominantly positive -- Parent is predominantly positive, both in terms of facial and vocal expressiveness. The parent does not appear to be bored, discontent, or vocally harsh, and disruptive. Affect is consistently positive and spontaneity is characteristic and appropriate. Parent shows a range of expressions that are virtually always positive.

*Negative Affect*

Expression of negative affect (e.g., hostility) toward the child, considering both the intensity and frequency of the expression of negative affect. If the intensity of the negative affect is low to moderate, the rating is made primarily on the frequency. If there is high intensity, the frequency is considered and the rating is moved up one point on the scale. Some negative behaviors include: disapproval, tense body, negative voice when correcting, abruptness, tense facial muscles, strained expression, threatening the child, punishing the child without explanation.

*Negativity Ratings*

**1** = Not at all negative -- No evidence of anger, distrust, frustration, impatience, disgust, general dislike or other negative behaviors is observed in parent's face or voice.

**2** = Minimally negative -- low frequency, low-moderate intensity. Only one or two instances of negative affect with moderate or low intensity of negative expression.

**3** = Moderately negative -- low to moderate frequency, high intensity. More than two instances of negative affect are observed (about 3 or 4), or 1 particularly intense expression of negative regard.

**4** = Strikingly negative -- higher frequency and intensity of negative affect/regard are observed, when compared to a rating of 3. Yet, the parent is not characteristically negative during interactions with the child, as with a rating of 5. Parents are simply more negative than positive in their affective expressions.

**5** = Predominantly negative -- Feelings of negative affect or regard are expressed strongly and quite frequently (e.g., unnecessarily harsh when prohibiting child's's behavior, constant sarcasm and cynicism, in tone of voice). The overriding affect influencing the parent-child interactions is characteristically negative.

*Sensitivity*

The key defining characteristic of a sensitive interaction is that it is child-centered. The sensitive parent is tuned to the child and manifests awareness of the child's needs, mood, interests, and capabilities, and allows this awareness to guide his/her interaction with the child.

If the child is upset, the parent takes time to soothe and calm the child. The parent responds to signals of the child's distress (e.g., crying, fretting, frowning) by acting a) promptly; b) appropriately; and c) consistently. (Mild fussing does not require the parent to respond as quickly as does the child's acute distress).

If the child initiates social gestures and expressions (e.g., looking at the parent, smiling at the parent, talking, reaching toward the parent, waving, clapping hands, handing objects), or makes demands, demonstrates desires or requests (e.g., stretching arms to be picked up, reaching for toys the parent is holding, asking for something), the parent responds appropriately.

If the child is uninterested, the parent takes time to re-engage the child in a manner that demonstrates sensitivity to the child's mood. When the child is bored or frustrated, the parent offers toys or other distractions. When a child is interested and involved with toys, the sensitive parent allows the child to independently explore the toys. During play, the sensitive parent provides one toy or game at a time and bases continuation on the child's response. How the parent gears the play and what they gear the play towards is determined by whether or not the child seems to be enjoying the activity. The parent does not persist with an activity or toy that the child is obviously not enjoying.

A sensitive parent provides stimulation that is developmentally appropriate and facilitates exploration and actions that the child is capable of achieving. She/he may encourage the child to develop new skills, but does not evidence expectations that are clearly beyond the child's developmental capabilities. A sensitive parent provides the

child with contingent vocal stimulation and acknowledges the child's interest, efforts, affect, and accomplishments.

Sensitive parents can spend some time watching the child, but the difference between them and the detached parent is that the sensitive parent seems to be actively taking an interest in the child's activities, as evidenced by comments and embellishments when the child loses interest. It is at these times-- when the child loses interest or is detached-- that the difference between the sensitive parent and the detached, under-stimulating parent is most easily seen. The detached parent is either not responding, responding in a listless manner, or responding with developmentally inappropriate comments and behavior.

Sensitive interaction is well-time and paced to the child's responses, a function of its child-centered nature. The parent paces games or toy presentation to keep the child engaged and interested, but also allows him/her to disengage, to calm down, and reorganize his/her behavior. Sensitivity involves judging what is a pleasurable level of arousal for the child and helping the child to regulate arousal and affect. When the child loses interest, the sensitive parent switches to a new tactic or toy and observes the child's reaction.

Markers of sensitivity include acknowledging child's affect; contingent vocalizations by the parent; facilitating the manipulation of an object or child movement; appropriate soothing and attention focusing; evidence of good timing paced to child's interest and arousal level; picking up on the child's interest in toys or games; shared positive affect; encouragement of the child's efforts; providing an appropriate level of stimulation when needed; sitting on floor or low seat, at child's level, to interact.

Thus, the sensitive parent demonstrates the ability to adapt interactions to child's mood and level of development. The parent neither over- nor under-stimulates. The parent knows when it is time to increase or reduce the amount of stimulation the child is experiencing. For example, parent discontinues an activity that is beyond the child's capacity for response or introduces a new activity when child appears bored.

Ratings for sensitivity should be conceptualized as falling on a continuum of low to high levels of sensitivity. Insensitivity, as opposed to a lack of sensitivity, is captured elsewhere.

*Sensitivity Ratings*

**1** = Not all characteristic-- There are almost no signs of parent sensitivity. The parent rarely responds appropriately to the child's cues.

**2** = Minimally sensitive/responsive-- Parent is occasionally sensitive; maybe 1 or 2 instances of sensitivity.

**3** = Parent is moderately sensitive and responsive to child; Inconsistently sensitive, hard to categorize.

**4** = Mostly sensitive/responsive-- Here the balance shifts to the parent being more often sensitive than not.

**5** = Highly sensitive/responsive-- The parent displays consistent sensitivity to the child throughout the rating period.

*Intrusive Interaction*

Intrusive, interaction is definitely adult-centered rather than child-centered. Intrusive parents impose their agenda on the child despite signals from the child that a different activity, level, or pace of interaction is needed. High arousal, vigorous physical interaction, or a rapid pace are not, by themselves, indicative of intrusive overstimulation--- if the child responds positively with sustained interest and is not engaging in defensive behaviors. It is when the child averts his/her gaze, turns away, or expresses negative affect and the parent continues or escalates his/her activity that intrusive behavior is evident. Overstimulation is also apparent when the parent does not allow the child a turn or an opportunity to respond at his/her pace. Some intrusive parents persist in demonstrating toys to the child long after they have gained the child's interest and the child obviously wants to manipulate the toy him/herself. These parents appear unable to relinquish control of the interaction in order to facilitate the child's exploration or regulation of the activity. Another controlling, intrusive behavior is displayed by parents who overwhelm the child with a rapid succession of toys or approaches, not allowing him/her time to react to one before another occurs. Extreme intrusiveness can be seen as over control to a point where the child's autonomy is at stake. It should be kept in mind that a parent can become involved in play with the child without being highly intrusive.

Specific behaviors characterizing intrusive interaction include failing to modulate behavior that the child turns away from, defends against, or expresses negative affect to; offering a continuous barrage of stimulation or toys; not allowing the child to influence the pace or focus of play or interaction; taking away objects while the child still appears

interested; not allowing the child to handle toys he/she reaches for; insisting that the child do something (play, eat, interact) in which he/she is not interested; not allowing child to make choices. Remember that the child and parent do not have to involved in the same activity for the parent to still impose his/her agenda on the child.

*Intrusiveness Ratings*

1 = Not all intrusive-- There are almost no signs of parent intrusive behavior; no sense.

2 = Minimally intrusive-- While the parent shows evidence of intrusiveness, it is of non-insistent or non-directive quality. Parent may initiate interactions with and offer suggestions to the child that occasionally are not welcomed by the child. If the child engages in defensive behavior, the parent persists for no more than a brief time, and then changes to a different activity. The parent continues his/her activity after the child engages in defensive behavior but she does not escalate her activity.

3 = Inconsistently intrusive-- Parent is characteristically incoherent in this regard; periods of blatant intrusiveness are intermixed with periods of sensitive, responsive interaction.

4 = Moderately intrusive-- Parent intrusiveness occurs with moderate frequency. The parent is more intrusive than not.

5 = Highly intrusive-- Parent is consistently intrusive. Most of the observation period is marked by the parent completely controlling the interaction, allowing the child little lee-way in his/her play. The parent allows the child little autonomy; parent essentially negates the child's experience.

*Detached Manner*

The detached parent appears unaware of the child's needs for appropriate interaction to facilitate involvement with objects or people, or parent is unable to provide such interaction. Parent is disengaged from the child. Behaviors typical of detached parents include not facing or making eye contact with the child, and/or not talking to the child. This parent does not react contingently to the child's vocalizations or actions, and does not provide the scaffolding needed for the child to explore objects. Detached, under stimulating parents "miss" the child's looks towards them or reaches towards a toy, and their timing is out of synchrony with the child's affect and responses (although not the overwhelming barrage of stimulation that intrusive parents present). The detached, under stimulating parent is passive and his/her non-involvement lacks the alertness of that of the sensitive parent. Detachment and under stimulation can be marked by putting the child so he/she faces away from the parent; presenting toys without first engaging the child, or without showing, or explaining to him/her how to manipulate or use the toys; rarely talking to the child; not responding to the child's comments, smiles, or reaches for toys; an unawareness of the child's capabilities and developmentally appropriate activities; positioning the child so that he/she cannot reach, manipulate, or use a toy. Behaviors such as cleaning, soothing, talking to, or feeding the child are carried out in a mechanical, detached, distant manner without social interaction. Parents ignore the interesting things the child does, and let the child play unsupervised. Simply going through the motions when interacting with the child. Also, think about bids for interaction on the part of the child toward the parent; the detached parent will remain detached even in the face of these.

*Detached Ratings*

**1** = Not at all detached -- There are virtually no signs of parent detachment or under-involvement. When interacting with the child, the parent is clearly involved.

**2** = Minimally detached -- While the parent is sometimes non-involved, the parent is clearly more involved than not.

**3** = Equally detached and involved -- The parent demonstrates the ability to remain involved and interested in the child as well as demonstrating the tendency to act in an uninterested or detached manner. Difficult to characterize.

**4** = Moderately detached-- Here the balance shifts to the parent being relatively more non-involved than involved.

**5** = Highly detached-- The child lies or sits without parent attention virtually all of the time, while the parent remains within a suitable distance for interacting. In the minimal instances of involvement, parents' behaviors are simple, mechanical, stereotyped, bland, blank, and repetitive