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FATHER-CHILD PLAY BEHAVIORS AND CHILD EMOTION REGULATION

by

Amanda Hagman

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family, Consumer, and Human Development

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Logan, Utah

2014

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**ABSTRACT**

Father-Child Play Behaviors and Child Emotion Regulation

by

Amanda M. Hagman, Master of Science

Utah State University, 2014

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Department: Family, Consumer, and Human Development

This study uses the father-child activation theory, which identifies the father-child relationship as a source for self-regulation learning. Father-child play behaviors during toddlerhood were examined for their contribution to self-regulation skills, specifically emotion regulation and aggression. This study examined father-child play behaviors of emotion amplification, intrusiveness, positive regard, and child emotion regulation-seeking in the National Early Head Start (EHS) Evaluation. Fathers who used more emotion amplification at 24 months were less intrusive, showed more positive regard, and had children who sought more emotion regulation at 24 months than fathers who used less emotion amplification. Fathers who were more intrusive during play had children who were less likely to seek emotion regulation with them than fathers of children who were less intrusive. Correlational results indicate gender differences in fathers' intrusiveness. Children who sought emotion regulation demonstrated greater emotion regulation at 24 and 36 months than children who sought less emotion regulation during

play. Furthermore, children with fathers who showed more emotion amplification and positive regard demonstrated better emotion regulation at 36 months. The regression models predicting child emotion regulation at 24 and 36 months accounted for 21% and 22% of the variance, respectively. However, only paternal positive regard and child emotion regulation-seeking during play were significant predictors at 24 months and no pathways were significant in the 36-month model. Regression models predicting child aggression were not significant. Results suggest that father-child play may be an important context for child emotion regulation development in young children.

(101 pages)

## **PUBLIC ABSTRACT**

### Father-Child Play Behaviors and Child Emotion Regulation

Amanda Hagman

Most of us have learned ways to manage how, when, and to what extent we experience emotions. These emotion regulation skills are habitual and may seem innate, but for infants and young children these abilities are basic, limited, and unrefined. Developing emotion regulation skills is an important learning task for infants and toddlers; the role of fathers in emotion regulation learning is a growing area of research. This research takes a closer look at early childhood and how father-child interactions may contribute to child emotion regulation.

Theory suggests that during interactions with their parents, children learn emotion regulation skills, but what is the role of fathers in this process? This paper explores the quality of father-child play and how it affects children's emotion regulation and aggression during toddlerhood.

Fathers who used more emotion amplification at 24 months were less intrusive, showed more positive regard, and had children who sought more emotion regulation at 24 months than fathers who used less emotion amplification. Fathers who were more intrusive during play have children who were less likely to see emotion regulation with their fathers than children of fathers who were less intrusive. Children who sought more emotion regulation during play at 24 months demonstrated better emotion regulation at 24 and 36 months. Finally, children with fathers who showed more emotion amplification

and positive regard demonstrated better emotional regulation than children with fathers who showed less emotion amplification and positive regard.

When father-child play behaviors were combined in a regression model, results indicate that the combination of these behaviors contribute to children's emotion regulation capacities but not to child aggression. Specifically, paternal positive regard for the child and child emotion regulation-seeking behaviors are important for improved emotion regulation at 24 months. The selected father-child play behaviors were not associated with child aggression.

Studying the potential teaching power of father-child play is an important research area because much of the time fathers spend with children is in a playful context. Early play interactions, regardless of how ordinary they may seem, are learning opportunities for children. Examining father behaviors in a play context may provide further insight into the contributions made by fathers to child emotion regulation. These findings support play as a learning context and father-child interactions as a contributor to child emotion regulation.

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Amanda Hagman

## CONTENTS

	Page
ABSTRACT .....	iii
PUBLIC ABSTRACT .....	v
ACKNOWLEDGMENTS .....	vii
LIST OF TABLES .....	xi
LIST OF FIGURES .....	xii
 CHAPTERS	
I. INTRODUCTION.....	1
II. REVIEW OF THE LITERTURE.....	5
Emotion Regulation.....	7
Emotion Regulation and School .....	8
Emotion Regulation and Parents .....	11
Mothers and Fathers in Emotion Regulation Research.....	13
Activation Theory .....	14
Father Play .....	18
Father Intrusiveness .....	23
Parenting During Toddlerhood .....	27
Summary .....	30
Research Questions and Hypotheses .....	31
III. METHODS .....	36
Participants .....	36

Measurements .....	37
Analysis .....	42
IV. RESULTS .....	46
Father and Child Demographics .....	47
Correlations Among Father and Child Behaviors .....	51
Regressions .....	53
Exploring Moderators .....	56
Summary .....	57
V. DISCUSSION .....	59
Father-Child Play and Emotion Regulation .....	60
Father-Child Play and Aggression .....	65
Father Intrusiveness During Play .....	67
Father-Child Play and Child Gender .....	71
Fathers in EHS Research .....	72
Limitations .....	74
Future Directions .....	77
REFERENCES .....	80

**LIST OF TABLES**

Table		Page
1	Demographic Comparison Between Fathers Who Participated in Home Visits and Fathers Who Did Not Participate .....	48
2	Correlations of Father and Child Demographics with Father and Child Play Behaviors.....	50
3	Intercorrelation of Father and Child Play Behaviors at 24 Months .....	52
4	Predictors of Child Emotion Regulation at 24 and 36 Months .....	54
5	Predictors of Child Aggression at 24 and 36 Months .....	55
6	Hierarchal Multiple Regression Analysis Predicting Emotion Regulation at 24 and 36 months with Paternal Intrusiveness and Positive Regard.....	58

**LIST OF FIGURES**

Figure		Page
1	Emotion regulation and aggression logic model. ....	4
2	Father and child play behavioral model with child emotion regulation at 24 and 36 months. ....	34
3	Father and child play behavioral model with child aggression at 24 and 36 months. ....	35

## **CHAPTER I**

### **INTRODUCTION**

The purpose of this study is to examine the quality of father-child play and its association to child emotion regulation. The project uses Paquette's (2004) father-child activation theory to examine how paternal interactions during toddlerhood may result in improved emotion regulation skills. Father-child play interactions may be important opportunities for children to learn to regulate emotions (Parke, 1994). Father-child interactions are often characterized by playfulness. Fathers destabilize children's environment with high-energy, physical, and unpredictable play (Parke & Tinsley, 1987). These play interactions typically induce positive affect in children and a heightened state of arousal (Ekas, 2011). It is hypothesized that these play interactions provide children with opportunities to regulate their emotions. Theory suggests that children must adapt their level of emotion amplification to that of their fathers to stay appropriate for play (Parke, 1994). Play episodes with fathers provide opportunities for children to intensify emotions and then regulate these emotions; this cycle is thought to assist children in their emotion regulation development. It is believed that the father-child activation relationship results in improved emotion regulation in toddlers.

The second aspect of this proposal investigates the association between father-child play and aggression. An important aspect of the father-child activation theory is that play teaches children about the extended world (Paquette, 2004). Teaching children about the extended world includes teaching them to behave in socially appropriate ways. A major parental responsibility during infancy and toddlerhood is to teach children to

appropriately regulate their emotional impulses. While it is not uncommon for young children to display aggressive behaviors (hitting, kicking, biting), aggression at school entrance has been tied to later anti-social problems in children (Flanders, Leo, Paquette, Pihl, & Seguin, 2009; Paquette, Carbonneau, Dubeau, Bigras, & Tremblay, 2003; Restoin et al., 1985). Theory suggests that through father-child play children learn to quell their aggressive impulses in socially appropriate ways.

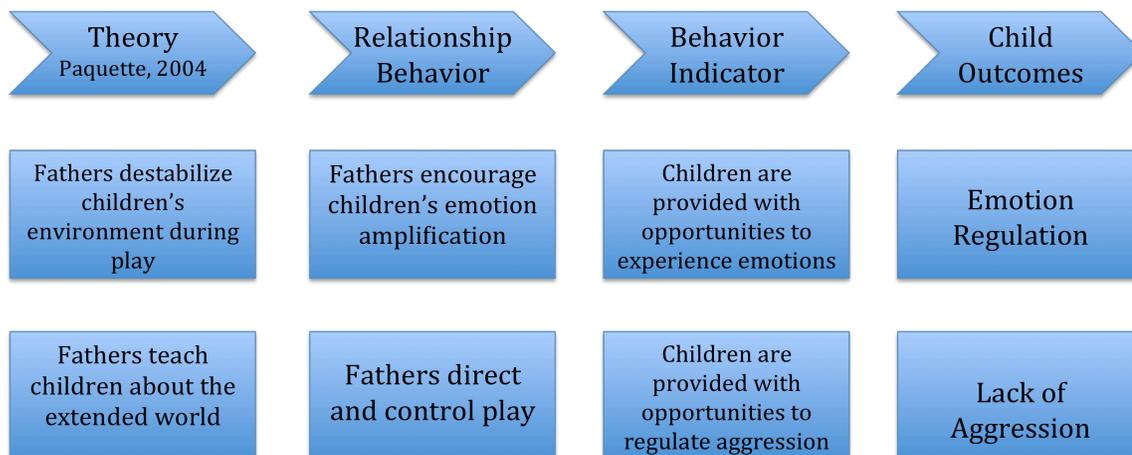
The quality of the father-child play relationship during toddlerhood has been correlated with lack of aggression in middle childhood (Flanders, Simard, & Paquette, 2010). The amount of control a father maintains during play during toddlerhood is correlated with a lack of childhood aggression during middle childhood. Fathers who defer control to their children during rough-and-tumble play tend to have children who are more aggressive in middle childhood. The element of intrusiveness and control during father-child play appears to play a role in curbing childhood aggressive tendencies (Paquette, 2004). Intrusiveness during parent-child interactions includes behaviors that are adult focused and limiting to children's autonomy. It is hypothesized that father behaviors of emotion amplification, intrusiveness, and positive regard, and child emotion regulation-seeking during play at 24 months will predict a lack of aggression in young children.

An observer of father-child play may identify unique attributes in the father-child relationship. Fathers are more intrusive during play episodes with children than mothers (Parke & Tinsley, 1987; Power & Parke, 1982). Intrusiveness, for this study, refers to parenting that is adult-orientated and limiting to children's autonomy (National Center

for Children and Families, 1999). Paternal intrusiveness during play may allow fathers to direct father-child interactions; paternal intrusiveness during play may provide opportunities for children to employ emotion regulation strategies to adapt to the fast pace of father-child play (Parke, 1994). Yet the element of paternal intrusiveness during father-child play and its association to child emotion regulation outcomes has received less attention in research than maternal intrusiveness during play. Literature on mother-child play links maternal intrusiveness to poor emotion regulation for children (Graziano, Calkins, & Kean, 2011), but attempts to observe the same pattern in father intrusiveness have yielded either weak or neutral results (Shannon, Tamis-LeMonda, London, & Cabrera, 2002). Paternal intrusiveness during play may be perceived differently by children than maternal intrusiveness during play (Volling, McElwain, Notaro, & Herrera, 2002). Further research is needed to add understanding to the role of paternal intrusiveness on child outcomes.

Lessons in emotion regulation and aggression may be learned during father-child play, but a moderating factor is presumed to be paternal positive regard during play. Positive regard may buffer against negative effects of parental intrusiveness. The majority of intrusiveness studies have investigated the effects of intrusiveness during mother-child play and may not be representative of intrusiveness during father-child play interactions (Cabrera, Shannon, & Tamis-LeMonda, 2007; Graziano et al., 2011), nonetheless, positive regard in mother-child play buffers against the effects of maternal intrusiveness (Graziano et al., 2011). It is believed that positive regard will be equally important during father-child interactions.

This study investigates the association between father-child play and child self-regulation during toddlerhood (see Figure 1). It is believed that fathers encourage children's emotion amplification during play. It is hypothesized that this emotion amplification along with intrusiveness and positive regard accompanied by child emotion regulation-seeking behaviors will positively predict child emotion regulation and aggression.



*Figure 1.* Emotion regulation and aggression logic model.

## **CHAPTER II**

### **REVIEW OF THE LITERATURE**

A major question in father research is how do father-child interactions affect child outcomes? Specifically, this research seeks to address the question, how does father-child play during toddlerhood relate to child emotion regulation? This study will observe father-child interactions during play at 24 months and look for association with concurrent 24 month and future 36 month child scores of emotion regulation and aggression.

Emotion regulation is an important milestone of early childhood and has been identified as an essential school readiness characteristic for young children (Volling et al., 2002). Emotion regulation has been described as one's ability to control emotions to reach one's goals in spite of obstacles (Thompson, 1994). Emotion regulation is undoubtedly an important aspect of development at any stage in life. A closer look at emotion regulation development in toddlerhood will add to our understanding of how emotion regulation is developed and the role of paternal contributions.

Around 24 months of age children gain a desire for autonomy (Piaget, 1954), and concurrently, parents develop a desire for children to gain autonomy in emotion regulation (Cicchetti, 1991; Kopp, 1989). Although the processes of autonomous emotion regulation begin around 24 months, for the purpose of this study, it is believed that emotion regulation scores at 36 months will be a better indicator of emotion regulation

development than scores at 24 months because children are novice to autonomous emotion regulation at 24 months (Thompson, Lewis, & Calkins, 2008).

This study will look at paternal emotion amplification, intrusiveness, and positive regard as characteristics of father-child play. Paternal intrusiveness, for the purpose of this study is defined as father behaviors that are clearly adult centered and limit children's autonomy. Observational studies have found that fathers tend to be more physical, intrusive, demanding, and arousing during play than mothers are in play situations (Parke & Tinsley, 1987). A closer look at these characteristics of play may lead to a better understanding of fathers' contributions to child development. Specifically, amplification is thought to provide children with the opportunity to experience many emotions during father-child play (Paquette, 2004). With high emotion amplification, children must regulate their emotions in response to the fathers' and control their emotions so that they are appropriate for play. It is thought that high emotion amplification in play will provide children with opportunities to regulate emotions; these opportunities are thought to help children have better emotion regulation later in life.

Another overarching question in the field of father research is, do fathers' parental efforts add above and beyond the contributions of mother parental efforts? In this study, we recognize the importance of mother, but chose to look solely at father-child interactions to find potential associations to child outcomes. Future research should combine findings from this study with mother-child play to examine predictors in the larger scheme of child emotion regulation.

## Emotion Regulation

Emotions play a role in every interaction. Modern emotion research defines emotions as adaptive responses that provide information to aid decision-making, prepare motor responses, and direct social behavior (Gross, 1998). Emotion regulation refers to the ability to influence which emotions are felt, when they are felt, how they are experienced, and how they are expressed.

Processes of emotion can be conceptualized through physiological responses to life events; hormones are released to prepare our bodies to respond to environmental stimuli. Emotion regulation is our ability to influence and interpret these biological cues. Thompson (1994) defined emotion regulation as, “the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one’s goals.”

This complex process indicates that individuals have some level of control over their emotions. Emotion regulation strategies are learned during the earliest years of life. Emotion regulation begins to develop as infants gain the ability of executive attention control (Thompson et al., 2008) and is considered a major developmental task of early childhood (Volling et al., 2002). Increased communicative abilities allow infants the ability to use internal and external speech to process life events. Mobility fosters self-direction, providing infants with means to avoid potentially stressful situations. These developmental milestones open the door for children to gain control over emotions. In addition to these developmental landmarks, emotion regulation is a learned process. A

key role of parents is to shape children's responses to life events; to teach emotion regulation (Thompson, 1994).

Children's ability to respond appropriately to life events becomes increasingly important as they gain more autonomy because it supports children's ability to accomplish goals in spite of obstacles, an important skill for any developmental period of life (Gross, 1999; Thompson, 1994). At 24 months, children frequently act on their newfound autonomy (Verhoeven, Junger, Van Aken, Dekovic, & Van Aken, 2010). Around this same time, parental expectations encourage children to transition from parent-directed emotion regulation strategies to autonomous forms of regulation (Cicchetti, 1991; Kopp, 1989). Toddlerhood marks a transition point for both child and parent, where children desire more autonomy and parents expect more autonomy in emotion regulation, making 24 months an important age to study emotion regulation.

### **Emotion Regulation and School**

While emotion regulation learning begins very early and the transition to autonomous regulation begins around 24 months, emotion regulation becomes increasingly important as children spend more time away from home. The ability to conduct oneself in socially appropriate ways is vital as children enter the school system specifically (Graziano, Reavis, Keane, & Calkins, 2007; Raver & Knitzer, 2002; Ursache, Blair, & Raver, 2012). By this time children are expected to cooperate with peers, follow teacher instruction, and work independently on tasks; all of these tasks require emotional competence.

Emotion regulation competence has direct and indirect influences on attributes important for future success in early and middle childhood (Entwistle & Alexander, 1999; Graziano et al., 2007), adolescence (Broidy et al., 2003; Speece & Copper, 1990), and adulthood (McClelland, Acock, Piccinin, Rhea, & Stalling, 2013). Emotion regulation skills are also correlated with peer relations, in the form of improved cooperation and reduced aggression (Valiente, Swanson, & Lemery-Chalfant, 2012). Peer and teacher relationships are influenced by the degree of emotion regulation competence exhibited by a child in kindergarten (Georges, Brooks-Gunn, & Malone, 2012; Graziano et al., 2007), while aggression inversely affects peer and teacher relations (McEvoy & Welker, 2000; Valiente et al., 2012). Early peer and teacher relationships are an important element of concurrent and future school success (Birch & Ladd, 1997). Aside from the social consequences of emotion regulation, emotion regulation has been directly tied to school performance (Graziano et al., 2007).

Graziano and colleagues (2007) explored the role of emotion regulation in children's early academic success. While emotion regulation correlated with child-teacher relationship, it was only a piece of the puzzle. Emotion regulation was tied, above and beyond teacher-child relationships, to academic outcomes. Children with poor emotion regulation skills also scored lower on standardized tests for math and literature. Additionally, children with poor emotion regulation skills were scored lower in independent class productivity in kindergarten.

A peek at the neural biology of emotion regulation shows that, even at young ages, emotion dysregulation inhibits the prefrontal cortex and activates basal areas of the

brain (Blair, 2002). Physiologically, emotion dysregulation will interfere with higher order reasoning.

Emotion regulation at school entry has received increasing attention as it has become evident that emotion regulation facilitates peer relations, positive teacher-child relationships, class participation, and learning. It has been suggested that policymakers must promote emotion regulation learning in children prior to entry into the school system for children to be successful in school (Raver & Knitzer, 2002). Early childcare institutions with a curriculum that covered emotion regulation learning better prepared children for kindergarten than childcare institutions without an emotion regulation curriculum. These children had a better emotion vocabulary, were better able at identifying emotions in others, and were found to have better emotion regulation capacities when assessed by their teachers when compared with peers from other institutions (Brown & Sax, 2013). School readiness is an important precursor to school success. It is increasingly evident that emotion regulation learning needs to happen prior to school entry (Raver & Knitzer, 2002).

Efforts to encourage emotional competence in children are especially important for children coming from disadvantaged living situations. There is evidence that children's earliest experiences and relationships set the stage for how children manage feelings and impulses (Shonkoff & Phillips, 2000). For children coming from at-risk populations, early experiences in emotion regulation may not be experiences in effective emotion regulation (Shonkoff, & Phillips, 2000). It is likely that at-risk children experience more family related stress during an important learning phase of emotion

regulation than children from other populations. Federally funded programs such as Head Start can act as a safety net for emotion regulation learning with children from at-risk populations, but a greater understanding of the origins and roles individuals play in helping children develop emotion regulation is needed.

### **Emotion Regulation and Parents**

Helping children develop socially appropriate emotion regulation skills is an important role of parents and early childcare providers to prepare children for their future in society (Raver & Knitzer, 2002; Thompson, 1994). While most parents may not focus on teaching emotion regulation with an endpoint of school readiness, parents are motivated for other reasons. Emotionally competent children express emotions in socially appropriate ways (Thompson et al., 2008) and parents find it easier to entreat a child who is emotionally competent (Cassano, Perry-Parish, & Zeman, 2007), making training in emotion regulation beneficial to parents as well as children.

Most studies investigating emotion regulation development have focused on mother-child dyads, while an increasing minority of research also involves father-child dyads. Mothers, because of their primary caregiver status, are preferred during times of distress by children (Ainsworth, 1969; Ekas, 2011; Parke & Tinsley 1987). These moments provide mothers an opportunity to comfort and teach emotion regulation strategies to children. More didactic and verbal, mothers may be the primary source for children to learn strategies to regulate their emotions (Bariola, Hughes, & Gullone, 2012; Parke, 1994).

Equally as important as learning strategies in emotion regulation is appropriate implementation of these strategies. It has been theoretically suggested that, while the mother-child relationship may be the primary source to foster learning of emotion regulation strategies, the father-child relationship may be the primary source to foster the implementation of strategies (Paquette, 2004; Parke, 1994).

Commonly seen in father-child play is a degree of instability, unpredictability, and high emotion amplification (Parke & Tinsley, 1987). The destabilizing attribute of father-child play may require children to adapt and appropriately monitor their own emotions to enjoy father-child play. Despite the unpredictability of father-child play, toddlers tend to prefer fathers more than mothers during times of play (Ekas, 2011; Volling et al., 2002). Using expressed positive affect during play episodes as a measure of enjoyment, Volling and colleagues (2002) found that children expressed more positive regard when playing with dad than with mom. During these same play episodes, children also showed less effortful attention with fathers than mothers. It is thought that because of the destabilizing nature of father-child play that children need to have less effortful control to enjoy the intrusive and controlled play. Additionally, more positive affect was seen in father-child interactions when fathers were also scored as emotionally available. The measure for emotional availability did not specifically account for positive regard, but it shows that father-child relationship quality is important for children to enjoy time spent playing with dad.

It is important to note the value of positive regard during play for child emotion regulation development. Graziano and colleagues (2011) investigated the sustained

attention development between 24 and 48 months and its association to toddler emotion regulation strategies with their mother during a frustrating task. Mothers who were observed to be controlling and intrusive at 24 months, had children with poor emotion regulation and sustained attention at 48 months. But the effects of maternal control and intrusiveness were moderated by maternal warmth. It is expected that positive regard during father-child play will be equally as important for child emotion regulation. It is expected that paternal intrusiveness accompanied with positive regard will have the most potential to support child emotion regulation.

### **Mothers and Fathers in Emotion Regulation Research**

It is not uncommon for research in child development to lean heavily upon what is known about mothers to investigate fathers; there is no exception for research in emotion regulation. Mother-child investigations make up the majority of the research in emotion regulation development. Often the father-child relationship is described using terms and measures originally identified to explain the mother-child relationship. Because research has identified qualities of father-child play that are different from those qualities found in mother-child play, father-child play merits additional research, including viewing father-child relationships separate from mother-child relationships. Despite the increasing interest in father-child relationships there is still no widely accepted, unified theoretical framework for father research. Much of the literature shared in this paper relies on maternal data, but where applicable current paternal research is presented. Specifically

this research will use the father-child activation theoretical framework to view how fathers influence child outcomes.

### **Activation Theory**

The conceptual view of fathers, fatherhood, and father-child interactions has undergone substantial shifts in paradigm over the course of the 20<sup>th</sup> and 21<sup>st</sup> centuries. Original research viewed fathers as auxiliaries in children's lives, supplemental to maternal child rearing and attachment. This can be, in part, attributed to the chronology of family studies and paradigms that defined families. Historically, the definition of family was viewed as simple and unchanging. This falls into stark contrast with modern fatherhood that is diverse and difficult to define.

Attachment theory integrated fathers into the theory as secondary attachment figures (Ainsworth, 1969). Attachment theory represents a child's need to trust a caregiver. Attachment theory identifies an infant's need to attach to a caretaker for short- and long-term survival. Because a mother's care can be directly linked to a child's survival, the attachment relationship is most commonly, and naturally, formed between a mother and her child. Fathers' original contributions to infant survival were indirect through maternal care, provisioning, and protection.

Even though fathers tend to be secondary attachment sources for children, central to attachment theory is the ability for children to bond with other caregivers (Schaffer & Emerson, 1964). Children benefit most when they have a strong attachment to their primary caregivers. The attachment system provides a secure foundation for children

during times of distress while providing encouragement to explore. These close relationships build the foundation under which children eventually build a working model of self in relation to others.

Secure infant-father attachment is correlated with fewer behavior problems (Verschueren & Marcoen, 1999) and higher levels of sociability in kindergarten (Lamb, Hwang, Frodi, & Frodi, 1982). Yet, secure infant-father attachment, as defined by the Strange Situation Procedure, continues to show weaker correlations between infant-father relationships and childhood outcomes than infant-mother relations and childhood outcomes. Elements that contribute to the child-parent attachment relationship include parental sensitivity to child's needs, availability, and warmth (Lucassen et al., 2011). Over the past several decades, fathers have shown an increase in time spent in care-giving activities (Pleck, 2010). Fathers have also been shown to be comparably sensitive to children's needs (Cabrera et al., 2007; Ekas, 2011). It might be expected that as fathers spend more care-giving time with children showing warmth and sensitivity, correlations between infant-father attachment and child outcomes may become stronger; however this has not been the case. A meta-analysis combining the past 3 decades of infant-father attachment research found there has not been an increase in correlation strength despite the increase in father time dedicated to care-giving activities (Lucassen et al., 2011). Regardless of time spent with the father and fathers' sensitivity to children's needs, fathers most often remain a secondary attachment figure for children. The secondary nature of the father-child attachment relationship may explain why correlations between father-child attachment and child outcomes have not become stronger with increased

care-giving responsibilities. However, it is still possible that current attachment theory fails to adequately describe the father-child relationship resulting in only partial explanation of the father role in child development (Lewis, 1997; Volling & Belsky, 1992).

Current research is starting to view the father-child relationship as more central to exploration, which can be considered complementary to mothers' contribution of a secure base. Paquette (2004) proposed a re-conceptualized theory for the father-child attachment relationship. Fathers provide relatively more excitatory, destabilizing, and challenging environments for children. This facilitates the process of child exploration and opens children to the world outside the safety provided by the mother-child attachment relationship. As described by the father-child activation theory, activative fathering uniquely engages children's self-regulatory systems, encourages risk-taking and increases self-confidence.

An essential component of the father-child activation relationship is that it opens children to the outside world through the physical, arousing, and destabilizing elements of father-child play. The non-punitive establishment of dominance through play teaches children to follow rules and promotes the encoding of personal and decoding of others' emotional signals, along with regulating aggressive and angry impulses (Coley, 1998; Paquette, 2004). Complimentary to the mother-child attachment theory, the activation theory encourages children to explore and to broaden and build upon cognitive and motor skills. It also provides children the opportunity to practice regulatory skills and appropriate responses to arousing situations with effective limit-setting. Lack of paternal

involvement or punitive, poor quality parenting is often associated with behavioral problems (Coley, 1998). Even in situations when fathers do not reside with their children, children have fewer behavior problems when they maintain contact with their fathers when compared to children who have no contact with their fathers (Amato & Rezac, 1994). The father-child relationship appears to be important for behavior regulation. The activation theory suggests reduced problem behaviors come through father-child play that opens the child to the world, provides limits, and teaches appropriate emotion regulation and expression of aggression.

The theory also postulates that fathers need to display higher levels of control in order to promote social skills and decrease dysregulation in children. Paternal dominance has previously been shown to moderate the association between father-child rough-and-tumble play during toddlerhood and a lack of aggression during middle childhood (Flanders et al., 2010).

It is crucial to further explore and identify the role fathers' behaviors play in children's emotion regulation. Evidence suggests that regulation is learned through social referencing and modeling (Silk, Shaw, Skuban, Oland, & Kovacs, 2006), emotion coaching (Gottman, Katz, & Hooven, 1997), and parental emotional expressiveness and emotional climate of the family (Cumming & Davis, 1996). Currently, the majority of the research still focuses on mothers, with several studies including fathers, but often using maternal theories and measures. Developing father research in a father-specific framework may provide further information elucidating the association between the father-child relationship and child outcomes.

## Father Play

Behavior patterns of father-child play merit additional study; these play episodes are characterized as abrupt, destabilizing, high emotion amplification, and fun (Parke & Tinsley, 1987), but the impact of these behaviors on child development is not well understood. It is believed that father-child play may be a unique context for learning during early childhood. Playful, physical, affectionate, and engaging father-child interactions tend to be associated with later peer acceptance (MacDonald & Parke, 1986). Hypothetically, the father-child play relationship may be complementary to mother-child verbal interactions that tend to also result in later peer acceptance (MacDonald & Parke, 1984). The behavior patterns seen in typical father-child interactions are different from those of mother-child but may offer learning opportunities resulting in similar prosocial behaviors. While fathers tend to spend more time engaged in play than other caregivers (Power & Parke, 1982), the past several decades have seen an increase in care-giving provided by fathers. Even as fathers have undertaken more care-giving responsibilities, they tend to tackle care-giving tasks (feeding, diaper changing, etc.) with the same lively spirit that is seen in customary play situations (Yogman, 1994).

A form of father-child play that has received attention in research is rough-and-tumble play (RTP). This form of play incorporates hitting, kicking, grappling, wrestling into father-child interactions, actions that in other circumstances may be seen as aggressive (Pellegrini & Smith, 1998). Father-child RTP appears to have a life cycle, emerging in late infancy, reaching its peak when children are 4 years old, then declines as

children enter middle childhood (Paquette et al., 2003). It is thought that father-child RTP has an important role in teaching children to regulate emotions, curb aggression, and learn to appropriately interact with peers (Paquette, 2004). Previous research on RTP identified possible functions of the unique play context. Pereira and Altmann (1985) hypothesized that RTP promotes social cohesion between father and child. High-energy play offers a context for fathers to be involved with children, complementing the primary care-giving role of mothers. Rough-and-tumble play may create a unique context for fathers to use their strength and energy to connect with children in a mutually enjoyable play experience (Paquette et al., 2003; Shannon et al., 2002).

In addition to providing a context wherein children can interact with their father it was also suggested that RTP establishes and maintains the dominance relationship between father and child. Paquette and Dumont (2013) described this aspect of RTP as a non-verbal expression of “I love you, I’m stronger than you.” This message seems to be important as children learn to regulation their emotions and avoid aggression. It is proposed that positive regard during play is a moderating element between paternal intrusiveness during play and emotion regulation outcomes in children.

Physical play, which occurs most commonly with fathers, is an appropriate environment for children to learn to regulate their level of stimulation in response to a partner’s level of stimulation (Parke, 1994). Father-child play is often father directed, intrusive, destabilizing, and unpredictable (Parke & Tinsley, 1987). It can be expected that with increased risk, demands, and unpredictability children must adapt to enjoy this type of destabilizing play. This adaptation is believed to come in the form of emotion

regulation. Theoretically emotion regulation strategies are primarily learned through observation and didactic instruction, most commonly a result of mother-child interactions; play is theoretically believed to offer practice in application (Parke, 1994).

Bariola and colleagues (2012) investigated the association between parent and child emotion regulation strategies during middle childhood. Parents, both fathers and mothers, and children completed a self-report Emotion Regulation Questionnaire which assessed individuals' propensity to employ different methods of emotion regulation. Results indicated that maternal use of suppression was positively correlated with children's use of suppression. Paternal emotion regulation strategies were not related to children's strategies. These findings support social learning and modeling as a means of teaching emotion regulation for mothers, but not for fathers. Focusing on younger children, 4- to 7-year-olds, Silk et al. (2006) found that children of depressed mothers employed passivity during distress while children with non-depressed mothers employed active engagement strategies during times of distress. These results supported Garber and Hilsman's (1992) finding that children of depressed mothers were reported to use fewer and poorer quality emotion regulation strategies compared to children of non-depressed mothers. The element of social learning for emotion regulation strategies may originate in the mother-child relationship, not the father-child relationship, but father research in this field is sparse. This could, however, support the notion that strategies are learned from mothers while implementation is learned in the father-child play context.

Regardless of where emotion regulation strategies are learned, fathers, through destabilizing play, create situations where children need to cope with stress in a warm

play environment (Paquette et al., 2003). It is believed that early opportunity to practice emotion regulation strategies in high emotion amplification play context with fathers provides a foundation for later emotion regulation (Paquette, 2004).

It was thought that the quantity of early father-child RTP may aid in reducing later child aggressive behaviors (Paquette et al., 2003) but the quantity is much less important than the quality of play. Flanders and colleagues (2010) found that frequency of father-child RTP and child physical aggression is moderated by the father's dominance during play. When examining just the frequency of play, RTP appeared to increase aggression in boys during middle childhood (Flanders et al., 2009). However when paternal dominance was assessed as a moderator the association changed (Flanders et al., 2010). The degree to which the father controlled the flow of play and held a dominant position during preschool RTP changed the association between play and aggression. At five years post preschool, RTP was associated with aggression only when fathers did not maintain the dominant position (Flanders et al., 2010). This research suggests that paternal control may be an important element in child aggression.

It is important to note that controlling fathers from the Flanders et al. (2009, 2010) studies are not negative fathers; rather they permitted children to be in the dominant position, exchanging positions of power, but fathers are always in control. Father-child play can be perceived as an interaction of mutual enjoyment and trust (Ekas, 2011). Parental control is less effective and more negative when it is not combined with affection (Paquette, Bolte, Turcotte, Dubeau, & Bauchard, 2000). Fathers who maintain control and dominance during play are not necessarily negative and overbearing but set

clear limits in play contexts. This supports the need for an indicator of positive regard during play to examine moderation among dominating father characteristics and child outcomes.

Research on paternal deprivation, however complicated and surrounded by confounding factors these situations may be, may also add to our understanding of what is learned during father-child interactions. Boys growing up without fathers tend to exhibit more externalizing behaviors, while girls show more internalizing problems. Children growing up without fathers also tend to be less popular and reluctant to engage in peer play (MacDonald & Park, 1984). However poor quality fathering, along with parental absence, is related to an increase in the incidence of conduct problems like aggression (Lamb, 2002). Some parental contact appears to be better than none. Amato and Rezac (1994) found that children who do not live with their fathers, but maintain contact are able to curb some of the externalizing problems associated with growing up without a father. Paquette and Dumont (2013) highlighted a secondary association that may exist between fathers and problem behavior. It is commonly thought that aggression can be explained by lack of parental supervision, but, as Paquette and Dumont explained, it can also be explained by learning that has not taken place (Paquette & Dumont, 2013). Father-child play may provide the context for that learning (Peterson & Flanders, 2005).

The role of father-child play in child outcomes is not completely understood, additional research may support play as an appropriate context to learn self-regulation, employ emotion regulation strategies, and curb aggressive tendencies evident in

toddlerhood to prepare children for their future (Dumont & Paquette, 2013; Flanders et al., 2010; Paquette et al., 2003).

### **Father Intrusiveness**

Intrusive parenting during toddlerhood is correlated with poor social, cognitive and behavioral outcomes (Graziano et al., 2011; Ispa et al., 2004); however, a closer look shows that most of this research has been conducted with mother-child dyads. Many studies of intrusive parenting that have included fathers have found only small or no association between father intrusiveness and poor emotion regulation outcomes (Shannon et al., 2002; Shannon, Tamis-LeMonda, & Cabrera, 2006).

One study investigated how RTP at 24 months relates to child cognitive and social outcomes. Father-child interactions were measured using the Caregiver-Child Affect, Responsiveness, and Engagement Scale (C-CARES) during a semi-structured play episode. Using factorial analysis, father items were combined into two factors of father engagement patterns, Responsive-Didactic and Negative-Intrusive. Fathers in the Responsive-Didactic group were five times as likely to have children in the normal range for cognitive and social development. The second father engagement pattern, Negative-Intrusive, was not significantly correlated with children's cognitive and social development or child engagement patterns during play (Shannon et al., 2002).

In a second study by Shannon and colleagues (2006), father semi-structured play was analyzed at 16 and 24 months using C-CARES to assess the quality of father-child interactions during infancy. Again factor analysis revealed two factors, Responsive-

Didactic and Negative-Overbearing at both age points. Similar results were observed; Responsive-Didactic fathering was positively correlated with child social and communication outcomes at 16 months, no association was seen for Negative-Overbearing fathers with child outcomes.

Recent mother literature has also provided evidence that intrusiveness may not be inherently negative in parent-child play. A study conducted by Ispa and colleagues (2004) investigating maternal intrusiveness and warmth as it associates to the mother-toddler relationship found that intrusive behaviors may not be interpreted equally in all populations. While maternal intrusiveness did predict child negativity at 24 months, among African American mothers this association was moderated by warmth. Additionally for European Americans and acculturated Mexican American mother-child dyads, intrusiveness was correlated with decreased dyadic mutuality, but not in African American and less acculturated Mexican American mother-child dyads.

Another study examined mothers' responsiveness, intrusiveness, and negativity during play with their 15- and 25-month-old children and the association of these characteristics to children's cognitive outcomes at 25 months (McFadden & Tamis-LeMonda, 2013). Maternal behaviors were coded from videotaped semi-structured play interactions; mothers were coded as high or low Responsive-Didactic and high or low Negativity. Maternal intrusiveness was found to moderate the association between parenting style and child cognitive outcomes at 25 months. For mothers categorized by high Responsive-Didactic parenting, high Intrusiveness had a negative association with child cognitive outcomes. For mothers categorized by low Responsive-Didactic

parenting, high Intrusiveness had a positive correlation with cognitive development. Additionally, mothers categorized by high Negativity parenting, high Intrusiveness showed a negative association with children's cognitive outcomes. And for mothers categorized by low Negativity parenting, high Intrusiveness had a positive correlation with child cognitive outcomes at 25 months. Separating intrusiveness from negativity sheds light on parental intrusiveness during play. Continued research on intrusiveness as an independent construct is needed to better understand its role in child emotion regulation.

An important note regarding the previous four studies is that each sample consisted of low-income, at-risk families participating in the National Early Head Start Research and Evaluation Project (NEHSREP). The data used in this study only includes the Utah sample and reflects a portion of the NEHSREP data. This data set is reflective of an underrepresented population in research who are also often the focus of policy and intervention programs. It is important to study low-income families so that policies can target crucial behaviors that promote intended outcomes that buffer the effects of poverty.

While literature on father-child relationship is sparse compared to mother-child research, father-child research is sparse within disadvantaged groups compared to middle-class populations. Age, education, marital status, and income demographics have been shown to be important for low-income fathers and parenting quality (Shannon et al., 2006). A focus on the intended population may be particularly important for low-income, at-risk families.

While it is not uncommon for father-child interactions to be judged against and compared to mother-child interactions in research, it is necessary to look at the unique attributes of father-child play on their own. Intrusiveness by fathers may not be viewed and interpreted equally by children as maternal intrusiveness (Shannon et al., 2002) or intrusiveness when separated from other negative factors may not be viewed and interpreted equally by children (McFadden & Tamis-LeMonda, 2013).

Volling and colleagues (2002) suggest that the more controlling nature of father-child interactions actually provides the necessary scaffolding to support a young child's efforts to regulate negative affect. Describing the fathers in their study, Volling and colleagues noted that fathers were not controlling and negative, but made clear demands of children during play.

The demands fathers place on children during play are not inherently negative; research and theory suggests that parental demands are less effective and are perceived more negatively when not accompanied by affection (Paquette et al., 2000). Parents who are affectionate and set clear limits have children who cooperate better in preschool and are more self-confident and responsible (Baumrind, 1971). Elements of paternal emotion amplification, intrusiveness, and positive regard can be thought to communicate two lessons, "I love you" and "I'm stronger than you" (Paquette, 2004). This is presumed to create an environment where emotion regulation strategies can be implemented, resulting in more emotionally competent children with fewer behavior problems. A fresh look at the effects of parental intrusiveness may be necessary to better understand its role in child development.

## Parenting During Toddlerhood

Parenting during toddlerhood requires adaptation from parenting during infancy. During infancy parenting is physical and direct; parents feed, clean, soothe, and move the child to meet the infant's needs. These parenting behaviors must adapt as children enter toddlerhood and gain autonomy in thought, word, and deed.

Autonomy comes in the form of improved mobility and language skills, along with representational and symbolic capacities (Piaget, 1954). Toddlerhood also marks the emergence of effortful control (Posner & Rothbart, 1980) and an awareness of social expectations (Cicchetti, 1991; Kopp, 1989). These newly formed abilities are also accompanied by an increase in negativity and oppositionality (Keenan & Wakschlag, 2000). The combination of these emerging abilities makes parenting during toddlerhood a unique experience. Parents must learn to set limits and direct children to behave in socially appropriate ways while allowing them to operate autonomously (Verhoeven et al., 2010).

At this transition point from complete parental dependence to weaned independence, parental attempts to resolve problems, which were appropriate during infancy, may be considered intrusive during toddlerhood. Over-control during toddlerhood is associated with externalizing behaviors, like aggression (Verhoeven et al., 2010; Youngblade & Belsky, 1992) and poor emotion regulation (Graziano et al., 2011). Parenting that is responsive, didactic, warm, and structured is associated with decreased

aggression and improved emotion regulation in preschool and kindergarten (Flanders et al., 2009, 2010).

Parenting is considered a modifiable characteristic of the environment in which children develop. Improving parenting during toddlerhood has the potential to benefit children both short- and long-term (Raver & Knitzer, 2002). Understanding the characteristics and contexts of parents and parenting that decrease aggression are particularly important because aggression in children as young as preschool has been linked to aggression in middle-childhood (Olson, Lopez-Duran, Lunkenheimer, Chang, & Sameroff, 2011) and adolescence and school failure (Broidy et al., 2003; Ursache et al., 2012). While aggression is greatest at age 2, it decreases and is replaced by prosocial behaviors between 2 and 5 years of age for most children (Restoin et al., 1985).

A primary task for parents during early childhood is to manage and guide children's emotional experiences so that children's emotions are felt and expressed in a socially acceptable manner (Thompson, 1994). Self-regulation is thought to reduce the expression of aggression in children (Olson et al., 2011). Fostering emotion regulation learning during toddlerhood may improve both later emotion regulation and aggression. Additionally, emotion regulation is associated with social and cognitive outcomes in childhood that are important to future life success (Graziano et al., 2007). Parents teach children emotion regulation strategies through social learning; parent deal with stressors and regulate their own emotions, these strategies are observed and applied by children when they, too, experience stressors (Silk et al., 2006). Additionally, parents teach

emotion regulation by providing children with opportunities to apply strategies in daily interactions and play.

At the transition from infancy to toddlerhood, children become capable of redirecting their attention to avoid stressful situations (Thompson et al., 2008). The frequency of parent-directed strategies is highest during infancy, but by 24 months children are expected to transition from parent-directed emotion regulation strategies to more autonomous forms (Cicchetti, 1991; Kopp, 1989). Mothers of toddlers are less likely to eliminate emotional stressors from the environment or to soothe their children than mothers of younger children (Karraker, Lake, & Parry, 1994). At 24 months parents want children to manage their affect, but children still find it easier to employ emotion regulation strategies when they are in the presence of an adult (Grolnick, Bridges, & Connell, 1996). It is likely that during play at 24 months, children will still elicit their parents' emotional support and seek emotion regulation cues. It is hypothesized that children that look to their parents frequently during play will have improved emotion regulation at 24 and 36 months because they are using their parents as a model.

Research at 24 months in emotion regulation learning is necessary because of the unique transition between dependence and autonomy. Parenting behaviors that promote emotion regulation during this period have the potential to support children with peer relations and task orientation, both of which are important for future success.

## Summary

The purpose of the literature review was to provide a foundation for this study by clarifying the theoretical framework and identify elements of father-child play that may be important to child emotion regulation. Parenting at 24 months transects the shift from parental dependence for child emotion regulation to autonomous forms of regulation. Emotion regulation outcomes at 24 and 36 months may be representative of the regulation learned through play at 24 months. Father-child play is thought to be a context for emotion regulation practice. Observing the characteristics of father-child play at 24 months may provide a foundation for understanding concurrent and later emotion regulation.

Intrusiveness has been observed in father-child play (Parke & Tinsley, 1987). While intrusiveness in some contexts is shown to have an inverse association with child emotion regulation, intrusiveness in the father-child play context shows ambiguous or neutral results. Theoretically, paternal intrusiveness is necessary to open children to the world and provide them with opportunities to employ emotion regulation strategies (Paquette, 2004). Additionally, there is strong theoretical and empirical evidence that suggests that father-child play is an important context to teach aggression control. Positive regard is expected to be a modifying attribute of this association.

Negative and punitive control has been correlated with child behavior problems and poor emotion regulation. In some research negativity has been conceptually grouped with intrusiveness, but it is hypothesized that paternal intrusiveness, when coupled with

positive regard for the child, is viewed and interpreted differently by children. It is hypothesized that parental intrusiveness during play is an important component of emotion regulation learning and aggression control.

The theoretical and empirical evidence presented in the literature review supports the need for further research to understand the role of father-child interaction in child emotion regulation learning. The specific questions and hypothesis that are addressed in this research project follow.

### **Research Question and Hypotheses**

1. Do fathers promote emotion amplification during semi-structured play with their 24-month-old children? Based on prior research in father-child play, it is expected that fathers will promote emotion amplification during semi-structured play (Parke, 1994; Parke & Tinsley, 1987; Yogman, 1994).

a. Are father demographics of age, education, or income related to fathers' promotion of emotion amplification, intrusiveness, or positive regard during semi-structured play at 24 months? Father demographics have frequently shown to correlate with child developmental outcomes (Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004). Specifically father age, education, and income are frequently correlated with child outcomes, it is expected that similar correlations may exist for emotion regulation and aggression control.

b. Is child gender related to fathers' promotion of emotion amplification, intrusiveness, or positive regard during semi-structured play at 24 months? Child

gender often influences parental interaction with children (Bradley & Gobbart, 1989). It is expected that child's gender will be associated with father behaviors during play at 24-months. Specifically, it is believed that fathers will elicit more emotion amplification and be more intrusive in their play with sons than daughters.

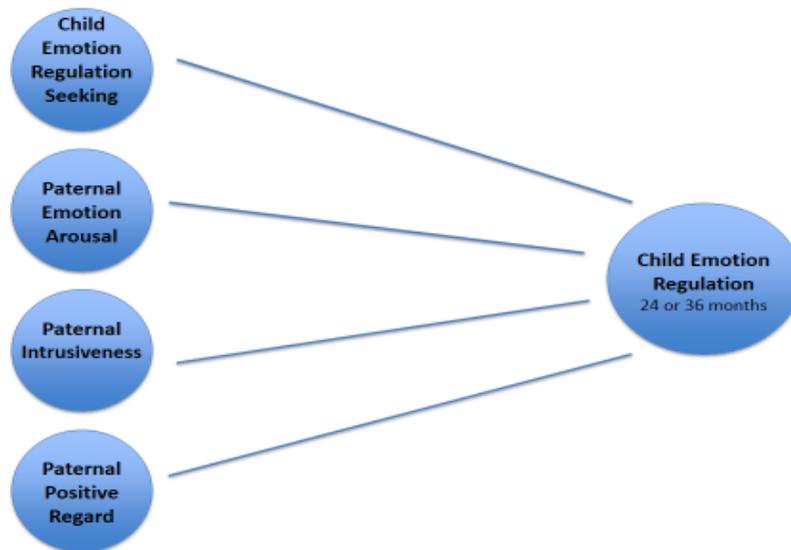
c. Are fathers who are rated high on promoting emotion amplification also rated high on intrusiveness or positive regard during semi-structured play at 24 months? Observational research in father-child play often describes it as arousing, intrusive, and enjoyed (Flanders, Herman, & Paquette, 2012; Parke & Tinsley, 1987; Volling et al., 2002). It is hypothesized that father who promote emotion amplification during play will also be intrusive and display positive regard for children during play.

d. Are fathers' behaviors of emotion amplification, intrusiveness, or positive regard related to their children seeking regulation support during play at 24 months? Theoretically, father-child play is believed to provide opportunities for children to practice emotion regulation skills (Paquette, 2004). It is believed that fathers who promote emotion amplification, who are intrusive, and show positive regard during play will also have children who seek emotion regulation support during play.

e. Are fathers' play behaviors and children's regulation-seeking behaviors correlated with emotion regulation and aggression control outcomes at 24 and 36 months? Paternal behaviors are thought to play a role in child emotion regulation

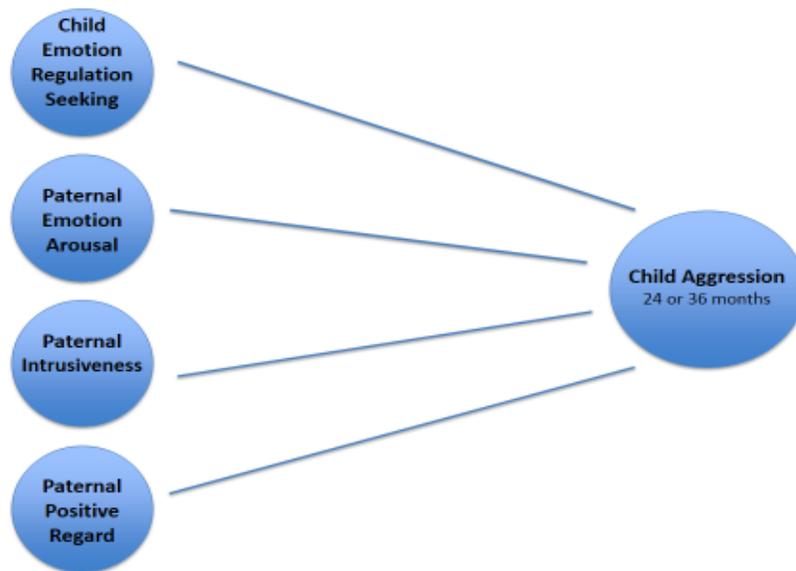
development (Paquette, 2004). It is expected that paternal emotion amplification, intrusiveness, and positive regard will correlate positively with child emotion regulation. It is expected that father play behaviors will be negatively correlated with child aggression at 24 and 36 months.

2. Do paternal and child play behaviors at 24 months predict child emotional regulation or aggression outcomes at 24 or 36 months?
  - a. Does children's regulation-seeking behavior with their fathers at 24 months, paternal emotion amplification, positive regard, and paternal intrusiveness at 24 months predict children's emotion regulation at 36 months (see Figure 2)? It is expected that a model including parental and child behaviors during play at 24 months may be able to explain variance within children emotion regulation at 36 months. Paternal behaviors of intrusion and emotion amplification are thought to contribute to a child's emotion regulation because of the destabilizing nature of the behaviors. Theoretically, a need is created in destabilizing play for children to regulate their emotions so that play may continue. Additionally, positive regard is also thought to play an important role in this model as father-child play may need to communicate love to result in positive child outcomes.
  - b. Does children's regulation-seeking behavior with their fathers at 24 months, paternal emotion amplification, positive regard, and intrusiveness at 24 months predict children's aggression at 24 or 36 months (see Figure 3)? Paternal



*Figure 2.* Father and child play behavioral model with child emotion regulation at 24 and 36 months.

lack of control and dominance during play has been correlated with childhood aggression (Flanders et al., 2009, 2010). Theoretically a model including intrusiveness, positive regard, and father emotion amplification is thought to influence childhood aggression, resulting in a lack of aggression. Children's emotion regulation-seeking behaviors are thought to represent children's attempts to reference their father for appropriate emotional cues. Including an element of children's behaviors that represent the children's attempt to regulation their emotions with assistance from the father will help account for children's contributions during play to later emotion regulation.



*Figure 3.* Father and child play behavioral model with child aggression at 24 and 36 months.

c. Does paternal positive regard moderate the association between paternal intrusiveness at 24 months and emotion regulation at 36 months? Intrusiveness in father-child play is thought to correlate positively with child emotion, but only as long as it is accompanied by paternal positive regard for the child. It is hypothesized the paternal positive regard will moderate the association between paternal intrusiveness and child emotion regulation.

## **CHAPTER III**

### **METHODS**

The purpose of this study was to examine the quality of father-child play and its relation to child emotion regulation. Extant data obtained from video observations of father-child interactions during semi-structured play provided measures of intrusiveness and positive regard during play at 24 months. These same archived videos were coded for paternal emotion amplification during semi-structured play and child emotion regulation with their father. Outcome variables obtained from extant data were used to examine correlates among observed parent-child play behaviors and 24 and 36 month child emotion regulation and aggression. Data used for this study came from both local and national data collected for the Early Head Start Research and Evaluation Project (EHSREP) at the Utah sites.

#### **Participants**

Participants for this study were qualified applications to the Utah Early Head Start Program and control group, 35 and 40 father-child dyads, respectively, during the 1996 – 1998 period. Families were recruited into the research opportunities through the Early Head Start Program (EHS) application process. Families who inquired about EHS services and agreed to participate in the study completed an application and were randomly assigned to either the EHS program or to a control group. Primary care providers (typically mothers) who agreed to participate in research opportunities were

asked to identify the child's father or father figure. Fathers from both groups, as identified by mothers, were contacted and invited to participate in the study. Fathers received approximately \$50 to complete each set of interviews and assessments (Administration for Children and Families, 2002; Boller et al., 2006). The proportion of fathers participating from both groups was relatively equal (.47 from test group, .52 from control group).

Fathers participated in interviews, videotaped play sessions, and assessments during home visits at 14, 24, and 36 months and again before their children entered kindergarten. Videotaped interactions lasted 10 minutes and were later coded by graduate students. Overall, 82 father-child interactions were videotaped from the Utah EHS site.

## **Measures**

### **Family Demographics**

Information about the father and the family were gathered through maternal and paternal interviews and EHS application forms. Demographic information collected included, marital status, residency status of the father, parents' age, race/ethnicity, years of education, employment status, income, and children's age and gender.

The working sample contained 75 fathers. The mean age of the sample was 26.16 years, with a minimum age of 16 and a maximum age of 49 at the time of EHS application ( $N = 72$ ). The average education acquired by fathers was 13 years, with a minimum of 9 years and maximum of 20 years of education at the time of EHS application ( $N = 64$ ). Average family income for the sample was \$12,404 annually, with a

minimum of \$960 annually and a maximum of \$48,132 annually, ( $N = 75$ ). The child sample was composed of 35 males and 40 females.

The dataset was restricted to include only fathers that participated in father-child semi-structured play observation episodes from the Utah EHS site and control group. Additionally, regression models were investigated with a further subset of the father sample, biological fathers. Finding that models of biological fathers only had minimal variation from all fathers once the outlier was removed, and in attempt to capture more diversity within the sample, it was determined to use all father data available within the set for research analyses.

### **Three-Bag Procedure**

The Three Bag task is a 10-minute play session designed to provide a modest amount of structure with flexibility for the father to guide the interaction. The father-child dyads were given three bags containing age-appropriate toys. The first bag contained a book, *The Very Busy Spider*. The second bag contained a pizza play food set and the third bag contained a farmhouse. Fathers had the freedom to determine whether and when to transition between bags, with the stipulation that the bags needed to be opened in order. The father also had the freedom to determine the degree to which the child directed play. Father-child interactions were videotaped.

The assessment and coding schemes for the Three Bag procedure were adapted for the EHS from the NICHD Study of Early Child Care ratings of Mother-Child Interaction Rating Scales (Owen, Norris, Houssan, Wetzel, Mason, & Ohba, 1993) and

the manual for Coding Free-play Parenting Styles from the Newark Observational Study of the Teenage Parent Demonstration and the Baltimore study (Fuligni & Brooks-Gunn, 2013). Training followed strict protocols. Coding teams at Columbia University were made up of several graduate students. Training activities included weekly meetings, discussions of the scales, and viewing training videos that contained examples of high, medium, and low scoring interactions.

Coders were trained to a reliability criterion of 85% inter-rater agreement or better before beginning the coding process. Intermittent reliability checks were performed on 15% to 20% of each coder's weekly assignments. Inter-rater reliability was .68 to .76 (kappa plus one, minus one was 87% to 96%). Coders were blind to the treatment status of the families.

Coding scales included measures for both father and child behaviors. Each scale ranged from 1 to 7 points to indicate the prevalence and intensity of the observed for the domains of paternal intrusiveness and positive regard. The coding manual provided in-depth descriptions of each scale, including behavioral indicators for each of the 7 points on the scale. Scoring considered both quality and quantity of observed behaviors. A score of 1 represented no evidence of the behavior and 7 indicted high levels of the behavior.

### **Paternal Positive Regard and Intrusiveness**

The National Institute of Child Health and Human Development (NICHD) Study of Early Child Care's Three Box Scales were used to assess paternal positive regard and intrusiveness, each on a 7-point rating scale ranging, 1 (very low) to 7 (very high).

Intrusiveness is defined by clearly adult centered behaviors that limit children's autonomy. This scale focuses on behaviors in which the parent exerts control over the child. Intrusive fathers do not recognize and respect the validity of the child's perspective. Positive regard is a dimension that reflects a father's expression of love, respect, and admiration for the child.

### **Paternal Emotion Amplification and Child Emotion Regulation-Seeking**

The second scale used to evaluate paternal and child interactions during the Three-Bag procedure was the Emotion Regulation Rating Scale (ERRS; Fogel, DeKoeyer-Laros, & Johnson, 2005). Coders observed the 10-minute three-bag procedure between father and toddler. The ERRS was coded using a 1 to 7 global rating scale for two subscales; Paternal Amplification of Child Emotions (paternal emotion amplification) and Child Regulation with Father (child emotion regulation-seeking). Paternal emotion amplification assesses how much fathers amplify or suppress children's emotions during play. Emotion amplification is identified by paternal emotion exaggeration (smiling, laughing, voice exaggeration) in an attempt to enhance the emotion or to amplify an emotion expressed by the child. Paternal emotion control is identified by parental suppression of children's emotions or parental enhancement of negative emotions to a point when the children or parents lose control. Neutral scores represent emotionally appropriate interactions with no amplification or control during the play session.

Child Emotion regulation-seeking with Father, also on a 7-point scale, measures how a child references the father to regulate his/her emotional state. A high score reflects clearly referencing or seeking support from the father for or in response to emotional state changes. This is identified through proximity seeking behaviors, including eye contact during play, requesting amplification, and validation. Low scores consist of ignoring the father, avoiding eye contact, uncontrollable emotional states by the child. Neutral scores represent children who neither seek nor reject parental interactions during play.

Two graduate students coded the 10-minute Three Bag procedure. Training for reliability was built upon video coding performed in a previous research project exploring child emotion regulation with mothers. Mother videos were observed and scored until raters reliably scored videos equally to the previous coding group (Kappa 0.8). Father coding was performed and reliability was checked on 25% of coded videos. Meetings were held to discuss the code, review example videos, and address emergent issues with coding. Interrater reliability kappas for Emotion amplification versus Control and Child Regulation with Father were .84 and .79, respectively. Kappa plus or minus one were .94 and .97.

### **Emotion Regulation**

Child emotion regulation at 24 and 36 months was tested using the Bayley Scales of Infant Development (BSID-II) Behavior Rating Scales (BRS; Bayley, 1993). The BRS was scored based on observations made by the examiner during the administration of the

BSID-II Mental and Motor scales. Emotion Regulation scores were accessed by scoring task persistence, frustration tolerance, attention, activity level, and adaptation to change. All elements were rated on a 5-point scale, with higher scores representing better emotion regulation abilities. Based on Bayley-II validations sample, score reliability was moderate to high, with Cronbach's alphas ranging from .73 to .90. Test-retest reliability coefficients ranged from .61 to .71 (Bayley, 1993).

### **Aggression**

Children's aggression was measured by the Child Behavior Checklist (CBCL) aggression subscale (Achenbach, 1991). The CBCL is widely used to measure children's behavioral/emotional problems, higher scores indicate toddler behavior problems. The aggression subscale is a 19-item subscale measuring aggressive behaviors in children between the ages of 2 and 3 years of age. For each item, mothers reported whether the behavior described in the CBCL was never true of their children, true, or very true (not true = 0, true = 1, very true = 2). This measure was obtained through maternal interview at 24 and 36 months. The subscale reliability is provided by authors is a Cronbach's alpha of .92.

### **Analysis**

All analyses were conducted using Statistical Package for the Social Sciences (SPSS version 21). Descriptive statistics were obtained to describe the participants and identify outliers. Additionally, independent samples *t* tests were used to look at

differences between participatory fathers and non-participatory fathers. There are a variety of reasons that fathers may have not participated in home visits; mothers may have blocked paternal participation or fathers may have opted out. The basic differences between these groups were analyzed.

Independent samples *t* tests were also used to look at potential group effect between fathers randomly assigned to EHS test group and control groups.

In addition, descriptive analyses were used to examine research question 1, the degree to which fathers promote emotion amplification during play. The mean, range, and standard deviation are reported in the results section. Pearson bivariate correlations were used to answer research questions regarding the association between parent and child play behaviors at 24 months. Correlation with a *p* value less than .05 were considered significant. Potential demographic contributions to paternal emotion amplification during play were considered in statistical analysis.

It was expected that correlations would be observed between parental emotion amplification and concurrent paternal scores of intrusiveness and positive emotion amplification. Furthermore, it was expected that paternal emotion amplification would be associated with concurrent child emotion regulation-seeking during play. Paternal intrusiveness during play was expected to correlate negatively with child regulation-seeking behaviors at 24 months.

Multivariate regression analyses with single dependent variables were performed to answer questions regarding the combined effect of father and child play behaviors on child emotion regulation or aggression at 24 or 36 month time points. Correlations

between demographics and play behaviors with child outcomes identified variables important to incorporate into regression models beyond the variables identified as theoretically relevant. To test the first model between father and child behaviors during play at 24 months with child emotion regulation at 24 or 36 months, children's regulation-seeking behavior and paternal emotion amplification, intrusiveness, and positive regard were entered as the independent variables with emotional regulation as the dependent variable. The model was tested separately for each time point. It was hypothesized that these variables would be significant predictors in the regression model.

The second model tested father and child play behaviors at 24 months with aggression at 24 or 36 months, children's regulation-seeking behavior and paternal emotion amplification, positive regard, and intrusiveness at 24 months were entered as the independent variables and aggression was tested as the dependent variable. The model was tested separately for each time point. It was expected that child and father behaviors would negatively predict child aggression.

To explore possible moderation, paternal positive regard was tested as a moderator between parental intrusiveness and child emotion regulation. Thus, paternal intrusiveness and paternal positive regard, and the interaction between intrusiveness and positive regard were entered in as independent variables predicting emotion regulation as the dependent variable. The regression was examined to determine if the interaction term was significant. It was expected that positive regard would moderate the association between intrusive father-child play at 24 months and child emotion regulation at 36 months.

These regression analyses provided information about each individual independent variable's contribution to the model, as well as the strength of the regression model as a whole. The alpha level for all tests was set at .05.

## CHAPTER IV

### RESULTS

In this chapter, the analytical data used to address the research questions will be reported. For these questions, a  $p$  value less than .05 was used as the cut-off point to determine statistically significant findings. All analyses were conducted using SPSS version 21. The results sections will follow the order outlined by the questions from Chapter II.

Frequencies of paternal and child behavior variables were analyzed first to identify any potential outliers. One participant with an extreme outlier on paternal intrusiveness was removed from the sample. Next, descriptive statistics were analyzed. In addition to using descriptive statistics to describe the individuals represented in this study, descriptive statistics were also used to compare means between those fathers who participated in home visits provided by EHSREP and those who did not participate. Mean comparisons were conducted to identify differences between participatory and non-participatory fathers.

Within the sample used for this study (participatory fathers) was a division created by EHSREP. Some participatory fathers were involved in the EHS program while others were assigned to a control group. Mean comparison was conducted between treatment and control participatory fathers to identify significant differences between groups. Third, intercorrelations of father and child demographic characteristics were analyzed. Independent variables' intercorrelations were examined to identify any

potential threats to multicollinearity. Next, father and child play behaviors were examined for intercorrelation among variables. Multiple regression modeling was used to investigate the combined influence of father and child play behaviors on child emotion regulation or aggression at 24 and 36 months. Finally, a hierarchical regression model was used to examine the hypothetical moderation of positive regard between paternal intrusiveness and child emotion regulation.

### **Father and Child Demographics**

Father demographic variables and play behaviors were examined for potential outliers by viewing construct frequencies. Father emotion amplification frequencies spanned the entire construct from 1 to 7 with a mean of 5.08 ( $N = 76$ ). The frequencies indicated that the population was negatively skewed towards more emotion amplification during play. Father positive regard spanned the entire construct with a range of seven on a 7-point scale with a mean of 3.81 ( $N = 74$ ). The frequency distribution for paternal intrusiveness indicated that the sample contained a single outlier. All fathers spanned the range of 1-3 on a 7-point scale with the exception of one father who was scored a 5 ( $N = 75$ ). This father was excluded from further analyses, reducing the sample by one. After the removal of the outlier, the mean for paternal intrusiveness was 1.51. Child emotion regulation had a range of seven on a 7-point scale with a mean of 5.16; data was negatively skewed indicating on average more emotion regulation-seeking behaviors from children during play ( $N = 75$ ).

Fathers from NEHSREP were indentified by mothers and invited to participate in videotaped home visits by the children's mothers. Fathers' participation in videotaped home visits was necessary to be included in the current research. To better understand differences between fathers who participated in videotaped home visits and those who did not, independent samples *t* tests were conducted. Several statistically significant differences between home visit participatory and non-participatory fathers were identified (see Table 1). Participatory fathers were more likely to be older, more educated, and have a higher income. Additionally, participatory fathers were more likely to identify themselves as members of The Church of Jesus Christ of Latter-day Saints (LDS) and be non-Hispanic.

Further analysis of participatory fathers was also necessary because fathers were divided into two groups by the NEHSREP. Participatory fathers either belonged to the EHS treatment group or the control group based on random assignment shortly after

Table 1

*Demographic Comparison Between Fathers Who Participated in Home Visits and Fathers Who Did Not Participate*

	Non-participatory fathers	Participatory fathers
Child gender <sup>†</sup>	.48	.47
Hispanic	.21	.01***
LDS	.64	.91***
Marital status	2.05	1.96
Income	8826.02	12404.64**
Father education	12.28	13.6***
Father age	25.93	26.16**

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

<sup>†</sup> 0 = female, 1 = male

applying to EHS. Analyzing participatory fathers by group type (EHS test or Control group) for differences in basic demographics revealed no significant differences. Independent samples *t* tests also revealed no statistically significant differences between group type, father or child play behaviors, and child outcomes.

Correlations of father and child demographics with father and child play behaviors were examined using Pearson's bivariate correlations (see Table 2). Father demographics of age, education, and income were not significantly correlated with father-child play behaviors. Nor were father demographics correlated with child outcomes at 24 or 36 months.

Child gender was examined through point-biserial correlations to identify any association between child gender and father or child behaviors during play and child outcomes at 24 and 36 months. Child gender and father intrusiveness were statistically significantly correlated with an  $r(73) = -.31, p < .01$ . Gender was dichotomized in the data set; males were identified with a value of 1 while females were identified by a value of 0. Fathers' intrusiveness behaviors were seen more frequently or with greater intensity in their play with the daughters than with their sons. Child gender was not significantly associated with father emotion amplification or positive regard, nor was it associated with child emotion regulation-seeking at 24 months.

Table 2

*Correlations of Father and Child Demographics with Father and Child Play Behaviors and Child Outcomes at 24 and 36 Months*

Variables	Age father	Education father	Income family	Child gender <sup>†</sup>
Father behaviors				
1. Emotion amplification	.00	.01	-.15	-.05
2. Intrusiveness	-.13	-.05	.12	-.31**
3. Positive regard	.09	.00	.04	-.02
Child behavior				
4. Emotion regulation-seeking	-.01	.02	-.12	-.03
Child outcomes 24 months				
5. Child emotion regulation	.12	.01	.17	-.10
6. Child aggression	.05	.04	-.04	-.04
Child outcomes 36 months				
7. Child emotion regulation	-.10	.06	-.21	-.22
8. Child aggression	-.15	.00	-.13	.26*

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

<sup>†</sup> 0 = female, 1 = male

Child gender was also examined for its association with child outcomes at 24 and 36 months. Child gender was significantly correlated with child aggression only at 36 months,  $r(72) = .26, p < .05$ . Bivariate correlation suggests that girls have better emotion regulation skills at 36 months than boys, and boys are more aggressive at 36 months than girls.

### **Correlations Among Father and Child Behaviors**

Correlations were examined among father behaviors during semi-structured play at 24 months and child outcomes at 24 and 36 months (see Table 3). Fathers' behaviors during play were intercorrelated in the sample. Paternal emotion amplification was negatively associated with paternal intrusiveness at 24 months,  $r(73) = -.23, p < .05$ . Paternal emotion amplification was positively correlated with positive regard for the child  $r(73) = .52, p < .001$ , child emotion regulation-seeking,  $r(73) = .50, p < .001$ , and child emotion regulation at 36 months,  $r(73) = .41, p < .001$ . Paternal emotion amplification is negatively correlated with paternal intrusiveness during play,  $r(73) = -.23, p < .01$ .

Fathers' intrusiveness during play was negatively correlated with child emotion regulation-seeking,  $r(73) = -.31, p < .001$ , and with child gender, as previously stated. Fathers' demonstration of positive regard during play was not significantly correlated with child emotion regulation at 24 and 36 months,  $r(73) = .34, p < .01$  and  $r(73) = .34, p < .01$ , respectively. Child emotion regulation-seeking was positively correlated with child

Table 3

*Intercorrelation of Father and Child Play Behaviors at 24 Months and Child Outcomes*

Variables	1	2	3	4	5	6	7	8
Father behaviors								
1. Emotion amplification	--							
2. Intrusiveness	-.23**	--						
3. Positive regard	.51**	-.16	--					
Child behavior								
4. Emotion regulation-seeking	.50***	-.31**	.15	--				
Child outcomes 24 months								
5. Child emotion regulation	.13	-.04	.34**	.27*	--			
6. Child aggression	.12	-.03	-.23	.08	-.26*	--		
Child outcomes 36 months								
7. Child emotion regulation	.41***	-.18	.29*	.37***	.44***	-.03	--	
8. Child aggression	.05	-.10	-.10	.12	-.25*	.48***	-.06	
Child demographics								
9. Child gender	-.05	-.31**	-.02	-.03	-.10	-.04	-.22	.26*

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

emotion regulation at 24 and 36 months,  $r(73) = .27, p < .05$  and  $r(73) = .37, p < .001$ , respectively.

Lastly, intercorrelation among child outcomes were examined. Emotion regulation at 24 months was correlated with the same measure at 36 months,  $r(73) = .44, p < .001$ , the same is true for aggression,  $r(73) = .48, p < .01$ . Additionally, child emotion regulation at 24 months was negatively correlated with aggression at 24 and 36 months,  $r(73) = -.26, p < .05$  and  $r(73) = -.25, p < .05$ , respectively.

### **Regressions**

This research proposed several models whereby child emotion regulation and aggression could be predicted by father and child play behaviors. The correlations presented previously guided variable selection for these regression models. Father intrusiveness was not correlated with the child outcomes so was not included in the regression models. Child gender was also included in the regression model predicting child aggression as it was the only demographic variable correlated with child outcomes. The first set of models examined the role of father emotion amplification and positive regard, and child emotion regulation-seeking as predictors of child emotion regulation. Regression models were run for both 24 and 36 month emotion regulation time points (see Table 4). The 24 month model examined the influence of father and child behaviors on child emotion regulation concurrently while the 36 month model examined the

predictive influence of father and child play behaviors on later child emotion regulation.

The concurrent 24 month model examining father and child play behaviors with 24 month child emotion regulation yielded a significant equation,  $F(4, 71) = 4.51$   $p < .01$  (see Table 4). The proposed model accounted for 21.2% of the variance in child emotion regulation at 24 months. Within the model, paternal positive regard for the child during play and child regulation-seeking behaviors were statistically significant predictors,  $beta = .434$ ,  $p < .001$  and  $beta = .364$ ,  $p < .001$ , respectively.

The predictive model examining father and child play behaviors with 36 month child emotion regulation was also significant, accounting for 22.2% on the variance in 36 month child emotion regulation (see Table 4). The model statistics are as follows,  $F(4, 63) = 4.22$ ,  $p = .005$ . Within the model no individual predictors reached statistical significance. Multicollinearity was investigated as a potential confounding factor among predictors within the model; variance inflation factors provided no evidence of multicollinearity.

Table 4

*Predictors of Child Emotion Regulation at 24 and 36 Months*

Variables	24 months			36 months		
	B	SE	Beta	B	SE	Beta
Father behaviors						
Emotion amplification	-.12	.07	-.26	.09	.07	.21
Positive regard	.19	.06	.43**	.06	.06	.14
Child behaviors						
Emotion regulation-seeking	.16	.06	.36**	.11	.06	.24
Model 1. $r^2 = .212$ , $F = 4.508$ , $p = .003$ , Model 2. $r^2 = .222$ , $F = 5.201$ , $p = .001$ . * $p \leq .05$ , ** $p < .01$ , *** $p < .001$						

Again, gender was added to the models; the fit improved slightly  $F(5, 63) = 4.29, p = .002$ , and gender approached statistical significance.

The second set of models examined the role of father emotion amplification and positive regard, and child emotion regulation-seeking as predictors of child aggression. The concurrent theoretical model for child aggression examined father behaviors of emotion amplification and positive regard, and child emotion regulation-seeking (see Table 5). This model did not reach statistical significance,  $F(4, 70) = 2.21, p = .077$ , and accounted for only 11.8% of total variance in the child aggression variable. Within the model, only father positive regard for the child reached significance,  $beta = -.39, p < .01$ . When child gender was added to the model, because of its significant correlation to aggression, the fit of the model was reduced  $F(5, 70) = 1.75, p = .14$ . Gender was removed from the model.

The regression model examining father and child play behaviors during semi-structured play at 24 months predicting 36 month child aggression (see Table 5), did not

Table 5

*Predictors of Child Aggression at 24 and 36 Months*

Variables	24 month model			36 month model		
	B	SE	Beta	B	SE	Beta
Father behaviors						
Emotion amplification	1.37	.70	.30	.29	.76	.06
Intrusiveness	.19	1.15	.02	-.68	1.18	-.08
Positive regard	-1.68	.60	-.39**	-.64	.60	-.15
Child behaviors						
Emotion regulation-seeking	.37	.64	.09	.37	.64	.09

Model 1.  $r^2 = .118, F = .2214, p = .077$ ,

Model 2.  $r^2 = .035, F = .596, p = .667$ .

\* $p \leq .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

reach statistical significance, nor did any of the individual predictors within the model reach statistical significance. The addition of gender to the model did not improve the model's fit and was removed from the model. Variance inflation factors did not indicate multicollinearity existed within the model.

### **Exploring Moderators**

Positive regard was hypothesized to be a moderator of intrusiveness and child emotion regulation. Previous correlations suggest that moderation is unlikely; however, moderation was still examined. To test for moderation, the z-score for positive regard and intrusiveness variables were calculated. The new centered positive regard and intrusiveness variables were multiplied to create an interaction term representing the interaction between intrusiveness and positive regard, the moderator variable. A hierarchal regression was used to determine if the interaction term added above and beyond the centered variables of intrusion and positive regard in a model with child emotion regulation. The model of positive regard as a moderator was investigated following the above steps for emotion regulation at 24 and 36 months.

The hierarchal regression testing the moderator effect of positive regard on the association between paternal intrusiveness at 24 months and child emotion regulation at 24 months was statistically significant,  $F(3, 70) = 3.47, p = .05$ ; however the fit decreased from the  $F(2, 70) = 4.66, p < .05$  in the hierarchal model without this interaction term. The hierarchal regression with the interaction term at 36 months approached statistical

significance,  $F(3,70) = 2.53, p < .10$ . Both models showed small effect size,  $f^2 = .02$  for both the 24 and 36 month regressions. This suggests there is not moderation effect of positive regard on the association between intrusiveness and emotion regulation (see Table 6).

### Summary

Correlational results indicate that fathers were more intrusive with their daughters than their sons at 24 months and that girls had better emotion regulation skills at 36 months than boys. Fathers who used more emotion amplification at 24 months were less intrusive, showed more positive regard and had children who sought more emotion regulation at 24 months than fathers who used less emotion amplification. Fathers who were more intrusive during play have children who were less likely to seek emotion regulation with them than fathers of children who were less intrusive. Children who sought emotion regulation demonstrated greater emotion regulation at 24 and 36 months than children who sought less emotion regulation during play. Furthermore, children with fathers who showed more emotion amplification and positive regard demonstrated better emotion regulation than children with fathers who showed less emotion amplification and positive regard. The regression models predicting child emotion regulation at 24 and 36 months accounted for 21% and 22% of the variance, respectively. However, only the 24 month model had significant pathways. Regression models predicting child aggression were not significant. No moderation was found.

Table 6

*Hierarchical Multiple Regression Analysis Predicting Emotion Regulation at 24 and 36 months with Paternal Intrusiveness and Positive Regard*

Variables	24 Months						36 months					
	Model 1			Model 2			Model 1			Model 2		
	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta
Intrusiveness	.01	.11	.02	-.03	.11	-.02	-.12	.12	-.13	-.14	.12	-.05
Positive regard (PR)	.15	.05	.36**	.14	.05	.34**	.12	.05	.27*	.11	.05	.25
Intrusiveness*PR				-.10	.08	-.15				-.01	.09	-.12
<i>R</i>		.35			.37			.32			3.48*	
<i>F</i>		4.66*			3.47*			.36			2.53+	
<i>f</i> <sup>2</sup>				.018						.02		

\* $p \leq .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

## CHAPTER V

### DISCUSSION

The purpose of this study was to examine the quality of father-child play and its association to child self-regulation. Striving to understand the role of fathers in child development has motivated research for several decades. Fathers' role in emotion regulation learning is a relatively new topic within the field of father research. Much of what we know about fathers' promotion of self-regulation stems from maternal research. Evidence and theory assert that the mother-child relationship may be the context for child emotion regulation learning (Ekas, 2011; Parke, 1994). Fathers' role in this process remains mostly theoretical (Paquette, 2004; Parke, 1994). The present study adds to the growing body of research that aims to illuminate how the quality of father-child play associates with child emotion regulation.

Father-child activation theory guided this research design. This theory suggests fathers uniquely engage children's self-regulatory systems, encourage risk-taking, and increase self-confidence (Paquette, 2004). The research questions in this study were raised to illuminate the role of father-child play behaviors on emotion regulation and aggression, two important elements of self-regulation. Theoretically, the highly arousing nature of father-child play encourages children to experience emotions and express them in an appropriate manner so that play may continue; the current study investigated this claim. This discussion will highlight research findings, integrate results into current research, and examine the extent to which the data support the theoretical framework.

Finally, limitations of the current study will be evaluated and future directions for research will be suggested.

The variables used in this study were selected as a best attempt to represent elements identified as import paternal behaviors in the father-child activation theory. Paternal emotional amplification was selected to measure the extent to which fathers amplify children's current emotional state during play. Frequency data indicated that fathers do, indeed, attempt to amplify children's emotional state during semi-structured play. This supports the theoretical claim that fathers are arousing during play. Parental intrusiveness was selected in an attempt to measure the destabilizing and unpredictable nature of father-child play. Frequency data indicated that fathers in our sample were not particularly intrusive, but they exhibit similar intrusive behaviors as found in other studies (Ekas, 2011). The implications of low intrusiveness will be discussed later. Paternal positive regard was selected to reflect the love and respect fathers have for their children. Theoretically, love in the parent-child relationship is paramount to positive outcomes for children (Paquette, 2004; Paquette & Dumont, 2013). Child emotion regulation-seeking was used to reflect children's contribution to father-child play behaviors and child outcomes.

### **Father-Child Play and Emotion Regulation**

Fathers in the current study were examined for their use of emotion amplification, intrusiveness, and positive regard during semi-structured play. Fathers from our sample did indeed promote emotion amplification during semi-structured play with their

children. Fathers who promoted emotion amplification in their children also displayed more positive regard and less intrusiveness during play.

Basic correlations provide evidence of association among father-child play behaviors and child outcomes. At 24 months, paternal positive regard and child emotion regulation-seeking were independently correlated with child emotion regulation. When the father-child play behaviors were added to a regression model for this time point, these two pathways remain statistically significant predictors of emotion regulation, as hypothesized.

Paquette (2004) suggests that father-child play provides a means for children to learn self-regulation through high stimulation. The current study failed to find evidence that paternal emotion amplification results in improved emotion regulation in the concurrent model at 24 months. Bivariate correlations investigating the association between paternal emotion amplification and child emotion regulation was not significant at 24 months. Perhaps the concurrent model is not a good indicator of emotion regulation learning. As children begin to assert their autonomy there is an increase in negativity and oppositionality (Keanan & Wakschlag, 2000). Father emotion amplification in the presence of toddlers expressing increased negativity and oppositionality may appear as if fathers' efforts do not help children learn emotion regulation, but the effects of father play behaviors may have a latent effect on child emotion regulation learning. Bivariate correlation indicated that 24 month paternal emotion amplification was significantly associated with 36 month child emotion regulation. But, when paternal emotion amplification and positive regard, child gender, and child emotion regulation-seeking

were combined in a regression model predicting emotion regulation at 36 months, no pathways were significant, although the model was statistically significant. Gender was the only predictor to approach statistical significance. In other studies using low-income samples, gender effects on child emotion regulation were found (Raikes, Robinson, Bradley, Raikes, & Ayoub, 2007); girls exhibit better emotion regulation skills than boys at this age.

It is somewhat surprising that father emotion amplification did not contribute to children's emotion regulation as hypothesized. Observations of father emotion amplification revealed that fathers often exaggerated their tone and expression to reflect excitement and enthusiasm during semi-structured play. These behaviors are child directed, presumably to elicit these same emotions from their children. The motivation behind this behavior is unknown. It is likely that fathers enjoy play more with their children when children express positive affect than when children are neutral or express negative affect. Volling and colleagues (2002) found that fathers who are more emotionally available during play have children who show more positive affect during play. Emotion availability, in Volling's study, was a combination of paternal sensitivity and positive affect. Perhaps fathers are motivated to be emotionally available and to behave in emotionally arousing ways by how children respond to these behaviors; the behavior is self-rewarding.

Another explanation for fathers' emotion amplification during play is that fathers believe that their role and interactions with their children are important for their children's development and growth. A qualitative study of low-income fathers sought to

understand how low-income fathers viewed “good fatherhood”. They were asked questions like, “What does being a good father mean to you?” and “What are some of the things that you do that make you feel like you’re being a good father?” (Summers, Boller, Schiffman, & Raikes, 2006). Fathers’ comments showed that fathers value their interactions with their children, believing that a good father provides stability, guidance, physical interaction, and emotional support. Some fathers referred to their hopes for their children in the future as a result of good fathering. It is possible that fathers’ emotion amplification behaviors are a reflection of their view on fatherhood and their responsibility to physically interact and show emotional support. Fathers’ perspective on fatherhood may also explain the positive regard seen during play with their children.

In the current study children who displayed more emotion regulation-seeking from their fathers also tended to have fathers who promoted more emotion amplification during play than those who sought less emotion regulation. This can be potentially explained in a few ways; first children use fathers as a model. As fathers promote different emotions, children reference their fathers as they regulate their emotions. This potential explanation fits well with father-child activation theory; children match the emotion seen in fathers in order to remain appropriate for play. A second potential explanation could be that fathers follow the emotion lead of the children. Children who reference their parents more for emotion regulation support may direct their parents to express more emotion. The current research did not measure the temporal sequence of emotion amplification by fathers and emotion regulation-seeking behaviors by children; future research should investigate the temporal association between these events. A final

possibility is that emotion referencing is mutual and constant; fathers follow children's cues and children follow fathers' cues. Regardless, data suggests that paternal emotional amplification during play is associated with children's emotion regulation-seeking.

The regression model was designed with a father-child activation theory framework. Father-child play that is emotionally arousing provides opportunity for children to experience emotion and practice emotion regulation in a warm environment (Paquette, 2004). Paquette suggests that father-child activation theory opens children to the world and enhances personal confidence in spite of strangeness and fear; in other words, father-child relationships support child emotion regulation so that emotions are experienced when and where appropriate (Gross, 1999). Because father-child activation theory is in its preliminary stages, no longitudinal studies have been conducted to see the effect of activative parenting on children entering school, during adolescence, or adulthood. The current study adds to research using father-child activation theory as a framework. Our results suggest that father-activation theory is likely an adequate and useful theory for describing how fathers' behaviors influence children's emotion regulation development.

The significance of individual predictors at 24 months, but not at 36 months, may result from the time lapse between the father-child play observations and the outcomes. All concurrent behaviors were observed and measured from a single play episode. The parent and child behaviors may have a more direct influence on outcomes concurrently than when separated by time. By observing father-play at the 36 month observation time point also, it may be possible to better understand the association between these

predictors and children's emotion regulation. It is also possible that because the correlation between 24 and 36 month emotion regulation was moderate (Cohen, 1988), that emotion regulation abilities may be a fairly constant characteristic. Behaviors that influence 24 month emotion regulation, may therefore, influence 36 month emotion regulation (Keenan, Shaw, Delliquadri, Giovannelli, & Walsh, 1998).

### **Father-Child Play and Aggression**

Basic correlations among father-child play behaviors and child aggression were mostly insignificant, with the exception of positive regard, which was negatively correlated with child aggression at 24 months, and gender at 36 months, with boys exhibiting more aggression than girls.

Neither of the regression models examining aggression at 24 or 36 months reached statistical significance. Basic correlations indicated that positive regard might be an important father behavior in reducing concurrent child aggression. Positive regard includes behaviors like speaking with a warm tone, smiling, showing enthusiasm for the child, and clear enjoyment. Fathers may show more positive regard because children are less aggressive, or children may be less aggressive because fathers display more positive regard. The direction of influence cannot be determined from this study, but a study investigating the contributions of child characteristics to parenting during toddlerhood found that child characteristics only moderately affected parenting; parental characteristic and context had stronger influences on parenting (Verhoeven et al., 2010). Another study found that children who are difficult to parent are more likely to influence parenting

negatively, invoking harsh parenting practices (Kochanska, Friesenborg, Lange, & Martel 2004; Neitzel & Stright, 2003). However, the positive regard pathway was not significant when father-child play behaviors and child gender were combined into a regression model. Results suggest that other parenting or child factors may contribute to children's aggression at these time points.

Indeed, a study conducted by Brook, Zheng, Whiteman, and Brook (2001) found that in at-risk-populations, maternal behaviors and characteristics were more important than father behaviors and characteristics in predicting aggressive behaviors in toddlers. Maternal parenting behaviors moderated paternal parenting behaviors. It is important to note that the above-mentioned study found associations between parental risk factors such as parental substance use, rebellious, and aggressive behaviors with child aggression. It is possible that parenting risk factors, specifically, how these risk factor negatively influence the home and parent-child interactions, could have a greater influence on child aggression than positive fathering behaviors.

Flanders and colleagues (2010) provided evidence that father rough-and-tumble-play during preschool years negatively predicted aggression in middle-childhood, when fathers maintained dominance. The Flanders and colleagues (2010) study measured fathers' control of the videotaped RTP interaction along with questionnaire data indicating the frequency and physical aggressiveness seen during father-child play. Perhaps control during play would be a better measure than intrusiveness for predicting child aggression.

The presence and quality of the relationships between fathers and children appear to be important for children's externalizing behaviors (Amato & Rezac, 1994; McWayne, Downer, Campos, & Harris, 2013; Verhoeven et al., 2010). Perhaps the model presented in this study did not accurately represent father behaviors important in reducing aggression in toddlers, but father influence on the outcome is still likely. A model containing elements of paternal control (Flanders et al., 2010), teaching, and responsiveness (Anderson, 2012) may provide further insight into fathers' contributions to children's aggressiveness.

### **Father Intrusiveness During Play**

Intrusiveness during play was expected to be higher, because fathers have been described as being interfering and intrusive during play (Power & Parke, 1982), but that was not the case for the current study. It is important to note that research using the national EHSREP, which includes the sample used in this study from the EHS Utah site, have also found fathers to score low on intrusiveness (Shannon et al., 2002, 2006; Volling et al., 2002). The intrusiveness range for this study fell between 1, "Very Low Intrusiveness: No signs of intrusive behavior are observed. Child does not respond defensively in any way to parental behavior" and 3, "Moderately Low Intrusiveness: Parent displays minimal intrusiveness. Parent initiates some interactions with child or offers suggestions to child which are not welcome, evidenced by child protesting or responding defensively to parent. Or, parent may continue his/her activity after child responds defensively, but parent does not escalate the activity" (National Center for

Children and Families, 1999). Higher levels of intrusiveness as defined by the National Center for Children and Families reflects more negative/intrusive characteristics. High intrusiveness is defined as, “pervasive to the point that it characterizes the style of the parental interaction with the child. Parent strongly denies the child an opportunity to do things on his/her own. The child may have few opportunities to experience autonomy.” and Very High Intrusiveness is defined as, “so intrusive it is worrisome. Parent is very intrusive, physical and/or forceful.” A close look at the definition of intrusiveness from the measure illuminates why high levels of intrusiveness were not seen in the current study and in other studies using the measure. Perhaps fathers change behavior showing more socially desirable, less intrusive behaviors. Or low intrusiveness may be a characteristic of semi-structured play.

Additionally, and perhaps more importantly, the measure indicates that, “high emotion amplification, vigorous physical interaction, or a rapid pace are not in and of themselves indicative of intrusive over-stimulation if the child responds positively and is not engaging in defensive behaviors.” The nature of father-play is thought to be highly arousing, vigorous, fast-paced, and *enjoyed*. Theoretically, behaviors that may be construed as intrusive in other circumstances are enjoyed during father-child play. The measure continues, indicating to coders that when in doubt of intrusive actions the measure indicates that the parental behaviors should be viewed from the child’s perspective. If the behavior is enjoyed/welcomed it is not intrusive. Low levels of intrusiveness are a better reflection of intrusiveness in father-child activation theory than high levels of intrusiveness. Unfortunately, at lower intrusiveness scores the coding

scheme does not distinguish between highly involved fathers who exhibiting vigorous physical interaction that is welcomed by the child and fathers who are less involved.

Experimental conditions may have also added to the low levels of intrusiveness seen in the study. It is possible that highly intrusive fathers may not have participated in this study, either by maternal exclusion or self-exclusion. Or, experimental conditions did not offer enough challenge. Fathers enjoy play more when children show positive affect (Volling et al., 2002), high levels of intrusiveness are not met with positive affect from children, so during play, fathers may avoid intrusiveness (National Center for Children and Families, 1999). Volling and colleagues (2002) found that fathers were less intrusive with their children in free-play than when they were engaged in a teaching episode. In the Volling and colleagues study, neither group was composed of highly intrusive fathers, instead fathers made clear demands during play and teaching opportunities (Volling et al., 2002). Future studies should consider using additional measures to investigate the association between high emotion amplification, vigorous, and fast-paced play that is enjoyed, and child outcomes.

Additionally, child emotion regulation-seeking was negatively correlated with intrusiveness. It appears that children will seek more regulation from their fathers when their fathers are not being intrusive. Again, recall that fathers in the sample considered intrusive are identified by Moderately Low Intrusiveness. These fathers are minimally intrusive and initiate some unwelcomed interactions. Children respond to even Moderately Low Intrusiveness by seeking less emotion regulation from their father. This

may speak to the nature of toddlerhood; children seek independence and object to unwelcomed interactions.

On the other hand, fathers exhibiting low intrusiveness were more likely to have children exhibit emotion regulation-seeking behaviors. As discussed earlier, low intrusiveness can either be defined by less involved fathers who exhibit no intrusive behaviors or by more involved fathers who exhibit intrusive behaviors that are welcomed/enjoyed by children. So, perhaps children seek more regulation from less involved fathers because that is the only way to get input from their fathers. Children are required to seek more when fathers are less involved. This would suggest that children want their fathers to be involved as children seek interaction through regulation from less involved fathers. Or, children seek more when they are enjoying interactions with their involved father. This would suggest that children seek cues from their fathers to stay emotionally appropriate for play because it is enjoyed. It is difficult to identify the true meaning behind this data because of the nature of the scale.

Positive regard is a measure of the parental behaviors that reflect the respect and love fathers have for their children. It was expected that positive regard would play an important role within the proposed model for this study; specifically, positive regard was tested as a moderator between intrusiveness and emotion regulation. However, positive regard was not found to moderate intrusiveness with this sample of fathers. Parental warmth has been identified as a moderating factor between intrusiveness and child emotion regulation (Graziano et al., 2011; Ispa et al., 2004). In this study, positive regard

was an important piece of the model predicting emotion regulation, but positive regard did not play a moderating role.

### **Father-Child Play and Child Gender**

Father demographic variables for participating fathers were not significantly correlated with father-child play behaviors or child outcomes. Child gender, however, was correlated with paternal intrusiveness indicating that fathers were more intrusive with their daughters than with their sons. Evolutionary framework hypothesizes that one of the purposes of father-child rough-and-tumble play is to pass on information between generations, specifically father to son (Pereira & Altmann, 1985). It might be expected that fathers would show more intrusiveness, with the intent of teaching and displaying dominance, when they played with their sons. Perhaps, this may only be true in rough-and-tumble play situations, which were not used in this study. Perhaps, instead of increased intrusiveness between fathers and sons to pass on information and show dominance, the observed intrusiveness between fathers and daughters during semi-structured play may stem from fathers' beliefs regarding gender roles.

A study investigating the role of child gender on fathers' interactions with their children during early childhood interactions found that father-child interactions as early as 24 months show gender patterns which continue through preschool (Leavell, Tamis-LeMonda, Ruble, Zosuls, & Cabrera, 2012). During toy play, fathers tend to offer more masculine toys to boys and feminine toys to girls than mothers (Bradley & Gobbart, 1989). Fathers in father-child dyadic play also tend to model more assertive behaviors to

children than they do when involved in triadic play involving mothers (Lindsey, Cremeens, & Caldera, 2009). Through modeling and direct play fathers teach their children about gender roles. From the current research study it is impossible to decipher the purpose behind higher amounts of intrusiveness during play with daughters than with sons at 24 months, or what this finding says about father perception of gender roles.

Another explanation for increased intrusiveness with daughters could be that fathers are less skilled or find it less important to be sensitive to daughters' cues than to their sons' cues. Contrary to this notion, in a middle-income sample, Lovas (2005) found that father-daughter sensitivity and non-intrusiveness were greater than father-son sensitivity and non-intrusiveness.

Research from low-income fathers suggests that gender difference in father play patterns exist, but there is much that is unknown about this research area. Future research could focus on examining the continuity of father gender patterns within this sample over time and in relation to later child outcomes.

### **Fathers in EHS Research**

The first question from this study sought to paint a picture of fathers within our sample of low-income, at-risk families. The sample used for this study was limited by father participation in videotaped, in-home visits. A quick look at fathers' who participated in videotaped, in-home visits indicated several differences. Fathers who participated in video observations were more likely to be older, more educated, and have higher incomes; they were also more likely to be non-Hispanic and LDS than fathers who

did not participate in video observations, and therefore, were not included in this study. It is difficult to comment further on fathers who did not participate because research on this group is extremely difficult to obtain. It is worth mentioning that the Utah data collected for national EHS purposes had higher levels of father participation than other sites throughout the nation and a low attrition rate (Boller et al., 2006).

The LDS religious culture in the region, from which this study's samples were drawn, is prominent. Examining EHS applicants from the same sample employed for this study, Roggman, Benson, and Boyce (1999) found differences between LDS and non-LDS fathers in this sample in regards to their knowledge and involvement with their infants. At baseline and 10 month tests, LDS fathers showed a greater knowledge of infant development, however LDS fathers' knowledge was negatively correlated with father involvement with children. Involvement from fathers professing the LDS religion was associated with support. The support and knowledge associated with fathers in the LDS faith may explain why more LDS fathers participated in videotaped home visits than non-LDS fathers. Building a culture of support for fathers within the EHS population may encourage greater father participation.

Because several studies have used national EHSREP data for father research, it is possible to compare the Utah sample to the national sample. The present study did not find significant correlations between father demographics and father play behaviors. But using the national EHSREP data Tamis-LeMonda and colleagues (2004) did find demographic correlates with father play behaviors; these correlates included age, education, and income (Tamis-LeMonda et al., 2004). Fathers who were more educated

were more sensitive, showed more positive regard, and were less intrusive. Fathers who had higher incomes were more sensitive and less intrusive. Fathers' education was not correlated with father play behaviors, but was correlated with mother play behaviors. Perhaps the current sample was too small, or too homogenous to find significant correlations among demographic variables and father behaviors. It is possible that on a national scale demographic variables important to current research variables (intrusiveness, positive regard, emotion amplification) could be identified.

Studies using national EHSREP data found low paternal intrusiveness, similar to the finding in the Utah sample at 24 months (approximately 1.9 for the national sample and 1.51 for the Utah sample). Positive regard was also similar between the national EHSREP sample and the Utah sample at 24 months (approximately 3.7 for the national sample and 3.8 for the Utah sample). The Utah sample does not appear to vary from national data on these two variables. National EHSREP data does not include ERRS data, so comparisons were not possible.

### **Limitations**

The findings of the present study should be interpreted in light of some limitations. The present study has several limitations related to the sample, measurement selection, and exclusion of mothers.

Our sample consisted of fathers from a Utah EHS program and comparison families participating in the National Early Head Start Evaluation. It is important to note that all studies are biased by the sample that chooses to participate. It is likely that fathers

who participated in this study were more cooperative with the children's mothers and participated more in their children's lives than fathers who chose not to participate or those who were not invited to participate because mothers excluded them from this process. As such, the sample used in this study is only a small portion of low-income fathers.

The measures selected for this study may also be a limiting aspect. The fathers in this study did not display many intrusive behaviors as indicated by our measure of intrusiveness, providing a limited range for this variable in the analyses. And, as discussed earlier, lower levels of intrusiveness could describe fathers who are highly involved and vigorous during play interactions with children welcoming interactions or fathers who are less involved; the two groups cannot be separated using the current measure. Low scores on intrusiveness appear to be representative of low-income fathers as seen in other studies using the EHS sample (Shannon et al., 2002, 2006; Volling et al., 2002).

Low intrusiveness is also likely due to the nature of the play observed in the present study. Studies using observation of play episodes, whether free- or semi-structured play, pose few demands or challenges to the father-child dyad. A research design that adds challenge or demand to an observation of father-child interactions may elicit more intrusive techniques from fathers. Indeed, fathers and mothers during teaching episodes exhibit more intrusiveness with their children than during free-play (Volling et al., 2002). In spite of higher intrusiveness ratings during the teaching activity in Volling and colleagues' (2002) study, parents remained low on intrusiveness as a whole. The

current study may not have shown great diversity within the measure of intrusiveness because low levels of intrusiveness may be a true characteristic of low-income fathers or the semi-structured play situation may have stifled more typical father-child play. As described in the review of literature, fathers engage in more high-energy, abrupt, and unpredictable play than mothers (Parke & Tinsley, 1987; Power & Parke, 1982). The play episode in this study used a semi-structured play procedure that limited the father-child interactions to a small radius. It is possible that a free-play design would elicit more natural play behaviors from fathers. However, most video recorded, in-home observations require parents to remain in a specific location for ease of observation. This constraint may influence father-child play, but it has also been indicated that parents are more likely to behave naturally with their children in a home setting (Serbin, Sprafkin, Elman, & Doyle, 1982). If fathers would have been permitted to move about freely and chose the play activities without a semi-structured play format it is likely that fathers may have been more vigorous in their play with their children. But again the construct chosen to measure intrusiveness is limiting, because it doesn't differentiate between vigorous and welcomed play and less involved fathers.

The Emotion Regulation Rating Scale (ERRS) could also have some limitations. The tool has not been extensively used in published research (Jones, 2009). To our knowledge, this is the first time ERRS has been applied to father-child dyads. The measure was originally designed for mother-child interactions, and it is possible that behavioral indicators of the parental emotion amplification variable may not translate directly between mothers and fathers. But this is not a unique conundrum for father-child

research. Often measures designed to measure mother-child interactions are applied to father-child interactions.

Finally, the exclusion of mothers from our study may also be a limitation. The father-child activation theory highlights the distinctiveness of fathers and accounts for the previously overlooked context of play in attachment theory, but using a father-specific theory neglects the contribution of mothers. In a family context maternal qualities and behaviors will influence children's outcomes. Studies that involve both fathers and mothers provide insight into working family systems (Roggman, 2004). In most families it is likely that children receive caregiving, at least in part, from both mothers and fathers (Leavell et al., 2012). Additionally, using theories that are parent-specific may not consistently provide clear results as parent gender roles merge in new-age families (Roggman, 2004). However, using a father-specific theory we were able to identify and examine father behaviors important in child emotion regulation development. Current findings support fathers as agents of influence in child emotion regulation development. Continued use of father-child activation theory as a theoretical framework for research on father-child interactions will likely provide insight into the father-child relationship and its effects on various child outcomes.

### **Future Directions**

The findings of the present study can contribute to future research and policy. Despite the limitations of this study, the findings can stimulate further hypothesis testing and inform the design of larger studies. This observational study of an underrepresented

group of fathers can serve as a map for researchers and policymakers interested in understanding and promoting positive outcomes for low-income families and children. This study is an important step towards increasing our understanding of paternal contribution to child emotion regulation in low-income families and can be viewed as exploratory. Future research can expand upon these findings by investigating multiple contexts and temporal associations, applying the model to mother-child interactions, and using a large, more diverse sample.

The current study found evidence that paternal emotion amplification, intrusiveness, and positive regard and child emotion regulation-seeking predict child emotion regulation at 24 and 36 months. Testing this model across multiple contexts of play and caregiving with fathers could provide important insights into the potential of these interactions to promote improved child emotion regulation. A better understanding of the contextual use of these fathering behaviors may support the development of intervention efforts working toward promoting children's emotion regulation. Indeed, emotion regulation for young children at-risk for school failure has been identified as an important domain for early intervention so that children are prepared to enter school (Blair, 2002; Graziano et al., 2007; Raver & Knitzer, 2002). This study emphasizes the role of fathers in supporting their children's emotion regulation during toddlerhood and could be used to guide intervention efforts targeting father involvement to promote children's development.

The mechanisms behind father-child play as a context for teaching, as described by the father-child activation theory, need further exploration. The current study did not

examine the temporal sequence of paternal emotion amplification and child emotion regulation-seeking. A better understanding of the association between these behaviors may provide insight into how fathers and children respond to each other during play.

The father-child activation theory explains that the father-child relationship is a unique teaching opportunity for children. Including mothers in a framework guided by father-child activation theory will help determine the usefulness of this theory in describing the unique father-child relationship (Roggman, 2004). It is possible that this model may hold true for mothers during semi-structured play as well as fathers (Ispe et al., 2004). Additionally, including mothers would allow for fathers' contributions to be tested above and beyond the contributions of mothers.

Finally, research should explore the possibility of a complimentary model between mothering and fathering. It is possible that the same behaviors performed by mom or dad (playing, caretaking, teaching, disciplining, etc.) have different impacts on children's outcomes. A complimentary model, including fathers and mothers, may explain fathers' and mothers' contributions to children's outcomes.

In spite of the limitations of the current study, the findings are theoretically and practically important. Paternal emotion amplification and positive regard and child emotion regulation-seeking behaviors at 24 months predict child emotion regulation at 24 and 36 months. These findings, although exploratory in nature, can help guide future research hypotheses and policy involving low-income families, children, and fathers.

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