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Moving to the Level of Representation to Explain Variations in Family Child Care Provider Sensitivity and the Effectiveness of Child-Related Training

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LOYOLA UNIVERSITY CHICAGO

"MOVING TO THE LEVEL OF REPRESENTATION"

TO EXPLAIN VARIATIONS IN FAMILY CHILD CARE PROVIDER

SENSITIVITY AND THE EFFECTIVENESS OF CHILD-RELATED

TRAINING

A DISSERTATION SUBMITTED TO

THE FACULTY OF THE GRADUATE SCHOOL

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

PROGRAM IN APPLIED CHILD DEVELOPMENT

BY

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All of us, from the cradle to the grave, are happiest when life is organized as a series of excursions, long or short, from the secure base provided by our attachment figures.

John Bowlby

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ABSTRACT

Many young children in the United States spend a substantial amount of time in the care of family child care providers. Previous research has found that when providers are sensitive and responsive to children's needs, children are more likely to develop secure attachment relationships with their providers, which, in turn, have been linked to many developmental benefits for young children. Unfortunately, it appears that many children do not experience the levels of caregiving sensitivity that are necessary to develop secure attachment relationships with their providers and that increased child-related training is not always effective at improving provider caregiving behaviors.

Attachment theory suggests that a caregiver's own working model of attachment, which includes her perceptions of her own attachment experiences and her unconscious information-processing rules about how to interpret and participate in relationships, will strongly influence her caregiving behaviors and will influence her willingness to take up new relationship related information. This exploratory study attempted to test this intergenerational transmission model of caregiving in the family child care context. By using the Perceptions of Adult Attachment Questionnaire (PAAQ), this study also attempted to understand whether a self-report could be useful in identifying particular working models of attachment that were related to differences in a provider's overall emotional tone toward children, in their intensity of engagement with individual children, and in their responsiveness to individual children's learning needs.

Results of this study suggest that providers who endorsed more of a dismissing attitude toward attachment were more likely to respond to children in harsh and punitive manners than provider's who valued attachment. In addition, providers who experienced more enmeshment with their early attachment figures in early childhood were more likely to be emotionally disengaged from children and their activities. No evidence was found to support the notion that providers who experienced attachment security in their early relationships were more likely to respond sensitively to children and little evidence was found to suggest that a provider's working model of attachment moderated the effectiveness of early childhood coursework on their caregiving sensitivity. Results of this study are discussed in relation to attachment-based sensitivity interventions in the parenting context that offer promise for improving the sensitivity of family child care providers and in relation to directions for future research on the PAAQ.

CHAPTER ONE

INTRODUCTION

Due to changes in social policies and the growing need for dual income families,

the United States has seen a marked increase in children's attendance in family child care

homes over the past 30 years (Johnson, 2005).[1] Consequently, a need was created for

comprehensive information about children's experiences in these settings. Emerging from

decades of research is now a firm understanding of the importance of family child care

provider sensitive and responsive caregiving for children's positive adaptation (Clarke-

Stewart, Vandell, Burchinal, O'Brien & McCartney, 2002; Howes, 1997; Loeb, Fuller,

Kagan, Carrol & Carroll, 2004; NICHD ECCRN & Duncan, 2003).

Indeed, infants rely on their primary caregivers to be sensitive to their cues and to

respond to their needs by soothing their distress (Bowlby, 1969/1982). This is true

whether the caregiver is the parent, another family member, or someone who is hired to

care for the child. As infants reach toddlerhood, they rely on their caregivers to be

sensitive to their needs for autonomy and mastery (Erikson, 1950) by encouraging their

exploration (Piaget, 1952) and by building upon their emerging skills (Vygotsky, 1978).

Children in child care also depend on their caregivers to be sensitive to the emotional

demands of group care by helping them to interpret their emotions and the emotions of

others and by facilitating their positive peer relationships (Rimm-Kaufman, Voorhees,

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[1] Family child care homes are defined as paid care, typically offered by one provider, to non-relative
children within a provider's own home (Morrissey, 2007).

Snell & La Paro, 2003). Family child care providers are certainly important caregivers in the lives of many young children and are in key positions to influence children's experiences through their sensitive caregiving practices.

Child care researchers who have applied an attachment framework (Bowlby, 1969/1982, 1973) to the study of family child care consider sensitive caregiving a necessary condition for children to develop secure attachment relationships with their providers (Howes & Spieker, 2008). That is, when children receive sensitive caregiving, especially during times of distress, children develop a sense of trust and security in the availability of their provider to meet their needs. This security reduces children's fears, enabling them to engage in exploration and learning with confidence (Howes & Ritchie, 2002) and enables children to manage their arousal (Howes, Matheson & Hamilton, 1994). In turn, confident exploration strengthens children's feelings of competency and facilitates their independent functioning (Birch & Ladd, 1997; Howes et al., 1994).

In his conceptualization of attachment theory, Bowlby (1969/1982, 1973) contended that the feelings and ways of interacting that children develop in their attachment relationship also become generalized and are carried forward into future relationships. Thus, children who have experienced sensitive and responsive caregiving are likely to approach other relationships as if they too will be positive, rewarding and helpful. This pattern of caregiving also teaches children that relationships are predicated on empathy and synchrony. Consequently, the prosocial ways of interacting that children learn in their secure attachment relationship are carried forward into other relational contexts enabling children to have more harmonious interactions with others (Weinfield,

Sroufe, Egeland & Carlson, 1999/2008).

The importance of sensitive and responsive caregiving to children's attachment security with their family child care providers has been demonstrated in a considerable amount of research. Ahnert, Pinquart and Lamb (2006) synthesized this research and found that provider sensitivity and responsiveness accounted for 37% of the variance in children's attachment security with their providers if they had not experienced interruptions in their care. Causal evidence is also drawn from Howes, Galinksy and Kontos (1998) who observed that when providers improved their sensitivity and responsiveness toward children, children were significantly more likely to move from an insecure to a secure attachment relationship with their family child care provider.

In turn, research has also demonstrated the importance of a secure family child care provider attachment relationship to children's well-being. For example, children with secure provider attachments have been found to be more engaged in activities, with learning materials, and in complex play (Howes & Hamilton, 1993; Howes, Rodning, Galluzzo & Myers, 1988; Howes & Smith, 1995; Howes & Stewart, 1987; Kontos, Howes, Shinn & Galinsky, 1995), and more likely to use their teachers as a resource for learning, allowing them to develop positive orientations to schooling (Birch & Ladd, 1997). Others have found that securely attached children act more empathetically, prosocially and less aggressively toward other children, and are better able to regulate their emotions and control their impulses (Howes, et al., 1994; Mitchell-Copeland, Denham & DeMulder, 1997). As a result, children with secure home provider attachments during toddlerhood have demonstrated better future peer and teacher

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relationships than children with insecure provider attachments (Howes, 1997; Howes, Hamilton & Phillipsen, 1998; Howes, et al., 1994).

Problem and Significance

Unfortunately, several studies have found that fewer than 50% of family child care providers act sensitively enough to the children in their care to form secure attachment relationships with them (Howes, et al., 1998; Howes, & Smith, 1995). Ahnert and her colleagues (2006) offer a somewhat more optimistic picture, finding that approximately 59% of providers offer care that enable secure attachments. It appears that lower-income children are at most-risk of receiving harsh care where children are threatened and scolded frequently to promote their obedient behavior or are at risk for receiving detached care where providers merely respond to children's custodial needs (Ahnert, et al, 2006; Elicker, Noppe & Fortner-Wood, 1999; Layzer & Goodson, 2006; Kryzer, Kovan, Phillips, Donagall & Gunnar, 2007; Raikes, Raikes & Wilcox, 2005). These are also the children who could benefit the most from sensitive caregiving (Peisner-Feinberg, et al., 2001) and who most frequently attend family child care settings (Morrissey, 2007).

These findings are particularly noteworthy in light of research that has also observed that children with insecure provider attachments are more likely to be aggressive toward other children (Howes & Aikens, 2002, Howes et al., 1994). They are also more likely to develop future teacher relationships that are marked with conflict or anxiety (Howes, et al., 1998) that deflect their attention from learning and negatively affect their school performance (Birch & Ladd, 1997; Piesner-Feinberg, et al., 2001).

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Given the importance of sensitive care to children's positive adaptation, child care researchers and policy-makers have focused attention on whether specialized child-related training can effectively improve a provider's capacity to provide sensitive and responsive care. This approach is grounded in the notion that providers who understand children's development will be better able to read children's cues, respond in supportive manners, and structure a developmentally appropriate environment. Correlational studies, however, have yielded mixed results, with some studies finding positive relationships between increased levels of formal early childhood education coursework and higher levels of provider sensitivity (Bordin, Machida & Varnell, 2000, Bromer, Van Haitsma, Daley & Modigliani, 2009; Burchinal, Howes and Kontos, 2002), while other studies have not found such relationships (Clarke-Stewart, et al., 2002; Kontos, 1994; NICHD ECCRN, 1996). Similarly, in-service training interventions specifically aimed at improving provider sensitivity have also been only inconsistently successful at improving their interactions with children (Howes, et al., 1998; Kontos, 1996; Kontos, Howes & Galinsky, 1996). These results have left policy-makers and those tasked with improving this important aspect of provider quality left wondering what to do.

Theoretical Framework

Attachment theory (Bowlby, 1969/1982, 1973) and research has provided a robust developmental framework for explaining variations in maternal sensitive caregiving behaviors (van IJzendoorn, 1995) and for explaining variations in the effectiveness of maternal sensitivity training interventions (Heinicke & Levine, 2008; Korfmacher, Adams, Ogawa & Egeland, 1997). This framework may be particularly useful, as well,

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for understanding differences in family child care provider caregiving sensitivity and for understanding differences in the uptake and application of child-related training and education to provider caregiving behaviors. Attachment theory posits that it is an adult's early experiences in childhood with their primary attachment figure and the evaluations they make of their early experiences that strongly influence their caregiving practices (Bowlby, 1973).

Bowlby (1969/1982, 1973) contended that through repeated interactions with their primary caregiver, children from mental representations of close relationships, which he referred to as internal working models of attachment. These working models contain affective postulates regarding the worthiness of the self, of the caregiver, and of the relationship and contain cognitive information processing rules that guide children's expectations and behaviors in both their attachment relationships and in other close relational contexts. Main, Kaplan and Cassidy (1985) have explained that as children reach adulthood, their working models become increasingly elaborated into a stable "state of mind with respect to attachment" (p. 62). This state of mind contains evaluations of an individual's early experiences and their impact on current functioning that either allow access to past and current relationship information, or through defensive information processing restrict an individual's access to relationship information. It has been further hypothesized that caregivers then draw upon their working model of attachment to interpret children's cues and to gauge a caregiving response (George & Solomon, 1999/2008, Main, et al., 1985).

The research literature describes four classifications of an adult's working model

of attachment that reflect differences in an individual's perceived interactional histories with their attachment figures, in the meaning they make of their early experiences, and in their current relationship information processing strategies (Main, et al., 1985). Classifications have been described by several different names depending on the measure used, but generally contain the same underlying constructs. For example, individuals described as *secure* have often experienced a loving and supportive early attachment relationship prompting these individuals to value relationships, which enable them to integrate past and current relationship related information into their consciousness. In contrast, individuals classified as *insecure-dismissing* have frequently experienced a rejecting early attachment relationship. To cope with this rejection, these individuals often block early attachment memories from consciousness or devalue the importance of attachment relationships. In an effort to avoid the anxiety associated with close relationships, they defensively exclude current relationship related information from consciousness. Individuals classified as *insecure-preoccupied* or *angry* have often experienced an inconsistent or unloving early attachment relationship and frequently appear so entangled in and actively angry over their early attachment relationship that they are not psychologically open to detecting current relationship information. Finally, those classified as *insecure-unresolved* or *vulnerable* have frequently experienced worry over or trauma in their early attachment relationship and become so overwhelmed with fear regarding relationships they tend to disengage from them (Lichtenstein & Cassidy, 1991; Main, Goldwyn & Hesse, 2002).

Within the parenting context, these different classifications have been found to

correspond to differences in maternal beliefs about caregiving (George & Solomon, 1996, Huth-Bocks, Levendosky, Bogat & von Eye, 2004), to maternal caregiving behaviors (van IJzendoorn, 1995), to the accuracy of a mother's perceptions of her infant's cues (Blokland, 1999), and to differences in infant attachment security (Main, et al., 1985; van IJzendoorn, 1995). Variations in maternal working models of attachment have also been found to predict maternal openness to taking up new relationship information learned in sensitivity training interventions and to variations in the likelihood that mothers will make improvements in their sensitivity and responsiveness to their children post intervention (Heinicke & Levine, 2008; Korfmacher, et al., 1997; Spieker, Solchany, McKenna & Barnard, 2000).

Research Questions and Term Definitions

Given the robust relationships found in the parenting context linking a mother's working model of attachment to her caregiving practices, this study sought to apply an adult attachment framework to the study of family child care providers to explore whether a provider's working model of attachment operates in the same manner as it does with mothers. Also following research in the parenting context that has observed differences in sensitivity intervention outcomes as a function of a mother's working model of attachment, this study as well explored whether a provider's working model of attachment influenced the relationship between her child-related training and caregiving sensitivity to help shed some light on the inconsistent relationships found in the research literature between child-related training and caregiving behaviors.

Drawing from Gerber, Whitebook and Weinstein (2007), family child care

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provider sensitivity has been defined in this study as a provider's "ability to recognize children's individual needs from the most basic to the complex and to respond contingently with a positive approach that scaffolds development and learning" (p. 328). It has been operationalized as a provider's overall emotional tone toward all children in the group, including (1) the degree to which they exhibited emotional warmth (also referred to as sensitivity), (2) the degree to which they exhibited emotional detachment, and 3) the degree to which they set a harsh and punitive tone in their program. Provider sensitivity was further operationalized as the (1) intensity with which a provider interacted with individual children, ranging from merely responding to children's custodial needs to elaborated interactions, and (2) the degree to which they responded to individual children's learning needs.

Consequently, this study was guided by four central research questions.

1. Are differences in working models of attachment in family child care providers related to differences in the degree to which they provide children with sensitive care?

2. Do working models of attachment moderate the relationship between a family child care provider's formal early childhood education coursework and her caregiving sensitivity?

3. Are there differences in working models of attachment between providers who hold good-standing child care licenses and those who hold negative child care licenses due to founded complaints regarding their harsh treatment of children or their lack of supervision of children?

4.   Do particular working models of attachment increase or decrease the risk of

negative licensing status?

Within parenting research, the most frequently used method of assessing an

adult's working model of attachment involves lengthy narrative interviews. However, this

research study departed from this methodology, and in an effort to gain measurement

efficiency, employed a self-assessment survey, the Perceptions of Adult Attachment

Questionnaire (PAAQ; Lichtenstein & Cassidy, 1991). Consequently, a secondary goal of

this study was to determine the validity of using this self-report questionnaire within the

family child care context to predict caregiving behaviors.

Significance of Study

The consistent and strong relationships observed between a mother's working

model of attachment and her caregiving behaviors (van Ijzendoorn, 1995) have prompted

calls from both attachment theorists and from child care researchers alike to extend this

line of inquiry into the child care context (Bretherton & Munholland, 1999/2008; Howes

& Spieker, 2008). Calls have also been made to explore whether a provider's working

model of attachment interferes with the effectiveness of professional development at

improving provider interactions with children. Howes and her colleagues (1998), after

administering an intensive caregiving sensitivity training intervention noted that a sub-

group of family child care providers remained harsh toward or detached from children

post intervention. They hypothesized that these providers may have had insecure working

models of attachment and that the training content may not have been compatible with

their prior beliefs about relationships, prompting them to resist taking up relationship-

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related information offered in training sessions. Consequently, the authors argued for additional research to explore these processes. However, while these calls to extend adult attachment research into child care have certainly been made, they have not yet been taken up creating a clear need for this research.

In part, this research gap may exist due to the field's heavy reliance on extensive and costly interviews to assess an adult's working model of attachment. In child care research, where large samples are needed to account for the wide variation in providers and in programs, the cost of administering these interviews may simply be too prohibitive. More importantly, even if extensive interviews were used, the practical significance of this research would remain questionable. That is, even if research indicated that a provider's working model of attachment, as measured by narrative interviews, strongly influences a provider's capacity to provide sensitive and responsive care and prompts her to rely on harsh or detached caregiving strategies, those tasked with improving provider sensitivity would gain little from this research. Indeed, interventionists would be unable to identify a specific provider's underlying working model unless they administered an interview to each provider with whom they worked. In a service sector that is dramatically under-resourced, this seems highly unlikely.

This study was designed instead to have practical utility. If the results of this study suggest that differences in provider working models of attachment, as measured by the PAAQ, can meaningfully predict insensitive caregiving practices or if particular working models increase the risk of holding a negative license due to child maltreatment or neglect, the cost-effective PAAQ may be used as a helpful screener or a tool for

resource allocation. Namely, it could be used to identify providers at risk of developing relationship difficulties with children and could be used to target preventative interventions toward these providers.

Another central premise to this research is that in order to promote more sensitive caregiving practices in family child care providers, it is important to understand precursors to individual differences in caregiving behaviors so that a set of theory-driven interventions directed at an underlying source of caregiving insensitivity can be developed and implemented with providers. If this study finds that an important source of variation in caregiving sensitivity stems from a provider's own attachment representations, interventions aimed at their underlying relationship-related defensive information processing strategies may be an important focal point for intervention. Within the parenting context, interventions that support mothers in exploring their own attachment histories and how these histories influence their interpretations of relationships and children's behaviors have been found to be effective at improving maternal caregiving sensitivity (Cassidy, Woodhouse, Cooper, Hoffman, Powell, et al., 2005; Cooper, Hoffman, Powell & Marvin, 2005). The results of this study may suggest that these types of interventions may offer promising approaches to improving family child care provider caregiving sensitivity as well.

Conclusion

Unlike in the parenting context, currently little is known about the psychological characteristics of family child care providers that support or constrain their abilities to provide sensitive and responsive care to young children. A central tenant of attachment theory is that caregiving behaviors are strongly influenced by a caregiver's own state of mind with respect to attachment formed, in large part, through their own early attachment experiences (Bowlby, 1973). Certainly, family child care providers have their own attachment histories. This study marks one of the first to explore if and how their attachment histories and the meaning they make of early relationships influence their interactions with children and contributes importantly to building a theory of attachment and caregiving for nonparental caregivers.

CHAPTER TWO

REVIEW OF LITERATURE

This chapter begins with a discussion of the context of family child care in the

United States and explores how it compares to and differs from maternal care and center-

based care. It proceeds with a discussion of how definitions of provider sensitivity have

been adapted from definitions of maternal sensitivity and explores the dimensions of

provider caregiving behaviors used to define provider sensitivity within the context of

this study. It follows with an exploration of what is currently known about provider

characteristics that influence their caregiving sensitivity and draws comparisons between

factors found to influence maternal sensitivity. The chapter then introduces key literature

related to working models of attachment from childhood through adulthood and discusses

the theoretical underpinnings of the intergenerational transmission model of attachment.

It proceeds with a discussion of different approaches to measuring an adult's working

model of attachment and the relationships between approaches and reviews the empirical

links between a mother's working model of attachment and her caregiving behaviors. The

chapter concludes with an examination of the validity of applying this construct to other

caregiving professionals including teachers and early childhood caregivers.

The Context of Family Child Care

Family child care homes are defined as a provider who is licensed by the state to

care for non-relative children, for pay, within their own home (Morrissey, 2007).[1] Family

child care homes are a unique developmental context for young children. They are

typically organized somewhere between a child's own home environment and care

provided in center-based settings. In many important ways however, family child care

providers organize their caregiving environments and practices in ways that more closely

resemble maternal care than center-based care.

For example, many family child care providers tend to identify with mothers and

view their primary responsibilities as serving as an alternative mother figure and

providing children with loving care. In contrast, many center-based teachers tend to

identify with elementary school teachers and view their primary responsibility as

enhancing children's academic skills (Howes & Matheson, 1992). In a recent national

study, providers reported that they believed family child care settings to be advantageous

over centers because of their small group nature. Providers often felt that this type of

caregiving environment enabled them to offer children more intimate and individualized

care in a manner similar to care children would likely receive from their mothers (Layzer

& Goodson, 2006). Confirming these beliefs, several studies have observed that family

child care providers offer more predictable and one-on-one care in comparison to center-

based teachers (Ahnert, et al., 2006; Howes & Matheson, 1992). In contrast, the large

group nature of center-based care, combined with organizational practices where children

experience many different teachers throughout the day (Le, Setodji & Schaack, 2009),

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[1] This discussion is restricted to licensed family child care homes regulated by the state and does not include a discussion of unregulated family child care homes, also referred to as family, friend and neighbor care or kith and kin care.

instead promotes care in centers that is much less predictable and individualized (Ahnert, et al., 2006; Howes & Matheson, 1992).

Family child care homes are simultaneously a business, a developmental context for children and a provider's personal family home. As such, work and home life frequently become intertwined resulting in daily child care activities less formally structured than in center-based settings. Much like in a child's own home, providers often intermingle child-related activities with household responsibilities (Howes & Matheson, 1992; Kontos, et al., 1995; Layzer & Goodson, 2006). This is contrasted against center-based settings where the entire day and physical environment is structured to be almost completely child-centered (Howes & Matheson, 1992).[2] Family child care providers, much like mothers who have multiple children, also must structure their caregiving and activities to meet the needs of children across developmental levels (Layzer & Goodson, 2006). This is juxtaposed against center-based settings where children are typically segregated by age and teachers are only called upon to meet the developmental needs of one age group.

Similar to mothers and unlike center-based teachers, family child care providers also provide care in environments that are typically isolated from other adults. Unless providers seek out avenues for social and professional support, which most do not, they usually do not have institutionalized avenues for feedback to inform and improve their

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[2] Child-centered care and individualized caregiving are considered two separate dimensions of caregiving behaviors. Child-centered care is defined as the structuring of daily activities, schedules and physical environments to focus on children's developmental needs as opposed to adult needs. Individualized care is defined as one-on-one interactions between providers and children where providers respond to children's unique needs.

work with children and to reduce their isolation (Kontos, et al., 1995). Nor do they have other adults present to constrain negative behaviors, such as yelling or ignoring children, from entering into their caregiving practices (Hamre & Pianta, 2004).

Because family child care providers typically place less emphasis on school readiness skills than do center-based teachers, a recent national study reported that most children in these settings spent much less time in goal-directed learning activities than did children in center-based settings (Layzer & Goodson, 2006). It was also noted that most providers infrequently played interactively with children and spent little time teaching social skills and facilitating children's conceptual development. However, there are also wide variations in children's experiences in family child care programs, with some children experiencing daily activities more typically found in center-based programs. For example, unlike mothers and more like center-based teachers, some providers subscribe to a more professional orientation to their "work" of caring for children (Layzer & Goodson, 2006; Kontos, et al., 1995). Consequently, this orientation combined with the demands of caring for multiple children, prompt some providers to structure more group routines and school-type activities, such as story-time and art projects, than mothers' structure for their children (Howes & Matheson, 1992).

Other studies have noted that children's experiences in family child care homes often vary as a function of a provider's training and education. These studies have observed that providers with more education tend to hold more professional views of their work and offer more child-centered care, provide activities that are more instructionally focused, and have more materials that support children's school-readiness

skills (Kontos, et al., 1995; Whitebook, Phillips, Bellm, Crowell, Almarez, et al., 2004). However, the Economic Policy Institute (Herzenberg, Price & Bradley, 2004) estimates that only 11% of family child care providers nationally hold bachelor's degrees or higher with the majority, 56%, holding a high school degree or less.

Importantly, as issues of children's school readiness and its links to child care quality have reached the attention of the public sector, many state- sponsored child care quality improvement initiatives have offered incentives to family child care providers to increase their education and to offer more instructionally oriented child care environments (Norris, Dunn & Dykstra, 2005; Zellman, Perlman, Le & Setodji, 2008). With the growing pressure for school readiness, it is quite possible that some providers who participate in these initiatives are reorganizing their approaches to the care they provide; moving from a more family-like, informal environment to one that more closely replicates a center with more attention paid to instruction.

Taken together, these findings suggest that family child care is a distinct developmental context for children that currently are organized somewhat closer to a child's own home environment than to a child care center. Less like center-based settings and more like mothers, they appear to place more emphasis on providing intimate, flexible and loving care to children and place less emphasis on academic instruction, although caring for groups of children often necessitates that providers structure some activities and routines in ways that are less flexible than parents and more like centers in order to maintain the functioning of the larger group (Layzer & Goodson, 2006; Howes & Matheson, 1992).

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In turn, many parents select family child care homes, particularly for very young children, for their intimate and family-like nature (Hayes, Palmer & Zaslow, 1990; Li-Gring & Coley, 2006; Whitebook, et al., 2004). Indeed, families often believe that family child care providers are in better positions to provide their children with loving care than are center-based teachers (Pence & Goelman, 1987) and rarely choose these settings to explicitly enhance children's school readiness skills (Layzer & Goodson, 2006). In addition, the cultural compatibility of child socialization techniques between providers and parents also weigh heavily into parents' decisions to send their children to family child care. In fact, many families opt for this type of setting so that providers can serve as cultural brokers during their absence (Faddis, Aherns-Gray & Klein, 2000; Kontos, Howes, Shinn & Galinsky, 1997; Layzer & Goodson, 2006). Consequently, it appears that families, in addition to selecting family child care homes for their cost and convenience (Morrissey, 2007), purposefully seek out these settings to as closely as possible replicate their own caregiving environments and practices.

Over the past 30 years, more and more children have begun spending large amounts of time under the care of family child care providers starting at very young ages (Johnson, 2005). This caused substantial concern for many attachment theorists who feared that the prolonged separation of children from their mothers would interrupt the security of children's attachment relationships with their mothers and would have negative developmental consequences for children, particularly with respect to their social-emotional development (Bowlby, 1973). This concern led to decades of research on the topic. While most research has now converged around the idea that child care, in

and of itself, does not damage the mother-child attachment relationship (Howes &

Spieker, 2008), this body of research also served to illuminate the wide variations in

children's child care experiences. Noting the similarities in the caregiving roles and

environments between family child care providers and mothers, child care researchers

ironically drew from attachment principles and research to define potentially important

sources of variation in children's child care experiences; namely "caregiving sensitivity"

that was found to be meaningful in the parenting context (Ainsworth, Behlar, Waters &

Wall, 1978; de Wolff & van IJzendoorn, 1997).

Defining Family Child Care Provider Sensitivity

Within parenting literature, maternal sensitivity has been broadly defined in terms

of a mother's ability to read her child's cues, to respond promptly, appropriately and

contingently especially in times of children's distress, and to cooperate with children's

exploratory behaviors (Ainsworth, et al., 1978). However, mothers and child care

providers do play different roles in children's lives and provide care in different contexts.

These differences have prompted adaptations in the definition of caregiving sensitivity

when applied in the child care setting.

Similar to mothers, providers are called upon to keep children emotionally and

physically safe and healthy. However, more so than with mothers, they are called upon to

act as teachers by structuring environments for learning and facilitating children's active

engagement in it.[3] Because of the nature of group care, providers, (perhaps more so than

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[3] Whether or not family child care providers believe this is their role, public focus on school readiness in
many ways is increasingly forcing this role upon family child care providers (Zellman, et al.,

mothers) also must help children interpret their emotions and the emotions of others to facilitate children's positive relationships with peers in order to maintain a pleasant environment. Consequently, their facility with these different roles has been incorporated into definitions of provider sensitivity. Gerber and her colleagues (2007) define it as a provider's "ability to recognize children's individual needs from the most basic to the complex and to respond contingently with a positive approach that scaffolds development and learning" (p. 328).

This definition clearly draws from definitions of maternal sensitivity with its emphasis on reading children's cues and being responsive to them. However, the definition moves beyond cooperating with children's exploration to the active involvement of providers in facilitating children's learning and development to suit the emphasis in child care as a more formal learning environment. It also departs from traditional definitions of maternal sensitivity (see Hesse, 1999/2008) by emphasizing the affective quality of the provider. Interestingly, some attachment theorists have argued that maternal sensitivity should also be reconceptualized to include both affective sensitivity and maternal teaching behaviors as well (Easterbrooks & Biringen, 2005; Tavecchio & van IJzendoorn, 1987).

Other important differences exist in the caregiving contexts between mothers and child care providers that have prompted some researchers to make further adaptations in the definition of the *form* that sensitive caregiving takes in the child care setting.

2008).Consequently, definitions of provider sensitivity and measures used to assess sensitivity place substantial emphasis on their sensitivity to responding to children's learning needs.

Attachment theory (Bowlby, 1969/1982) contends that the unique interactional histories, and particularly the degree of sensitivity that a mother exhibits to a *particular* child, form the basis of attachment relationship quality. Within the home caregiving context, mothers typically interact and respond to only one child and potentially to that child's siblings. As such, maternal sensitivity has been operationalized within dyadic terms. However, within the child care setting, providers have the responsibility of caring for multiple children.

Some researchers have chosen to maintain the fidelity of Bowlby's (1969/1982) original theory and have defined provider sensitivity within dyadic terms describing it as the "one-on-one positive caregiving behavior [that] provides prompt and adequate responses to individual needs" (Ahnert, et al., 2006, p.667). This definition is evidenced in studies employing *The Adult Involvement Scale* (AIS; Howes & Stewart, 1987). This scale rates the intensity and adequacy of adult involvement with a particular child ranging from low-level involvement where providers often ignore a child or merely respond to their custodial needs to high level involvement where providers engage with a child in activities and elaborate on their social cues to promote learning. Another example, the *Observational Record of the Caregiving Environment* (ORCE; NICHD ECCRN, 2001), broadly measures a provider's positive and negative regard toward a child, their stimulation of a child's development, their intrusiveness, detachment, and sensitivity to a child's non- distress signals, their fostering of a child's exploration, their stimulation of language and their flatness of affect.

Other child care researchers, however, have conceived of provider sensitivity as a function of their group-directed behaviors; namely, how well a provider creates an

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overall tone of emotional availability to all children in the group. The most frequently used measure of group-directed provider sensitivity is the *Caregiver Interaction Scale* (CIS; Arnett, 1989). The CIS broadly measures a provider's warmth, punitiveness (including their hostility and harshness), detachment, and permissiveness.

Looking specifically at child care setting features, Ahnert and colleagues (2006) demonstrated that when adult to child ratios in child care settings were 1:3 or below, dyadic sensitivity and group focused sensitivity demonstrated similar relationships to children's attachment security with their providers, with each explaining approximately 30% of the variance. Each increase in ratio and group-size, however, significantly reduced the relationship between dyadic sensitivity and attachment security while the relationship between group-focused sensitivity and attachment security remained constant in light of increased ratios and group sizes. The authors contended that within the context of small group care, sensitive caregivers appear to respond individually to most social bids from children. Within larger group care, this type of individualized sensitivity and responsiveness is less possible, serving to decrease the strength of the relationship between dyadic sensitivity and attachment security. This attenuated relationship has also been noted in families with many children (Ahnert, Meischner & Schmidt, 2000). Importantly, children in large group care have adapted to this type of caregiving setting and are able to feel emotionally secure in the availability of their providers through the overall emotional tone the provider exhibits to the group at large.

These frequently used measures of provider sensitivity also place different emphasis on caregiver behaviors thought to be important to the construction of secure

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provider attachments. For example, the AIS has not been specifically designed to tap into a provider's affective quality but instead emphasizes a provider's responsiveness to children's cues and their active involvement in children's activities and in their learning (Elicker, et al., 1999). In contrast, the CIS places almost all of its emphasis on the affective tone of the provider and places significantly less emphasis on their active engagement in children's activities and learning. Several studies have demonstrated that both high levels of provider responsive involvement (r= .44) and affective sensitivity (r=.39) influence children's attachment security with their providers with the same relative strength (Elicker, et al., 1999; Kontos, et al., 1995). Similarly, high levels of provider unresponsiveness (r= .37) and of provider detachment (r= .28) have also shown similar relationships to children's attachment insecurity with their providers (Elicker, et al., 1999; Kontos, et al., 1995). While more research is clearly needed, results do point to the idea that these two types of provider behaviors that encompass provider sensitivity more broadly are functioning in the same manner.

Ultimately, highly sensitive providers are able to maneuver artfully between monitoring and responding to the needs of individual children and to the needs of the whole group (Howes & Spieker, 2008). By taking child centered views, they are also able to integrate multiple sources of information, including children's cues, cultural practices, interests and developmental levels, into their decisions about if, when and how intensively to respond to children and scaffold their experiences. In turn, this sensitivity results in highly synchronized interactions between providers and children (Rimm-Kaufman, et al., 2003). Sensitive providers are also able to help children navigate the

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demands of group care (Howes & Ritchie, 2002; Rimm-Kaufman, et al., 2003). By helping children positively manage their relationships and maintain harmonious interactions, providers are able to create an overall positive, security-enhancing, social-emotional tone in their programs (Howes & Ritchie, 2002; Pianta, 1999).

Ecological Correlates of Caregiving Sensitivity

Given the importance of family child care provider sensitivity to children's attachment security with their providers and thus to positive child adaptation (as described in Chapter 1), a relatively small body of research has investigated the ecological correlates of provider sensitive caregiving (Gerber, et al., 2007). The majority of existing studies have typically draw from a center-based framework and have focused their inquiries on factors that can be more easily regulated and improved through policy levers, such as group sizes and ratios and provider training and education (see next section). While lower ratios and group sizes appear to enable provider sensitivity with very young children, in so much as infants require more attention than do preschoolers, their effects on provider sensitivity seem to diminish as children get older (Kontos, et al., 1995; NICHD ECCRN, 2000).

Some research attention has also been paid to whether particular children elicit different types of caregiving behaviors from their providers. However, links between provider sensitivity and children's temperament and between provider sensitivity and the quality of children's attachment relationships with their mothers, which influences children's initial behaviors toward their provider (Howes & Oldham, 2001), have not been found (Elicker, et al., 1999; Hamilton & Howes, 1992). At least one study has also

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reported that child care providers tend to offer similar types of care across all children in their program (Sagi, et al., 1995) lending additional validity to using measures of group-focused sensitivity. Taken together, these results, similar to those found in the parenting literature (Main, Hesse & Kaplan, 2005), suggest that provider sensitivity may be more influenced by attributes that providers bring to their relationships with children than with what children elicit from their providers.

Consequently, the following review of literature explores what is currently known about the relationships between provider characteristics and their sensitive caregiving behaviors. Results of these studies are discussed in relation to the striking similarities in the factors found to influence maternal sensitive caregiving and factors found to influence family child care provider sensitive caregiving.

Psychological Characteristics

Within parenting literature, much research attention has been paid to the psychological characteristics that mothers bring to their interactions with children and thus to child adaptation (Hammen, 2003; van IJzendoorn, 1995). Given the commonalities between family child care providers and mothers discussed previously, the lack of research attention paid to family child care provider psychological characteristics is quite surprising (Gerber, et al., 2007).

To date, the NICHD Study of Child care and Youth Development is one of the only studies to explicitly investigate aspects of a provider's mental health, namely their depressive symptomologies, on caregiving sensitivity. This research was guided by findings in the parenting context that have consistently shown maternal depression to be

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linked to decreases in sensitivity toward detecting children's signals, to less engagement

with children, and to increases in caregiving intrusiveness and negative interactions with

children (Lovejoy, Graczyk, O'Hare & Neuman, 2000). Using data from NICHD, Hamre

and Pianta (2004) observed that child care provider depression across child care settings

also predicted substantially lower levels of positive verbal interactions, and more

withdrawal from and negativity toward children. The authors also demonstrated that

family child care provider depression exerted significantly stronger influences on their

negative interactions toward and withdrawal from children then it did with center-based

teachers.

Several other studies in family child care, while not looking explicitly at provider

psychological health, investigated provider internal belief systems, including their beliefs

about how to care for young children. This research was guided by findings in the

parenting literature that have observed relationships between maternal sensitivity and

parenting styles (e.g. authoritarian, permissive, authoritative and disengaged), a construct

conceptually similar to caregiving beliefs (Gerber, et al., 2007). Child care research, too,

has consistently reported that providers who hold more child-centered beliefs are more

sensitive, responsive and engaged with children while providers who hold more

authoritarian child-rearing views are more negative toward and detached from children

(Clarke-Stewart, et al., 2002; Kontos, et al., 1995; NICHD ECCRN, 1996; NICHD

ECCRN, 2000; Owen, Ware & Barefoot, 2000). Several of these studies have noted that

these beliefs exert even stronger influences on family child care provider sensitivity than

they do on center-based teacher sensitivity (NICHD ECCRN, 1996; NICHD, 2000).

These combined findings may be explained by organizational differences between family child care homes and center-based settings. Within child care centers, there are multiple caregiver belief systems in operation and social pressures to act in appropriate ways when other adults are present (Clark-Stewart, et al., 2002; Constantino & Olesh, 1999; Hamre & Pianta, 2004). These factors appear to constrain the influence of an individual teacher's psychological dispositions and beliefs on their practice more so than in family child care, where providers are usually the only adult in the program.

<center>Provider Training and Education</center>

Another provider characteristic frequently examined in relation to the care they provide is a family child care provider's level of training and education. Training and education is typically conceived as a multi-dimensional construct that includes formal education (degree), child-related training (community workshops and early childhood coursework), and experience (Maxwell, Field & Clifford, 2006). Theoretically, it is assumed that providers with more of these attributes will be better able to interpret children's behaviors, respond appropriately to their needs, and structure a developmentally supportive environment. Training providers to offer more responsive care is consistent with work in the parenting context where some maternal training interventions have been found to effectively improve maternal sensitivity (Velderman, Bakersmans-Kranenburg, Juffer & van IJzendoorn, 2006; Ziv, 2005). The body of research examining the effects of provider training and education on their sensitivity has been quite mixed, with training appearing to demonstrate *somewhat* more consistent relationships to provider sensitivity than experience or education.

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For example, Bordin and her colleagues (2000) observed that when providers had more specialized training, they also had more knowledge of infant development and subsequently were less harsh toward and detached from children. Using a combined index, they also found that the more educational risk factors a provider presented, including having less experience, fewer training hours, no college degree and less knowledge of infant development, the more likely they were to act negatively toward children.

Other research has corroborated the importance of specialized child-related training to provider sensitivity (Bromer, et al., 2009; Burchinal, et al., 2002, Kontos, et al., 1995; Kryzer et al., 2007) with early childhood education coursework appearing to more strongly influence provider sensitivity with preschool-aged children (NICHD ECCRN, 2000), when sensitivity is more focused on responding to children's academic needs. Providing some evidence for a causal model, Howes and her colleagues (1998) found significant improvements in provider sensitivity after a short-term training aimed at improving provider interactions with children.

However, other studies have not found such relationships. For example, Clarke-Stewart and her colleagues (2002), Kontos (1994), and Zellman and her colleagues (2008) did not report any relationships between more early childhood education coursework or more in-service training completed and higher levels of sensitive and responsive involvement. Similarly, Kontos and her colleagues (1996) found no improvements in provider sensitivity or decreases in detachment or harshness after providers completed a training specifically focused on improving their interactions with

children.

Additionally, most research has noted no differences in provider sensitive caregiving behaviors between providers with more experience and those with less experience (Bordin, et al., 2000; Clarke-Stewart, et al., 2002; Kontos, 1994; Kryzer, et al., 2007; NICHD ECCRN, 1996; NICHD ECCRN, 2000). The one notable exception comes from Kontos and her colleagues (1995) who found that the more experience a provider had, the more likely they were to be harsh in their interactions and detached from children.

Research has also frequently noted a lack of direct relationships between having more formal education and more sensitive caregiving behaviors (Clarke-Stewart, et al., 2002; NICHD ECCRN, 1996, NICHD ECCRN, 2000). Although other research has indicated a formal degree may moderate provider, setting and policy risks to caregiving sensitivity. For example, Hamre and Pianta (2004) found that depressed providers with more formal education were able to be more sensitive to the children in their care than their depressed counterparts with less formal education, a finding that has also been replicated in the parenting context (Hammen, 2003). Raikes and her colleagues (2005) found risks to provider sensitivity when providers cared for more children living in poverty and when they were governed by less stringent licensing regulations. They also determined that a provider's education level moderated these relationships, with higher education increasing the sensitivity of providers in these conditions.

Mutually Influencing Factors

Drawing again from parenting literature that has found a relationship between

more supportive parenting and higher levels of social support (Belsky & Barends, 2002), Kontos and her colleagues (1995) took a more complex look at the interplay among training and education, social support, and other provider characteristics and demonstrated that highly sensitive providers had a constellation of mutually influencing factors. Namely, providers who had more training were also more likely to: 1) have modern and less authoritarian child-rearing beliefs, 2) join professional groups, which provided them with social support and professional codes of conduct, 3) have greater feelings of professionalism and dedication to the field, and 4) be intentional in their program planning and practices. All of these factors mutually conspired with one another and contributed to these providers being more sensitive to children and more responsive to their developmental needs. Unfortunately, the correlational design of this study did not allow for an understanding of whether, through their education, providers developed more of a professional orientation and adopted the values and beliefs of the profession or if, for example, providers developed child-centered beliefs in other relationship contexts and then were motivated to seek out training and professional affiliations that reinforced their beliefs. Regardless, these results confirm Phillip's (1987) maxim "good things go together."

<div align="center">Low Wage Work</div>

Interestingly, research has not sufficiently examined the intersection between a family child care provider's home life and her interactions with children. This is particularly surprising given that providers care for children within the context of their home lives. The one ecological factor studied that does attempt to draw some connection

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between family and work life is a provider's family income. This research is guided by work in the parenting context that has found that lower job status (Raver, 2003) and economic stresses are related to less supportive parenting (Mistry, Vandewater, Huston & McLoyd, 2002). The economic challenges faced by many providers, given the nature of their low-wage work, have also consistently been found to impact provider interactions with children. Several studies have noted that providers with higher family incomes (Helburn, Morris & Madigliani, 2002) and who charge more (Helburn, 1995; Kontos, et al, 1995) are more likely to have sensitive interactions with children and are less likely to be harsh toward or detached from children than are providers with lower-incomes and who charge less.

Research has not fully described the processes through which a provider's income influences her caregiving behaviors. It is perhaps reasonable to assume that the stresses of economic hardship create anxiety that make attending to children's needs more difficult (Mistry, et al., 2002). Alternatively, it could be that providers who are willing to charge more have greater feelings of self-efficacy that also allow them to feel confident as caregivers and enable them to be more responsive to children; a process that has been described in the parenting context (Biringen, Matheny, Bretherton, Renouf & Sherman, 2000a). Surely, there are multiple ways in which low-wage work influences provider behaviors, but likely their effects are mediated through a provider's internal emotional system.

Taken together, it appears that many of the factors found to influence maternal sensitivity operate in a comparable fashion to influence family child care provider

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sensitivity. This research also suggests that in care contexts where there is typically only one adult present, such as in maternal care or in family child care, individual caregiver psychological characteristics and belief systems influence caregiver behaviors more substantially than in care contexts where there are multiple adults present. Consequently, looking to other psychological characteristics which have been found to influence maternal sensitivity, including internal belief systems, may be particularly useful for explaining variations in provider sensitivity.

<div align="center">Belief Systems</div>

Teacher education research within the elementary and secondary school setting has had a long tradition of studying the influence and origins of teacher beliefs. Richardson (1996) suggests that deeply held teacher beliefs about children, how they learn and how instruction should occur, which strongly influence teacher practices are, in part, formed through a teacher's early experiences being a student. Several studies have also observed teachers' unwillingness to take up new information and adopt new classroom practices unless they are compatible with their already established belief systems (Bowman, Donovan & Burns, 2001; Horppu & Ikonen-Varila, 2004; Kennedy, 1997). Adapting Richardson's argument to the family child care context where provider practices are more focused on care than instruction, it follows that a provider's personal experiences in receiving care will influence her beliefs about relationships with children and shape her caregiving practices. It is possible that these beliefs also influence a provider's willingness to take up new information learned through training efforts and could provide an explanation as to why training has been only inconsistently successful at

improving provider sensitivity.

Attachment theory (Bowlby, 1969/1982, 1973) provides a framework in which to understand how an individual's early care receiving history shapes psychological adjustment and beliefs about relationships and influences caregiving practices. In fact, a robust research literature exists in the parenting context that strongly links a mother's perceptions and feelings about her early attachment relationships to her beliefs about her child and how to care for her child (George & Solomon, 1999/2008) as well as to her actual caregiving sensitivity and responsiveness (van IJzendoorn, 1995). Family child care providers do form attachment relationships with the young children in their care (Ahnert, et al., 2006; Howes & Spieker, 2008). Family child care providers and mothers also provide similar types of care in similar caregiving environments. Consequently, an attachment framework may be especially useful in understanding variations in provider sensitivity.

Attachment Theory

Bowlby, in his conceptualization of attachment theory (1969/1982, 1973), contended that the beliefs and ways of interacting in relationships that are formed in an individual's early attachment relationship influence their later psychological adjustment and serve as a template for their participation in future relationships, including their caretaking relationships. To explain these processes, he organized attachment theory around three core constructs: behavioral-motivation systems, internal representational systems, and defensive processes.

Bowlby (1969/1982) contended that children's innate attachment system,

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motivated by the set-goal of achieving felt security with an attachment figure especially in times of perceived threat, interacts with their exploratory system, with the set goal of interacting with the world. Children's behaviors, such as tracking, crying, locomotion and communication are the observable elements of the attachment system and indicate its activation. By being consistently open and responsive to children's attachment behaviors and providing comfort to children's distress, attachment figures instill children with the necessary security in their availability if need arises for children to actively explore their environments, including other relationships. However, he acknowledged that not all children are instilled with such confidence and instead are anxious and insecure over their caregiver's availability to provide comfort and he argued that this insecurity is directly related to their attachment figure's recurrent caregiving behaviors.

<div align="center">Internal Working Models of Attachment</div>

Bowlby (1973) proposed that recurrent interactions between children and their attachment figures form the basis of attachment security through their "translation of interaction patterns into relationship representations" (Bretherton & Munholland, 2008, p.102), which he referred to as internal working models. He contended that infants assimilate the outcomes of their repeated attempts at closeness with their attachment figures into cognitive structures to create working representational models of their attachment relationship, which infants then use to make predictions about their caregiver's whereabouts and their likely responses. As children develop, repeated attachment related interactions then become abstracted into affective postulates regarding who the caregiver is, what the relationship means, and who the child is to the caregiver.

As children continue to develop, their working models become further organized into a set of unconscious information-processing rules (Main, et al., 1985). These rules serve to guide children's attention regarding what information in the environment and in the relationship should be attended and serve to shape children's interpretations of attachment-related experiences. These rules then direct children's attachment behaviors in response to their caregiving environment (Ainsworth, et al., 1978; Bowlby, 1973; Main, et al., 1985) by either optimizing exploration, (and in turn, development) or by compromising exploration, including the exploration of other relationships (Weinfield, et al., 1999/2008). Initial working models are also thought to provide a generalized script regarding how close relationships operate and how to participate in them that are carried forward into children's assessments of and interactions in future relationships (Berlin, Cassidy & Appleyard, 1999/2008).

<div align="center">Attachment Patterns</div>

Attachment theory and research have demonstrated that children have individual differences in how they behave in their attachment relationships and in how they form working models of attachment. The most common ones have been conceptualized by Mary Ainsworth (Ainsworth, et al., 1978) and expanded by Mary Main (Main & Solomon, 1986) and are described here.

Secure

The secure relationship working model fits the description provided earlier with children able to deploy attachment behaviors and receive comfort from an available and responsive attachment figure. This emotional security in their caregiver's availability

enables children to confidently explore their environments (Ainsworth, et al., 1978) and cope with and manage their arousal (Weinfield, et al., 1999/2008). According to Bowlby (1973), when caregivers are able to read children's cues and respond to children's attachment behaviors effectively and in a predictable manner, children also learn that their actions have their intended effect, thus instilling confidence in their own self-efficacy in the world. Correspondingly, when children can effectively use their caregivers as a secure-base for exploration, they are provided with continued opportunity for mastery of their environments, thus reinforcing feelings of confidence and self-efficacy, further promoting independent functioning. Consequently, children construct working models of their caregivers as available, of the self as worthy of care and competent in the world, and of the relationship as satisfying. Thus, Bowlby claimed, children will be more likely to approach other relationships as if they, too, will be positive and rewarding serving to reaffirm the value of relationships.

Contrastingly, insecure working models develop when children's attachment behaviors are met with rejection or unpredictability thus creating anxiety over their caregiver's availability to meet their needs (Bowlby, 1973). Insecure working models adapt to these caregiving conditions by forming defensive information processing rules to reduce this anxiety and, in some cases, to maximize a caregiver's availability (Main & Hesse, 1990). Three insecure working models have been identified in the literature: avoidant, resistant (Ainsworth, et al., 1978) and disorganized (Main & Solomon, 1986).

Avoidant

Children who have experienced rejecting or harsh care when exhibiting

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attachment behaviors, instead of being satisfied in their relationship, live with chronic anger over their caregiver's rejection (Bowlby, 1973). Children who have experienced this type of care tend to form insecure-avoidant attachments (Ainsworth, et al., 1978) where their working model rules adapt to defensively exclude the content of the relationship as attending to the relationship in light of a rejecting caregiver would be too painful (Bowlby, 1973). Consequently, their attachment behavioral strategy adapts to direct few attachment behaviors toward their caregiver in lieu of an inflexible attendance to the environment, in order to minimize their rejection (Ainsworth, et al., 1978). Main and Hesse (1990) have further explained that their working model rules also adapt to restrict the evaluation of what constitutes threat, with the goal of minimizing arousal, so that when a real threat does arise and children do exhibit attachment behaviors, an attachment figure will be more likely to respond. In response to these caregiving conditions, children construct working models of their caregiver as rejecting, of their relationship as threatening and of the self as unworthy of care. These children are then more likely to approach other relationships as if they, too, will be hostile and unsatisfying (Bowlby, 1973) thus reinforcing their beliefs about relationships.

Resistant

Children who have experienced erratic and unpredictable care when exhibiting attachment behaviors live with chronic anxiety over abandonment (Bowlby, 1973) and tend to develop insecure-resistant attachments with their caregiver (Ainsworth, et al., 1978). Main and Hesse (1990) have argued that children who have experienced this type of care have defensive working model rules that serve to amplify threat, subsequently

amplifying distress, in an attempt to assure that protection will be provided if a real threat presents itself. Consequently, these children adapt an attachment behavioral strategy focused on keeping a careful watch over their caregiver's whereabouts (Bowlby, 1973; Ainsworth, et al., 1978). This psychological preoccupation with their attachment figure restricts exploratory behaviors (Ainsworth, et al., 1978), which combined with feeling ineffectual at eliciting consistent care, further compromises their feelings of self-efficacy and competence. Consequently, children construct working models of their caregiver as unavailable, of the caregiving relationship as unpredictable, and of the self as unworthy of care and inefficacious in the world. While these children may seek closeness in other relationships, their participation in an uncoordinated and unpredictable attachment relationship, combined within their consistently heightened emotional arousal, compromises their abilities for relationship synchrony (Weinfield, et al., 1999/2008).

Disorganized

Children who experience frightening (Main & Solomon, 1990) or abusive (Zeanah & Smyke, 2005) care when in distress are confronted with the unresolvable situation of having to seek comfort from the actual source of their fear (Main & Hesse, 1990). This situation leaves many young children behaviorally confused and without an organized behavioral strategy to cope with their attachment relationship (Main & Hesse, 1990). Consequently, these children tend to form attachments with their caregivers referred to as disorganized (Main & Solomon, 1986). As children mature, their behaviors become more organized to reflect a reversal of the parent-child role in an attempt to provide themselves with a secure-base to protect themselves from the fear and dread

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associated with a frightening or absent caregiver (Goodman, 2007).[4]

<p style="text-align:center">Continuity of Working Models of Attachment into Adulthood</p>

A central idea in attachment theory is that adult behaviors strongly influence a child's working model of attachment and their subsequent behavioral patterns. Bowlby (1973) invoked the term "working" to imply that models are subject to revision, although Main and her colleagues (1985) have argued that this only occurs in light of stable changes in caregiving patterns. There also appears to be a strong tendency toward consistency in the quality of parent-child interactions across development (Crowell, Fraley & Shaver, 1999/2008), particularly for middle-class families where contextual factors that reduce life stresses enable such stability (de Wolff & van IJzendoorn, 1997). This continuity, in turn, creates working models that become increasingly more resistant to change as children develop into adults (Bretherton & Munholland, 1999/2008).

Among other things, Bowlby (1973) described the function of a secure attachment relationship as enabling a child and subsequently an adult, to develop a coherent sense of self and other. He explained that through the provision of sensitive caregiving in early childhood, children learn that they are valued, that relationships are give and take, that their caregiver has intentions and goals of their own, and that children are distinct from, yet intimately connected with their attachment figure. This prompts children to move into a goal-corrected partnership with their caregiver where the relationship becomes more two-sided, with children increasingly able to invoke the perspective of their attachment

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[4] A complete overview of disorganized attachment is beyond the scope of this paper, the reader is pointed Deklyen and Greenberg (1999/2008) for a more comprehensive discussion.

figure as well as their own to negotiate inevitable social conflict. In many ways, this sets

the stage for children, as they reach adulthood and develop formal operational thought

(Piaget, 1968), to integrate multiple sources of information into the meaning they make

of their experiences to allow a more coherent and balanced perspective of themselves and

of their attachment relationships.

Main and her colleagues (1985) contend that as children reach adulthood, their

working models of attachment become further organized into a stable "state of mind with

respect to attachment" (p.67). Following Piaget (1968), Bowlby (1973) claimed that

formal operational thought allows adults to step outside of their attachment relationship

and to think about and reflect upon it. Consequently, Main and her colleagues (1985)

theorize that an adult's state of mind with respect to attachment contain representations

and evaluations of one's self, of one's attachment figure and of the relationship between

the two, and evaluations of an individual's early experiences and their perceived impact

on current functioning (Main, et al., 2005). They posit that these evaluations are then

organized further into a set of information processing rules that allow or restrict an

individual's access to past and current relationship information.

Thus, individual differences in an adult's working model of attachment are

reflected in differences in their evaluations of their attachment figures, in their

evaluations of their early experiences, and in their differential access to past attachment

memories. That is, adult's with secure working models are expected to have access to

attachment-related memories and demonstrate a connection and coherence of thought

between past and present and self and attachment figure that contribute to a balanced and

believable portrayal of their experiences (Bowlby, 1973). In contrast, individuals with insecure working models are expected to employ defensive information processing strategies to limit access to past relationship information in order to cope with the anxiety associated with having an attachment figure who failed to provide a secure-base (Crowell, et al., 1999/2008). In turn, this restriction of memories limits the coherency and balanced portrayal of the self, attachment figure and early experiences (Hesse, 1999/2008; Main, et. al., 2005).

One of the primary methods used to assess an adult's working model of attachment is the Adult Attachment Interview (AAI; George, Kaplan & Main, 1985/1995; Main, et al., 2002) which has been designed to "surprise the unconscious" by querying individuals about their life histories to reveal their evaluations of their early attachment relationships and their underlying relationship-related information processing rules (Hesse, 1999/2008). Similar to infant attachment classifications, the AAI classifies adult working models into four categories: secure-autonomous, insecure-dismissing, insecure-preoccupied and unresolved. The later three reflect specific early experiences and specific defensive information processing strategies an individual employs to limit access to relationship information.

Secure-Autonomous

Adults classified as secure-autonomous, when queried about their attachment histories, demonstrate an ability to integrate both positive and negative early experiences into a coherent and internally consistent narrative that reflects their valuing of attachment (Main, et al., 1985). These individuals have easy access to memories and feelings of early

attachment relationships, with many holding images of security-restoring attachment

figures as solutions to distress (Waters & Rodriques, 2001). Simultaneously, their

narratives reflect their abilities to represent what was in the mind of their attachment

figures, consider the circumstances under which their attachment figures cared for them,

and to integrate this information into the meaning they make of their attachment histories

to provide a balanced and reflective account of themselves, their attachment figures and

their experiences. In turn, they are able to present themselves as autonomous from, yet

connected to the important others in their lives (Main, et al., 2005).

Dismissing

In contrast, adults classified as dismissing tend to devalue or derogate early

attachment relationships and deny the influence that early relationships have had on their

current functioning. This is noted in the interview transcripts of many dismissing adults

who describe their early experiences as rejecting, unloving, or neglecting, and describe

themselves as independent and unaffected by others. At the same time, these individuals

also provide inconsistent evaluations of their attachment histories by simultaneously

providing idealized accounts of their attachment figures and their early experiences with

many insisting upon lack of recall of specific memories to substantiate these evaluations

(Hesse, 1999/2008).

Bowlby (1980) proposed that in order to cope with the rejection of an attachment

figure, dismissing individuals use cognitive deactivation as a defensive information

processing strategy to scan, sort and exclude painful relationship information. The

averting of conscious memories and painful emotional content prevents them from being

integrated into working models and ultimately prevents them from being experienced

(Mukulincer & Shaver, 1999/2008). The representation of an idealized childhood then

serves as a strategy to replace painful memories with ones that are more manageable,

allowing dismissing adults to maintain behavioral and emotional organization (George &

Solomon, 1999/2008). Consequently, their coherency in integrating their experiences

fully into their evaluations of their attachment histories, into their sense of self, and other

is compromised.

Preoccupied

Many individuals classified as preoccupied, when queried about their early

attachment relationships, indicate that their early experiences were associated with role-

reversing attachment-figures where children often had to attend to parental needs as

opposed to the reverse (Crowell, et al., 1999/2008). In turn, preoccupied individuals

appear enmeshed in their early and current attachment relationships, with many

individuals confusing past and present and self and attachment figure. Many demonstrate

further cognitive confusion by oscillating between anger and passivity and negative and

positive evaluations of their childhood (Main, et al., 2005).

Bowlby (1973) contended that preoccupied individuals employ cognitive

disconnection as a defensive information processing strategy to cope with the rejection of

an attachment figure. Cognitive disconnection allows some feelings and thoughts related

to attachment to be remembered and felt while some are excluded. The blocking of some

events and feelings prevents individuals from having to see the bigger picture and

acknowledge rejection from their attachment figure (George & Solomon, 1996).

However, the cognitive splitting that allows some feelings and events to be remembered compromises their abilities to deactivate their attachment system (George & Solomon, 1999/2008) creating a condition of chronic attachment anxiety and emotional arousal (Mikulincer & Shaver, 1999/2008). Consequently, this prompts preoccupied individuals to continue being enmeshed in their early experiences, compromising their development of an autonomous sense of self in relation to their attachment relationships. This process also prevents individuals from fully integrating their experiences into their working models, constraining their abilities to stand outside of their relationship to provide a coherent and balanced evaluation of themselves, their attachment figures, and their early experiences (Hesse, 1999/2008; Main, 1990).

Unresolved

Individuals receiving a classification of unresolved report attachment related trauma or abuse during early childhood or beyond. When this topic is explored, individuals show marked lapses in reasoning, for example by suggesting that a dead person is alive or 10 years ago was yesterday (Hesse, 1999/2008). Bowlby (1973) proposed that some traumatized individuals, in order to maintain behavioral organization, separate traumatic memories into a separate representational system to block these events from consciousness. In turn, this creates either a failure to mourn or a condition of chronic mourning (George & Solomon, 1999/2008). When the attachment system becomes activated during the administration of the AAI, an unresolved individual's defensive strategies break down and their failure to have processed this information is indicated through their lapses of reasoning.

Attachment Representations and Parental Caregiving Behaviors

According to attachment theory (Bowlby, 1980), a child's attachment system, with the set goal of achieving proximity and protection from a caregiver, interacts with a caregiver's reciprocal caregiving system, with the set goal of providing protection. The caregiving system becomes activated by the caregiver's evaluation of internal cues, including her own perceptions of threat to her child's comfort and safety, and from external cues, including her child's attachment behaviors that signal a need for closeness and protection.

Adult attachment theory (Main, et al., 1985; Mikulincer & Shaver, 1999/2008) contends that the threat appraisal process triggers the activation of a caregiver's own attachment system and attachment representations. That is, it brings about unconscious thoughts and feelings about the accessibility of a caregiver's own attachment figure (Main, et al., 1985). Caregivers then process the content of their attachment representations and draw upon them to assess threat, to interpret their own children's attachment cues, and to gauge a caregiving response. In other words, a caregiver's working model of attachment is thought to mediate caregiving behaviors (Hesse, 1999/2008) by providing a filter through which to view and respond to children and their behaviors. Consequently, one explanation regarding individual differences in caregiving behaviors are differences in caregivers' own working models of attachment.

Individual Differences in Caregiving Behaviors

Secure-Autonomous

Main (1990) argues that the cornerstone of a secure-autonomous state of mind is

an individual's integration of attachment information into their working models. George and Solomon (1999/2008) argue that this capacity allows caregivers to be psychologically open to attending to current relationship information and to detecting their own child's attachment needs. In addition, secure-autonomous caregivers, through their own experiences in a goal-corrected partnership, develop representational flexibility (George & Solomon, 1999/2008) often demonstrated by their reflective functioning (Fonogy, Steele & Steele, 1991), that allows secure caregivers to represent what is in the mind of their child and thus to anticipate their child's needs. This enables caregivers to balance a child's own need for autonomy and exploration with a caregiver's own need to provide protection.

Consequently, secure-autonomous caregivers are able to flexibly adjust their caregiving, based on the integration of multiple sources of information, to maintain "caregiving homeostasis" (George & Solomon, 1999/2008) and synchrony. Secure-autonomous caregivers are also thought to be able to draw from their internalized secure-base script of caregiver as protector (Waters & Rodriquez, 2001) and in turn, provide a secure-base for their own child. Their effectiveness at providing care then creates and reinforces their own feelings of competency at caregiving, and reinforces their joy and satisfaction in the child and in the relationship, enabling their continued sensitive caregiving (George & Solomon, 1996).

Dismissing

In contrast to secure-autonomous caregivers, the activation of the caregiving system, and thus the activation of their own attachment representations, produces anxiety

for a dismissing caregiver. To circumvent the caregiving system's activation and to reduce this anxiety, a dismissing caregiver continues to employ cognitive deactivation to limit the detection of her own child's attachment signals and to limit her child's attachment distress from entering into her consciousness (George & Solomon, 1999/2008). By limiting the integration of children's attachment needs into consciousness, caregivers are able to maintain a distanced and uninvolved approaching to caregiving (George & Solomon, 1996). Because this type of rejecting caregiving invokes anger in children, dismissing caregivers often construct negative representations of their child (e.g. "she is so bad") and construct negative postulates about caregiving (e.g. "I need to be strict") (ibid). These postulates prompt many dismissing caregivers to employ caregiving strategies focused strongly on discipline (Britner, Marvin & Pianta, 2005).

Preoccupied

Two hypothesizes have been put forward to explain how a preoccupied working model of attachment affects maternal caregiving practices. van IJzendoorn (1995) suggests that preoccupied caregivers may be so enmeshed in their own attachment anger and distress, that they are not always psychologically open to detecting their own children's attachment signals. Simultaneously, in an effort to correct their own negative attachment experiences, they provide excessive care to their children and interrupt their children's exploratory behaviors. Together, these behaviors result in unbalanced, unpredictable and thus "insensitive" care.

George and Solomon (1996, 1999/2008) suggest, however, that the cognitive disconnection process of "chopping up" events gets carried into caregiving to suppress a

caregiver's full awareness of her child's attachment signals and needs. That is, disconnection, on the one hand, creates a hyper-activation of the caregiving system, but on the other hand, it prevents a caregiver from understanding the causes of a child's behaviors and integrating a child's own need for exploration into their caregiving practices. What results is confused caregiving where caregivers oscillate between extremes of keeping a vigilant watch over their children by maintaining close proximity and interrupting their exploratory behaviors (Biringen, et al., 2000b), but also failing to recognize potentially physically or emotionally threatening events (George & Solomon, 1996). In the final feedback loop, their ineffectiveness at providing care reinforces their feelings of inadequacy and indecision about how to meet their child's needs (George & Solomon, 1996).

Unresolved

Main and Hesse (1990) have proposed that within the context of caregiving, unresolved mothers appear to become flooded with traumatic event memories. This flooding often results in fearful and frightening expressions and dissociative behaviors during maternal-child interactions. George and Solomon (1996) have also found that the activation of the caregiving system dysregulates unresolved mothers by flooding them with fears and distress about their children's safety and their abilities to provide care. In turn, to remain in control, many unresolved mothers employ constricted caregiving where they abdicate their caregiving role and neglect their children and leave them in distress (Solomon, George & De Long, 1995).

Self-Report Measures of Working Models of Attachment

While using the AAI to measure an adult's working model of attachment has

certainly been the primary method used by developmental psychologists studying parent-

child interactions, the interview itself is particularly labor intensive and expensive to

code. For these reasons, researchers have developed self-assessments of adult working

models of attachment to allow for greater measurement efficiency. These self-report

measures differ from the AAI, and are similar with one another, in so much as they tap

into an adult's *conscious* processes. That is, the AAI is designed to tap into an adult's

unconscious processes, with the coder inferring the quality of an adult's early experiences

and analyzing the discursive styles that an individual uses in order to determine that

individual's defensive processes and state of mind with respect to attachment. For

example, a dismissing individual may evaluate her mother as warm and loving (e.g.

defensive idealization), but when asked for specific examples, may be unable to come up

with any. Consequently, the AAI does not take an adult's account at face value. Self-

reports, on the other hand, are all based on the premise that adults can, for the most part,

consciously and accurately portray their experiences in and evaluations of their

attachment relationships, and they put less emphasis on capturing defensive processes.

The multitudes of self-report measures that have been developed, however, also

significantly differ from one another, particularly in their emphasis. In part, these

differences have arisen from disagreement in the field regarding whether working models

of attachment in adulthood are actually generalized working models of all close

relationships or are specific to different relationships (Bretherton & Munholland,

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1999/2008). Differences in measures also stem from the research tradition in which the measure was developed guided by the relationship outcome of interest.

For example, some measures of adult working models of attachment have been developed within the social psychology tradition and have been primarily concerned with an adult's participation in other close, adult relationships. Many of these questionnaires, such as the Experiences in Close Relationships Scale (Brennan, Clark & Shaver, 1998) or the Relationship Questionnaire (Bartholomew & Horowitz, 1991) focus on an individual's general feelings and evaluations of close relationships. For example, they may query an individual about whether they "worry about feeling abandoned" or are "nervous when another person gets too close" (Brennan, et al., 1998). These measures are undergirded by a belief that an individual's participation in attachment relationships with friends and romantic partners across a lifetime are integrated into one's working model of their early attachment relationships with their parents to create a more general working model of attachment.[5]

Measures from the social psychology tradition also focus on an individual's attachment *style* by emphasizing the behaviors an individual enacts in intimate relationships. These measures often ask an individual to report on whether, for example, "they want to get close to others, but keep pulling back" or "if their desire to get close to people often scares others away" (Feeney, Noller & Hanrahan, 1994). These measures

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[5] Others in the social psychology tradition have created measures that are not grounded in a generalized working model of attachment, but instead are grounded in the belief that adults construct a specific working model of their romantic attachment. These have not been used in the parent-child context and will not be discussed further.

are also grounded in the notion that an individual's behaviors in close relationships are directed by their working models of attachment (Bowlby, 1973) and thus behaviors can serve as a proxy for working models. All of the aforementioned measures provide a classification or dimensional analysis of an adult's working model of attachment that are conceptually similar to infant working models of attachment (e.g. avoidant, anxious, fearful) and to AAI classifications.

Developmental psychologists, in contrast, have developed several self-assessment questionnaires that focus specifically on an adult's working model of their early attachment relationships with their primary caregivers. This is guided by two beliefs. First, that working models of attachment are not generalized, but are specific to a relationship (Bretherton & Munholland, 1999/2008). Second, that a mother's *specific* working model of her own early attachment relationship strongly, if not exclusively, influences her caregiving practices and the security of her infant's attachment to her (Bowlby, 1973; Mulicener & Shaver, 1999/2008).

Several self-assessment questionnaires pre-dating the AAI were developed to assess the degree to which an individual perceives early experiences with parents to be supportive or rejecting such as the Mother-Father-Peer Scale (Epstein, 1983 as cited in Ricks, 1985) or the Parental Acceptance-Rejection Questionnaire (PARQ; Rohner, Saaredra & Granum, 1978). These instruments ask individuals, for example, to rate whether they believe that when they were children "[their] mother was a close to perfect parent," indicating defensive idealization, or if their "mother wished [they] were never born" indicating rejection (Epstein, 1983 as cited in Ricks, 1985).

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Post-dating the AAI, Pottharst (1990) developed the Attachment History Questionnaire (AHQ) which examines an individual's attachment memories and classifies individuals into those who have experienced a secure-base, those who have experienced extreme parental discipline, and those who have experienced threats of separation or loss of love. Derived directly from the AAI, Lichtenstein and Cassidy (1991) developed the Perceptions of Adult Attachment Questionnaire (PAAQ) to assess an individual's integration of positive and negative childhood attachment experiences into a narrative that reflects their valuing of attachment. Following the AAI, the PAAQ uses two overarching scales: an adult's perceived early experiences and their state of mind with respect to attachment, which taps into how adults evaluate these experiences. Benoit, Parker and Zeanah (1994/2000) have also developed the Adult Attachment Screening Questionnaire (AASQ) that probes adults regarding their childhood experiences, feelings and thoughts about parents, and the impact of attachment experiences on personality development. However, this measure differs from the PAAQ and AAI as it is used only to classify adults with dismissing and preoccupied working models and thus does not probe adults regarding security-restoring early experiences.

Among the measures that assess an adult's generalized working model of attachment or an adult's attachment style originating from the social psychology tradition, classification concordance with the AAI has been found to be low to moderate (Crowell, et al., 1999/2008). Consequently, they appear to be measuring constructs perhaps distinct from those captured in the AAI. While the bulk of research using these measures has focused on establishing their predictive validity with adult relationship

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outcomes, for example the quality of adult friendships and romantic relationships, recently several studies have found that like the AAI, they also predict differences in maternal sensitive caregiving behaviors (discussed further in next section; Edelstein, et al., 2004; Holmes & Lyons-Ruth, 2006).

With respect to measures specifically focused on working models of early attachment relationships, the Mother Scale from the Mother-Father-Peer Scale and the PARQ have demonstrated relationships to maternal caregiving behaviors and to child development outcomes (Cox, Hopkins & Hans, 2000; Fish, 1993; Ricks, 1985). However, these measures have not been validated against the AAI. In contrast, both the AAQ and the PAAQ, measures specifically derived from the AAI, have been validated against it and appear to be demonstrating reasonably high concordance with AAI classifications. For example, Lichtenstein and Cassidy (1991) reported significant correlations between AAI classifications and many of the PAAQ classifications (r= .46-.63, p<.01).[6] Moderate to high correlations have also been found between AAI classifications and AQS classifications (Benoit & Parker, 1994 as cited in Blokland, 1999).

Empirical Studies Linking Working Models of Attachment to Caregiving

The following review of literature presents empirical research using both the AAI and self-report measures linking mothers' and alternative caregivers' working models of

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[6] Given that the PAAQ has been subjected to validation against the AAI, has demonstrated relationships to maternal caregiving beliefs (Huth-Bocks, et. al., 2004) and unlike the ASQ assesses a security dimension, it has been selected for use in this study and its psychometric properties will be discussed more thoroughly in Chapter 3.

attachment to caregiving behaviors. While the discussion concentrates on working

models of early attachment relationships, references are also made to studies that have

employed self-report measures of generalized working models of attachment. These

studies are discussed to demonstrate further the validity of using self-assessment

measures to predict caregiving behaviors.

<center>Caregiving Sensitivity</center>

In a synthesis of research, van IJzendoorn (1995) used 389 mother-child dyads in

8 studies to explore the relationship between parental attachment security on the AAI and

caregiving sensitivity during both free-play and laboratory settings. Parental attachment

security demonstrated moderate relationships with caregiving sensitivity with an effect

size calculated at .72 (r=.34). However, this study was not able to disentangle the

different types of insensitive caregiving practices observed as a function of different

insecure working models.

Holmes and Lyons-Ruth (2006) found that the security of a mother's generalized

working model of attachment measured by the self-report Relationship Questionnaire

(Bartholomew & Horowitz, 1991) also predicted more maternal responsive involvement

with their children. Moreover, they found that a mother's profoundly distrustful

attachment (conceptually similarly to unresolved on the AAI) was associated with more

hostile and intrusive caregiving behaviors and contributed to disruptions in a mother's

affective communication with her infant. In addition, mothers with dismissing and

preoccupied attachments exhibited more disorienting caregiving behaviors where mothers

only erratically responded to their children.

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Similarly, Edelstein and colleagues (2004), using the self-report Relationship

Questionnaire (Bartholomew & Horowitz, 1991) found that a mother's attachment style

significantly predicted her responsiveness to her child during a particularly distressing

situation. Avoidant mothers (conceptually similar to dismissing mothers on the AAI)

were observed to be more likely to reject or ignore their child's bids for comfort and

stand at a distance from the distressing situation. In contrast, mothers with secure

attachment styles were more likely to respond to children and sooth their distress. Using

the self-report Mother Scale, Fish (1993) noted that mothers reporting more accepting

early experiences with their own mothers were significantly more responsive to their own

children's attachment signals than mothers who reported less accepting early experiences.

<div align="center">Reading Children's Cues</div>

Using videotapes of infants demonstrating a variety of emotional states, Goldberg,

Blokland, Cayentano and Benoit (1998; as cited in Hesse, 1999) found that secure-

autonomous mothers on the AAI were significantly more accurate at reading a child's

cues and identifying their states, and reacted more empathetically to children's distress

than insecure mothers. Dismissing mothers, on the other hand, were least likely to

respond to an infant's state and were more likely to misread a child's fear as interest.

Preoccupied mothers, however, appeared overly responsive and tended to invoke and

mirror an infant's negative state in their own reactions. Using the AQS self report of a

mother's working model of early attachment relationships, Blokland (1999) found similar

relationships, noting that dismissing mothers were significantly less accurate at labeling

infants' emotions and were more likely to perceive their negative emotions as more

<div align="center">56</div>

intense than mothers without a dismissing attachment. It appeared that dismissing mothers were particularly alarmed by the presentation of infant emotions that signaled a need for them to intervene.

Postulates about Caregiving

Using the self-report PAAQ, Huth-Bocks and her colleagues (2004) found that pregnant mothers who recalled more loving childhood experiences with their attachment figure held more positive postulates about caregiving and demonstrated a willingness to serve as a secure-base for their unborn child. Contrastingly, mothers who had higher attachment insecurity scores held less accepting and sensitive attitudes about their unborn baby, expressed some unwillingness to serve as a secure-base for their child, and expressed reluctance to provide responsive care. The authors further noted that these mothers also were more anxious about their own caregiving abilities. Using the AAI, George and Solomon (1996) demonstrated similar relationships to those described by Huth-Bocks and colleagues after children were born. They noted that secure-autonomous mothers constructed representations of caregiving as joyful with a willingness to respond to their child's needs and also constructed themselves as capable of doing so. Dismissing mothers, on the other hand, while idealizing the role of motherhood, invoked negative postulates about their willingness to care for their child and expressed doubts about their caregiving abilities. Both preoccupied and unresolved mothers articulated fear and worry about knowing how to care for their children and held representations of themselves as caregivers as ineffective and incapable.

Relationship Outcomes

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In a meta-analysis of 8 studies of mother-infant dyads, van IJzendoorn (1995) found that the security of a mother's own attachment representations strongly predicted the security of her own infant's attachment to her. Similarly, using the Mother Scale, Ricks (1985) found that mothers who evaluated their early attachment relationships as accepting were better able to serve as a secure-base for their own children than mothers with rejecting early experiences. These mothers, in turn, developed more secure-attachment relationships with their children and had children who demonstrated better adaptive functioning. Using the PARQ self-report, Cox and her colleagues (2000), also observed that mothers who reported more rejection in childhood were more likely to have children with disorganized attachments.

Intervention Studies

A mother's working model of attachment has also played an important role in intervention research. For example, Korfmacher and his colleagues (1997) found that high-risk, secure-autonomous mothers were more open to participating in supportive therapy or in problem solving with their intervener and demonstrated more of a commitment to the intervention process than insecure mothers. These mothers ultimately saw better relationship outcomes, such as increased levels of maternal responsiveness and more secure mother-child attachments, post intervention (Egeland & Erikson, 1993). In contrast, dismissing mothers had more of a superficial engagement in the process while disorganized mothers tended to primarily use the intervener for crisis management. Other research has confirmed that secure autonomous mothers are more open and objective about the intervention process. They approach the intervention less defensively, are more

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willing to take-up the information learned in sensitivity interventions, and demonstrate more sensitive interactions with their children post-intervention (Heinicke & Levine, 2008; Teti, Killeen, Candelaria, Miller, Hess, et al., 2008).

Spieker, Nelson, DeKlyen and Staerkel (2005) observed that secure-autonomous Early Head Start parents showed high participation in a home visiting intervention and experienced the most improvements in their sensitivity post-intervention. They also noted that dismissing parents, because of their need to create a sense of normalcy to keep at bay negative feelings, constructed an idealized presentation of self and participated in as many home visits as their secure-autonomous counterparts. However, their lack of deep engagement in the intervention process (also noted by Korfmacher, et al., 1997) or their unwillingness to take up relationship information that was incompatible with their beliefs about relationships may have been factors that limited the intervention's ability to enhance their sensitivity.

Application of Working Models of Attachment to Alternative Attachment Figures

Because an individual's working model of attachment becomes organized into postulates and rules regarding how to participate in close relationships in general, an individual's representations of attachment have implications beyond the parent-child relationship and into other contexts that require intimate relationships. Relationship contexts most relevant to the study of family child care providers in which this construct has been applied include foster parents and early childhood and elementary school teachers.

Foster Parents

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Bick and Dozier (2008) have reported similar relationships as those noted in the biological parenting literature between a foster mother's working model of attachment and her sensitive caregiving behaviors. Secure-autonomous foster parents on the AAI have also been found to be more responsive to children than insecure foster parents. However, the authors also observed that all foster parents struggle to provide the levels of sensitivity needed to support the healthy development of children in traumatic life circumstances. After administering a training intervention aimed at improving their sensitivity, the authors again confirmed research in the biological parenting context and found that secure-autonomous foster mothers were more open to the training intervention and thus were able to make more improvements in their caregiving sensitivity than insecure foster mothers.

Elementary Teachers and Early Care and Education Providers

Morris-Rothschild and Brassard (2006) applied the self-report Experiences in Close Relationships Scale (Brennan, et al., 1998) to elementary school teachers to understand whether a teacher's classroom management style was influenced by her attachment style. The authors observed that securely attached teachers were more likely to use effective classroom management and set a positive classroom tone than teachers with fearful attachments. They also found that teachers with avoidant attachment styles, likely due to their discomfort with relationship content, tended to oblige children in their classroom and avoid managing conflict. They further noted that increased attachment anxiety predicted decreases in a teacher's sense of efficacy in managing their classrooms.

Using the AAI, Horppu and Ikonen-Varila (2004) examined the relationships

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between pre-service kindergarten teachers' working models of attachment and their beliefs about instruction and children. They found that secure-autonomous pre-service teachers expressed more child-center beliefs about teaching, held more positive views about children and demonstrated more certainty in their career choice of working with young children. In contrast, insecure pre-service teachers, despite having been through a teacher education program that presumably emphasized child-centered education, expressed fewer child-centered instructional beliefs and were more likely to have wanted a different profession. Using the AHQ self-report, Kesner (1995) investigated whether a preschool pre-service teacher's perceptions of her own attachment history influenced the quality of the relationships she had with the children in her practicum. Pre-service teachers who perceived their own parents as having not provided a secure-base and who threatened separation were more likely to establish dependant relationships with the children in their care than preservice teachers who reported having a secure-base in early childhood.

Surprisingly, there has been very little published research on the attachment representations of child care providers. The one notable exception comes from Constantino and Olesh (2999), who used the AAI with center-based teachers. No relationships between a teacher's working model of attachment and their responsive involvement with children were observed. The authors offered that the communal nature of caregiving in center-based settings appeared to serve a protective function, buffering an individual teacher's working model from influencing her interactions with children. To date, only one unpublished study has applied an adult attachment framework to the

study of *family child care providers*. Hyson and Molinaro (1999; as cited in Hyson & Molinaro, 2001) investigated the relationship between a provider's attachment style and their beliefs about caregiving. Providers with secure attachment styles were more likely to endorse the importance of close emotional bonds with children. In contrast, providers with insecure styles were significantly more likely to believe that close bonds between providers and children should not be encouraged or developed.

This combined research suggests the important role that working models of attachment play in organizing both biological and non-biological caregivers' perceptions about children and caregiving, in influencing how they respond to children's needs, and in organizing their uptake and response to training interventions. Given the extensiveness of paid care use in the United States and given the clear links demonstrated in the literature between adult attachment representations and caregiving, it is surprising that so little research exists focused on the attachment representations of child care providers. Since the types of caregiving roles previously described are similar in nature to family child care providers, it seems that family child care may be an ideal context in which to study the influence of a provider's working model of attachment on their interactions with children. This research also provides some evidence of the validity of using self-report measures to predict a variety of relationship outcomes, including caregiving behaviors.

Conclusion

Past research has demonstrated that there are many parallels between the environments in which mothers and family child care providers care for children, in the

ways in which they provide care (Howes & Matheson, 1992; Kontos, et al., 1995), and in the factors that influence their caregiving behaviors (Gerber, et al., 2007). One of the most important similarities in the caregiving environments between mothers and family child care providers appears to be the isolated contexts in which they care for children. This type of environment appears to create conditions where a caregiver's psychological characteristics and belief systems influence caregiving sensitivity more so than in care contexts with multiple adults present (Constantino & Olesh, 1999; Hamre & Pianta, 2004; NICHD ECCRN, 1996). Consequently, understanding the inner worlds of providers appears critically important for understanding their behaviors with children.

Indeed, the similarities in roles between family child care providers and mothers, foster parents, and teachers, suggests that it is quite likely that a provider's working model of attachment influences her caregiving behaviors in the same ways in which it does with these caregivers. Given the many concerns expressed in the literature regarding the quality of child care in the United States (Helburn, 1995), research focusing on antecedents to caregiving quality that might be amenable to intervention has important policy implications. Preliminary evidence also points to the notion that early childhood teachers, similar to mothers, may be unwilling to take up new information learned in professional development if does not fit into their already established belief systems about relationships developed in their early attachment relationships (Horppu & Ikonen-Varila, 2004). Understanding whether a provider's working model of attachment interferes with their abilities to take-up professional development and change their practices is vital to understanding how to modify professional development to be more

effective at improving children's experiences in child care and assuring that they have

caregiving relationships that they need to thrive.

CHAPTER THREE

METHODS

This chapter presents a detailed description of the research design, the setting and population studied, the instrumentation, and the statistical techniques used to examine data that address the central research questions in this study. This study was designed to examine four core research questions related to (1) whether a family child care provider's working model of attachment is predictive of their caregiving sensitivity, (2) whether a provider's working model of attachment moderates the relationship between their formal early childhood education coursework and their caregiving sensitivity, (3) whether differences in working models of attachment exist between providers with good-standing child care licenses and providers with negative licensing histories due to their harsh treatment or lack of supervision of children, (4) and whether particular working models of attachment increase or decrease the chances of a provider holding a negative license?

Within this study, caregiving sensitivity was first operationalized as the overall emotional tone with which providers interacted with all children in their care. Three specific dimensions of provider emotional tone were explored: the degree to which they exhibited emotional warmth (also referred to as sensitivity), the degree to which they exhibited emotional detachment, and the degree to which they responded to children in a harsh and punitive tone. Caregiving sensitivity was further operationalized as the intensity of a provider's involvement with individual children and as the degree to which

they responded to individual children's learning needs.

Sample

The sample for the observational portion of this study used to address research questions 1 and 2 included 52 licensed family child care providers in the Denver, Colorado metropolitan area who held a type A license, the most commonly awarded. This license allows a provider to care for 2 children younger than 2 years of age, 4 preschool-aged children, and 2 school-aged children. Of the 52 providers sampled, 11 (21.1%) held a negative or "probationary" license stemming from their harsh interactions with children or stemming from their lack of supervision of children which prompted licensing inspection visits every 1 to 12 months, depending on the severity of the violation. Twenty-eight (53.8%) providers in this sample had no suspected or confirmed licensing violations and their low-risk status only required licensing visits every 24 to 36 months. The final group consisted of 13 (25%) providers who did not have a negative license, but were identified by the state as needing inspection visits every 12 months. Five of these 13 providers held a license that was less than a year old and the newness of their license prompted more frequent inspections. The remainder had multiple unconfirmed or unfounded complaints lodged against them for unspecified reasons (e.g. environmental safety issues, ratio violations, interactional concerns, etc.) prompting more frequent licensing visits.

Several conditions, due to pragmatic and theoretical considerations, were placed on the eligibility of a provider to participate in the observational portion of this study. First, providers were deemed ineligible if they had participated in one of several quality

improvement interventions in operation throughout Colorado aimed at enhancing provider sensitive caregiving. These providers were excluded because the intervention may have attenuated the relationships between the variables under investigation in this study. Second, only family child care homes with one adult providing care for children were considered eligible as having another adult available to assist with child care duties has been found to buffer individual provider characteristics from influencing their interactions with children and may provide conditions under which providing sensitive care is made easier (Constantino & Olesh, 1999; Harme & Pianta, 2004; NICHD ECCRN, 1996). Third, this study eliminated providers if they cared for fewer than 3 children between the ages of 18 months and 5 years of age because one of the outcome measures used in this study required an observation of at least 3 children to achieve a representative account of a provider's interactions across children. Finally, because the primary investigator only spoke English, providers who primarily interacted with children in any other language were considered ineligible for study participation.

In addition to the sample described above, a sample of 57 licensed family child care providers in the Denver, Colorado metropolitan area were used to address research questions 3 and 4. Providers were selected to participate in this portion of the study if they had held a license to operate a family child care business for at least a year and either a) held a license with *founded* violations stemming from their harsh treatment of children or stemming from their lack of supervision of children and required licensing inspections every 1-12 months, or b) held a license with no noted infractions regarding their harsh treatment or lack of supervision and required licensing inspections every 24-

36 months. Twenty-nine (50.9%) of the 57 providers in this sample held a negative

license and 28 (49.1%) held a license with no infractions stemming from interactional

concerns.

Recruitment Procedures

To obtain the sample used in the observational portion of this study, a publically

available database of all licensed providers in Colorado was consulted and used to recruit

providers. The state database contained information pertaining to: the provider's address

and phone number, type of license held, length of time the license had been in operation,

the frequency of required licensing inspection visits, the type (in most cases) and amount

of complaints filed against the provider, and whether complaints were founded. Initially,

a list of the 221 providers in the City and County of Denver who possessed a Type A

license at the time of study recruitment was generated and providers were called in

random order to solicit study participation. Because of the extremely low study

participation rate of Denver-based providers (n=17), recruitment efforts were expanded to

the surrounding suburban areas. Thus, a random list of 250 additional providers was

generated from suburbs to the north, northwest, south, east and west of Denver (50 in

each group) to help ensure income diversity in the sample. Because of low participation

rates of providers with a negative license in the Denver metropolitan area (n=5) and to

ensure that there would be a percentage of providers with a negative license in the sample

that was representative of the percentage in the Denver metropolitan area, the public

database was again consulted to generate an additional list of 29 providers who held a

negative license in another metropolitan area of Colorado within 60 miles of Denver. In

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total, a database of 500 providers from the aforementioned groups was created.

Each of the 500 providers were called, beginning first with those in the City and County of Denver, and then extending in random order to the suburban areas and concluding with the targeted list of providers who held a negative license. During the recruitment call, providers received a brief explanation of the study, were queried about conditions that would render them ineligible for the study, and interest in study participation was solicited. Of the population of 500 providers, 91 were unable to be reached, 12 had closed their business, 17 worked in homes with multiple adults caring for children, 11 only spoke Spanish, 10 had received prior quality improvement interventions, 38 enrolled fewer than 3 children, and 17 enrolled only infants. Of the remaining 304 providers, 209 (68.8%) declined to participate in the study while 95 initially agreed to participate.

The 95 providers who agreed to participate were sent a letter explaining the study, a consent form, and letters outlining the study to families. Forty-three providers (45.3%) who originally consented to participate withdrew from participation yielding a final sample for the observational portion of the study of 52 providers. Of the providers who withdrew, 8 withdrew because parents did not feel comfortable with the study, 5 withdrew because their enrollment had dropped below 3 children, 3 withdrew because of illness, 2 were deemed ineligible because they had received previous coaching to improve quality, and 27 withdrew because they changed their minds about participating.

Because of the low study participation rate of providers with negative licenses (n=11), to address research questions 3 and 4, 54 additional providers with suspected or

confirmed licensing violations who declined to participate in the observational portion of the study or who had too few children enrolled were asked during the initial recruitment call if they would instead be willing to complete two short surveys related to their attachment histories and program demographics. Forty-nine (90.7%) providers agreed and were mailed the surveys; 26 providers (53%) returned the surveys. Of the returned surveys, 18 were returned from providers with negative licenses due to *founded* complaints stemming from their harsh treatment of children or stemming from their lack of supervision of children. Data from these 18 providers was then combined with data from the 11 providers in the observational portion of the study who held a negative license and combined with data from the 28 providers in the observational portion of the study with no noted licensing violations. This yielded a final sample of 57 providers (29 of whom held a negative license (50.8%) and 28 (49.2%) of whom held a good standing license) used to address research questions 3 and 4.

It is important to note that family child care providers are notoriously difficult to recruit into research studies (Morrissey, 2007) and this study was no exception. After talking to over 400 providers during the course of this study, it appeared that study refusal and attrition rates may have been even higher than expected because of the current policy climate in Colorado. Study recruitment efforts began just as the State of Colorado had changed many of the rules governing family child care making them somewhat more stringent, which appeared to upset many providers. In addition, the state has an established quality rating system whereby a provider's quality is observed by an independent rater and the quality level is then made public. Many providers, as evidenced

by the 3% participation rate across the state, are resistant to the rating process because of its high stakes and public nature and many expressed that the standards, many of which are now reflected in licensing standard changes, were inappropriate for family child care homes. Consequently, this context made it extremely challenging to gain access to providers, particularly into those with negative licenses.

Instrumentation

Data for this study was collected via survey and observation. The following details the psychometric properties of the instruments selected for use in this study.

Perceptions of Adult Attachment Questionnaire (PAAQ)

The PAAQ (Lichtenstein & Cassidy, 1991; Appendix A) was designed to assess two aspects of an adult's working model of attachment: their *perceptions of their early attachment experiences* and their *current state of mind with respect to attachment*. The PAAQ is constructed on a 5-point Likert scale with an individual rating 60 questions as "1" strongly agree to "5," strongly disagree. Perceived early attachment experiences are separated into 3 scales: Loving (6 items), Rejecting/Neglecting (11 items) and Enmeshed/Role-Reversing (10 items). The current state of mind scale is separated into 5 scales consisting of: Balanced/Forgiving (7 items), Dismissing/Derogating (4 items), Vulnerable (5 items), Lacking in Memory (4 items), and Angry (5 items). Items within each scale are averaged and higher scores are intended to reflect an individual's perceived early experience and current state of mind with respect to attachment.

In the validation study of the PAAQ (Lichtenstein & Cassidy, 1991), factor analysis showed support for the author's theoretically derived scales. Lichtenstein and

Cassidy also demonstrated that the scales showed moderate to good internal consistency with coefficient alpha calculated at: Rejecting = .87, Loved = .87, Enmeshed =.79, Balanced/Forgiving = .65, Dismissing = .62, Vulnerable = .71, Lacking in Memory = .94 and Angry = .80. Inter-rater reliability kappa coefficients ranged from .68 to .86 and test-retest reliability ranged from .73 to .89 over a 14-week period. The PAAQ has also demonstrated moderate to strong correlations with conceptually similar AAI subscales, with correlations ranging from r= .46 to r=.63, with the exception of the Enmeshed (r=.10) and Dismissing scales (r=.13).[1] In addition, Huth-Bocks and her colleagues (2004) established the concurrent validity of the PAAQ with the Working Model of the Child (Zeanah, Benoit, Hirshberg, Barton & Regan, 1994).

PAAQ scale reliability

Drawing from the full sample of 77 family child care providers for whom PAAQ data was available, Cronbach's alpha coefficients were calculated to assess the reliability of each scale within the context of this study. An alpha value equal to or greater than .70 was used as the standard by which scale internal consistency was evaluated (Bowerman & O'Connell, 1990). As can be seen in Table 1, several PAAQ scales did not meet this threshold.

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[1] Unlike the AAI that directly queries an individual about early childhood trauma or abuse, the PAAQ does not and correlations between an unresolved state of mind on the AAI and PAAQ scale correlations are unavailable.

Table 1. Cronbach's Alpha PAAQ Scales (n=77)

	Alpha
Rejecting/Neglecting	.91
Loving	.93
Enmeshed/Role-Reversing	.66
Vulnerable	.61
Balanced/Forgiving	.51
Angry	.76
Dismissing/Derogating	.55
No Memory	.87

Consequently each scale yielding an alpha value of less than .70, with the exception of the Balanced/Forgiving scale, was subjected to a maximum likelihood factor analysis using oblique rotation to determine if scale reliability could be improved with the removal of items with factor loadings less than .32 (Kim & Mueller, 1978). Within the Enmeshed scale, 3 items yielding factor loadings below .32 were identified and dropped from the scale and a Cronbach's alpha was recalculated at .76 on a revised scale. Items used to construct the revised Enmeshed scale are presented in Appendix B.

The removal of items with factor loadings less than .32 did not, however, appreciably improve the internal consistency of the Dismissing and Vulnerable scales, likely because both scales are comprised of very few items (n = 4 and 5, respectively). Because these scales have both theoretical and practical value, with each scale having demonstrated predictive validity with the Working Model of the Child (Huth-Bocks, et al., 2004), a decision was made to retain the author's theoretically derived scales for use in this study.

Attempts were not made to improve the reliability of the Balanced/Forgiving scale because there may be theoretical reasons as to why items on this scale do not hang together as well as standard convention warrants. As noted earlier, the gold standard for

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assessing adult attachment representations, the AAI, uses discourse analysis to identify

inconsistencies or violations of coherency in the attachment narrative which are then used

to classify an adult's working model of attachment (Hesse, 1999/2008). For example,

adults with dismissing working models often report rejecting early experiences and

simultaneously assess these experiences as extremely positive. These inconsistencies may

contribute to the low reliability found on the Balanced/Forgiving scale. Consequently,

alpha coefficients on the Balanced/Forgiving scale were recalculated for providers

scoring below the median split on both the Rejecting and Dismissing scales. However,

results indicate that Balanced/Forgiving scale internal consistency coefficients actually

decreased to .46 for both the sample of providers who fell below the median split on the

Rejecting scale and for the sample of providers who fell below the median split on the

Dismissing scale.

Inter-Relationships among PAAQ Scales

To understand the inter-relationships among a provider's perceived early

attachment experience and her current state of mind with respect to attachment and to

assess the degree to which PAAQ scales are independent of one another, a series of

bivariate Pearson's Product-Moment correlations were calculated. Results are displayed

in Table 2. With respect to the inter-relationships among early experiences scales, a very

high negative correlation was found between Rejecting and Loving scores ($r = -.88$)

suggesting that these scales are largely measuring the same construct. With respect to the

inter-relationships among current states of mind scales, low to moderate relationships

were detected indicating that these scales do tap into relatively different constructs. In

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general, moderate correlations also emerged in the expected directions between early experiences scales and current states of mind scales. These results, as well, suggest that perceived past experiences and current thinking are appreciably different constructs and cannot serve as proxies for one another. However, it is important to note the very high correlations between Angry current state of mind scores and both Loving (-.83) and Rejecting (.77) perceived early experiences.

Table 2. Correlations among PAAQ Scales (n=77)

	1	2	3	4	5	6	7	8
1	1							
2	-.878**	1						
3	-.399**	.444**	1					
4	.303**	-.294**	.218	1				
5	-.145	.176	.103	-.002	1			
6	.512**	-.402**	-.370**	.082	-.176	1		
7	.771**	-.825**	-.270*	.499**	-.168	.271*	1	
8	.504**	-.477**	-.291*	.172*	.070	.483**	.401**	1

Notes: 1=Rejecting, 2=Loving, 3=Enmeshed, 4=Vulnerable, 5=Balanced, 6=Dismissing, 7=Angry, 8=No Memory
*p<.05; **p<.0001

To understand the degree to which early attachment experiences predict current states of mind with respect to attachment, a multivariate ordinary least square regression was run. Findings summarized here and presented in full in Appendix C provide empirical support for theoretically expected predictions. Namely, variation in the degree to which providers perceived rejection in their early attachment histories predicted approximately 14% of the variance in Dismissing scores. Variations in the degree to which providers perceived themselves as having a loving early attachment experience predicted approximately 26% of the variance in Angry scores with providers who perceived their early experiences as unloving more likely to have higher Angry scores.

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Variations in the degree to which providers felt that they had experienced an enmeshed

early attachment history, predicted 17% of the variance in Vulnerable scores (i.e. current

enmeshment and worry over attachment relationships). In addition, approximately 6% of

the variance in Dismissing scores was predicted by Enmeshed scores; with higher

Enmeshed scores negatively related to Dismissing scores. It is also noteworthy that no

early experiences scale demonstrated relationships with Balanced/Forgiving scores.

PAAQ Scale Reduction

Based on theoretical considerations and the aforementioned empirical analysis,

two scales on the PAAQ were dropped from further analysis in an attempt to improve

measurement precision. First, because the Balanced/Forgiving scale yielded weak

internal consistency, which likely contributed to the lack of relationships to other PAAQ

scales, following Huth-Bocks and her colleagues (2004), the Balanced/Forgiving scale

was dropped. To reduce measurement redundancy and to assist in addressing issues of

colinearity that arise when using two highly correlated scales, the Rejecting early

experiences scale was also dropped from further analysis. In light of the removal of the

Balanced/Forgiving scale, a decision was made to retain the Loving scale as opposed to

the Rejecting scale to assure that there was a scale included in this study that captured the

construct of attachment security (Huth-Bock, et al., 2004).

<div align="center">Caregiver Sensitivity Scale (CIS)</div>

The purpose of the CIS (Arnett, 1989; Appendix D) was to rate the overall

emotional tone of a family child care provider over the course of a three hour

observation. The CIS is comprised of 26 items rated on a 1-4 Likert scale with 1

indicating "not at all like the provider" and 4 indicating "very much like the provider." Items are organized into 4 sub-scales consisting of: Sensitivity (i.e. emotional warmth; 10 items), Harshness (8 items), Detachment (4 items) and Permissiveness (4 items). Items within each subscale are averaged to obtain a subscale score with higher scores reflecting more sensitivity, harshness, detachment, and permissiveness.

Konto's and her colleagues (1995) in their study of family child care performed a confirmatory factor analysis on the CIS and found support for 3 distinct scales: Sensitivity (alpha= .91), Harshness (alpha= .83) and Detachment (alpha= .81) which have been replicated more recently by Jaeger and Funk (2001). Consequently, these three subscales were selected for use in this study. Inter-rater reliability analysis conducted by Konto's and her colleagues yielded an average kappa coefficient of .86 while Jaeger and Funk reported kappas ranging from .75 to .97 between a certified observer and trainees. CIS Sensitivity scores have also yielded a correlation of r=.40 with children's attachment security with their family child care providers (Kontos, et al., 1995).

Using CIS data from 52 family child care providers collected for this study, a Cronbach's alpha was computed for each CIS scale with an alpha value equal to or greater than .70 used as the standard by which scale internal consistency was evaluated (Bowerman & O'Connell, 1990). As can be seen in Table 3, each CIS scale met this threshold.

Table 3. Cronbach's Alpha Caregiver Interaction Scales (n=52)

	Alpha
Sensitivity	.93
Harshness	.90
Detachment	.93

Adult Involvement Scale (AIS)

The AIS *(*Howes & Stewart, 1987; Appendix E) was used to provide a snapshot of the intensity of a family child care provider's interactions with children and a snapshot of the types of interactions in which a provider engaged with children. Provider interactions directed toward 3-4 target children between the ages of 18 months and 5 years of age were observed 50 times during 20-second timeframes over the course of 2.5 to 3.33 hours, depending on the number of children in attendance. During each 20 second snapshot, the highest level of adult involvement directed *specifically toward a target child* was coded as either: ignoring a child or rebuffing their bids, or (1) providing routine or custodial caregiving, (2) providing minimal caregiving in which the provider talked to the child to give directions, (3) providing simple caregiving where providers briefly answered a child's social bids with no reply encouraged and, (4) providing elaborate caregiving where providers extended interaction with a child. To understand the types of interactions in which providers engaged with target children, provider behavior was further coded when the target child experienced *individualized or group interactions* where the provider facilitated peer interaction, engaged in literacy/language play, provided didactic instruction, engaged in scaffolding of children's experiences to promote learning, and facilitated second language use.

Howes and Stewart (1987) in their validation study of the AIS calculated an average inter-rater reliability kappa coefficient of .85 between AIS coders, which was confirmed by Kontos, and her colleagues (1995) who calculated an average kappa of .86.

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Kontos and her colleagues also reported a correlation of r= .44 between higher levels of family child care provider responsive involvement scores and children's attachment security with their providers, a relationship also noted by Elicker and his colleagues (1999).

Because of the volume of AIS data generated with respect to the small sample size in this study, AIS data was used to create two indices of provider caregiving behaviors used in analysis. The first, "Intensity of Adult Involvement," followed developer's recommendations for item weighting and was calculated by summing the portion of time a provider spent in each level of involvement (with the exception of Ignoring) across target children, weighting the proportion by the scale point, and summing the weighted proportions. For example, the proportion of time a provider interacted with children in routine ways was multiplied by 1, the proportion of time they interacted in minimal ways was multiplied by 2, and so forth. Weighted proportions were then summed resulting in a provider receiving more "credit" for more intensive engagement with children.

The second index, "Responsiveness to Learning Needs," was created by first calculating the mean proportion of time providers spent in each type of interaction (Literacy, Didactic, Scaffolding, Facilitating Peer Interaction)[2] and entering values into a maximum-likelihood factor analysis using oblique rotation to identify underlying factors. Next, the Kaiser Criterion (eigenvalues >1) and visual inspection of a scree test

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[2] "Facilitating second language use" was dropped from analysis because only four providers engaged in this behavior, three of whom only engaged in second language use during 1-2 time samples.

(Costello & Osborne, 2005) was used to identify one unique factor solution explaining 55.7% of the variance in scores. Individual items with factor loadings equal to or greater than .32 were then identified and retained. These items included: Didactic, Scaffolding and Facilitating Peer Interactions. A composite "Responsiveness to Learning Needs" index was then created by summing the mean proportion of time providers spent in these activities.

<div align="center">Provider and Program Demographic Survey</div>

This survey, found in Appendix F, was intended to collect data specific to key provider and program characteristics identified in the research literature as influencing provider caregiving sensitivity. This survey, adapted from Zellman and her colleagues (2008) queried providers about their: 1) ethnicity, 2) number of children receiving Colorado Child care Assistance Program (CCCAP) subsidies in attendance during the observation,[3] 3) number of years of paid experience working as a family child care provider, 4) number of non-credit baring training hours completed, 5) credit hours in early childhood education (ECE) or child development completed, 6) level of formal education, 7) membership in a professional organization, and 8) annual family income.

Data pertaining to annual family income was collected on the following scale: 1) 0-$5,000, 2) $5,001-$10,000, 3) $10,001-$25,000, 4) $25,001-$50,000, 5) $50,001-$75,000, 6) $75,001-$100,000, and 7) more than $100,000. Similarly, level of formal education was collected as (1) no high school degree, (2) high school degree or GED, (3)

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[3] CCCAP was used as a proxy for children living in poverty.

Associates degree (A.A.), (4) Bachelors degree (B.A.), and (5) Masters Degree (M.A.) or

higher. Due to the bi-modal distribution of education levels observed in this sample

(described further below), formal education was dummy coded to represent: 0) providers

with less than an A.A. degree, and 1) providers who held an A.A. degree or higher.

Because cell sizes pertaining to specific provider ethnicity groups were too small

to individually model, dummy coding was further used to represent: 0) providers who did

not identify as being a member of a minority group, and 1) providers who identified as

being part of a minority group. It is important to note that combining cultural groups in

this manner is not optimal as there are very likely between cultural group differences in

caregiving behaviors. However, absent larger group cell sizes, it was impossible to

examine these potential differences in this study.

Data Collection Procedures

Site visits, typically occurring during morning child care activities, were made to

each of the 52 providers participating in the observational portion of the study. During

the site visit, the CIS and AIS were simultaneously administered over the course of 2.5 to

3.33 hours and the number of children in attendance was documented. In cases where

fewer than 3 children between the ages of 18 months and 5 years of age were in

attendance, the observation was rescheduled. In 21 homes (40.4%), 3 children within this

age range were present during the site visit, in 26 homes (50%), 4 children were present.

In each of these cases, all children within the age range were selected as target children

for the administration of the AIS. In the 5 homes (9.6%) where more than 4 children

within the age range were present, the birth month method (Forsman, 1993) was used to

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randomly select target children. After the administration of the AIS and CIS, and once children were placed down for nap, each provider was then asked to complete a program demographic survey and a PAAQ. In several instances, providers were unable to complete the surveys during naptime. When this situation occurred, providers were given a self-addressed stamped envelope to mail back the surveys. Fifty-one (98.1%) providers completed and returned the surveys.

Data Analysis

To address each of the research questions in this study, the Statistical Package for the Social Sciences (SPSS) software 18.0 (SPSS Inc., Chicago IL) was used as the computer program to conduct statistical tests. An alpha value of .05 was used to determine statistical significance for all analysis, as this level of significance is commonly used in social science research (King & Minnium, 2003). Further, given the small sample size in this study, it was not possible to detect differences at lower significance levels.

In preparation for data modeling, Kolmogorov-Smirvov (K-S) tests revealed that the distribution of several variables collected for this study did not comport to the normal curve. These included three covariates: (1) ECE Credits, (2) Highest Education Level, and (3) CCCAP and two dependant variables: (1) Harshness and (2) Detachment. Each distribution, with the exception of Highest Education Level, displayed positive skew. Histograms constructed for Highest Education Level indicated instead a bi-modal distribution with the majority of providers falling into one of two categories: High school degree or B.A. degree. Consequently, a dummy code described previously was created to solve issues concerning this distribution.

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Since many observations reached the scales' natural lower limit for ECE credits, CCCAP, Harshness and Detachment, Box-Cox transformations were conducted on these variables. Subsequent K-S tests on transformed variables revealed that transformations improved the distribution of ECE Credits, but likely due to the small sample size, did not improve the distribution for CCCAP, Harshness and Detachment. Consequently, untransformed values for CCCAP, Harshness, and Detachment are presented for ease of interpretation. For models predicting Harshness and Detachment, standard errors were adjusted to compensate for the skew using a heteroscedasticity-consistent standard error estimator (Hayes & Cai, 2007).

Another important analytic issue in this study concerned balancing the comprehensiveness of variable inclusion with what was realistic given the limitations of the sample size. Thus, a series of bivariate analyses were conducted first via Pearson's Product-Moment correlations between each continuous potential analytic covariate and each continuous dependant variable to determine covariates to retain in subsequent modeling.[4] Following standard practice, an r equal to or greater than .20 was used as the criterion for retention (Bowerman & O'Connell, 1990). Bivariate analyses were also conducted via independent sample t-tests between each dichotomous covariate and each

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[4] To assure that the set of covariates retained for modeling, together with the predictor variables of interest, did not produce analytic issues related to multicolinearity among variables, variance inflation factors (VIF) in each model were examined. A VIF >5 was used to determine if multicolinearity existed and in cases where this occurred, one of the variables was dropped from modeling. In addition, a Mahalanobis Distance was calculated for each observation to identify multivariate outliers. Outliers were determined if their x^2 value fell above the critical value at p<.0001. In cases where this occurred, outliers were removed from analysis if it did not result in loss of generalizibility. Unless specified, assume all observations and variables were used in modeling.

continuous dependant variable to determine whether significant mean differences emerged between groups. T-tests that reached statistical significance were used as the standard for covariate retention. Pearson's chi-squared tests of independence were also conducted between each dichotomous covariate and each dichotomous outcome measure to determine whether the distribution of covariates differed between provider groups. Significant chi-square values were then used as the standard for covariate retention.

Research Question One

To examine whether a family child care provider's working model of attachment was predictive of specific dimensions of caregiving sensitivity, a series of multiple ordinary least squared (OLS) regressions were run. To address issues arising from the colinearity between early experiences scales and current states of mind scales, for each dimension of caregiving behavior examined, two regression models were built. The first, the "Early Experiences Model" contained: Loving and Enmeshed PAAQ scales as predictor variables of interest. The second, the "Current States of Mind" model contained: Dismissing, Vulnerable, No Memory and Angry PAAQ scales as predictor variables of interest. Each model controlled for covariates associated with the dimension of caregiving behavior examined. For each regression model, an r^2 value was used to determine model fit and beta weights were used to assess the effect sizes of individual predictor variables. Appendix G provides an analytic roadmap for research question 1.

Research Question Two

To understand whether a provider's working model of attachment moderated the relationship between formal early childhood education coursework and dimensions of

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caregiving sensitivity, another set of OLS regression equations were built using CIS sensitivity scores, AIS intensity of involvement scores, and AIS responsiveness to learning needs scores as dependant variables. Following procedures outlined in research question 1, an early experiences model and a current state of mind model were built for each dependant variable examined. Interaction terms between each PAAQ scale score and number of ECE credits completed were calculated and used as predictor variables of interest and all models controlled for covariates that demonstrated relationships to the outcome examined. In cases where the interaction term was statistically significant, unstandardized regression coefficients were used to calculate four simple slopes representing the combination of high and low levels of ECE Credits and PAAQ scale scores. Simple slopes were then graphed in a two-way interaction plot to determine the direction of the interaction. Appendix H provides an analytic roadmap for research question 2.

Research Question Three

To understand whether there were differences in working models of attachment between provider's who held a negative license and provider's who held a good-standing license, a series of independent, two-tailed t-tests were conducted on each PAAQ scale. For scales that demonstrated significant mean differences, descriptive statistics were consulted to determine the direction of the difference.

Research Question Four

To explore whether particular working models of attachment increased or decreased the likelihood of a provider holding a negative license, a binary logistic

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regression was conducted using each PAAQ scale score as the predictor variable of interest controlling for covariates found to influence provider licensing status. A Wald test was used to determine whether differences in PAAQ scale scores could predict licensing status and a log-odds ratio was used to determine the degree to which increases in working model scale scores increased or decreased the risk of negative licensing status.

CHAPTER FOUR

RESULTS

This chapter presents the results of analyses addressing the core research questions under investigation in this study. The first section of this chapter presents descriptive statistics related to key program and provider characteristics of the sample used in the observational portion of this study. It follows with an examination of the relationships among program and provider characteristics and dimensions of provider sensitivity observed in the study sample. The first section concludes with results from analyses used to address research questions 1 and 2, regarding, respectively, the influence of a provider's working model of attachment on caregiving sensitivity, and the moderating effects of a provider's working model of attachment on the relationship between formal early childhood education coursework and caregiving sensitivity.

The second section of this chapter presents descriptive statistics on the two licensing group samples used to address research questions 3 and 4. It follows with analyses examining whether differences along key program and provider demographic variables were observed between provider licensing groups. The chapter concludes with the presentation of inferential statistics used to examine whether differences in working models of attachment existed between provider licensing groups and whether particular working models of attachment increased or decreased the likelihood of negative child care licensing status.

Program and Provider Characteristics: Observational Study Sample

Data for the observational portion of this study was drawn from 52 licensed

family child care providers. Due to missing data stemming from one provider not

returning the PAAQ and program demographic survey, a sample size of 51 was used for

several tests. As can be seen in Table 4, the sample was comprised exclusively of

females with the majority of providers caring for children at least 8 hours a day, with

90% of providers open for 12 hours or more. While information pertaining to the cultural

backgrounds of providers in Colorado was unavailable for comparative purposes, the

distribution of provider ethnicities in this sample closely mirrors the general population

found in the greater Denver area (Preuhs, 2002). In addition, the percentage of providers

in this sample holding negative licenses (21%) is highly similar to that which was found

in the population of licensed providers in the Denver metropolitan area (16%) at the time

of study recruitment.

Table 4. Frequency Distributions of Sample Characteristics

	N	Percent
Female	52	100
Full-Time (open at least 8 hours)	51	98
24-Hour Care	3	6
Ethnicity		
African-American	6	12
Caucasian	33	64
Latina/Hispanic	8	1
Native American	2	3
Multi-Ethnic	3	6
Licensing Status		
Good-Standing	41	79
Negative	11	21

As can be seen in Table 5, the average provider in this sample cared for

approximately 5 children during site visits. Of these children, approximately one child

per provider received CCCAP subsidy to attend the program, although there was

substantial variation among providers, with nearly 61% not enrolling any subsidized

children. Of the 19 providers who did accept CCCAP payments, they on average, cared

for between 3 and 4 children on subsidies during site visits.

Table 5. Program and Provider Descriptive Statistics

	N	Mean	SD	Range
Children Present	52	4.88	1.44	3-9
CCCAP	51	1.31	2.18	0-9
Experience	51	11.07	8.91	1-29
ECE Credits	51	12.86	14.17	0-46
Training hours	51	162.08	159.23	0-810

In general, the sample was composed of experienced family child care providers.

However, large differences in experiences levels existed among providers. Frequency

distributions indicated that just over a third (n=19) had less than 5 years of experience

with the remainder (n= 32) having provided family child care for at least 5 years. These

results can be interpreted in relation to the national Quality in Family, Friend and

Neighbor Care Study (Kontos, et al., 1995) which found an average of 5 years experience

among licensed providers with most having between 1 and 3 years experience.

While information pertaining to why providers entered into the field and their

orientation to the work was not collected for this study, provider participation in a

professional organization was collected and can be viewed as a proxy for a more

professional orientation (Kontos, et al., 1995). In this sample, 59% of the providers were

members of a professional organization and were typically affiliated with an Association

of the Education of Young Children local chapter. This is compared against the 26% of

providers in the Quality in Family, Friend and Neighbor Care Study who reported

membership in a professional association (Kontos, et al., 1995). That nearly 67% of

providers in this sample had more than 5 years of experience and that 59% were members of professional groups suggests that this sample may have a more professional orientation to the work than might be expected in the general population of licensed providers.

Within this study, three dimensions of provider professional credentials were collected: number of early childhood education credits (ECE) completed, number of non-credit bearing continuing education hours related to young children and the operation of a family child care business completed (referred to as Training Hours), and formal education level. As can be seen in Table 5, the mean number of ECE credits providers in this sample had taken was just over 12, translating to about 4 completed classes. Again, considerable variation was found among providers with frequency distributions confirming that approximately 37% (n=19) of providers had not completed any ECE coursework.

In general, providers in this sample had completed a substantial amount of non-credit bearing training hours. It is important to note that the State of Colorado required, up until 2009, 12 hours of on-going professional development annually and many providers indicated that they had completed the minimal number of hours required. This prompted many to calculate their training hours by simply multiplying their number of years of experience by training hours required. Consequently, a Pearson's Product Moment correlation was calculated between training hours completed and years of experience to understand the degree of the relationship. A small and non-significant correlation was found (r= .230, p=.105) indicating that these variables are independent of one another.

Figure 1 shows that formal education levels in this sample are almost evenly split between providers with a bachelor's degree or higher (46%) and those with lower education levels (54%). This distribution can be compared against a recent national survey of the education levels of the early childhood workforce, which reported that only 11% of family child care providers nationally held a B.A. or higher (Herzenberg, et al., 2004). Thus, this sample had considerably more formal education than would be expected.
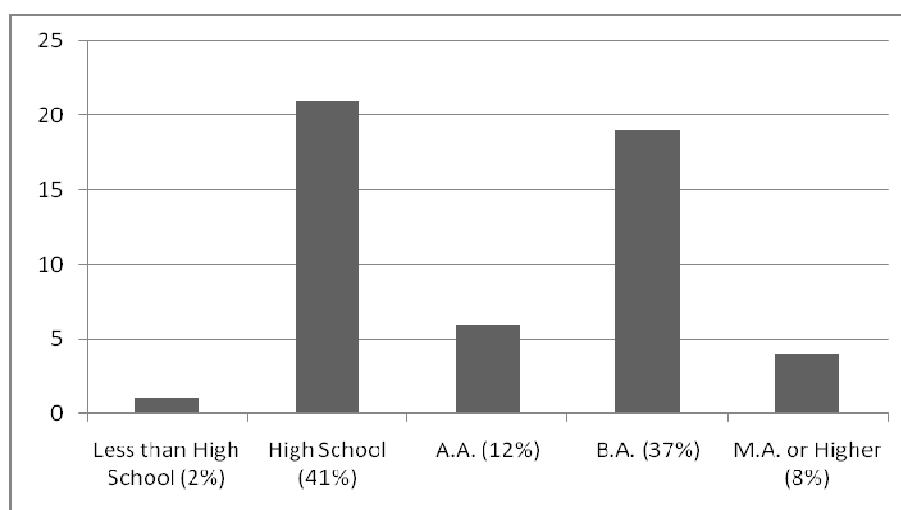
Figure 1. Distribution of Provider's Formal Education: Observational Sample (N = 51)

Table 6 displays information related to the sample's annual family income. For providers in this study, the median family income fell between $50,001 and $75,000 a year. This annual family income is higher than that reported by Helburn and her colleagues (2002) who used data from the nationally representative Cost, Quality and Child Outcomes Study to find an annual provider family income of approximately $37,000 a year. Given that providers in this sample are more educated than those found in other samples; it is not surprising that median annual family income is higher as well.

Table 6. Frequency Distribution: Annual Income (N = 51)

Income	Frequency	Percent
0 -$5,000	2	3.8
$5,001 -$10,000	0	0
$10,001 -$25,000	4	7.7
$25,001 -$50,000	13	25.0
$50,001 -$75,000	15	28.8
$75,001 -$100,000	9	17.3
More than $100,000	8	15.4

In summary, by using a sampling frame that included a proportion of providers with a negative license representative of the proportion found in the Denver metropolitan area and by recruiting the remaining providers from a randomly generated database, attempts were made to assure that the providers in this study displayed a representative range along the aforementioned structural indicators of quality. However, study self-selection appears to have generated a sample for this study that is of somewhat higher quality, at least along structural dimensions, than would be expected in the general population of licensed family child care providers.

Provider Sensitivity

Emotional Tone

In this study, provider sensitivity was first operationalized as a provider's overall emotional tone toward children and three CIS scales were used to measure the degree to which providers exhibited: emotional warmth (also referred to as "sensitivity"), harshness, and detachment. Table 7 displays the means, ranges and standard deviations calculated for each CIS scale in this sample. These scores indicate that, for the most part, providers were quite warm to children, and not very harsh, but that there was some detachment from children observed. Standard deviations, particularly with respect to sensitivity and detachment, also indicate considerable differences among providers.

When comparing these scores to those found by Kontos and her colleagues (1995), this sample of providers appears slightly more sensitive (compared to a mean of 3.03), slightly less harsh (compared to a mean of 1.58), and somewhat more detached (compared to a mean of 1.46).

Table 7. Descriptive Statistics: Emotional Tone (N = 52)

	Mean	SD	Range
Sensitivity	3.25	.71	1.50-4.00
Harshness	1.36	.55	1.00-3.38
Detachment	1.74	.89	1.00-4.00

Intensity of Involvement

In addition, provider sensitivity was also operationalized in terms of the intensity with which a provider interacted with individual children. The AIS was used to measure the average proportion of time providers spent engaged in different levels of interaction across four target children. As can be seen in Table 8, provider interactions ranged from 2% of their time spent in routine caregiving activities with target children to almost 20% of their time spent in elaborated interactions with target children. Within the context of a 2.5 to 3.33 hour observation, this translated into each target child spending, on average, about 1.15 minutes receiving routine or custodial care from their provider, about 1.85 minutes receiving minimal caregiving from their provider, almost 4 minutes engaged in simple interactions with their provider, and about 10 minutes engaged in elaborated, reciprocal interactions with their provider. Across children, the average provider spent about 1 hour, or a third of their morning, in *individualized* interactions with target children.

Table 8. Intensity of Provider Involvement: Percent Time Spent in Caregiving Activities (N = 52)

	Mean	SD	Range
Routine	.02	.02	.00 - .08
Minimal	.04	.02	.01 - .08
Simple	.08	.04	.02 - .16
Elaborated	.20	.11	.03 - .53
Intensity of Involvement[1]	.84	.45	.14 - 2.16

Responsiveness to Learning Needs

The final dimension of caregiving sensitivity measured in this study related to the degree to which providers responded to children's learning needs. The AIS was again used to measure the proportion of time providers spent in individualized or group interactions that: scaffolded target children's learning experiences, provided target children with didactic instruction, and facilitated target children's peer interactions. Table 9 displays the means, ranges and standard deviations related to the proportion of time providers spent responding to children's learning needs. Providers, in general, spent about 9% of their time, or nearly 16 minutes over the course of a morning, scaffolding children's experiences to promote learning. They spent approximately 20% of their time, approximately 35 minutes, instructing children through route procedures or by giving children directions, and spent a little over 5% of their time, nearly 9 minutes, facilitating peer interactions and negotiating peer conflict.

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[1] Scores were achieved by weighting the time providers spent in each level of interaction (i.e. routine, minimal, simple, and elaborated) and summing the weighted proportions.

Table 9. Responsiveness to Learning Needs: Percent Time in Instructional Activities (N = 52)

	Mean	SD	Range
Scaffolds	.09	.07	.00 - .30
Didactic	.20	.09	.04 - .50
Facilitates Peer	.05	.04	.00 - .18
Responsiveness to Learning[2]	.34	.17	.06 - .92

Contextual Factors Related to Caregiving Sensitivity

To understand program and provider contextual factors related to dimensions of caregiving sensitivity and to identify covariates used in subsequent analysis, a series of two-tailed, Pearson's Product-Moment correlations were calculated. As can be seen in Table 10, the total number of children a provider cared for during a site visit did not demonstrate significant relationships to most dimensions of provider sensitivity with the exception of a significant, moderate relationship found with the intensity of provider involvement. However, when looking more specifically at the composition of children in attendance, one of the most striking findings is the relationship between caring for more children receiving CCCAP subsidies and the overall emotional tone of the provider. That is, providers who cared for more children receiving subsidies demonstrated substantially less warmth, moderately more harshness, and substantially more detachment.

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[2] Scores were achieved by summing the proportion of time providers spent: scaffolding learning experiences, providing didactic instruction and facilitating peer interaction.

Table 10. Correlations between Dimensions of Provider Sensitivity and Covariates (n=51)[3]

	Sensitivity	Harshness	Detachment	Intensity of Involvement	Responsiveness to Learning
Children Present	-.170	-.090	.092	-.325*	-.152
Experience	-.190	.018	.158	-.199	-.321*
Training Hours	.031	-.100	.016	-.133	-.061
ECE Credits	.282*	-.154	-.219	.089	.087
Income	-.011	.045	-.055	-.258	-.108
CCCAP	-.533**	.323*	.596**	-.159	-.201

**p<.001;*p<.05

ECE credits, while demonstrating relationships in the expected directions to each dimension of provider sensitivity, was only significantly and moderately related to more emotional warmth. Providers with more experience spent less time responding to children's learning needs than did providers with less experience.

In addition, to understand whether significant between-provider group differences existed in CIS and AIS scores, a series of two-tailed, independent t-tests were calculated. Comparison provider groups included: those having attained at least an A.A. degree verses those with less than an A.A. degree, members of minority groups versus non-minority group members, and members of professional organizations versus those with no professional group affiliation. Table 11 displays measures of central tendency calculated for CIS and AIS scales for each discrete provider group and results of between-group comparisons.

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[3] A sample of 52 providers was used for Children Present.

Table 11. Comparisons of Caregiving Sensitivity by Provider Group

	Sensitivity	Harshness	Detachment	Intensity of Involvement	Responsiveness to Learning Needs
A.A. Degree					
Yes (n=29)	2.99(.71)	1.31 (.60)	1.41 (.49)	.877 (.42)	.366 (.17)
No (n=22)	2.46(.65)	1.41 (.49)	2.20 (1.05)	.790 (.51)	.300 (.17)
t-test	-2.463**	.634	3.485**	-.674	-1.415
Minority Group					
Yes (n=19)	3.10 (.71)	1.46 (.62)	2.04 (1.01)	.813 (.57)	.351 (.17)
No (n=33)	3.34 (.68)	1.30 (.55)	1.56 (.78)	.851 (.39)	.323 (.19)
t-test	1.184	-.875	-1.77[4]	.289	.128
Professional Membership					
Yes (n=30)	3.17 (.76)	1.43 (.65)	1.88 (.98)	.793 (.41)	.289 (.16)
No (n=21)	3.38 (.63)	1.24 (.36)	1.56 (.75)	.906 (.49)	.405 (.16)
t-test	1.019	-1.365[5]	-1.276	.869	2.503*

**p<.001, *p<.01

In general, very few significant differences in CIS and AIS scores were observed between provider groups. However, providers with at least an A.A. degree demonstrated significantly more sensitivity and less detachment toward children in comparison to providers who held less than an A.A. degree. A significant and unexpected difference was also observed in the proportion of time providers spent responding to children's learning needs between professional group members and non-members. That is, providers who were unaffiliated with professional organizations, on average, spent more of their morning (40%) engaged in activities intended to promote learning in comparison to providers who were professional group members (29%).

Working Models of Attachment

As noted in Chapter 3, internal working models of attachment were

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[4] Correction made to compensate for unequal variance.

[5] Correction made to compensate for unequal variance.

operationalized in terms of a provider's perceived early childhood attachment

experiences (Loving and Enmeshed) as well as in terms of their current state of mind

with respect to attachment (Dismissing, Vulnerable, No Memory, Angry). Table 12

displays the means, ranges and standard deviations for each PAAQ scale found in this

sample.

Table 12. Descriptive Statistics: Perceptions of Adult Attachment Questionnaire

	Mean	SD	Range
Loving	3.94	1.05	1.00-5.00
Enmeshed	2.55	.68	1.00-4.43
Vulnerable	2.25	.66	1.00-3.80
Dismissing	2.22	.82	1.00-4.00
No Memory	2.27	.99	1.00-5.00
Angry	1.96	.82	1.00-4.20

N=51

Although there was large variability, on average, providers in this sample

characterized their early attachment experiences as quite loving and warm. The average

provider also reported a moderate degree of enmeshment with their attachment figure

during childhood marked by feelings of worry over or responsibility for the well-being of

an attachment figure while growing up. The mean vulnerable score of 2.25, when

considering the truncated range of scores, also indicates that a fair number of providers

currently experience low to moderate levels of current enmeshment and emotional

vulnerability with respect to their attachment figure (e.g. "My mother can devastate me

with her criticisms"). In addition, mean dismissing and no memory scores suggest that

the average provider, to a moderate extent, currently employs defensive strategies

typically associated with having experienced rejection in early attachment relationships

(Main, et al, 1985) such as derogating the importance of closeness and intimacy or

blocking negative early attachment memories. Although there is some variability, these scores also indicate that the average provider does not experience a great deal of active anger over their early attachment relationships and experiences. These scores are very similar to those of a sample of high-risk mothers reported by Huth-Bocks and her colleagues (2004).

Influence of Working Models of Attachment on Caregiving Sensitivity

For ease of presentation, results of statistical tests pertaining to research question 1 have been divided into sections corresponding to: (1) dimensions of the emotional tone of the provider, (2) the intensity of provider interactions with children, and to (3) the responsiveness of a provider to children's learning needs. For each of these caregiving outcomes explored, the results of two OLS regression equations are presented; the first examining the influence of perceived early attachment histories, and the second examining the influence of current states of mind with respect to attachment. Appendix F displays a correlation matrix of all variables included across models.

Emotional Tone

Table 13 presents the results of an OLS regression equation predicting sensitivity scores from perceived early attachment experiences scales and Table 14 displays the results of an OLS regression equation predicting sensitivity scores from current states of mind scales.[6] As demonstrated in both tables, the models specified provide a good fit to

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[6] For these and all subsequent tests, covariates were included in models if they demonstrated a correlation of .20 or higher with the outcome explored or if t-tests indicated significant between-group differences in outcomes. To address issues of colinearity between ECE credits and an A.A. degree, ECE credits were dropped from modeling in spite of demonstrating a correlation of >.20. Before the decision to eliminate

the data with both explaining approximately a third of the variation in sensitivity scores.

However, none of the perceived early experiences scales or the current state of mind

scales contribute to explaining any variance in sensitivity. In contrast and across models,

caring for more children receiving subsidies emerged as the only significant predictor.

The unstandardized regression coefficients show that with all else held constant,[7] the

enrollment of one additional child receiving subsidies in a family child care home is

likely to result in a decline in sensitivity scores of between .16 and .18 points. Given that

most providers who accept subsidies as a form of payment typically enroll approximately

4 subsidized children, sensitivity scores for these providers would be expected to be

approximately .68 points (out of 4) lower than compared to providers who do not enroll

any children on subsidies.

Table 13. Predicting Sensitivity from Perceived Early Experiences

	B	SE	T	P
Constant	3.145	.498	6.319	.000
CCCAP	-.163	.046	-3.555	.001
A.A.	.221	.197	1.124	.267
Loved	.061	.091	.663	.511
Enmeshed	-.016	.145	-.110	.913

Notes: r^2=.34 (p = 007)

ECE credits from models was made, ECE credits was regressed against each outcome measure and across models, ECE credits did not emerge as a significant predictor of any outcome examined.

[7] All coefficients presented are unstandardized.

Table 14. Predicting Sensitivity from Current States of Mind

	B	SE	T	P
Constant	4.002	.469	8.537	.000
CCCAP	-.174	.046	-3.812	.000
A.A.	.168	.205	.821	.416
Dismissing	-.117	.119	-.982	.331
Vulnerable	-.172	.172	-1.000	.323
Angry	.047	.154	.308	.760
No Memory	-.026	.107	-.241	.811

Notes: r^2=.34 (p =.004)

Tables 15 and 16 respectively, display the results of the early experiences and current states of mind models predicting caregiving harshness. As can be seen in Table 15, neither early experience scale significantly explained any variation in provider harshness. Across models, caring for more subsidized children was, however, predictive of greater provider harshness, but the effects of enrolling more subsidized children on harshness was relatively weak. On the other hand, the current states of mind model revealed that variations in the degree to which providers endorse a dismissing or derogating attitude toward attachment significantly predicted harshness with a one unit increase in dismissing scores likely to result in over a quarter of a point increase in harshness scores.

Table 15. Predicting Harshness from Perceived Early Experiences

	B	SE(HC)[8]	T	P
Constant	1.334	.362	3.687	.001
CCCAP	.090	.032	2.821	.007
Loved	-.053	.066	-.798	.429
Enmeshed	.042	.104	.399	.691

Notes: r^2=.11 (p =.002)

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[8] Standard errors adjusted for skew.

Table 16. Predicting Harshness from Current States of Mind

	B	SE(HC)	T	P
Constant	.483	.400	1.208	.233
CCCAP	.102	.029	3.475	.001
Dismissing	.281	.135	2.09	.043
Vulnerable	.163	.110	1.49	.144
No Memory	-.040	.081	-.493	.624
Angry	-.084	.085	.9799	.332

Notes: r^2=.26 (p =.024)

The final dimension of emotional tone explored concerned the degree to which providers exhibited emotional and physical detachment from children and their activities. Table 17 displays results of an OLS regression equation predicting detachment scores from perceived early experiences scales while Table 18 displays the results of an OLS regression predicting detachment scores from current states of mind scales. Again, as can be seen in both models, enrolling more children receiving subsidies had a small yet significant effect on provider detachment. While no current state of mind scales predicted variations in provider detachment, the results of the perceived early experiences model demonstrate that the degree to which a provider perceives her early attachment relationship to have been enmeshed had a moderate and significant impact on detachment. With all else held constant, a one unit increase in enmeshment scores is shown to result in a likely .41 increase in detachment scores, with providers with the highest enmeshment scores likely to score two full points higher (out of a scale of 4), on the detachment scale.

Table 17. Predicting Detachment from Perceived Early Experiences

	B	SE (HC)	T	P
Constant	1.088	.597	1.823	.075
CCCAP	.193	.064	3.023	.004
A.A.	-.332	.213	-1.559	.126
Loved	-.115	.088	-1.312	.191
Enmeshed	.411	.189	2.058	.045

Notes: r^2=.49 (p =.0005)

Table 18. Predicting Detachment from Current States of Mind

	B	SE(HC)	T	P
Constant	1.227	.491	2.500	.016
CCCAP	.217	.058	3.753	.001
A.A.	-.312	.221	-1.413	.165
Dismissing	-.153	.122	-1.253	.217
Vulnerable	.316	.258	1.227	.226
No Memory	.011	.114	.100	.921
Angry	.010	.182	.054	.957

Notes: r^2=.48 (p =.0001)

Intensity of Involvement

Tables 19 and 20 respectively predict the intensity of provider involvement with children from perceived early attachment experiences and current states of mind scales. Both models show that caring for more children and having a lower family income predicted lower levels of involvement where provider interactions with children primarily focused on meeting children's custodial needs. Results also revealed that higher scores on both the enmeshed early experiences scale and on the vulnerable current state of mind scale predicted less intensive involvement. On the other hand, higher scores on the angry current state of mind scale predicted more intensive involvement with children.

Table 19. Predicting Intensity of Involvement from Perceived Early Experiences

	B	SE	T	P
Constant	2.747	.484	5.674	.000
Children Present	-.121	.042	-2.865	.006
Experience	-.011	.007	-1.570	.123
Income	-.109	.042	-2.565	.014
Loved	-.023	.064	-.358	.722
Enmeshed	-.223	.101	-2.206	.033

Notes: r^2=.29 (p =.007)

Table 20. Predicting Intensity of Involvement from Current States of Mind

	B	SE	T	P
Constant	2.257	.432	5.219	.000
Children Present	-.120	.042	-2.839	.007
Experience	-.009	.007	-1.352	.183
Income	-.101	.043	-2.334	.024
Dismissing	.060	.078	.762	.762
Vulnerable	-.288	.113	-.2.544	.015
No Memory	-.059	.072	-.811	.422
Angry	.209	.100	2.078	.044

Notes: r^2=.32 (p =.014)

To gain a more precise estimate of the unique effects of having an enmeshed early attachment experience and a vulnerable and angry state of mind with respect to attachment on intensity of engagement, another OLS regression was run controlling for provider family income and children present. As can be seen in Table 21, after considering the shared variance among working model constructs on intensity of involvement, higher enmeshment scores no longer predicted less intensive engagement with children. Similarly, under standard convention for attributing statistical significance, higher vulnerability scores also no longer predicted less intensive involvement. However, given the small sample size used for this study that limited statistical power to detect meaningful differences combined with a t-value that very nearly approached statistical significance under standard convention, higher vulnerability scores may arguably predict

less intensive involvement with children.

Table 21. Predicting Intensity of Involvement from Enmeshment, Vulnerability, and Anger

	B	SE	T	P
Constant	2.581	.486	5.312	.000
Children Present	-.137	.042	-3.248	.002
Income	-.119	.042	-2.807	.007
Enmeshed	-.133	.096	-1.389	.172
Vulnerable	-.223	.114	-1.957	.057
Angry	.179	.091	1.977	.054

Notes: r^2 = .31, p =.004

More current active anger regarding early attachment experiences remained a significant predictor of more intensive and elaborated involvement with children. At first blush, this may appear to be a counterintuitive finding. However parenting research has shown that mothers' classified as preoccupied or actively angry over early attachment experiences often employ a hypervigilent approach to caregiving, often characterized as intrusive (Biringen, et al., 2000b; George & Solomon, 1999/2008). Although a measure of intrusive caregiving was not collected for this study, the closest conceptual construct collected was the proportion of time providers spent in didactic instruction, which frequently took the form of giving children instructions or telling them what to do and or what not to do. Consequently, a Pearson's Product Moment correlation was calculated between the proportion of time providers spent in didactic instruction and angry PAAQ scores. While a positive relationship emerged, the correlation was neither strong nor significant (r=.12, p=.400).

Responsiveness to Learning Needs

Finally, Tables 22 and 23 display the results of two OLS regressions predicting

provider responsiveness to children's learning needs from perceived early experiences

scales and current states of mind scales, respectively. When considering both the early

experiences and current states of mind models, the only working model construct that

significantly predicted responsiveness to learning needs was enmeshment, with higher

enmeshed scores predicting provider's spending less time responding to children's

learning needs. The models also show that when including early experiences scales, more

child care experience predicted less instructional responsiveness. On the other hand,

when including current states of mind scales in modeling, provider experience no longer

predicted responsiveness. Instead, professional group membership emerged as

significant, with providers unaffiliated with professional groups demonstrating more

responsiveness to children's learning needs.

Table 22. Predicting Responsiveness to Learning Needs from Perceived Early
Experiences

	B	SE	T	P
Constant	.684	.112	6.091	.000
Experience	-.007	.003	-2.311	.025
CCCAP	.002	.011	.159	.874
Professional Membership	-.065	.046	-1.397	.169
Loved	-.002	.024	-.085	.932
Enmeshed	-.089	.040	-2.251	.029

Notes: r^2=.29 (p=.008)

Table 23. Predicting Responsiveness to Learning Needs from Current States of Mind

	B	SE	T	P
Constant	.369	.089	3.760	.001
Experience	-.003	.002	-1.289	.204
CCCAP	-.011	.009	-1.146	.258
Professional Membership	-.129	.039	-3.337	.002
Dismissing	.046	.025	1.836	.073
Vulnerable	-.022	.034	-.656	.515
No Memory	-.011	.023	-.502	.618
Angry	.026	.031	.138	.419

Notes: r^2=.38 (p=.004)

N=50[9]

Consequently, another OLS regression model was run predicting responsiveness to learning needs from enmeshment scores, years of experience and professional group membership to gain a more precise estimate. As can be seen in Table 24, provider experience continued to have a significant yet small effect, with each year of experience predicted to result in providers spending 7% less of their time responding to children's learning needs. After considering the effects of experience and enmeshment, professional membership no longer predicted instructional responsiveness. Although the effects decreased slightly, an enmeshed early experience continued to be significantly predictive of less responsiveness to children's learning needs, with those scoring the highest on this scale expected to respond to children's learning needs approximately 44% less than those with the lowest scores.

[9] One observation with a standardized residual above 3.50, indicating a univariate outlier, was removed from analysis rendering a sample size of N = 50 for this analysis.

Table 24. Predicting Responsiveness to Learning Needs from Enmeshment and
Contextual Factors

	B	SE	T	P
Constant	.675	.094	7.208	.000
Experience	-.007	.003	-2.683	.010
Professional Membership	-.066	.045	-1.460	.151
Enmeshed	-.088	.033	-2.657	.011

Notes: r^2=.29, p = .001

Moderating Effects

To address research question 2 (moderation of effects of ECE coursework by working model), three dependant variables were explored: sensitivity, intensity of involvement, and responsiveness to children's learning needs. Analogous to regression models constructed to address research question 1, two OLS regression models were built per outcome:[10] an "Early Experiences" model and a "Current State of Mind" model, each controlling for covariates demonstrating a relationship to the outcome explored.[11] Because of the consistency in results found across all six models, findings are summarized here and presented in full in Appendix I.

In general and across models, no interaction terms calculated between PAAQ scores and ECE credits emerged as significant predictors of any caregiving behaviors examined. That is, there were no differences in the relationships between early childhood education coursework and sensitivity, intensity of involvement, and responsiveness to learning needs scores between providers with high security scores, as measured by the

[10] Because of the small sample size in relation to the number of variables included in models reduced the power of the tests, a set of individual models were also run using one PAAQ scale at a time. Results of individual models, with one exception, were similar to those that included the full set of PAAQ variables in a model. Thus, the comprehensive models are presented for ease of presentation unless otherwise noted.

[11] Although attaining at least an A.A. degree differentiated between sensitivity scores, it was excluded as a covariate due to its relationship to ECE credits.

PAAQ "loving" early experiences scale, and providers with low security scores. Correspondingly, there were almost no differences in the relationship between early childhood education coursework and sensitivity, intensity of involvement and responsiveness to learning needs scores between providers with high and low dimensions of insecurity scores. In general, working models of attachment, at least as measured by the PAAQ, do not appear to moderate the relationship between formal early childhood education course work and caregiving sensitivity.

However, one notable exception was found.[12] As can be seen in Table 25, a significant interaction was detected between ECE credits and dismissing scores on the intensity of provider involvement with children. Consequently, unstandardized regression coefficients were plotted in a two-way interaction chart (Figure 2) to understand the direction of the interaction. Figure 2 shows that as providers with low dismissing scores take more ECE coursework, their involvement with children increases. The same relationship between ECE coursework and intensity of involvement was not observed for providers with high dismissing scores. In contrast, as providers with high dismissing scores take more ECE coursework, their intensity of involvement with children declines.

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[12] It is important to note that interactions between ECE credits and intensity of involvement did not emerge when considering all of the working model dimensions *together* in analysis.

Table 25. Test of Moderation on Intensity of Involvement: Dismissing

	B	SE	T	P
Constant	1.60	.33	4.93	.00
Children Present	-.08	.04	-1.84	.07
Experience	-.01	.01	-1.41	.17
Income	-.08	.04	-1.92	.06
ECE Credits	.35	.17	2.06	.05
Dismissing	.05	.07	.72	.48
ECEX Dismissing	-.16	.08	-2.03	.05

Notes: Dependant: Intensity of Involvement.
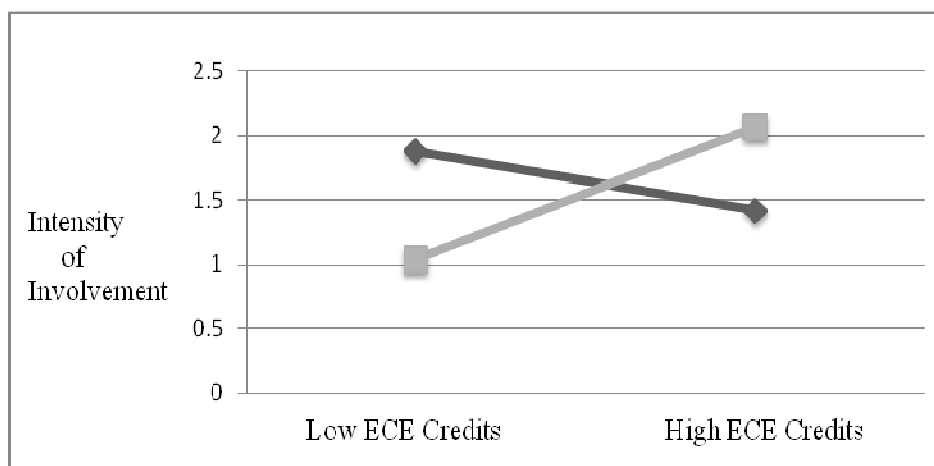
Figure 2. Interaction between Dismissing and ECE Credits Predicting the Intensity of Involvement

Note: Square line represents low dismissing scores; diamond line represents high dismissing scores

To understand if this decline in involvement with children may have stemmed from providers with high dismissing scores exhibiting less harsh and punitive interactions toward children once they completed more early childhood education coursework, another regression model was run with an interaction between dismissing scores and harshness scores calculated as the predictor variable of interest. However, the interaction term was not significant and no evidence was found to suggest that providers with high dismissing scores, once they take ECE coursework, are less harsh toward children.

Licensing Study Sample

Data for this portion of the study was drawn from 57 licensed family child care

providers in the Denver, Colorado metropolitan area. Twenty-eight providers (49.2%) in

this sample held a good-standing child care license while 29 providers (50.2%) in this

sample held a negative license stemming from harsh treatment (2 providers), lack of

supervision (2 providers), or both (25 providers).

Program and Provider Characteristics by Licensing Group

Table 26 displays descriptive statistics for each licensing group with respect to

experience levels, ECE credits taken, training hours completed, and enrollment of

children receiving CCCAP subsidies. Providers with negative licenses, on average, had 3

to 4 more years of experience providing family child care services, completed

approximately 4 fewer ECE credits, completed an additional 74 non-credit baring

professional development hours, and enrolled approximately 1 more subsidized child

than did providers with good standing licenses. Results displayed in Table 27 indicate

that these differences were not, however, of statistical significance.

Table 26. Descriptive Statistics by Provider Licensing Type

		N	Mean	SD	SE
Experience	Good Standing	28	11.88	8.66	1.64
	Negative	29	15.27	10.70	1.99
ECE Credits	Good Standing	28	14.46	15.19	2.87
	Negative	27	9.74	10.14	1.95
Training	Good Standing	28	128.21	107.47	20.31
Hours	Negative	29	202.86	202.41	37.59
CCCAP	Good Standing	28	1.11	1.97	.37
	Negative	29	2.17	2.62	.49

Table 27. Independent T-Tests: Comparison of Licensing Group Demographic Variables

	T	Df	Mean Difference	Std. Error Difference	95% Confidence Interval Lower	Upper
Experience	-1.29	55	-3.33	2.58	-8.51	1.85
ECE Credits[13]	1.36	47.25	4.72	3.47	-2.26	11.71
Training Hours	-1.75	42.94	-74.65	42.72	160.81	11.52
CCCAP	-1.73	55	-1.07	.62	-2.30	.17

**p>.001, *p>.05

Using a series of Pearson's chi-square tests of independence, distributions related to provider: education levels,[14] ethnicities, annual family incomes, and participation in professional associations were compared between provider licensing groups. Figure 3 presents the distributions of provider education levels. A chi-square value of 4.99 (p=.289) indicates that the two sample distributions did not differ significantly from one another with respect to *overall* education levels. However looking more closely, it can be seen that the median education level for providers with good standing licenses is an A.A. degree while the median education level for providers holding negative licenses is only a high school degree. Consequently, another chi-square value of 2.47 (p=.033) was calculated, confirming that the two groups did indeed vary with respect to having obtained at least an A.A. degree.

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[13] Corrections were made to ECE Credits and Training Hours to compensate for unequal variances.

[14] Due to missing data, a sample of 56 (50 percent with a negative license and 50 percent with a good-standing license) was used for all analysis that included provider education levels.
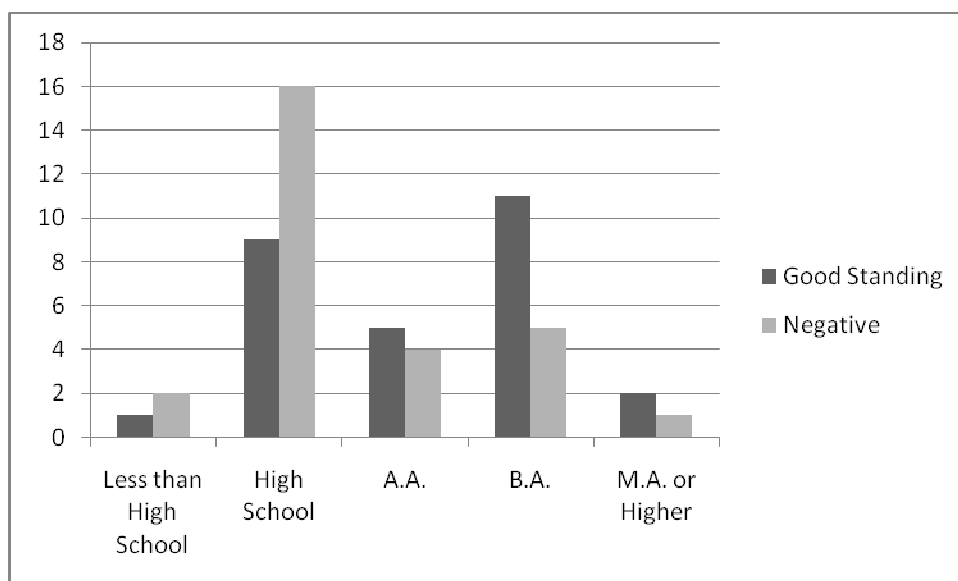
Figure 3 Distribution of Provider Formal Education: Licensing Sample

Table 28 displays the distributions of annual family incomes for each sampling group. For both groups, income levels fell between $50,001 and $75,000 a year with a chi-square value of 6.14 (p=.292) confirming that the two sample distributions did not significantly differ from one another. In addition, 57% (n=16) of providers with good standing licenses reported professional group membership compared to 62% (n=18) in the negative license sample (chi-square value =.144, p=.704).

Table 28. Income Level by License Type

		1-5,000	10,001-25,000	25,001-50,000	50,000-75,000	75,001-100,000	More than 100,000	Total
License	Good-Standing	2	1	6	11	6	2	28
	Negative	0	3	11	8	3	3	28
Total		2	4	17	19	9	5	56

Finally, Table 29 presents the distribution of provider ethnicities for each licensing group. A chi-square value of 7.65 (p=.265) again indicates no significant between group differences in distributions. While the percentage of providers who

reported minority group membership was indeed higher for the sample of providers with

a negative license (42%) compared to the sample of providers with a good-standing

license (29%), an additional chi-square value of 1.24 (p=.264) revealed that this

difference was also not of statistical concern.

Table 29. Provider Ethnicity by License Type

		African-American	Caucasian	Latina	Native American	Multi-Ethnic	Total
License	Good-Standing	2	20	6	0	0	28
	Negative	3	16	3	1	5	28
Total		5	36	9	1	5	56

Differences in Working Models of Attachment by Licensing Group

Table 30 presents the means and standard deviations on PAAQ scales observed in

each licensing group and presents the results of a series of independent, two-tailed t-tests.

In general, providers with good-standing licenses had higher mean PAAQ scores

associated with attachment security and lower mean PAAQ scores associated with

attachment insecurity as compared to providers holding negative licenses. However, the

only statistically significant mean differences between groups was found in the

dismissing and no memory scales, with providers holding a negative license scoring

approximately half a point higher on both scales.

Table 30. Mean Differences in Provider PAAQ Scales by Licensing Type

Scale	Good-Standing Mean	SD	Negative Mean	SD	Mean Difference	T
Loved	4.17	.86	3.76	1.10	.401	1.527
Enmeshed	2.48	.71	2.57	.68	-.093	-.504
Dismissing	2.08	.65	2.52	.82	-.442	-2.249*
Vulnerable	2.17	.82	2.28	.58	-117	-.622
Angry	1.83	.80	2.18	.89	-.335	-2.178
No Memory[15]	2.04	.76	2.55	1.00	-.516	-1.499*

**p>.001, *p>.05

Risk to Negative Licensing Status

Table 31 displays the results of a binary logistic regression predicting licensing status from PAAQ scale scores, controlling for the effects of an A.A. degree. The Wald goodness of fit test indicates that two variables significantly predicted licensing status: educational attainment and the degree to which a provider endorses a dismissing or derogating view of attachment.

Table 31. Predicting Risk to Negative Licensing Status from PAAQ Scales

	B	SE	Wald	Exp(B)
A.A.	-2.264	.830	7.438**	.104
Loved	-.127	.621	.042	.881
Enmeshed	.744	.560	1.761	2.104
Dismissing	1.133	.566	4.009*	3.104
Vulnerable	-.852	.624	1.867	.426
No Memory	.694	.458	2.293	2.002
Angry	.314	.753	.174	1.368
Constant	-3.080	4.328	.506	.046

**p>.001, *p>.05

With respect to educational attainment, the odds-ratio calculated suggests that having less than an A.A. degree only slightly increases the risk of negative licensing status. On the other hand, a dismissing working model poses much greater risk. As the

[15] Corrections made for unequal variances.

odds-ratio demonstrates, a one-unit increase in dismissing scores is predicted to result in

a provider being over three times more likely to have a negative license stemming from

child maltreatment or neglect.

CHAPTER FIVE

DISCUSSION

This chapter opens by summarizing the findings of this study in relation to the theoretical predictions made by attachment theory (Bowlby, 1973). It proceeds with a discussion of the challenges of using the PAAQ as a measure of an adult's working model of attachment; particularly with respect to measuring the construct of attachment security. It follows with a discussion of how the results of this study can be used to identify and target providers at-risk of developing relationship difficulties with the children in their care and identifies potentially promising attachment-based interventions to improve family child care provider caregiving sensitivity that may be applied within state quality improvement systems. The chapter continues with a discussion of the overall pattern of caregiving observed across family child care providers in this study and how these patterns and a provider's working model of attachment may be considered in interventions that seek to enhance the instructional environment of family child care homes. The chapter concludes with a discussion of the limitations of this study and points to further research that will be necessary to better understand the relationships between a provider's working model of attachment and her caregiving sensitivity.

Summary of Findings

The results of this exploratory study suggest that, similar to parents (Hesse, 2008; van Ijzendoorn, 1995), family child care providers with insecure working models of draw upon their attachment representations to shape their caregiving practices. Two working model constructs in particular--currently endorsing a dismissing or derogating attitude toward attachment and having experienced an enmeshed or role-reversing early attachment history-- were found to relate negatively to caregiving sensitivity. Similar to research on mothers (George & Solomon, 1996), this study found that particular insecure working models of attachment are related to different types of insensitive caregiving practices.

Dismissing Working Models

For example, George and Solomon (1999/2008) argue that the activation of a mother's caregiving system brought on by the presentation of children's attachment needs creates anxiety for mothers with dismissing working models of attachment. In an effort to reduce this anxiety, dismissing mothers tend to create emotional distance by taking a removed approach to caregiving, invoking negative postulates about children, their behaviors, and the demands of caregiving responsibilities (George & Solomon, 1996), and consequently rely on caregiving strategies focused strongly on discipline (Brinter, et al., 2005). Similarly, the current study found support for the notion that providers with higher dismissing scores employed more caregiving practices focused on threatening children to promote obedient behavior and tended to set more of a harsh and punitive emotional tone than did providers with lower dismissing scores. This was further

supported by the finding that higher dismissing scores substantially increased the risk of providers having a negative child care license due to founded complaints regarding their harsh discipline.

In addition, higher dismissing scores increased the risk of a provider being found to have shown lapses in supervision that were considered to jeopardize children's safety . The results are somewhat mixed, however, in that the study did not show an association between higher dismissing scores and observed emotional detachment in interaction with children, nor a relationship between dismissing scores and observed intensity of involvement. Attachment theory and research in the parenting context provides some guidance for interpreting the differences in results between the observational study and the licensing study with respect to distanced caregiving. That is, individuals with dismissing working models, in an effort to maintain a sense of normalcy, often feel a need to act in socially acceptable manners in front of others (i.e. when their caregiving behaviors are being observed). This has been noted when dismissing mothers often report idealized childhoods in light of rejecting early attachment experiences (Hesse, 1999/2008), when they report an idealized perception of the importance of mothering (George & Solomon, 1996), and when they demonstrate better attendance at sensitivity training interventions as compared to mothers with other working model classifications (Spieker, et al., 2005). It is possible that this need to present a socially acceptable caregiving self contributed to why distanced caregiving or large lapses in supervision were only indirectly observed through negative licensing status in this study.

On the other hand, it may be that no relationships exist between distanced caregiving and dismissing working models and that the relationships noted in the licensing study were merely a product of the sample used. Twenty-five (86%) providers with negative licenses in this sample were cited for both harsh discipline *and* lack of supervision, and only 2 (7%) providers were cited exclusively for lack of supervision or for harsh treatment, respectively. Given the results of the observational portion of the study, it may be that a dismissing working model is related only to increased risk of negative licensing status stemming from harsh treatment and not to lack of supervision. Unfortunately, without a larger sample of providers with mutually exclusive licensing violations, it is impossible to disentangle these associations. It also makes drawing any clear interpretations as to the relationship between distanced caregiving and dismissing working models difficult.

This study also found some support for the hypothesis that a dismissing working model of attachment may moderate the relationship between formal early childhood education coursework and the intensity of a provider's involvement with individual children. When only considering dismissing scores in models, providers with lower dismissing scores who had taken more early childhood education credits exhibited more elaborated involvement that extended interaction with individual children and offered more intimate physical contact (e.g. hugging, sitting on lap) than did providers with higher dismissing scores who had taken as much coursework. Western developmental theories that have shaped the content in many early childhood education classes emphasize the importance of individualized care and close caregiving relationships

(Bowlby, 1969/1982; Howes & Ritchie, 2002; Nsamenang, 1999). The results of this study point to the notion that providers may be more likely to take up this course content because it may be compatible with their prior beliefs about relationships and apply it to their caregiving practices if they do not endorse a dismissing working model of attachment. It is also interesting to note that dismissing working models did not moderate the relationship between early childhood coursework and group-focused provider sensitivity or responsiveness to children's learning needs. It is perhaps the more individualized and intimate caregiving behaviors that are more difficult to influence through child-related coursework with providers who tend to devalue closeness in relationships.

The current study also found some evidence to suggest that as providers with high dismissing scores take more early childhood education coursework, their intensity of engagement with children actually declines. Although this is highly speculative, one potential explanation for this counterintuitive finding is that most early childhood education classes emphasize a play-based approach to promoting children's learning in early childhood settings. Presumably, the content of coursework explores the continuum of development-enhancing play ranging from play that is completely child-initiated and directed to play where adults participate and scaffold children's activities (Hyson & Bigger, 2006). It is possible that providers with high dismissing scores are drawing on their working model of attachment to filter course content. That is, providers with high dismissing scores, who are prone to avoid closeness, may be taking up some of the course content that is compatible with their working model and interpreting a play-based

approach to mean that they should allow children to play, on their own, without adult participation or guidance. Again, this is highly speculative, but it is a possible hypothesis as to why these providers might exhibit less involvement with children after taking early childhood education coursework. Further research will certainly be necessary to understand the interplay among actual course content, how providers interpret course content, and working models of attachment.

<center>Enmeshed and Vulnerable Working Models</center>

George and Solomon (1999/2008) and Main and Hesse (1990) have also postulated that when caregivers have experienced worry, fear, or trauma in their early attachment relationships, the activation of their caregiving system brought about by children's attachment behaviors frequently creates emotional disregulation. To gain emotional control, these caregivers often employ constricted caregiving where they remove themselves either emotionally or physically from caregiving duties often leaving children in distress (George & Solomon, 1999/2008). While the current study did not specifically look at trauma or abuse in early childhood, the enmeshed and vulnerable scale on the PAAQ were used to assess the degree to which providers experienced worry in early childhood over their attachment figures' well-being and current feelings of entanglement and susceptibility to emotional pain from attachment figures, respectively. Similar to research in the parenting context, the current study found that family child care providers who reported more enmeshment in their early attachment histories demonstrated more emotional detachment and less responsiveness to children's learning needs. In addition, this study also found that providers who reported more <u>current</u>

vulnerability demonstrated less engagement with children and relied primarily on caregiving strategies focused simply on meeting children's custodial needs (e.g. wiping their face or changing their diaper).

It is also interesting to note that the licensing portion of this study did not find that having higher enmeshment or vulnerability scores increased the risk of negative licensing status. These results could mean, as noted earlier, that negative licensing status in this sample primarily resulted from harsh discipline. On the other hand, it may mean that these providers employ an emotionally removed and disengaged approach to caregiving, but are available enough to children to ensure their basic health and safety needs. Prior research suggests that this type of caregiving approach may not, however, be "good enough" to support the development of secure attachment relationships between providers and the children in their care (Kontos, et al., 1995), especially for those with social-risk factors (Ahnert, et al., 2006).

Angry Working Models

Attachment theory and research within the parenting context has also found that mothers who are preoccupied and actively angry over their own early attachment relationships place an extreme value on attachment (Mikulincer & Shaver, 1999/2008), resulting in a hypervigilence with respect to keeping their own children emotionally and physically close (George & Solomon, 1999/2008), which often serves to interrupt their children's exploratory behaviors (Biringen, et al., 2000b). Simultaneously, they are often so caught up with their own attachment anger that they are not psychologically open to detecting their own children's attachment needs (van IJzendoorn, 1995). These behaviors,

when taken together, have been described as confused caregiving (George & Solomon, 1996). Within the context of this study, no support was found for the notion that providers with more current active anger around attachment relationships demonstrated more emotional detachment or less involvement with children.

On the contrary, this study found that providers with more active anger exhibited more intensive and elaborated engagement with children. Unfortunately, within this study it was impossible to determine whether the intensity of a provider's engagement with children was considered developmentally supportive, such that caregiving was cooperative of children's need for independence, or was of such intensity as to be considered intrusive and disruptive of children's exploratory behaviors and sense of agency (Stern, 1985). Thus, it is unclear whether active anger actually serves a protective function such that providers are more sensitive to children's need for closeness or that it poses a risk for intrusive caregiving.

It is possible that caring for other people's children may serve as a protective factor by moderating the emotional intensity of a provider's engagement with children. That is, providers may have less emotional investment in other people's children, which may result in providers with more anger having less intense worry over non-relative children's well-being, which, in turn, may enable them to actively engage with children in a developmentally supportive manner. In contrast, it may be that with their own children, there is greater emotional investment, serving to increase an actively angry mother's worry over her children's well-being, prompting more intrusive caregiving behaviors. Understanding the interplay between a provider's working model of

attachment and their caregiving sensitivity with their own children and other people's children is certainly an important area for future inquiry.

No known studies within the context of child care, including this one, have collected information about intrusive caregiving. Nonetheless, this practice was anecdotally observed in this sample of providers. For example, a provider might insist that a child use a material in a particular manner or not allow children to go beyond a very small area for extended periods of time. Consequently, this study points to the need for a number of further studies in this area focused first on describing the characteristics of intrusive caregiving within child care settings. It is possible that this dimension of caregiving insensitivity *may* look different than in parenting and may be more focused on interrupting children's cognitive exploration and intellectual autonomy, curiosity and creativity than on maintaining close proximity. Further, it will be important to understand how this type of caregiving strategy is related to children's adaptation, especially as it relates to how children approach and organize their learning and teacher relationships in later years. Theoretically, there is reason to believe that providers with higher angry attachment scores may be more likely to employ intrusive caregiving practices; however, this too will be an important direction for future research and could not be addressed within the current study.

<div align="center">Secure Working Models</div>

Unlike in the parenting context-- in which it has been established that the security of a mother's own attachment representations enables her to be balanced with respect to her own child and open to the full range of her child's behaviors and to respond in

sensitive ways that establish a secure-base (Bowlby, 1988)--no evidence was found to support the notion that family child care provider attachment security served this function. This study did not find that higher levels of attachment security, as measured by the loving early experiences scale, predicted higher scores on any dimension of caregiving sensitivity nor did higher scores reduce the risk of negative licensing status stemming from child maltreatment or neglect. In addition, no evidence was found to suggest stronger associations between early childhood coursework and dimensions of caregiving sensitivity for providers with higher security scores in comparison to those with lower security scores.

It is possible that within the context of group care settings, provider attachment security does not serve as a meaningful influence on caregiving sensitivity and that there are other contextual factors that may better explain differences in sensitive caregiving behaviors. However, before such a conclusion is reached, it is important to consider how the construct of attachment security was defined and measured within the current study, as it may be an important contributor to the lack of relationships observed between caregiving sensitivity and provider attachment security.

<div align="center">**Measurement Considerations**</div>

The extent research available on mothers has almost exclusively used the Adult Attachment Interview (AAI; Main, et al., 2002) to tap into the security of maternal attachment representations. For pragmatic reasons, this study departed from this methodology and used the PAAQ self-report questionnaire. Important differences exist between these two measures that raise questions about whether a self-report questionnaire

was nuanced enough to fully capture the construct of attachment security in this study.

In contrast to the PAAQ, the AAI has been designed to "surprise the unconscious" by asking an individual a set of questions about their attachment experiences and the meaning they make of them to reveal their underlying relationship-related cognitive information processing rules. Because of the largely unconscious defensive processes observed in insecure adults, attachment experiences reported are not, however, taken at face value. For example, in an effort to keep at bay feelings of attachment rejection, a dismissing adult often reports very loving early experiences that cannot be substantiated with specific examples, or provides contradictory evidence throughout the course of the lengthy interview (Hesse, 1999/2008). Consequently, an extensively trained interviewer is called upon to classify an adult's early attachment experiences as opposed to relying on the report of the individual. In contrast, self-report questionnaires must take an individual's report at face value. In short, it is harder with self-report instruments to distinguish between those who report genuine security in their representations of attachment relationships and those who report it as a defensive process. This may explain the lack of relationships observed between caregiving sensitivity and loving early attachment experiences in this study.

In addition, the AAI uses the early experiences scales, not as a measure of attachment security or insecurity, but in relation to the overall coherency of the attachment narrative. Drawing on Bowlby's (1973) conception of attachment representations as "working" models subject to revision, an adult can be classified on the AAI as having a rejecting early attachment experience but also classified as having a

secure state of mind with respect to attachment; often referred to as "earned secure" (Main, Hesse & Goldwyn, 2008). Indeed, these individuals may have experienced other close relationships, including therapeutic ones that challenged their initial working model by providing a corrective attachment experience (Leiberman & Zeanah, 1999). Within the context of the AAI, these individuals are realistic about the rejection they experienced, but are balanced and sometimes forgiving with respect to their attachment figure (i.e. my mother had a hard life and she parented me in the way she was parented). Ultimately, their narrative suggests that they value attachment relationships and can articulate both the positive and negative impact that their early attachment relationship has had on their current functioning (Hesse, 1999/2008).

Given the importance of a balanced state of mind to attachment security noted in the AAI, the PAAQ also includes a balanced/forgiving current state of mind scale. However, within the sample used in this study as well as in others (Huth-Bocks, et al., 2004; Lichtenstein & Cassidy, 1991), the balanced/forgiving scale demonstrated very low internal consistency, calling into question the reliability of this sub-scale. In addition, the negative skew observed in the data indicated a potential response bias, with providers perhaps feeling social pressure to respond in positive ways about their current feelings about their attachment figure. Given the psychometric issues with the PAAQ balanced/forgiving scale and with the theoretical and methodological issues associated with relying exclusively on a self-report loving early experiences scale as a measure of attachment security, it appears that the PAAQ may be better suited for detecting insecure working models of attachment than for detecting secure working models and that the

results of this study, with respect to attachment security, should be interpreted with caution.

With respect to hypothesis testing, it will be important for future research to gain a better approximation of the effects of a secure working model of attachment on the caregiving behaviors of family child care providers by using a more empirically and theoretically validated measure of attachment security, such as the AAI. However, a central premise that guided the design of this study was that in order for attachment representations to be a construct that could be considered within the applied work of states attempting to improve provider caregiving sensitivity, it is critical to have available a cost-effective tool that can easily identify providers at-risk of developing relationship difficulties with young children and for targeting preventative interventions. In this respect, the influence of attachment security on caregiving sensitivity may be less important in applied settings than are the influences of working models that relate to insensitive care. The results of this study suggest that the PAAQ may be a promising and cost-effective tool for these purposes.

Other important measurement differences exist between the PAAQ and the AAI that should be considered in relation to the results of this study. Similar to the PAAQ, the AAI uses a Likert scale to rate the degree to which an individual has experienced a loving, rejecting and role-reversing early experience and the degree to which an individual exhibits active anger, derogation of attachment and has no memories of early attachment experiences. However, unlike the PAAQ, an AAI certified coder examines the constellation of these individual scale scores in relation to the cohesiveness of the

attachment narrative and arrives at a single, primary working model classification. Consequently, most analytic models using the AAI compare differences in caregiving behaviors as a function of discrete working model classifications.

Since the PAAQ does not yield an overall working model classification, each provider in this sample yielded 6 different working model dimension scores. It is unclear whether it is important to consider a provider's constellation of scores together in relation to their caregiving behaviors or that if by doing so, a degree of noise is entered into the data that appreciably changes interpretations. To help gain necessary measurement precision, it will be important for future research to simultaneously administer the AAI and PAAQ with family child care providers to understand whether there exist thresholds on PAAQ scales that can discriminate between AAI classifications or whether patterns of PAAQ scores can be used to predict AAI classifications to inform a working model classification system for the PAAQ.

Implications

An important premise to this research is that in order to promote more sensitive caregiving practices in family child care providers, it is important to understand precursors to individual differences in caregiving behaviors so that a set of theory-driven interventions directed at an underlying source of caregiving insensitivity can be developed and implemented with family child care providers. Although there are a number of measurement issues to address with the PAAQ, the results of this study, nonetheless, point to the notion that insecure attachment representations (namely endorsing a dismissing attitude toward attachment and having perceived more

enmeshment in early attachment experiences) may be important influences on caregiving practices and may pose risk to family child care provider sensitive and responsive caregiving. By employing an easy-to-administer tool that taps into insecure internal working models of attachment that predict more harsh or detached care, the results of this study can be used to identify at-risk providers and can be used to target interventions toward these providers.

Within the current early learning system, there are several important contact points with family child care providers in which the PAAQ could be used for early identification of providers who may be at increased risk of providing emotionally unsupportive care. Often the first entry into this system for a family child care provider is through child care licensing. In Colorado, the context for this study, providers who apply for a family child care license are required to attend a 45-hour pre-licensing training. It is conceivable that licensing specialists could use the PAAQ to identify providers with high dismissing and enmeshment scores and target the content of pre-licensing training for these providers toward developing an understanding of the importance of a secure-base for young children's development and toward caregiving strategies that promote secure attachment relationships. Within coordinated systems, licensing agents could also then connect these providers to further preventative interventions.

In many states, another important point of contact with family child care providers is through their quality rating and improvement system, often delivered through state departments of human services or through child care resources and referral networks. Within these systems, providers who participate are first administered a

number of structural and global measures of family child care quality. In part, this occurs

as a means to identify programmatic areas that need improvement to guide professional

development and quality improvement efforts (Schaack, Tarrant, Boller & Tout, in

press). However, these assessments often do not provide nuanced enough information to

help target supports above and beyond those aimed at improving the physical caregiving

environment. Consequently, many states are seeking additional tools that could help them

better tailor the content and intensity of their quality improvement efforts in the most cost

effective ways. Within these systems, the PAAQ could also be used to indentify

providers with high dismissing and enmeshment scores that are likely to benefit from

professional development efforts specifically focused on improving provider-child

relationships and provider interactions with young children. It is important to note that

this recommendation does not endorse introducing the PAAQ into quality rating

measures as these are often high stakes assessments that are made public to families and

policy-makers. Once providers have been rated, however, it could be used by technical

assistance providers to further target the content of quality improvement and professional

supports.

Through their participation in a quality rating and improvement system, providers

are often offered scholarships to attend early childhood education classes as a means to

improve their capacity to provide developmentally supportive care and instruction. This

study suggests that offering scholarships to providers with high dismissing scores may

not be an effective mechanism, at least for improving their involvement with children.

Thus, the PAAQ could be used as a helpful screener to ensure effective use of limited

resources. Providers with high dismissing scores could first be offered other relationship-based interventions before taking costly early childhood education coursework to help ensure that once college coursework is taken, it can be more effective at influencing the application of developmentally supportive care and instruction.

However, there are important ethical considerations to denying providers scholarships based on their psychological characteristics and beliefs systems. An alternative to this may be to instead enhance the content of early childhood coursework to include a relationship-based component (Bromer, et al., 2009). Within most early childhood education curricula, the content is primarily focused on understanding developmental theory and developmentally appropriate pedagogy with respect to different domains of children's development (Dickinson & Brady, 2006; Ginsberg, et al., 2006; Hyson & Biggar, 2006). It may be necessary for programs of higher education to also include a focus on helping pre-service practitioners; especially those with dismissing working models, to understand their beliefs about children, caregiving, and relationships, and how these may influence their practices with young children. In a few graduate early education programs, this has been included in curricula through reflective supervision during teaching practicum (see Bank Street College of Education and Erikson Institute as examples). Including reflective supervision in community college practicum, where most providers receive their training, may be important for ensuring that early childhood coursework is effective at enhancing the relationships between providers and children.

Since most providers do not enroll in formal early childhood education classes (Herzenberg, et al., 2004), many states, through their quality rating and improvement

systems, have developed a cadre of early childhood professionals who provide in-service trainings, in-home coaching, and facilitate provider support groups focused, in large part, on improving provider interactions with children (Smith, Schneider & Kreader, 2010). Rarely, however, do these interventions follow theory or evidence-based models and are often focused on conveying information to providers about ways in which to improve their interactions with children by improving daily caregiving schedules and curricular activities (Schaack, unpublished manuscript, 2006; Smith, Schneider & Kreader, 2010). These more generalized supports are costly, with coaching activities occurring over extensive periods of time, sometimes years (Isner, Tout, Zaslow, Soli, Quinn, Rothenberg & Berhauser, 2010; Zellman, et al., 2008) and often they do not result in improvements to caregiving sensitivity (Zellman, et al., 2008).

This study suggests that to effectively improve provider caregiving sensitivity and responsiveness, it may be important to understand a provider's underlying working model of relationships and to target the content of interventions toward a provider's underlying relationship representations and defensive processes. Given that family child care providers tend to identify with mothers and view their role more as a surrogate mother than as a teacher (Layzer & Goodson, 2006), attachment-based caregiving sensitivity interventions applied in the parenting context provide some useful guidance for models that may be effective at improving family child care provider sensitivity and for models that could be applied within the context of state quality improvement systems.

Intervention models used with families to improve caregiving sensitivity vary with respect to both delivery method and dosage. Some utilize a one-on-one home

visiting approach (Bick & Dozier, 2008; Slade, Sadler & Mayes, 2005; Velderman, et al., 2006), while others use group-formats (Cooper, et al., 2005; Heinicki & Levine 2008). Interventions may be offered in as few as four sessions, (Velderman, et al, 2006) or may span up to18 months (Slade, et al., 2005). The interventions, however, share some common features. Typically, they begin by providing families with an easy-to-understand conceptual model of the transactional processes of caregiving behaviors and children's exploratory and attachment behaviors. They also focus on building the reflective functioning skills of the parent (Fonogy, et. al, 1991), often first by focusing on helping parents to more accurately infer the emotional state of their child (Bick & Dozier, 2008). By using reflective tools such as video-clips of parents interacting with their children (Cooper, et al., 2005, Velderman, et al, 2006) or caregiving diaries (Bick & Dozier, 2008), the intervener supports parents in observing their child's behavior and inferring the needs their child's behavior is trying to meet.

Video-clips and caregiving diaries are also used to guide parents gently toward caregiving strategies that challenge their working models. For example, for dismissing mothers, interventions may emphasize supporting closeness and providing nurturance when children exhibit avoidant behavior (Bick & Dozier, 2008), or supporting exploration for preoccupied mothers, or in taking pleasure in the child and providing a secure-base for unresolved or vulnerable mothers (Cooper, et al., 2005). Through reflective dialogue (Seigal, 1991 as cited in Cooper, et al., 2005), interveners also help parents to identify their own emotional states when children exhibit behaviors that challenge their working models and help parents to explore the origins of these feelings

and how they color their interpretation of their child's intentions and behaviors (Cooper, et al., 2005; Dozier, Lindheim & Ackerman 2005, Slade, et al., 2005). Cassidy and her colleagues (2005) explain that by connecting the past with present behaviors, mothers begin to understand that their behaviors have reasons, which often eliminates confusion about why they act in particular ways, helping to give the past and present a better sense of coherence resulting in improved representation of the self.

Another central premise to these interventions is that the intervener-parent relationship serves a corrective attachment function (Leiberman & Zeanah, 1999), providing the parent with a secure base to explore and experience their painful emotions by communicating empathy and helping the parent to contain their emotions (Cooper, et al., 2005). By being able to remember the painful past and identify underlying feelings and making them available at the conscious level, parents are then able to frequently move from defensive processes to more empathy for their child (Cassidy, et al., 2005; Cooper, et al., 2005).

In short, these interventions use a parent's attachment representations to guide the content of the intervention and work toward helping parents understand how their own attachment histories have served to create triggers that shape their interpretations of children's behaviors. The goal of many of these interventions then is to help parents identify their "automatic thoughts" (Bick & Dozier, 2006) and override them (Heinicke, et al., 1999). Another important feature is that they are delivered by mental health professionals who are well positioned to understand how a parent's working model influences both their caregiving strategies and their therapeutic responses and are thus

able to respond in non-complimentary ways that challenge an adult's underlying working model of relationships (Bick & Dozier, 2008; Dozier, Cue & Barnett, 1994).

It is certainly conceivable that these types of sensitivity interventions can be adapted and applied within the family child care context and that the PAAQ could be used to identify providers who could benefit from these targeted interventions. Indeed, many states already have in place the infrastructure and funding earmarked to support provider support groups and extensive on-site coaching (Bromer, et al., 2009; Smith & Kreader, 2010; Tout, et al., 2010). It may be quite possible to hire a cadre of infant mental health specialists to provide these types of services and supports within quality improvement systems. These targeted and theory-driven supports may be more cost effective than the extensive and general on-going coaching that many providers are currently experiencing.

While empirical study will certainly be necessary to determine whether these types of interventions are equally as effective at improving the caregiving behaviors of family child care providers as they are with mothers, they certainly offer promising possibilities. It will also be important for future research to determine how the intensity of the intervention interacts with PAAQ insecurity scores. It may be that more intensive interventions are necessary for providers with very high insecurity scores, who may have more resistant working models, and that less intensive interventions can be effective with providers with lower insecurity scores. This, too, is an empirical question that can help to target interventions and create a more cost-effective spectrum of supports for family child care providers.

Unfortunately, it is hard to draw any clear conclusions from this study as to the representativeness of the working models of attachment observed in this study to those found in the general population of providers so as to gain a sense of the extent to which attachment-based interventions may be necessary. The PAAQ scores found in this sample were, on the one hand, highly similar to those found in a study of high-risk, pre-term mothers (Huth-Bocks, et al., 2004). The extremely similar distributions may mean that the sample used for this study may be considered an at-risk group with an over-representation of insecure working models. On the other hand, this study drew from a sample of lower-risk providers, at least with respect to structural indicators of quality (e.g. higher income, higher education, lower ratios, professional membership). Consequently, it could also mean that these two study sample distributions both follow a similar pattern to that which would be expected in the general population. Absent descriptive statistics on a normative sample of low-risk mothers, it is hard to make any interpretations. Clearly, future research will also need to draw from larger and more representative samples of family child care providers to determine how well the findings from this study hold across different subgroups of providers. If findings hold, it will also be important to determine the thresholds at which dismissing and enmeshment scores pose a threat to sensitivity to assist policy-makers at targeting resources more effectively.

Contextual Influences on Caregiving Behaviors

Beyond dismissing and enmeshed working models of attachment, this study also found that other contextual factors influence a provider's caregiving practices. Unfortunately one of the most striking and consistent findings observed was the

relationship between caring for more subsidized children and most dimensions of

provider insensitivity. Other studies, too, have noted that many providers do not appear

well equipped to provide children living in poverty with the levels of sensitivity needed

to form secure attachment relationships with their providers (Ahnert, et al., 2006; Raikes,

et al., 2005). This study points to several important policy changes that could potentially

provide children in such challenging conditions with more emotionally supportive out-of-

home child care.

One solution is to reduce the number or concentration of subsidized children in

any one family child care home. Changes could be made at the state CCCAP

administration level to make having a contract to care for subsidized children more

attractive to providers, for example by reducing paperwork, assuring timely payments,

and albeit difficult, providing higher reimbursement rates. This could serve to disperse

subsidized children over more providers, which may reduce the stresses of trying to meet

the needs of multiple children living in challenging conditions that appear to make

providing sensitive care more difficult.

Although effects appeared to fade once working model constructs were added to

the statistical models, this study nonetheless observed that providers holding an A.A.

degree or higher demonstrated greater levels of sensitivity than their counterparts who

held less than an A.A. degree. Policies, much like those in Head Start (Administration of

Children and Families, 1996), could also be enacted to allow only providers with an A.A.

degree or higher to have CCCAP contracts. Perhaps more realistically, state and

foundation sponsored scholarships could also be intentionally targeted toward providers

with CCCAP contracts to raise their credentials to at least an A.A. degree.

Replicating prior research (Kontos, et al., 1995), this study also observed that providers with more experience were <u>less</u> responsive to children's learning needs. While information pertaining to provider age and orientation to their work was not collected in this study, it is possible that providers with more experience were older and perhaps relied on an older model of "day care" and oriented their programs more toward babysitting. Alternatively, a small group of providers sampled in this study very recently entered the field, taking a hiatus from elementary school teaching while their own children were young, and appeared to subscribe to a more academic orientation to the work, focusing more on developing children's school readiness skills than providers who had been in the field longer.

On the other hand, it may be that providers who have been in the field longer are experiencing burnout. The current study also found that providers with lower family incomes were less engaged with children. It is quite possible that over time, the low wage and undervalued work of a family child care provider creates low morale and job burnout (Bloom, 2010; Whitebook, Howes & Phillips, 1989). This may interfere with a provider's desire or capacity to engage with children in ways that meet their intellectual needs and that the emotional resources that providers have available are prioritized only toward meeting children's basic needs. This reinforces a point made in the Child care Staffing Study, that by failing to address the basic needs of providers by ensuring a livable wage, "we are threatening not only [provider's] well-being, but that of the children in their care" (Whitebook, et al., p.3).

Patterns of Caregiving Behaviors

It is also important to consider the overall pattern of caregiving behaviors observed in this study, what they might suggest about how providers view their roles and organize their practices, and how a provider's working model of attachment might influence attempts to shift providers from caregiving practices focused more on babysitting to practices that stimulate children's intellectual curiosity and concept development. Because of the findings in this study, the discussion thus far has been focused primarily on insensitive caregiving practices observed. The majority of providers in this study, however, responded to the overall group of children in their care in warm and sensitive manners and established a supportive emotional climate in the home. Perhaps enabled by the small group nature of family child care homes, for the most part, when providers interacted with children, they also interacted with them in individualized and elaborated ways.

Nonetheless, there was wide variability in providers engagement with children. Approximately one-third spent over half of their morning directly engaged with children. Typically, these providers structured a more "school-like program" with a dedicated "child care" space offering activities such as circle and story times. However, the average provider observed in this sample cared for children within the context of their own family's home and spent less than a third of their morning actively engaged with children, with most children receiving only about 14 minutes of individualized interactions with their provider. The majority of providers appeared to be balancing interacting with children with other caregiving duties such as preparing meals, or with

other non-caregiving duties such as talking on the phone, taking care of other household responsibilities, or responding to the needs of their own family.

In addition, and replicating prior research (Lazyer & Goodson, 2006), very little time was spent in the types of interactions that were likely to promote children's cognitive and intellectual development. While most providers spent about 35 minutes engaged in didactic instruction, this often took the form of giving children directions, for example, "you need to share that toy" but sometimes also included asking children questions like "what color is that?" There were very few instances observed where providers engaged with children in such a way that followed their interests and extended their learning and conceptual development. While there were not a great deal of peer conflicts observed, when they did occur, most were resolved by giving children directions as opposed to assisting children in cooperatively negotiating a solution.

These results suggest that providers do prioritize individual caregiving that is warm and responsive to children's basic needs and focus less on engaging with children in cognitively oriented activities. In these respects, providers organize their practices much like mothers. Correspondingly, families tend to choose family child care homes for their warm and individualized nature (Layzer & Goodson, 2006). However, with concerns growing over the school readiness of young children, there is increasing policy emphasis in many states on improving family child care in ways that are intended to bring about improvements to children's cognitive, language and social development (Schaack, et al., in press). Often family child care providers resist participating in quality improvement initiatives because they perceive them as incompatible with their goals for

children and incompatible with how they organize their caregiving practices. This sentiment was certainly echoed by the providers who participated in this study who often felt that these initiatives were trying to "turn them into centers" and that "children should be given the opportunity to be children and play."

Across providers observed in this study, children were given many opportunities to play. However, often providers were either away from children's play all together, taking care of other responsibilities or were physically present but assuming a more supervisory role, for example making sure there were no conflicts, getting children the toys they wanted, and assuring that children were safe. Consequently, many teachable moments were missed. Perhaps, more effective approaches to engaging providers in quality improvement initiatives is to ground them in activities that are meaningful to providers and in how they organize their care (Bromer, et al., 2009). For example, efforts could be made to design training efforts specifically focused on ways in which providers can more meaningfully be involved in the play of children.

As attempts are made to try to shift providers toward caregiving practices that are more intellectually stimulating for young children, it will be important to continue to explore how a provider's working model of attachment influences these shifts. Parenting research suggests that dismissing mothers often rely on strategies for interacting with their children that are strongly focused on instruction and teaching (Bick & Dozier, 2008). Thus it may be more difficult for providers with higher dismissing scores to move from didactic instruction where they primarily give children directions to engaging in play with children as a "cooperative companion" (Bandioli, 2002).

Similarly, parenting research has found that preoccupied mothers have less capacity to follow children's leads (Heinicke, et al., 1999) and interrupt children's exploratory behaviors (Biringen, et al., 2000b). Consequently, it may be more difficult for provider's with higher active anger scores to stand back and observe children's play, allow children to dictate the content and form of their play, and insert themselves in gentle ways that follow children's lead and extends their learning. As well, providers with insecure working models of attachment who do not have a sense of coherency about the origins of their own emotions may find it challenging to shift from didactic approaches for resolving peer conflict to more emotion-based strategies, such as helping children understand their emotions and the emotions of others (Cassidy, et al., 2005). These are all possible directions for future research.

Study Limitations

While a number of the limitations and concerns with measures used in this study have been raised earlier, there are other methodological limitations that affect this study's generalizability and should be addressed in future research. For example, while great attempts were made to generate a sample for this study that was representative along several important dimensions, the sample drawn does not provide a good representation of providers nationally. Providers in this study were substantially more educated, had more experience, were more likely to be members of professional organizations, and had higher incomes than would be expected in the general population of providers (Helburn, et al., 2002; Herzenberg, et al, 2004; Kontos, et al., 1995). These characteristics suggest the majority of this sample represented the middle class. It is possible that the effects of a

dismissing or enmeshed working model of attachment on caregiving insensitivity may be weaker or even nonexistent had a higher-risk sample been drawn, as the stresses of living in poverty may more strongly influence caregiving practices than these types of insecure working models. In fact, this attenuated relationship has been found in some parenting research (Huth-Bocks, et al., 2004; van Ijzendoorn, 1995).

It is also important to consider the results of this study in relation to the small sample size. Power calculations conducted prior to sample recruitment indicated that this sample size was adequate for detecting medium to large effects, but with this sample size, there was still a one in five chance of failing to detect small effects (Type II error). In addition, when estimating the sample size needed for this study, the calculations did not consider issues related to measurement precision. The results of this study suggest that several of the PAAQ scales, including the vulnerable and dismissing scale, may not offer a very precise estimate of the constructs. Low scale reliability requires larger sample sizes to lift the effect out of the noise created by measurement error (Bowerman & O'Connell, 1990). Consequently, the small sample size together with measurement error increased the chances of making Type II error, which may have contributed to why significant relationships between detachment scores and vulnerability scores, for example, were not observed. To gain a more precise estimate of the effects of a provider's working model of attachment, future research will need to draw from larger sample sizes.

Another methodological limitation to this study concerned the method of data collection. Given financial constraints, one person was responsible for recruiting

providers, observing their caregiving behaviors, and analyzing the data. While this was not an optimal study condition, safeguards were put in place to minimize bias. First, the primary investigator demonstrated sufficient reliability (> 75%) on the observational measures used which indicated an ability to score the tools in a standardized way based on the scoring conventions of the instruments. Second, caregiver behaviors were observed prior to having any information related to a provider's working model of attachment. It is nonetheless possible that a degree of bias stemming from these study conditions may still have been introduced into the data. For example, the primary investigator had prior knowledge of a provider's licensing status which may have colored her perceptions prompting lower scores on measures of insensitive caregiving for negatively licensed providers. Or it is possible that the ease with which providers agreed to participate in the study and followed through with scheduled observations biased the primary investigator toward positive caregiving scores for easy providers. Again, that the primary investigator demonstrated an acceptable ability to score the measures in a standardized way served to minimize these biases.

In addition, while the average provider to child ratio in the study was in line with those found in similar studies of providers in Colorado (Zellman, et al., 2008) they were, nonetheless, somewhat lower than most other state's licensing requirements (National Child care Information Center, 2007). It may be that in states that allow larger ratios, the relationship between dismissing and enmeshed working models and insensitive caregiving becomes weaker as the stress of caring for larger groups of children may more strongly influence caregiving behaviors. Conversely, it may be the case that under

conditions that elicit more stress, a provider's working model "kicks in" and influences sensitive caregiving more so than under conditions that cause less stress. Similar relationships have been found in recent research where depression more strongly influences provider sensitivity when a provider cares for larger groups of children (Harme & Pianta, 2004). More research will be needed to uncover the possible interactions between a provider's working model of attachment and number of children in a family child care home. Given the substantial variability in state regulations with respect to ratios, study findings should only be considered within the context of programs with low adult to child ratios.

Interestingly, this study did not find that ECE coursework predicted any dimension of provider sensitivity observed in this study. With respect to provider emotional tone, these results were slightly unexpected, but have also been noted in prior studies of family child care (Clarke-Stewart, et al., 2002). Less surprising were the lack of relationships found between ECE coursework and provider engagement and responsiveness to learning needs as the measures used in this study did not exclusively consider the proportion of *appropriate* interactions (Elicker, et al., 1999) nor did they solely take into account the amount of *effective* instructional practices observed. Further, neither the content nor the quality of child-related training or formal early childhood education college coursework was considered within this study. It is unclear whether failing to examine content and quality merely introduced some noise into the data or was of such magnitude as to appreciably change interpretations regarding the effects of training and education on sensitive caregiving. However, this is a problem noted in most

child care research (Early, et al, 2006).

Another important consideration is the cultural sensitivity and relevance of the measures that were selected to assess provider sensitivity in this study. Provider sensitivity is certainly a cultural construct and the measures that were administered, while widely used and standardized, reflect a particular cultural view of child-rearing (Nsamenang, 1999, Rogoff, 2003; Super & Harkness, 1997) and have been criticized for privileging middle-class, Eurocentric views (Lubeck, 1998). It is possible that providers outside of this cultural group may not subscribe to such child-rearing practices. Examinations were made to determine that no differences in sensitivity scores existed between Caucasian and minority providers. However, the small sample size used in this study did not allow for a comparison of specific cultural groups. Without the addition of a measure of caregiving beliefs that allow for the choice of a wide-range of practices, the influence of cultural beliefs on a provider's working model of attachment and the extent to which this influences its relationship to sensitive caregiving remains unknown.

This study was also only able to investigate the influences of provider sensitivity from the perspective of one relationship partner, the family child care provider. It is important to acknowledge that children bring to child care a variety of different experiences and dispositions that may influence the sensitivity with which providers interact with them. These influencing factors may include a child's temperament and their experiences in their own home environment (Howes & Spieker, 2008). Additionally, provider sensitivity may be supported or constrained by a variety of other individual and setting factors not collected in this study including a provider's beliefs about children and

caregiving (Clarke-Stewart, et al, 2002), depression (Hamre & Pianta, 2004), the social support available to a provider (Kontos, et al., 1995), and perhaps is influenced by the quality of a provider's own home life (Weaver, 2002). To create a better approximation of the influence of a provider's working model of attachment on sensitive caregiving, it will be necessary in future research to examine the interaction of these overlapping provider, setting and child protective and risk factors.

Conclusion

As social policies and family structures have changed, very young children are increasingly receiving a large portion of their daily care from family child care providers (Morrissey, 2007). Previous research has unequivocally demonstrated that children form attachment relationships with their providers (Ahnert, et al., 2006) and that the quality of this attachment relationship matters. It matters to children's emotional development, it matters to how well they form peer and future teacher relationships, and it matters to how they orient themselves to learning (Howes & Spieker, 2008). Howes and Ritchie (2002) maintain that the ability to learn and have harmonious relationships in child care and beyond depends in large part on developing a trusting relationship with their early childhood caregiver.

Family child care providers who consistently and sensitively respond to the needs of the children in their care instill children with this sense of trust. They establish themselves a secure-base from which children can explore their worlds and as a safe haven for children to return for protection and emotional organization. However, previous research has shown that often family child care providers do not provide

children with the types of caregiving needed to ensure secure attachment relationships and children's developmental well-being (Ahnert, et al., 2006). Consequently, there is a critical need to understand the characteristics of providers that support or constrain their abilities to provide sensitive and responsive care.

Attachment theory and research suggests that an important determinant of sensitive and responsive caregiving behaviors is a caregiver's own attachment representations (Bowlby, 1988; Main, et al., 1985). This study, however, marks one of the first to test this intergenerational theory within the context of professional caregivers who care for multiple children. While the results are preliminary and replication is certainly needed, this study found that for some providers, ghosts do appear in the nursery (Fraiberg, Adelson & Spiro, 1973) and that particular early attachment experiences and underlying attachment representations place a provider at greater risk for providing care to young children that is insensitive. Such insensitivity, in turn, poses risks to children's developmental well-being.

Within this study, providers who experienced more enmeshment with and worry over their attachment figures when they were young were more emotionally detached from and less engaged with young children than providers who experienced less enmeshment and worry. In contrast, providers who endorsed more of a dismissing or derogating attitude toward attachment were found to be at increased risk of using harsh disciplinary techniques and were more likely to establish a negative and punitive emotional tone in their program than providers who valued attachment. This study also indicates that endorsing a derogating attitude toward attachment may also interfere with

the effectiveness of formal early childhood education coursework at influencing a provider's engagement with and responsiveness to individual children.

A central premise to this study was that by understanding important influences on caregiving sensitivity and by having an easy-to-use tool that would help identify providers at risk of providing insensitive care, more effective, theory-based interventions could be developed and that these interventions could easily be targeted to providers in need of them. This study indicates that while there may be measurement issues with the PAAQ, particularly in relation to identifying secure providers, it may be a useful tool for identifying particular insecure working models of attachment that increase the risk of a provider setting an emotionally unsupportive tone in their program. The results of this study layout a promising line of future research that will add importantly to attachment theory with alternative caregivers and offers guidance to promising approaches to intervening with providers who do not offer the levels of sensitive and responsive care that children need to thrive.

APPENDIX A

PERCEPTIONS OF ADULT ATTACHMENT QUESTIONNAIRE

PERCEPTIONS OF ADULT ATTACHMENT QUESTIONNAIRE (PAAQ)
(Lichtenstein & Cassidy, 1991)

The majority of the following statements refer to your early childhood relationship with your mother (when you were approximately 3 to 8 years old). In most cases the principal caregiver referenced in the questions below refer to your mother. If someone else was the principal person responsible for your care in childhood, please respond to the questions which refer to "mother" with that person in mind.

A few of the questions have two parts. For example "when I caused trouble as a child I knew my mother would forgive me". Some people might feel like they never caused trouble as a child, however, they consider their mothers very forgiving. How then do they answer? Only answer AGREE or STRONGLY AGREE if you agree with both parts of the statement. If you agree with only one part of the statement, answer NEUTRAL. If you disagree with both parts of the statement answer DISAGREE or STRONGLY DISAGREE.

Please respond to the following questions by circling your response.

1. In childhood I felt like I was really treasured by my mother.

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE

2. In childhood I sometimes felt like my mother was really lonely when I was not with her.

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE

3. My mother was not very affectionate.

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE

4. When I was a young child and little things went wrong I did not feel sure I could count on my mother to take care of me.

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE

5. As a child I couldn't stand being separated from my mother.

STRONGLY DISAGREE   DISAGREE   NEUTRAL   AGREE   STRONGLY AGREE

6. My mother can make me feel really good but when she is not nice to me she can really tear me apart.

STRONGLY DISAGREE   DISAGREE   NEUTRAL   AGREE   STRONGLY AGREE

7. In my family of origin we don't make a show of expressing our feelings. We prefer keeping feelings t o ourselves.

STRONGLY DISAGREE   DISAGREE   NEUTRAL   AGREE   STRONGLY AGREE

8. Neither my mother nor myself are perfect but somehow we made it through my childhood.

STRONGLY DISAGREE   DISAGREE   NEUTRAL   AGREE   STRONGLY AGREE

9. I remember when I was frightened as a child my mother holding me close.

STRONGLY DISAGREE   DISAGREE   NEUTRAL   AGREE   STRONGLY AGREE

10. When I was a child my mother sometimes told me that if I was not good she would stop loving me.

STRONGLY DISAGREE   DISAGREE   NEUTRAL   AGREE   STRONGLY AGREE

11. My mother is selfishly caught up in herself to the exclusion of everybody else.

STRONGLY DISAGREE   DISAGREE   NEUTRAL   AGREE   STRONGLY AGREE

12. My family was not particularly intimate, but this has never bothered me.

STRONGLY DISAGREE   DISAGREE   NEUTRAL   AGREE   STRONGLY AGREE

13. It's hard for me t o remember my early relationship with my mother in any detail.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

14. In childhood I sometimes felt that my mother and I were so alike that I didn't know where she ended and I began.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

15. If anything happened to my mother I wonder if I could survive it.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

16. I remember as a child feeling a desire to protect my mother.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

17. Even though I went through rough times with my mother during my childhood, somewhere along the line I managed to let go of the majority of those angry, hurt feelings.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

18. In childhood I knew I was low on my mother's priority list.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

19. My mother was an all-around excellent mother.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

20. No one gets under my skin like my mother.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

21. As a child I never thought separations from my parents were any big deal.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

22. I often felt responsible for my mother's welfare.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

23. In childhood my mother sometimes threatened to leave me or to send me away if I wasn't good.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

24. To this day my mother has no clue who I am or what I an all about.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

25. Even with all our past difficulties, I realize my mother did the best for me that she could.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

26. I have forgotten what most of my early childhood was like.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

27. I always knew my mother was there for me; no matter what I could depend on her.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

28. There are times when I feel like shaking my mother and saying "wake up and see me for who I am".

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

29. In childhood I often had the impression that my mother was not listening to me. She often tuned me out.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

30. During my childhood I sometimes felt like I was my mother's whole life.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

31. My mother and I are more accepting of each other's differences than we have been in the past.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

32. When I was young I often feared something dreadful would happen to my mother or father.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

33. I remember my mother telling me that I didn't pay enough attention to her or love her enough.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

34. I often take my mother's opinions about me to heart and lose sight of my own opinions about myself.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

35. My mother is a real nag.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE
36. My mother and I were so alike we often could finish each others sentences.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

37. I think people put too much emphasis on the mother/child relationship.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

38. I remember very little about my early childhood (ages three to seven).

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

39. The concept of the loving, supporting mother is pure myth.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

40. My relations with my mother has gone through major changes over the course of my childhood and adolescence.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

41. Even as an adult I sometimes feel like I will never dig myself out from under my mother's influence.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

42. As a child I sometimes got the feeling that without me my mother would have fallen apart.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

43. I couldn't have asked for a better mother.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

44. If my mother was not fair to me as a child I realize now it was because she was dealing with her own problems.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

45. If something really bad happened to me in childhood I did not feel I could count on my mother to support me.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

46. When I was a child I sometimes got the feeling that my mother wished I was never born.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

47. I remember when I was a child feeling scared that one or both of my parents would die unexpectedly.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

48. My mother can devastate me with her criticisms.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

49. In childhood my mother often told me she was sacrificing herself for me.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

50. I don't think my early childhood relationship with my mother has any significant influence on who I am today or my present relationships.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

51. My mother was always there for me when I needed her.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

52. When I acted bad as a child my mother would, at times, threaten to send me away.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

53. I never felt like my mother gave me enough attention.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

54. For all our past problems my mother and I can still enjoy a good laugh together.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

55. During my childhood my mother would often turn to me and tell me lots of things that upset and bothered her.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

56. In childhood I often worried about my mother's state of health.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

57. I find it difficult to remember my early childhood.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

58. My mother was a perfect mother.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

59. My mother's issues are still interfering with my life.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

60. When I think back to my early childhood experiences I discover things about myself and my parents that I've never considered before.

STRONGLY   DISAGREE   NEUTRAL   AGREE   STRONGLY
DISAGREE   AGREE

APPENDIX B

REVISED ENMESHED/ROLE-REVERSED SCALE

Revised Enmeshed/Role-Reversing Scale

Item 2: In childhood I sometimes felt like my mother was really lonely when I was not with her.

Item 5: As a child I couldn't stand to be separated from my mother.

Item 14: In childhood I sometimes felt that my mother and I were so alike that I didn't know where she ended and I began.

Item 16: I remember as a child feeling a desire to protect my mother.

Item 30: During my childhood I sometimes felt like I was my mother's whole life.

Item 36: My mother and I were so alike we often could finish each others sentences.

Item 42: As a child I sometimes got the feeling that without me my mother would have fallen apart.

APPENDIX C

MULTIVARIATE REGRESSION: PREDICTING CURRENT STATES OF MIND

FROM EARLY EXPERIENCES

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	**Dismissing**	14.323	---	4.774	11.190	.000	.315
	Vulnerable	8.201	---	2.734	8.041	.000	.248
	Balanced/Forgiving	.461	---	.154	.514	.674	.021
	Angry	37.059	---	12.353	57.067	.000	.701
	No Memory	19.346	---	6.449	8.816	.000	.266
Intercept	**Dismissing**	.375	---	.375	.879	.351	.012
	Vulnerable	1.316	---	1.316	3.870	.053	.050
	Balanced/Forgiving	5.553	---	5.553	18.593	.000	.203
	Angry	5.673	---	5.673	26.209	.000	.264
	No Memory	2.501	---	2.501	3.419	.069	.045
Rejection	**Dismissing**	4.917	---	4.917	11.525	.001	.136
	Vulnerable	.340	---	.340	1.000	.321	.014
	Balanced/Forgiving	.073	---	.073	.243	.624	.003
	Angry	.522	---	.522	2.411	.125	.032
	No Memory	2.248	---	2.248	3.073	.084	.040
Loved	**Dismissing**	.923	---	.923	2.163	.146	.029
	Vulnerable	.655	---	.655	1.926	.169	.026
	Balanced/Forgiving	.001	---	.001	.003	.959	.000
	Angry	5.583	---	5.583	25.789	.000	.261
	No Memory	.196	---	.196	.268	.606	.004
Enmeshed	**Dismissing**	1.932	---	1.932	4.527	.037	.058
	Vulnerable	5.060	---	5.060	14.883	.000	.169
	Balanced/Forgiving	.319	---	.319	1.070	.304	.014
	Angry	.625	---	.625	2.889	.093	.038
	No Memory	.530	---	.530	.725	.397	.010
Error	**Dismissing**	31.148	73	.427	---	---	---
	Vulnerable	24.817	73	.340	---	---	---
	Balanced/Forgiving	21.803	73	.299	---	---	---
	Angry	15.802	73	.216	---	---	---
	No Memory	53.396	73	.731	---	---	---
Total	**Dismissing**	436.860	77	---	---	---	---
	Vulnerable	413.883	77	---	---	---	---
	Balanced/Forgiving	1060.096	77	---	---	---	---
	Angry	350.353	77	---	---	---	---
	No Memory	471.986	77	---	---	---	---
Corrected Total	**Dismissing**	45.471	76	---	---	---	---
	Vulnerable	33.018	76	---	---	---	---
	Balanced/Forgiving	22.264	76	---	---	---	---
	Angry	52.861	76	---	---	---	---
	No Memory	72.742	76	---	---	---	---

APPENDIX D

CAREGIVER INTERACTION SCALE

Think about the extent to which each of these statements is true for the family child care provider observed.

		Not at All	Some-what	Quite a bit	Very much
1.	Speaks warmly to the children				
2.	Seems critical of the children				
3.	Listens attentively when children speak to her				
4.	Places high value on obedience				
5.	Seems distant or detached from the children				
6.	Seems to enjoy the children				
7.	When the children misbehave, explains the reason for the rule they are breaking				
8.	Encourages the children to try new experiences				
9.	Doesn't try to exercise much control over children				
10.	Speaks with irritation or hostility to the children				
11.	Seems enthusiastic about the children's activities and efforts				
12.	Threatens children in trying to control them				
13.	Spends considerable time in activity not involving interaction with the children				
14.	Pays positive attention to the children as individuals				

		Not at All	Some-what	Quite a bit	Very much
15.	Doesn't reprimand children when they misbehave				
16.	Talks to children on a level they can understand				
17.	Punishes the children without explanation				
18.	Exercises firmness when necessary				
19.	Encourages children to exhibit prosocial behavior, e.g., sharing				
20.	Finds fault easily with children				
21.	Doesn't seem interested in the children's activities				
22.	Seems to prohibit many of the things children want to do				
23.	Doesn't supervise the children very closely				
24.	Expects the children to exercise self-control, e.g. to be non-disruptive in group and teacher-led activities, to be able to stand in line calmly				
25.	When talking to children, kneels, bends, or sits at their level to establish better eye contact				
26.	Seems unnecessarily harsh when scolding or prohibiting children.				

APPENDIX E

ADULT INVOLVEMENT SCALE

	Child 1				Child 2				Child 3				Child 4			
	Age __/__				Age __/__				Age __/__				Age __/__			

ADULT INVOLVEMENT	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ignore																
Routine																
Minimal																
Simple																
Elaborated																
TEACHER ENGAGEMENT																
Language Literacy																
Scaffolds																
Didactic																
Facilitates Peer																
Second Language																

APPENDIX F

PROGRAM AND PROVIDER DEMOGRAPHIC SURVEY

Here are a few questions about you and your program. These responses will be treated as confidential.

1. Altogether, how many years have you provided child care as a profession (this includes work in centers and as a paid family child care provider)? _____

2. How long have you been a family child care provider_____

3. How much school have you completed?

    Please check all of the degrees that you have completed.

    ☐ None

    ☐ 1-11 years

    ☐ High school graduate/GED

    ☐ Associates' degree (AA)   If yes, in what field?_____

    ☐ Bachelors' degree (BA, BS)   If yes, in what field?_____

    ☐ Completed graduate/professional degree   If yes, in what field?_____

4. Have you completed any formal college early childhood or child development course work? If yes, how many credit hours have you completed?_____

    (note: 1 class usually equals 3 credit hours)

5. Have you participated in any community workshops or training in early childhood education or child development where you did not receive college credit? If so, how many hours of training have you attended?_____

6. What is your family income? Please check the category that includes the total amount you and any other members of your household received last year in wages, salary, commissions, and tips.

    (Check One)

    __ $1 - $5,000

    __ $5,001 - $10,000

    __ $10,001 - $25,000

    __ $25,001 - $50,000

    __ $50,001 - $75,000

    __ $75,001 - $100,000

    __ More than $100,000

7. How many people in the family, including yourself, are supported by the above income? _____

8. How many children are attending your program today that receive Colorado Child Care Assistance Program subsidies to attend your program? _____

9. Are you a member of a family child care professional association? Please circle:

                    Yes   NO

10. What group or groups describe your race or ethnic origin? **(Check All That**

   Apply)

            __Black/African-American

            __White

            __Latino/Hispanic/Latin American/Spanish

            __Asian/Indian/South Asian

            __American Indian/Inuit//Aleut

            __Pacific Islander

            __Other (SPECIFY)_____

APPENDIX G

ANALYTIC ROADMAP: RESEARCH QUESTION ONE

Analytic Roadmap: Research Question 1

Model	Independent Variables	Dependant Variables	Covariates[1] A.A. Degree	Method
1.	Early Experiences Scales	Sensitivity	CCCAP	OLS regression
2.	Current State of Mind Scales	Sensitivity	A.A. Degree CCCAP	OLS Regression
3.	Early Experiences Scales	Harshness	CCCAP	OLS regression with heteroscedasticity-consistent standard error adjustment
4.	Current State of Mind Scales	Harshness	CCCAP	OLS regression with heteroscedasticity-consistent standard error adjustment
5.	Early Experiences Scales	Detachment	A.A. Degree CCCAP	OLS regression with heteroscedasticity-consistent standard error adjustment
6.	Current State of Mind Scales	Detachment	A.A. Degree CCCAP	OLS regression with heteroscedasticity-consistent standard error adjustment
7.	Early Experiences Scales	Intensity of Adult Involvement	Children Present Income Experience	OLS regression

[1] Because research question 2 is explicitly concerned with the influence of ECE coursework on caregiving sensitivity and to alleviate potential issues with colinearity between A.A. degree and ECE Credits (r=.46, p=.001) in Research Question 1, ECE credits was removed as a covariate from modeling despite demonstrating associations with several dimensions of caregiving sensitivity. Before a decision to remove ECE credits was made, ECE credits was regressed against each dimension of provider sensitivity and was found to not significantly predict any dimension.

Analytic Roadmap: Research Question 1 (cont.)

Model	Independent Variables	Dependant Variables	Covariates A.A. Degree	Method
8.	Current State of Mind Scales	Intensity of Adult Involvement	Children Present Income Experience	OLS regression
9.	Early Experiences Scales	Responsiveness to Learning Needs	Experience CCCAP Professional Membership	OLS regression
10.	Current State of Mind	Responsiveness to Learning Needs	Experience CCCAP Professional Membership	OLS regression

Notes: Perceived Early Experiences Scales included: Loved and Enmeshed; Current State of Mind Scales included: Dismissing, Vulnerable, No Memory and Angry.

APPENDIX H

ANALYTIC ROADMAP: RESEARCH QUESTION TWO

Model	Independent Variables	Dependant	Covariates
1.	ECE Credits X Early Experiences Scores	Variables Sensitivity	CCCAP ECE Credits Early Experiences Scores
2.	ECE Credits X Current States of Mind Scores	Sensitivity	CCCAP ECE Credits Current States of Mind Scores
3.	ECE Credits X Early Experiences Scores	Intensity of Involvement	Children Present Income Experience ECE Credits Early Experience Scores
4.	ECE Credits X Current States of Mind Scores	Intensity of Involvement	Children Present Income Experience ECE Credits Current States of Mind Scores
5.	ECE Credits X Early Experiences Scores	Responsiveness to Learning Needs	Experience CCCAP Professional Membership ECE Credits Early Experiences Scores
6.	ECE Credits X Current States of Mind Scores	Responsiveness to Learning Needs	Experience CCCAP Professional Membership ECE Credits Current States of Mind Scores

Notes: Perceived Early Experiences Scales included: Loved and Enmeshed; Current State of Mind Scales included: Dismissing, Vulnerable, No Memory and Angry.

APPENDIX I

CORRELATION MATRIX OF ALL VARIABLES INCLUDED ACROSS

MODELS

Correlation Matrix of Variables Included Across Models

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1																
2	.324	1															
3	-.309	-.420	1														
4	-.362	.228	.014	1													
5	-.510	-.430	.418	.074	1												
6	-.852	-.162	.233	.548	.442	1											
7	-.077	-.277	.033	-.192	.070	.028	1										
8	.311	-.211	.015	-.258	-.106	-.296	.101	1									
9	-.251	-.363	.197	-.189	.209	.199	-.013	-.222	1								
10	-.215	-.278	.030	-.147	.259	.126	.073	-.021	.204	1							
11	.347	.328	-.256	-.122	-.246	-.305	.029	.268	-.387	-.089	1						
12	.151	.196	.082	.001	-.115	-.106	-.178	.221	-.085	.151	.048	1					
13	-.128	-.206	.020	-.093	.076	.105	-.170	-.190	.332	-.011	-.533	-.144	1				
14	.018	.102	.259	.080	-.035	-.072	-.090	.018	-.090	.045	.323	.175	-.657	1			
15	.175	.487	-.299	.207	-.191	-.085	.075	.158	-.446	-.055	.596	.179	-.741	.242	1		
16	-.126	-.101	.110	-.057	-.037	.115	-.325	-.199	.096	-.258	-.159	-.123	.593	-.525	-.520	1	
17	-.257	-.310	.188	-.018	.067	.132	-.152	-.321	.198	-.108	-.201	-.337	.551	-.545	-.530	.702	1

Note: 1=Loved, 2= Enmeshed, 3=Dismissing, 4=Vulnerable, 5=No Memory, 6=Angry, 7=Children Present, 8=Experience, 9=A.A., 10=Income, 11=CCCAP, 12=Professional Membership, 13=Sensitivity, 14=Harshness, 15=Detachment, 16=Intensity of Involvement, 17=Responsiveness to Learning Needs

APPENDIX J

TESTS OF MODERATION

Outcome: Sensitivity

Testing for Interaction between Early Experiences and ECE Credits on Sensitivity

	B	SE	T	P
Constant	3.009	0.634	4.748	0.000
CCCAP	-0.173	0.050	-3.444	0.001
ECE Credits	0.022	0.025	0.859	0.395
Loved	0.100	0.129	0.777	0.441
Enmeshed	-0.017	0.210	-0.016	0.936
ECEXLoved	-0.002	0.006	-0.353	0.726
ECEXEnmeshed	-0.002	0.012	-0.131	0.896

Notes: f=3.621, p=.005

Tests for Interaction between Current States of Mind and ECE Credits on Sensitivity

	B	SE	T	P
Constant	3.974	0.613	6.481	0.000
CCCAP	-0.178	0.047	-3.813	0.000
ECE Credits	0.003	0.028	0.099	0.922
Dismissing	-0.051	0.138	-0.371	0.712
Vulnerable	-0.174	0.178	-0.973	0.337
Angry	0.046	0.161	0.287	0.776
No Memory	-0.052	0.119	-0.435	0.666
ECEXDismissing	-0.013	0.146	-0.092	0.927
ECEXVulnerable	0.009	0.162	0.054	0.957
ECEXNoMemory	0.058	0.102	0.567	0.574
ECEXAngry	-0.03	0.134	-0.227	0.821

Notes: f=2.217, p=.037

Outcome: Intensity of Engagement

Testing for Interaction between Early Experiences and ECE Credits on Intensity of Engagement[1]

	B	SE	T	P
Constant	2.577	.564	4.571	.000
Children Present	-.135	.049	-2.745	.009
Experience	-.012	.008	-1.643	.108
Income	-.114	.045	-2.513	.016
ECE Credits	.039	.033	1.164	.251
Loved	-.038	.069	-.556	.581
Enmeshed	-.266	.110	-2.414	.020
ECEXLoved	-.071	.069	-1.038	.305
ECEXEnmeshed	-.094	.118	-.791	.434

Notes: f = 2.437, p = .03

Testing Interaction between Current States of Mind and ECE Credits on Intensity of Engagement

	B	SE	T	P
Constant	1.863	.561	3.319	.002
Children Present	-.108	.048	-2.250	.030
Experience	-.010	.007	-1.296	.203
Income	-.087	.049	-1.787	.082
ECE Credits	.021	.020	1.078	.288
Dismissing	.064	.089	.718	.477
Vulnerable	-.229	.125	-1.828	.075
No Memory	-.109	.080	-1.364	.181
Angry	.200	.106	1.884	.067
ECEXDismissing	-.168	.097	-1.731	.092
ECEXVulnerable	.000	.118	.001	.999
ECEXNoMemory	.008	.068	.115	.909
ECEXAngry	.020	.088	.229	.820

Notes: f = 1.917, p = .063

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[1] For models predicting intensity of engagement, a sample size of 50 was used with one observation eliminated because critical chi-square values on Maholanobis Distance tests were reached indicating a multivariate outlier. Eliminating this observation created better model fit, but did not change interpretations.

Outcome: Responsiveness to Children's Learning Needs

Testing Interaction between Early Experiences and ECE Credits on Responsiveness to Learning Needs

	B	SE	T	P
Constant	.839	.184	4.571	.000
Experience	-.007	.003	-2.386	.022
CCCAP	.007	.013	.494	.624
Professional Membership	-.064	.047	-1.344	.186
ECE Credits	-.009	.009	-1.020	.314
Loved	-.009	.025	-.342	.734
Enmeshed	-.099	.042	-2.375	.022
ECEXLoved	.016	.017	.962	.341
ECEXEnmeshed	.023	.043	.526	.602

Notes: f = 2.336, p = .036

Testing Interaction between Current States of Mind and ECE Credits on Responsiveness to Learning Needs

	B	SE	T	P
Constant	3.974	0.613	6.481	0
CCCAP	-0.178	0.047	-3.813	0
ECE Credits	0.003	0.028	0.099	0.922
Dismissing	-0.051	0.138	-0.371	0.712
Vulnerable	-0.174	0.178	-0.973	0.337
Angry	0.046	0.161	0.287	0.776
No Memory	-0.052	0.119	-0.435	0.666
ECEXDismissing	-0.013	0.146	-0.092	0.927
ECEXVulnerable	0.009	0.162	0.054	0.957
ECEXNoMemory	0.058	0.102	0.567	0.574
ECEXAngry	-0.03	0.134	-0.227	0.821

Notes: f = 1.109, p = .381

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VITA

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While at Erikson and Loyola, Diana received the Irving B. Harris Early Childhood Leadership Fellowship. She also worked as a research and policy consultant specializing in early care and education accountability systems. Currently, Diana is a Research Associate in the School of Health and Human Services, Department of Child and Adolescent Development at San Francisco State University.