

PARENTAL INSIGHTFULNESS AND PARENTING BEHAVIOR: A TWO-
DIMENSIONAL ANALYSIS OF PARENT CONTRIBUTIONS TO CHILD OUTCOMES

AN ABSTRACT

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

OF THE SCHOOL OF SCIENCE AND ENGINEERING

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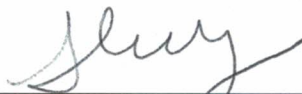
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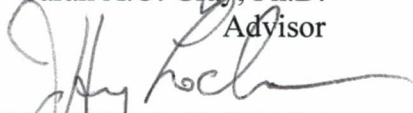


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Abstract

Utilizing a two-dimension model of parenting emphasizing both 1) sensitivity and 2) exploration, consistent with a conceptual framework rooted in attachment theory, the relations between parental insightfulness and observed parenting with child cognitive and language outcomes were investigated in a low income sample of 64 caregivers and their young 3- to 5-year-old children. Specifically, parental insightfulness, assessed dimensionally as *Positive Insight* and *Focus on Child*, and observed parental sensitivity and intrusiveness were examined in relation to child language and nonverbal cognitive outcomes. Although parental sensitivity and intrusiveness during play were not associated with child cognitive outcomes, parental intrusiveness during a wordless book activity was related to child language and nonverbal cognitive scores. Parent's capacity to remain child-focused during the Insightfulness Assessment was correlated with observed intrusiveness and was associated significantly with child nonverbal cognitive and language scores. In this sample, *Focus on Child* had a direct effect on child outcomes that was not mediated by observed parenting variables. These results suggest unique contributions of caregiver insightfulness, specifically parents' capacity to remain focused on the child's experience during the Insightfulness Assessment, to child nonverbal cognitive and language outcomes, with preliminary evidence supporting relations between insight, intrusive parenting, and nonverbal cognitive and language outcomes for young children.

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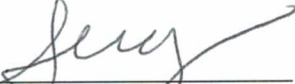
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Introduction

There is a robust body of research focused on exploring positive parenting within an attachment context associated with adaptive child outcomes, including cognitive development. Van Ijzendoorn, Dijkstra, and Bus (1995) suggest children's exploration and parental instruction as possible mechanisms or pathways between attachment and cognitive development. Parenting behaviors that are both contingently responsive and also encourage acquisition of knowledge through child engagement are associated with greater vocabulary skills, attention, and persistence, all of which are necessary for learning (Choudhury & Gorman 2000; Soares, Lemos, & Almeida, 2005; Isabella & Belsky, 1991; van Ijzendoorn et al., 1995).

Support for the intergenerational transmission of attachment is robust; the classic model proposed by attachment theory explains transmission through parent sensitivity, or parents' prompt and appropriate attention to the child's needs (Bowlby, 1982; Ainsworth, 1985). While research has typically focused on sensitivity, more recent work suggests that sensitivity is not sufficient to explain transmission. Meta-analytic data indicates that sensitivity may account for only 23% (van Ijzendoorn, 1995) to 36% (Raval et al., 2001) of transmission, suggesting that existing measures focused on sensitivity do not adequately capture the scope of the parent-child processes relevant to and facilitative of secure attachment (Whipple, Bernier, Mageau, 2009; van Ijzendoorn, 1995). With empirical evidence showing that secure attachment is associated with more advanced cognitive skills (Moss & St-Laurent, 2001; Main 1983; Spieker, Nelson, Petras, Jolley & Barnard, 2003; van Ijzendoorn et al., 1995) as well as social-emotional outcomes, it is important that this conceptual gap be narrowed. In addition to sensitivity, parents' non-intrusive, autonomy

supportive behaviors – a second dimension of parenting behavior that corresponds to children’s attachment need for exploration – have been found to predict additional variance in attachment outcomes (Whipple, Bernier, & Mageau, 2011).

A smaller but growing body of research focuses specifically on parental states of mind about children, such as parents’ insightfulness as measured by the *Insightfulness Assessment* (IA), as the context for secure attachment transmission underlying positive, responsive parenting (Oppenheim and Koren-Karie 2002). Insightfulness, also rooted in attachment theory, is theorized as the capacity to understand child’s motives in a child-focused, reflective manner. A two-dimensional model of parenting consistent with the literature on attachment, emphasizing both sensitivity and autonomy-supportive or non-intrusive parenting, is reflected conceptually by the two dimensional model of the parental states of mind that constitute insightfulness. Two IA factors have been confirmed in several factor analyses across samples: first, parents’ capacity to remain child-focused and see the child’s motives as separate from one’s own, a factor termed *Focus on Child*, and second, parents’ capacity to warmly, richly, and coherently describe their child, a factor termed *Positive Insight* (Hotez, Swanson, Delavenne, & Siller, 2015; Rosenblum, Martinez-Torteya, Beeghly, Koren-Karie, & Oppenheim, 2015). As shown in Figure 1, just as parenting behaviors can be conceptualized along two dimensions – sensitive behaviors to support proximity seeking and non-intrusive behaviors to support exploration – parent insightfulness can similarly be conceptualized along two dimensions – a parent’s capacity to ‘know’ and warmly accept their child (*Positive Insight*), as well as to be comfortable with separateness and focused on the child’s agenda (*Focus on Child*). First, we will review the literature on parenting behaviors along these two dimensions as well as child language and cognitive

outcomes, then we will describe what is known about the link between parental states of mind, parenting behaviors, and child outcomes.

Parenting Behaviors & Child Cognitive Development

Attachment security as originally conceptualized is described as the balance between proximity seeking and competent exploration (Ainsworth, 1985). This two-dimensional framework is reflected by a two-dimensional approach to parenting emphasizing sensitivity and non-intrusiveness, parenting behaviors that support proximity seeking and competent exploration, respectively. Historically, the literature has focused more heavily on sensitivity, but a growing body of work is investigating the contributions of non-intrusive parenting as well (Whipple, Bernier, Mageau, 2009). Parental support of the child's capacity to be self-initiating and competent while guiding and encouraging effective self-regulation skills so that the child can experience success, control, and mastery within their environment is at the core of non-intrusive, autonomy supportive parenting behavior (Fulgini & Brooks-Gunn, 2013). These parenting behaviors encourage children to internalize skills that allow them to solve problems independently (Landry, Miller-Loncar, Smith, & Swank, 2002).

Non-intrusive parenting is child-focused rather than adult-focused, recognizing and respecting the validity of the child's perspective and appropriately recognizing cues without letting the parent's own goals for the task or activity predominate (Fulgini & Brooks-Gunn, 2013). Respecting the validity of the child's perspective requires the parent to be able to take the child's perspective, an essential component of insightfulness. Intrusive or directive parenting behaviors, on the other hand, are adult-centered and manifest in the exertion of control over the child's behaviors, ignoring the child's cues in favor of the parent's agenda (Fulgini & Brooks-Gunn, 2013; Whipple, Bernier, and Mageau, 2009). An example of non-

intrusive, child focused parenting is scaffolding.

Scaffolding is defined as offering age appropriate problem-solving strategies likely to yield successful learning experiences and has been found to impact aspects of child cognitive development including language and problem solving competence (Landry, Garner, Swank, & Baldwin, 1996; Landry, Smith, Swank, & Miller-Loncar, 2000). Scaffolding can take various forms like prompting, modeling, encouragement, joint participation, and maintenance of the child's attention (Dilworth-Bart et al., 2010; Berk & Spuhl, 1995). This "guided participation" (Rogoff et al., 1993) provides information about the child's world, providing them with important background knowledge (Dieterich, Assel, Swank, Smith, & Landry, 2006; Bridges, 1979). Through scaffolding, children gradually take on more responsibility for their own behaviors, internalize the skills required for success, and learn to solve problems independently (Landry et al., 2002; Dilworth-Bart et al., 2010). Effective parental scaffolding occurs when the parent provides more support when the child is struggling and less support when the child is succeeding, providing optimal challenge to the child in order to facilitate the most growth (Mulvaney, McCartney, Bub, & Marshall, 2006). Vygotsky (1978) describes this level of optimal challenge as the child's *Zone of Proximal Development*, or when instruction is directed slightly above the child's current developmental standing. Because children are most likely to benefit from supportive parenting when it fits the child's developmental level, the capacity to be appropriately responsive is especially critical (Wertsch, 1979; Landry et al., 2002). Discerning a child's developmental level and judging the child's experience of success and frustration with a task requires the parent to be sensitive, responsive, and engaged (Hustedt & Raver, 2002), hallmark behaviors of parents that exemplify an insightful state of mind.

Various studies suggest that non-intrusive parenting yields positive child outcomes across a range of domains. The capacity to follow the child's lead while maintaining joint attention is associated with positive language outcomes; for example, Carpenter, Nagell, and Tomasello (1998) found that maternal following language and joint engagement at 12 months was strongly positively correlated with later word comprehension and maternal following language and joint engagement at 9 months predicted word production at 13, 14, and 15 months (Carpenter, Nagell, and Tomasello, 1998). Additionally, there is evidence that suggests these maternal behaviors directly influence child language skills rather than the reverse. Dieterich, Assel, Swank, Smith, and Landry (2006) found that maternal scaffolding at 3 years had a direct effect on language skills at 4 years but language skills at 3 years did not predict maternal scaffolding at 4 years, indicating that mothers who scaffold language at a high level do so independent of the child's language skills. Additionally, Neitzel & Stright (2003) found that both emotionally focused verbal and nonverbal scaffolding encourages self-regulatory skills and persistence, skills that are necessary for learning, processing, and comprehension (Choudhury & Gorman, 2000; Soares, Lemos, & Almeida, 2005). Parental behaviors including scaffolding are embedded within the emotional context of the dyadic interaction (Darling & Steinberg, 1993), and sensitivity and scaffolding are complementary aspects of dyadic behaviors (Hustedt & Raver, 2002).

Parental states of mind in the context of attachment: Insightfulness

Insightfulness, in the simplest of terms, is the capacity to see things from the child's point of view; indeed, Ainsworth (1969) describes sensitive mothers as being able to do just that. This capacity is essential to a parent's empathic understanding of the child (Oppenheim, Koren-Karie, and Sagi, 2001). More specifically, insightfulness, as described

by the authors of the IA, is the capacity to construct positive motives underlying the child's behaviors while maintaining an emotionally complex and open, flexible view of the child (Oppenheim and Koren-Karie, 2002). A parent's proclivity for understanding the child's behavior in terms of the child's underlying motivations is described in the literature in various ways, and the presence and quality of this state of mind has been shown to affect pre-linguistic skills (Paavola, Kemppinen, Kumpulainen, Moilanen, and Ebeling, 2006; Bornstein and Tamis-LeMonda, 1997), language acquisition and development (Meins, 1998), attachment security (Meins, Fernyhough, Fradley & Tuckey, 2001), and theory of mind abilities (Meins and Fernyhough, 1999). Meins (1997) operationalized this mentalization ability as *mind-mindedness*, the capacity to see their child as an intentional, mental agent – a psychological being – and described mind-mindedness as a mechanism for attachment transmission. Mind-mindedness is theorized to provide children with the tools to progress from being externally regulated to self-regulated, a crucial feature of executive functioning which underlies other developmental competencies (Meins, 1997; Fonagy et al., 2002; Sharp & Fonagy, 2008). Bernier, Carlson, Deschenes, and Matte-Gagne (2012) investigated the relationship between early parenting and child executive functioning performance, looking specifically at mind-mindedness, sensitivity, and autonomy supportive, non-intrusive parenting; results indicate that these parenting constructs, along with the quality of the attachment relationship, each play a significant role in the development of children's executive functions.

In their review of the constructs implicated in parents' ability to treat the child as a psychological agent (mentalizing), Sharp and Fonagy (2008) outline the theoretical overlaps of parental mind-mindedness and parental reflective functioning. Fonagy and Target (1997)

describe *parental reflective functioning* as the ability to use an open, non-defensive thought process regarding their children's motivations, mental states, and behaviors. This thought process allows the parent to provide an appropriate response, and in turn, this encourages the child to organize their own cognitions coherently and effectively in the manner of secure attachment (Fonagy, 2002; Fonagy and Target, 1997). This parental ability is characterized by child-focused thought processes and behaviors; the parent must be able to see their child as a separate entity from themselves, a capacity highlighted by the IA as promoting parental insightfulness (Oppenheim & Koren-Karie, 2002). Thus, it may be that parents' capacity to maintain a focus on the child as separate from the parent and positively intuit children's motivations supports the ability to parent in ways that more optimally support children's cognitive development. Moreover, the literature suggests that it is through the parent's capacity to mentalize or be insightful that parents transmit to their children the ability to regulate their own emotions and behavior and be self-efficacious (Sharp & Fonagy, 2008; Fonagy et al., 2002; Gottman, Katz, & Hooven, 1996; Meins, 1997).

Moreover, these positive parenting practices may be even more important for children of low SES families and children exposed to violence, particularly exposure in early childhood. The negative psychological, behavioral, and cognitive outcomes associated with exposure to community and domestic violence are well documented (Raver, Blair, & Willoughby, 2013; Chu & Lieberman, 2010; Perkins & Graham-Bermann, 2012; Koenen et al., 2003). Existing research suggests that parenting may moderate the relation between children's early exposure to violence and the psychological and behavioral effects of exposure (Gray, Forbes, Briggs-Gowan, & Carter, 2015; Lieberman, Van Horn, & Ozer, 2005; Skopp, McDonald, Jouriles, & Rosenfeld, 2007). Less is known about the relation

between parenting practices and children's cognitive outcomes following exposure to violence

To our knowledge, caregiver insightfulness measured with the IA has not been examined in relation to child cognitive outcomes. However, parental states of mind in the context of attachment relationships have been explored previously in relation to children's cognitive functioning. Busch and Lieberman (2010) investigated the relation between maternal states of mind in the context of attachment and children's cognitive functioning in a violence exposed sample, finding that higher coherence of mind on the Adult Attachment Interview (AAI) was associated with higher children's verbal and performance IQ scores. Maternal coherence of mind describes the mother's ability to provide relevant, appropriate, and specific descriptions of their attachment experiences, an ability conceptually relevant to the IA. This study also found that the effect of coherence on total IQ was mediated by children's receptive and spoken language abilities, suggesting that children's verbal and non-verbal abilities should be examined separately (Busch & Lieberman, 2010).

Similarly, there is a body of work exploring the relation between parental meta-emotion philosophy, or the parent's capacity to be aware and accepting of the child's emotions while coaching children through the experience of their emotions, and children's cognitive development in the context of trauma. In a sample of violence exposed children and their mothers, Cohodes, Hagan, Lieberman, and Dimmler (2015) found that children who scored higher in verbal IQ had mothers that were aware, accepting, and coaching of their emotions, particularly sadness. Higher levels of adaptive meta-emotion philosophy might indicate higher attunement to the child's emotional life, providing more opportunities to scaffold cognitive development. This attunement to children's emotions can be

conceptualized as a similar state of mind as insightfulness, which also describes parent's ability to understand that child's mental states.

The state of mind described by insightfulness also is an intuitive underlying component of non-intrusive behaviors that support children's agendas, key to scaffolding their effective learning. Non-intrusive parenting behaviors requires maintenance of the child's attention, remaining in tune with the child, and reading children's cues (Radin, 1971), behaviors that are associated with two factors in the IA (Oppenheim & Koren-Karie, 2002). This sensitivity to cues in itself has been associated with positive effects on cognitive development (Sharp et al., 1995; Bakeman & Brown 1980; Coates & Lewis, 1984). High levels of joint attention and reciprocity are also associated with global ratings of maternal sensitivity (Raver & Leadbeater 1995). Thus, just as secure attachment allows for a secure base from which a child can develop competent exploration skills (Ainsworth, 1985), an insightful state of mind might allow for sensitive parental behaviors that support a child's autonomy while scaffolding their learning.

Current Study

While a growing body of literature suggests a two-factor model of sensitivity-exploration, this model has not been tested robustly in models of parental behavior and child cognitive outcomes; moreover, extant studies have not incorporated two-dimensional models of parental states of mind in analyses. Drawing from attachment as originally theorized by Ainsworth (1985) and others (Belsky, 1984), the purpose of this study was to examine two dimensions of parenting – sensitivity and exploration – across both parenting behavior and states of mind, in relation to one another and to child cognitive outcomes.

The present study tested the following hypotheses:

- 1) Higher ratings on the *Positive Insight* and *Focus on Child* scales would be associated with higher child nonverbal cognitive and language scores.
- 2) Higher ratings for sensitivity and lower ratings for intrusiveness would be associated with higher child nonverbal cognitive and language scores.
- 3) While both insightfulness dimensions may be related conceptually to parenting behaviors, we anticipate that, when considered together, *Positive Insight* will account for more variance in observed sensitivity than *Focus on Child*, and *Focus on Child* will account for more variance for intrusiveness than *Positive Insight*.
- 4) Insightfulness will have an indirect effect on child cognitive outcomes through parenting behavior.

Method

Participants

Participant data were drawn from a larger study designed to document the impacts of violence exposure on children's social-emotional development (Gray, Forbes, Briggs-Gowan, & Carter, 2015). This study included 64 dyads: sixty biological mothers of the participating child, two fathers, one grandmother, and one great-grandmother (age range: 18-74). Caregivers were racially diverse (19% white, 45% black; 22% Latino), and 36% of caregivers were bilingual. The majority of caregivers were single parents (61%), currently unemployed (53%), and 13% of caregivers had a college degree. Children (girls = 34, boys = 30) were between 3-5 years of age (mean age = 3.83, SD = .77). All participants were low-income based on their eligibility for receiving services from Women Infants and Children (WIC) and Head Start programs (100-185% of federal poverty guidelines).

Procedures

Participants were recruited from a larger screening study at WIC and Head Start programs based on elevated or low parent report of exposure to potentially traumatic events. After screening, caregivers and children completed a 2 to 3 hour visit at their home or in the lab (based on caregiver preference) conducted by graduate students in clinical or counseling psychology. Exclusion criteria included not being able to complete interviews in English and diagnosis of global developmental delay or autism by parent report. Screener surveys included information on parent and child exposure to potentially traumatic events (PTEs) on the Life Events Checklist (Gray, Litz, Hsu & Lombardo, 2004), and the sample was enriched for endorsement of violence-related PTEs, which were further assessed in person using the Preschool Aged Psychiatric Assessment (Egger et al., 2006). Caregivers were given \$50 for their participation, and children were given a book and toy. All procedures were approved by a university IRB.

Measures

Sociodemographic information. Caregivers reported on their own and their children's race, ethnicity, and age, as well as education, marital status, and bilingual status.

Caregiver insightfulness. The *Insightfulness Assessment* (IA; Oppenheim & Koren-Karie, 2002) is a coded interview informed by attachment theory that measures parents' capacity to empathically understand motives underlying their child's behavior in a complete, positive, and child-focused manner. Caregiver and child interactions were videotaped across three activities with the parent: a free play task, a wordless book task, and a parent distraction task, where children were given a simple toy while caregivers filled out a form. Following

the activities, caregivers viewed two-minute video-taped vignettes of their interactions with their children and participated in a semi-structured interview about their perceptions of children's thoughts and feelings. The IA yields both dimensional scales and categorical classifications. Interviews were coded on 10 scales that have been shown in factor analytic analyses to load onto two dimensions: *Positive Insight* and *Focus on Child* (Oppenheim, Koren-Karie, & Sagi, 2001; Hotez, Swanson, Delavenne, & Siller, 2015; Rosenblum, Martinez-Torteya, Beeghly, Koren-Karie, & Oppenheim, 2015). The 10 rating scales are *insight into child's motives, openness, complexity of description of child, maintenance of focus on child, richness of description of child, coherence of thought, acceptance, anger, worry, and separateness from child*; each scale is rated from 1 to 9. The *Positive Insight* dimension is comprised of *complexity, richness, insight into motives, acceptance, coherence*, and reverse coded *anger*; while, the *Focus on Child* dimension is comprised of *maintenance of focus, separation*, and reverse coded *concern*. In addition, transcripts were categorized according to one of four categories: insightful, one-sided, disengaged, and mixed. In this sample, 27 were insightful, 21 were one-sided, 14 were disengaged, and 2 were mixed. Twenty percent of transcripts were coded for reliability, and coders were blind to all outcome and predictor variables, (e.g., quality of parent-child relationship). Reliability for scales was in the acceptable range (ICCs ranged from .76-.95) and reliability for classifications were also in the acceptable range (classifications kappa = .77).

Parenting quality. Observed caregiver-child interactions were coded with the *Parent-Child Interaction Rating Scales* (PCIRS; Sosinsky, Marakovitz & Carter, 2004). Caregiver-child interactions were observed and recorded for 6 minutes of free-play with three bags of age-appropriate toys as well as during a 4-minute wordless book task. Interactions

were rated on items with 7 point scales, and coding was completed by two coders. Both coders were blind to insightfulness status, and 20% of the tapes were evaluated for inter-rater reliability, which was strong ($\alpha = .82-.90$). One item from the PCIRS will be included in analysis to evaluate parental *intrusiveness/over-control*. Intrusiveness as defined by the PCIRS is behavior characterized by adult-centered imposition of the parent's agenda and an inability to relinquish control of the interaction and is evaluated from the perspective of the child. This type of behavior does not facilitate the child's exploration and does not allow the child to make choices or influence the pace or focus of play. Additionally, the scale for sensitivity was examined. The PCIRS describes the defining characteristic of sensitive interaction as being child centered, requiring the parent to be "in tune" with the child. Awareness of the child's "needs, mood, interests, and capabilities" should guide parental behaviors. Parental behavior markers include acknowledging the child's affect and being responsive to the child's verbalizations and activity, facilitating the child's play, sharing positive affect, and encouragement of the child's efforts. Scores for intrusiveness and sensitivity were summed across the free play and wordless book task, which were highly correlated (intrusiveness: $r = .68, p < .001$; sensitivity: $r = .71, p < .001$).

Child cognitive & language functioning. Children were administered a subset of tasks from the *Differential Ability Scales-II* (DAS-II; Elliot, 2007), a norm-referenced clinical instrument for assessing cognitive abilities in children ages 2 years and 6 months to 17 years and 11 months. Two DAS-II tasks were administered (*Pictures Similarities* and *Pattern Construction*) to assess nonverbal intellectual functioning. In *Pictures Similarities* children were asked to match pictures based on reasoning, and in *Pattern Construction* children were asked to build increasingly difficult structures, shapes, or patterns using

blocks. Scores from these two subscales were used to calculate the nonverbal cognitive functioning composite standard score. The DAS-II is the product of a revision process that included item bias analysis with overrepresentation of Hispanic and African American children, with results indicating that it is a fair measure of cognitive abilities for these populations (Elliot, 2007; Marshall, McGoey, & Moschos, 2011). Normed using a sample of 3,480 children, the DAS-II was standardized with a sample representative of the general US population based on age, gender, race/ethnicity, parent education level, and geographic region.

An overall core language standard score was derived from *The Clinical Evaluation of Language Fundamental-Preschool 2* (CELF-P2; Semel, Wiig, & Secord, 2004), a comprehensive norm-referenced standardized diagnostic tool used for identifying, diagnosing, and performing follow up evaluations of language deficits in 3 to 6 year old children. The CELF-P2 has good internal consistency (.77 to .95), test-retest reliability (.78 to .94), and inter-rater reliability (.95 to .97). Three subtests (*sentence structures*, *word structure*, and *expressive vocabulary*) were used to yield the overall core language composite. An analysis of 10 language assessment tools concluded that the CELF-P2 demonstrated a clearly defined standardization sample with adequate sample size and was representative of the general US population with regard to age, ethnic background, parent education level, geographic region, socio-economic status, and presence of impairment (Semel, Wiig, & Secord, 2004; Friberg, 2010).

Results

Data were examined first for missingness regarding variables of interest. No participants were missing data from the IA. Due to concerns about validity of testing, two

participants were missing data on both the DAS-II and the CELF-P2, one participant was missing data for the CELF-P2 only, and two participants were missing data on the DAS-II only. Two dyads were missing data for the parent-child interaction due to equipment malfunction. Missing data was excluded list-wise for analysis in SPSS. Data were evaluated for normality assumptions. Skewness and kurtosis were in the acceptable range for normality for each of the variables of interest. One outlier in the data was identified for child nonverbal cognitive scores on the DAS-II ($n = 1$). All analyses were run with the outlier excluded, and patterns remained consistent, so results are presented for the entire analytic sample.

Descriptive statistics and bivariate correlations between study variables are reported in Tables 1 & 2. Potential covariates, including child age and sex, parent education, and marital status were examined in relation to predictors and outcome variables. No significant correlations were found between potential covariates and both a predictor and outcome variable, so no potential covariates are included in reported results.

A series of t-tests were conducted to explore group differences across the dichotomous insightfulness categories for child nonverbal cognitive scores and language scores as well as parenting variables for insightfulness dimensions and observed sensitivity and intrusiveness. Insightfulness category (insightful, $n = 27$ and uninsightful, $n = 37$) was entered as the grouping variable, and child nonverbal cognitive scores, child language scores, parent *Positive Insight* and *Focus on Child*, and observed parent sensitivity and intrusiveness were entered as dependent variables. Significant differences between groups were found for *Positive Insight* ($t = -15.67, p < .001$) and *Focus on Child* only ($t = -2.31, p = .02$). Parents categorized as insightful were rated higher on *Positive Insight* and *Focus on Child* than

parents categorized as un insightful. No differences were observed across insightfulness groups for child language or nonverbal cognitive abilities scores or for observed parenting.

Hypothesis One: Insightfulness Dimensions and Child Cognitive and Language Scores

To test the hypothesis that higher scores on the dimensional variables of parental insightfulness (*Focus on Child* and *Positive Insight*) would predict higher child language and nonverbal cognitive scores, a series of regression analyses were conducted. In order to determine the co-contribution of the distinct IA factors to child language outcomes, *Positive Insight* and *Focus on Child* were entered together as predictor variables in a regression analysis, with child language scores on the CELF-P2 as the outcome. Together, the IA factors explained 10 % of the variance ($F(2,60) = 3.24, p = .05$) in child language. *Positive Insight* did not significantly predict scores on the CELF-P2 ($\beta = -.11, p = .37$), but *Focus on Child* did significantly predict scores on the CELF-P2 ($\beta = 2.45, p = .02$), with parents' higher *Focus on Child* in the context of the IA interview predicting higher child language scores (see Table 3).

In a separate regression, scores for *Positive Insight* and *Focus on Child* were entered together as predictor variables, with child nonverbal cognitive scores on the DAS-II as the outcome of interest. Together, the two IA dimensions accounted for 18% of the variance ($F(2,59) = 6.18, p = .004$) in child non-verbal cognitive ability. Similar to child language outcomes, in the regression model, *Positive Insight* was not a significant predictor ($\beta = -1.84, p = .07$), but *Focus on Child* significantly predicted scores on the DAS-II ($\beta = .38, p = .003$), with higher levels of *Focus on Child* in the context of the IA interview predicting child language and nonverbal cognitive scores (see Table 3).

Given that this sample included a subsample of children exposed to violence, as well

as concerns that these processes may differ across child sex and developmental level, we tested moderation of these patterns using Hayes's PROCESS macro (Hayes, 2013). The relation between *Focus on Child* and child language was not moderated by child age (interaction: $\beta = .47, p = .31; R^2 \text{ change} = .02, F = 1.03, p = .31$), child sex (interaction: $\beta = -.44, p = .58; R^2 \text{ change} = .01, F = .31, p = .58$), or children's dichotomously coded exposure to violence as indicated by parents in the Preschool Aged Psychiatric Assessment (Egger et al., 2006; $n = 24$ children with violence exposure; see (Gray, Forbes, Briggs-Gowan, & Carter, 2015) (interaction: $\beta = .07, p = .92; R^2 \text{ change} = .00, F = .01, p = .92$). Similarly, the relation between *Focus on Child* and child nonverbal cognitive scores was not moderated by child age (interaction: $\beta = .48, p = .23; R^2 \text{ change} = .02, F = 1.50, p = .23$), child sex (interaction: $\beta = 1.03, p = .13; R^2 \text{ change} = .01, F = .03, p = .13$), or children's exposure to violence (interaction: $\beta = .71, p = .27; R^2 \text{ change} = .02, F = 1.24, p = .27$).

Hypothesis Two: Observed Parenting and Child Nonverbal Cognitive and Language Scores

In a parallel set of regression analyses, in order to examine how sensitivity and intrusiveness together related to child outcomes, observed sensitivity and intrusiveness scores were entered together as predictors, with scores on the CELF-P2 as the outcome. Observed sensitivity and intrusiveness did not significantly predict child language scores ($F(2, 58) = 2.00, p = .15$), nor did they significantly predict child nonverbal cognitive scores ($F(2, 57) = 1.57, p = .22$).

As observed parenting variables were obtained by collapsing observation ratings for sensitivity and intrusiveness across two tasks, a free-play task and a wordless book reading task, exploratory correlational analyses examined whether parenting behavior in either task

may be more associated with child nonverbal cognitive and language outcomes (see Table 4). Observed intrusiveness during the wordless book task was significantly correlated with child language scores ($r = -.30, p = .02$) and child nonverbal cognitive scores ($r = -.28, p = .03$), but observed intrusiveness during the free-play task was not significantly correlated with child language scores ($r = -.13, p = .33$) or nonverbal cognitive scores ($r = -.15, p = .27$). Observed sensitivity was not significantly correlated with child language or nonverbal cognitive scores in either the wordless book task (CELF-P2: $r = .03, p = .84$; DAS-II: $r = .04, p = .76$) or the free-play task (CELF-P2: $r = -.08, p = .55$; DAS-II: $r = .08, p = .54$).

Hypothesis Three: Observed Parenting and Insightfulness Dimensions

As depicted in Table 2, *Focus on Child* was significantly correlated with observed intrusive parenting behaviors ($r = -.26, p = .04$), consistent with the theorized two-dimensional conceptual model; however, no relation was found between *Positive Insight* and observed sensitive parenting behaviors ($r = .10, p = .47$).

To test the hypothesis that the IA dimension of *Focus on Child* would predict intrusiveness over and above *Positive Insight*, a regression analysis was conducted with *Focus on Child* and *Positive Insight* as predictors and intrusiveness as the outcome variable (see Table 5). Despite significant bivariate correlations between *Focus on Child* and intrusiveness, when intrusiveness was considered together with sensitivity in a regression model, the overall model was non-significant ($R^2 = .07, F(2,61) = 2.23, p = .12$); additionally, when *Positive Insight* and *Focus on Child* were considered together as predictors of sensitivity, the model was non-significant ($R^2 = .05, F(2,61) = 1.48, p = .24$).

Again, as observed parenting variables were obtained by collapsing observation

ratings for sensitivity and intrusiveness across two tasks, a free-play task and a wordless book reading task, exploratory correlational analyses examined whether parenting behavior in either task may be more associated with *Focus on Child* and *Positive Insight* (see Table 6). Task-level patterns revealed that observed intrusiveness during the free-play task was significantly negatively correlated with *Focus on Child* ($r = -.29, p = .03$), but observed intrusiveness during the wordless book task was not significantly correlated with *Focus on Child* ($r = -.19, p = .13$). Observed intrusiveness during either task and observed sensitivity in either task were not significantly correlated with *Positive Insight*.

Hypothesis Four: Potential Mediating Role of Observed Parenting

To explore the potential mediating role of observed parenting behaviors in the relation between insightfulness dimensions and child nonverbal cognitive scores on the DAS-II and language scores on the CELF-P2, a mediational analysis was conducted using Hayes' PROCESS macro SPSS (2013). Due to patterns of significance in previous analyses, mediation was tested using only *Focus on Child* and observed intrusiveness, excluding *Positive Insight* and observed sensitivity.

Bootstrapping analyses were conducted to assess each component of the mediational model for *Focus on Child*, intrusiveness, and 1) child nonverbal composite and 2) child language scores. Mediation analysis using bootstrapping with 95% confidence intervals of direct and indirect effects were conducted with 1,000 bootstrap samples. *Focus on Child* was entered as the predictor variable, observed intrusiveness was entered as the mediating variable, and child scores were entered as the outcome (child nonverbal cognitive scores and child language scores). Observed intrusive parenting behaviors did not mediate the relation between *Focus on Child* and child nonverbal cognitive scores or child language scores.

Confidence interval values for the upper and lower levels for the indirect effect of *Focus on Child* through intrusiveness contained zero, indicating non-significance (DAS-II: $CL = -.03$ to $.45$; CELF-P2: $CL = -.02$ to $.56$). However, a significant direct effect was found for *Focus on Child* on DAS-II scores ($t = 2.31, p = .02, CL = .11$ to 1.49). A direct effect was not found for *Focus on the Child* on CELF-P2 scores ($CL = -.15$ to 1.40).

Discussion

Grounded in a two-dimensional, attachment-informed conceptual framework of parenting, the relations between parental states of mind (insightfulness), observed behaviors, and child outcomes were explored in this study. Specifically, *Positive Insight* and *Focus on Child*, dimensional variables of insightfulness, along with observed parental sensitivity and intrusiveness, were examined in relation to one another and to child language and nonverbal cognitive abilities. Observed parenting was hypothesized to mediate the relation between insightfulness and child language and nonverbal cognitive abilities; specifically, observed intrusiveness was hypothesized to mediate the relation between *Focus on Child* and child outcomes and observed sensitivity was hypothesized to mediate the relation between *Positive Insight* and child outcomes. This study was modeled after an attachment-informed framework that emphasizes both proximity seeking and exploratory child behaviors, with the intent of examining parenting behaviors and states of mind that maximally support cognitive and language development.

Results partially support hypotheses, as some relations between the insightfulness dimensions, specifically *Focus on Child*, and child nonverbal cognitive and language abilities, were found. Contrary to hypotheses but unique in the literature, *Focus on Child* had a direct positive effect on child cognitive and language outcomes. This effect was not

mediated by observed parenting behavior, despite bivariate relations between *Focus on Child*, nonverbal cognitive and language outcomes, and observed parental intrusiveness. Additionally, intrusiveness during a free-play task was significantly correlated with the *Focus on Child* dimension.

Focus on the Child, Positive Insight, and Child Outcomes

As defined by the IA, insightfulness is the ability of the caregiver to maintain an emotionally complex, child focused, flexible perspective of their child while constructing positive motives for the child's behaviors (Oppenheim & Koren-Karie, 2002). It was hypothesized that caregiver's capacity to present a rich, open and accepting view of the child (*Positive Insight*) and to demonstrate focus on the child rather than the self (*Focus on Child*) would each uniquely predict scores on the child outcome variables.

Parents' capacity to remain child-focused in the context of the Insightfulness Assessment interview in particular predicted both nonverbal cognitive and language scores, above and beyond their capacity to describe their child in a warm, open, and accepting manner (*Positive Insight*). In the only other known study exploring parental states of mind along with behaviors in relation to children's cognitive development, among a sample of preschoolers who had witnessed domestic violence, Busch and Lieberman (2010) demonstrated that parental coherence of mind in the context of the Adult Attachment Interview, a measure of parental representations of attachment relationships, predicted child verbal IQ. That is, parents' ability to provide coherent narratives regarding their attachment relationships, a construct that is conceptually aligned with the goals of the IA and similarly related to sensitivity (Leerkes et al., 2015), predicted their children's verbal IQ. It could be that parents' ability to be attuned to their children in the way that the *Focus on Child*

dimension captures supports children's interaction with and exploration of their environments. While *Focus on Child* has not been studied previously in relation to cognitive or language abilities, this child-focused sense of separateness characterizes conceptually related positive caregiving constructs like mind-mindedness and parental reflective functioning (Hawkins, Madigan, Moran, & Pederson, 2015) that allow the parent to understand the child's mental states and behaviors in a way that is theorized to encourage the development of self-regulatory skills (Sharp & Fonagy, 2008). These findings, in combination with prior work by Busch & Lieberman (2010) in a violence-exposed sample, suggest that this capacity may have particular relevance not only for children's social-emotional outcomes but also for cognitive and language competencies – and that these patterns appear to operate similarly for children who have been exposed to violence as well as those who have not. Contrary to hypotheses, parents' capacity to describe their child in positive, warm, flexible, and complex manner (*Positive Insight*) did not predict child cognitive or language outcomes in the sample.

Focus on the Child, Observed Parenting Behaviors, and Child outcomes

Contrary to hypothesis, neither observed sensitivity nor intrusiveness predicted nonverbal cognitive or language scores in this sample, although parents' observed intrusiveness during a wordless book-reading task correlated negatively with both child language and nonverbal outcomes. The general pattern of null findings in this sample is in contrast to robust findings in the literature on the beneficial impact of both sensitive parenting and non-intrusive, autonomy supportive parenting on child cognitive outcomes (Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004; Brady-Smith et al., 2013). It has been demonstrated, for example, that maternal sensitivity contributes to the development of

intentional language (Paavola et al., 2006), expressive language skills, and vocabulary size (Leigh, Nievar, & Nathans, 2011). Non-intrusive parenting has been further shown to encourage the development of problem solving skills (Landry, Miller-Loncar, Smith, & Swank, 2002; Dilworth-Bart, Poehlmann, Hilgendorf, Miller, & Lambert, 2010). McFadden and Tamis-Lemonda (2013) found that in a low-income sample of predominantly Black and Latino mothers and children, child cognitive performance was higher when maternal sensitivity was high and maternal intrusiveness low. Our lack of findings between observed sensitivity and child cognitive and language outcomes may be related to the small sample size, the constricted sample (all low income mothers), or the relatively low-demand nature of the parenting task, including free play and a book activity, which may not have elicited parenting behavior sufficiently variable in scope to capture the range of sensitive, responsive parenting that supports cognitive development. Given the diversity in this sample and the fact that the majority of studies on the variables of interest were conducted with homogenously white, middle class samples, it is necessary to consider parenting behaviors within the context of social norms. Findings suggest that certain parenting behaviors may be developmentally beneficial in some socio-cultural contexts where those behaviors are normative, but deleterious in other contexts where those behaviors are not (Brady-Smith et al., 2013). It could be that the lack of findings in the present study could be due to the composition of the present sample, as well as the normative samples on which the parenting measure was developed.

Additionally, in this sample, no relation was found between *Positive Insight* or *Focus on Child* and parenting variables, despite support from the literature (Oppenheim & Koren-Karie, 2013). In their prior work with the Adult Attachment Interview and preschoolers'

verbal outcomes, Busch and Lieberman (2010) found that mothers rated highly on coherence of mind were also significantly more sensitively responsive and less controlling during a free-play task with their young children – although sensitive parenting did not mediate the relation between coherence of mind and child outcomes in that sample, suggesting unique contribution of states of mind. Additional studies with the Insightfulness Assessment have also demonstrated correspondence between categorization as positively insightful and observed parenting sensitivity (Koren-Karie, Oppenheim, Dolev, Sher, & Etzion-Carasso, 2002). Robust patterns of association from parent states of mind to sensitive parenting behavior, however, were not observed in this sample, although observed intrusiveness in the free-play task was negatively correlated with parents' ability to remain focused on the child in the context of Insightfulness Assessment. Again, parenting behaviors must be considered in context. There is evidence that the link between parenting behaviors and child outcomes varies across types of interaction during which parenting is assessed; in this sample, intrusive parenting during a more didactic activity was more strongly associated with child cognitive and language outcomes (Page, Wilhelm, Gamble, and Card, 2010), whereas intrusive parenting during a free play activity was more strongly associated with *Focus on Child*. It may be that the free-play task presented no specific goals, providing the parent the opportunity to exhibit child-focused behaviors; conversely, the wordless book task may have prompted more goal-oriented, instructive dyadic interactions.

Lastly, it was expected that the insightfulness dimensions would have an indirect effect on child outcomes through the observed parenting. Contrary to hypothesis, *Focus on Child* had a direct effect on child language and nonverbal cognitive scores that was not mediated by parenting behavior. In a similar study examining maternal attachment states of

mind, parenting, and child outcomes among preschoolers exposed to domestic violence, Busch and Lieberman (2010) found that coherence of mind had a direct effect on child cognitive outcomes that was not mediated by sensitive responsiveness. Taken together, these findings suggest a unique contribution of parental states of mind to children's cognitive development that cannot be fully accounted for by observable parenting behaviors. Other contributing factors may include child-specific factors associated with security, such as children's self-confidence (Erikson, Sroufe, & Egeland, 1985) or their self-regulation capacities (Vondra, Shaw, Swearingen, Cohen, & Owens, 2001), which may be impacted by parents' attachment-related states of mind and have been associated with children's cognitive and language outcomes (Bandura, 1993). These child-level factors developed across early caregiving interactions, rather than observed parenting concurrent to measures of cognitive and language function, may better account for the effect of parental insightfulness on cognitive and language outcomes.

Limitations, Strengths, and Future Directions

Several methodological limitations constrain findings for the present study. First, the study design was cross-sectional, so causal conclusions regarding the influence of insightfulness or observed parenting on child cognitive and language outcomes cannot be drawn. However, the findings presented warrant further exploration longitudinally and with a larger sample, particularly as the present study may have been under-powered to detect small effects. This sample was also not representative as it was low income, limiting generalizability. Additionally, it is necessary to study parenting from a sociocultural perspective, as current measures of parenting behaviors may be culturally bound to predominantly white, middle class families. Appropriate parenting behaviors may look

significantly different in other cultural groups. Beyond the parenting behaviors, another limitation of the present study is the exclusion of child-specific and parent-specific factors like child temperament and parent psychopathology. In order to create a comprehensive picture of parent-child interactions, it is necessary to examine these individual factors. Future research should also examine other child outcomes like self-regulation and socio-emotional competencies, as child development across domains occurs together and not in a vacuum.

Given these limitations, this study design also had several methodological strengths. The two-factor approach taken allowed for identification of unique relations between parental insightfulness, parenting and child cognitive and language outcomes. Additionally, this sample was recruited directly from community agencies serving low-income families and was enriched for violence exposure, ensuring that the sample was comprised entirely of low-income children. While not generalizable to a broader community sample, this allowed for the study of these processes in this population where responsive parenting may be even more critical. Additionally, data for parenting was gathered through direct assessment, observationally, not through self-report.

Future research may benefit particularly from continuing to examine relations between parental states of mind and child cognitive and language outcomes – particularly in longitudinal models incorporating child factors that may illuminate this pathway. Existing evidence suggests that negative relational behaviors, including intrusive parenting, are amenable to change and that early dyadic therapy can affect positive change; in a study on relational behavior and parental representations, mothers' post-treatment were able to provide richer narratives on the mother-child relationship, a hallmark of insightfulness

(Dollberg, Feldman, Tyano, & Keren, 2013). Additionally, intrusive behaviors were associated with more restricted parental narratives regarding parent-child interactions, an important component of the IA, suggesting that further study is needed to more thoroughly explore the relation between insight and intrusive parenting behaviors (Dollberg, Feldman, Tyano, & Keren, 2013). There is also preliminary evidence that suggests that caregiver insight itself can be changed through treatment (Oppenheim, Goldsmith, & Koren-Karie., 2004). Young children with high sociodemographic risk exhibit lower executive functioning and compromised self-regulation (Raver, Blair, & Willoughby, 2013) and children from disadvantaged families exhibit significant disparities in language acquisition as early as 18 months (Fernald, Marchman, & Weisleder, 2013). Future research may help to determine what and how changes in parent states of mind behaviors may affect nonverbal cognitive and language outcomes for children in order to target intervention for children at risk.

Appendix

Table 1

Descriptive Statistics of Study Variables

	N	Range	Mean	SD
<i>Positive Insight</i>	64	19-56.5	35.66	10.16
<i>Focus on Child</i>	64	18-27	20.81	5.10
DAS-II Nonverbal	60	57-126	93.85	13.36
CELF Core Language Composite	61	53-112	85.20	14.83
Sensitivity	62	3-13	8.19	2.44
Intrusiveness	62	2-11	4.60	2.60

Note. As stated in the results, the lowest score for the DAS represents an outlier. Analyses were conducted with and without this score and patterns were consistent, so this score was retained for power. DAS-II refers to Differential Abilities Scales –II; CELF refers to Clinical Evaluation of Language Fundamentals.

Table 2

Correlations between study variables of interest

	1.	2.	3.	4.	5.
1. Positive insight					
2. Focus on child	.076				
3. CELF core language	.084	.296*			
4. DAS II Nonverbal composite	-.196	.360**	.428**		
5. Sensitivity	.119	.189	-.013	.081	
6. Intrusiveness	.014	-.264*	-.231	-.232	-.427**

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

Table 3

Dimensional variables of insightfulness predicting child nonverbal cognitive scores

	<u>CELF-</u> <u>P2</u>			<u>DAS-</u> <u>II</u>		
	<i>B</i>	<i>SE B</i>	<i>β</i>	<i>B</i>	<i>SE B</i>	<i>β</i>
<i>Positive Insight</i>	-.165	.184	-.112	-.292	.159	-.221
<i>Focus on Child</i>	.883	.360	.307*	.963	.309	.375**

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

Table 4

Correlations between observed parenting tasks and child language and nonverbal cognitive scores

	1.	2.	3.	4.	5.
1. Book task Intrusiveness					
2. Free-play Intrusiveness	.68**				
3. Book task Sensitivity	-.39**	-.30*			
4. Free-play Sensitivity	-.35**	-.41**	.71**		
5. CELF-P2	-.30*	-.13	.03	-.08	
6. DAS-II	-.28*	-.15	.04	.08	.43**

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

Table 5

Observed parenting variables predicting Insightfulness dimensions

	<u>Intrusiveness</u>			<u>Sensitivity</u>		
	B	SE B	β	B	SE B	β
<i>Focus on Child</i>	-.14	.07	-.27*	.09	.06	.18
<i>Positive Insight</i>	.06	.03	.03	.03	.03	.11
	R^2	.07			.05	
	$F(2,61)$	2.23			1.48	
	p	.12			.24	

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

Table 6

Correlations between observed parenting tasks and IA dimensions

	1.	2.	3.	4.	5.
1. Book task Intrusiveness					
2. Free-play Intrusiveness	.68**				
3. Book task Sensitivity	-.39**	-.30*			
4. Free-play Sensitivity	-.35**	-.41**	.71**		
5. <i>Focus on Child</i>	-.19	-.29*	.14	.17	
6. <i>Positive Insight</i>	.10	-.06	-.03	.22	.08

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

Figures

Figure 1. Conceptual Two Dimensional Model of Parenting States of Mind and Parenting Behaviors

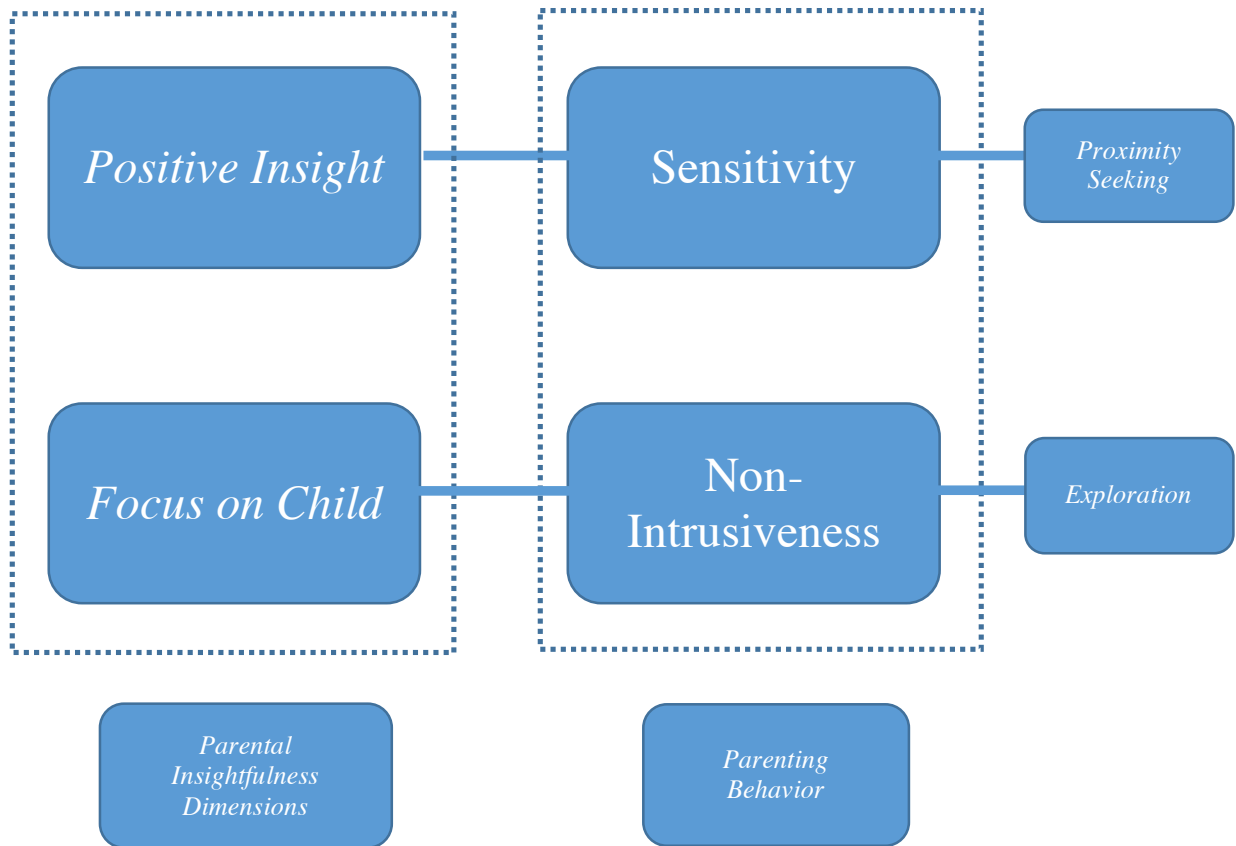


Figure 1. Both parenting insightfulness factors (*Positive Insight* and *Focus on Child*) and parenting behaviors (sensitivity and non-intrusiveness) can be conceptualized along two dimensions that are consistent with the literature on attachment regarding parenting that is both contingently responsive to support child's proximity seeking behaviors as well as autonomy supportive to support children's competent exploration.

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Biography

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