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Associations Between Early Caregiving and Rural, Low-SES, African American Children’s Representations of Attachment Relationships

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Abstract

Little research has examined the legacy of early maternal care for later attachment representations among low-income and ethnic minority school-aged children. Using data from a sample of 276 rural, low-income, African American families, this study examined associations between maternal care in infancy and children’s representations of attachment figures in middle childhood. Maternal care was coded from mother-child observations at 6, 15, and 24 months of age. Representations of attachment figures were assessed using the Manchester Child Attachment Story Task (Green, Stanley, Smith, & Goldwyn, 2000) at 6 years of age. Sensitive maternal care in infancy was not significantly related to attachment security or episodic disorganized behaviors in children’s representations. However, children exposed to more harsh-intrusive parenting during infancy displayed less secure representations of attachment figures in middle childhood and more episodic disorganized behaviors, even after controlling for numerous child and family contextual covariates. Findings inform conceptualizations of attachment formation among rural, low-income, African American parent-child dyads.

Attachment theory posits that children’s early caregiving experiences are carried forth via “Internal Working Models” (IWMs) of these relationships (e.g., Bowlby, 1969; Bretherton & Munholland, 2008) that promote positive adaptation and socio-emotional development across the lifecourse (e.g., Sroufe, 2005). Despite the importance of the IWM in both theoretical and empirical work on attachment, relatively few studies have examined the link between children’s experiences with parents in infancy and their representations of the quality of parent-child relationships as they make the transition to the school years. Moreover, research on attachment in general, and children’s representations of attachment relationships in particular, has not adequately examined associations between early caregiving and attachment security among socioeconomically disadvantaged and ethnic minority children.

Given that secure attachment relationships may be an important resource for children as they make the transition to school, it is critical to better understand the development of attachment representations in the early school years (Bosmans & Kerns, 2015). Such an inquiry seems particularly important in groups of children who are at high risk for poor adaptation to school and poor school success—that is, rural, low-income children, and particularly minority children in these settings (Grace, Shores, Zaslow, Brown, Aufseeser, & Bell, 2006; Vernon-Feagans, Cox, & The FLP Key Investigators, 2013). The present study sought to examine the relations between multiple dimensions of early maternal care in the first two years of the child’s life, and children’s representations of attachment relationships at six years of age among rural, low income, African American families.

Children’s Representations of Attachment Figures

Attachment theory (Bowlby 1969) has long argued for the importance of children’s early caregiving experiences in shaping the developing child. According to Bowlby, not only do the “safe haven” and “secure base” functions of attachment promote the child’s safety and survival, but they also promote greater mental health, emotion regulation capacities, and adaptive functioning in subsequent close relationships. The IWM has been hypothesized as a key mechanism in the attachment relationship, such that the quality of caregiving in infancy (Bretherton & Munholland, 2008) is internalized by the child, and serves as a guide for future expectations and interpretations of experience. Indeed, a great deal of research suggests the benefits of secure infant-mother attachment relationships for adaptive development across many domains (e.g., Sroufe, 2005; see Thompson, 2008 for a review).

Parental sensitivity has long been considered the key determinant of attachment security, such that caregivers who respond to their children’s cues in a warm, prompt, and appropriate fashion will elicit a sense of felt emotional security in those children (Ainsworth, Bell, & Stayton, 1974). Numerous individual studies and meta-analytic evidence (e.g., DeWolff & van Ijzendoorn, 1997) support this proposition by revealing that children with sensitive parents are more likely to develop secure relationships with their parents. Notably, and despite significant portions of unexplained variance in the prediction of attachment security, relatively few investigations have linked other parenting behaviors beyond sensitivity (or derivatives thereof) to attachment security. Furthermore, the bulk of evidence supporting associations between sensitivity and attachment security have assessed attachment in the first several years, and typically using behavioral assessments of attachment such as the Strange Situation Procedure (Ainsworth, Blehar, Waters, & Wall, 1978) and the Attachment Q-Set (Waters & Deane, 1985).

However, with the cognitive advances that occur in the transition to the symbolic representational capacities of early childhood, new methods examining children’s narratives in response to story stems about attachment-related experiences have been used in efforts to tap IWMs in school-aged children. Narratives enable children to share experiences and aspects of their inner worlds, as well as to integrate and organize their experiences, thoughts, and feelings (Stern, 1985; Thompson, 1994; Wolf, 2003). A number of narrative and story stem measures of attachment representation have been developed and used successfully over the last two decades including the Attachment Story Completion Task (Bretherton,

Ridgeway, & Cassidy, 1990), the Story Assessments of Moral and Prosocial Development (Emde & Buchsbaum, 1990), the Attachment Doll-Play Interview (Oppenheim, 1997), and the MacArthur Story Stem Battery (MSSB, Bretherton & Oppenheim, 2003). These representational procedures have made significant methodological contributions to the attachment literature (e.g., Bretherton, Ridgeway, & Cassidy, 1990; Green, Stanley, Smith, & Goldwyn, 2000; Madigan, 2016; Oppenheim & Waters, 1995; Steele, Hodges, Kaniuk, Hillman, & Henderson, 2003).

Although data is limited, conceptual work suggests that the link between sensitivity and attachment security could be somewhat lower when using representational measures of attachment as compared to behavioral measures such as the Strange Situation Procedure. This is in part due to the temporal proximity of early sensitivity to behavioral measures (typically assessed in early childhood) as compared to representational measures (typically assessed in middle and later childhood). Further, attachment representations in middle childhood require the integration of cognitive, linguistic, and affective systems, and may incorporate social experiences with others both within and outside the family (Kerns, Schlegelmilch, Morgan, & Abraham, 2005; Mayseless, 2005). As such, these representations may emerge as a result of complex intra- and inter-personal dynamics that go beyond the sensitivity of early interactions with a primary caregiver.

One common representational measure, the Manchester Child Attachment Story Task (MCAST; Green et al., 2000), appears to be a particularly promising tool for assessing children's representations of attachment relationships from the ages of four through eight. In contrast to earlier story stem measures that ask children to narrate stories of a "third-person" mother-child dyad, the MCAST asks children to narrate stories based on their own "self" and their primary caregiver. The MCAST has shown evidence of reliability and validity predominantly in British and European community and clinical samples (Goldwyn, Stanley, Smith, & Green, 2000; Green et al., 2000; Green, Stanley, & Peters, 2007; Barone et al., 2009; Matias O'Connor, Futh, & Scott, 2013), as well as an ethnically diverse urban British sample (Futh, O'Connor, Matias, Green, & Scott, 2008). These studies have demonstrated that MCAST attachment representations are related to parents' adult attachment classifications (e.g., Barone & Lionetti, 2012; Goldwyn et al., 2000; Steele, Hodges, Kaniuk, Hillman, & Henderson, 2003) and children's socioemotional outcomes (e.g., Colle & Del Giudice, 2011; Futh et al., 2008; Pasalich, Dadds, Hawes, & Brennan, 2012). A small number of prior studies also show associations between a) MCAST attachment security and concurrent maternal sensitivity (e.g., Matias et al., 2014), and b) MCAST disorganization and concurrent high maternal atypical behavior (e.g., Green et al., 2007). Nonetheless, this prior work has not yet established a relationship between caregiving experiences during infancy and later security or disorganization, and the extent to which caregiving is related to attachment representations for rural, low-income, and African American children remains to be seen.

Attachment in Poor, Rural, African American Families

Although several studies have examined attachment relationships in African American families during early childhood (Barnett, Kidwell, & Leung, 1998; Dexter, Wong, Stacks,

Beeghly, & Barnett, 2013), investigations on the correlates of school-aged African American children's attachment representations are lacking. The dearth of attachment research with African American families is particularly striking given debate in the literature regarding the utility of attachment theory for conceptualizing African American parent-child relationships (e.g., Jackson, 1993; Bakermans-Kranenburg, van Ijzendoorn, & Kroonenberg, 2004), as well as documented differences in family structure and parental style between European American and African American parents more broadly (e.g., Barnett et al., 1998; Brody & Flor, 1998; McLoyd & Smith, 2002; Pinderhughes, Dodge, Bates, Petit, & Zelli, 2000). Elucidating the development of attachment relationships in African American families is necessary to fully understand the applicability of attachment theory and measurement across social contexts.

Further, African American children are more likely than European American children to be living in poverty (Huston, McLoyd, & Garcia Coll, 1994). Children from economically disadvantaged backgrounds face a unique set of challenges that may alter the ways in which attachments to caregivers are formed and/or internalized. Poor children are exposed to greater family disruption and violence, instability in living arrangements, and more chaotic households than children in wealthier families (Evans, 2004). They are more likely to have caregivers who experience emotional distress, demonstrate harsher and less supportive parenting behavior, and provide fewer activities that stimulate cognitive development (Linver, Brooks-Gunn, & Kohen, 2002). Nonetheless, relatively little attachment research has focused on children from impoverished backgrounds, and the extent to which early caregiving predicts (or does not predict) later attachment representations among poor, African American children in the way that it does for middle-class, European and European American children remains an open question.

Despite representing a sizeable portion of the nation's poor children, the rural, African American children who are the focus of the present investigation are rarely studied (Fitchen, 1995). There are reasons to believe that results of research on parenting and attachment in other populations may not generalize to these families. For example, Huston et al. (1994) note that "urban-rural differences in family structure, spatial characteristics of communities, and structural functional characteristics of kin networks, among other factors, raise serious questions about the wisdom of extrapolating to the rural poor psychological processes documented in samples drawn from urban populations" (p. 278). Moreover, those investigations that do include rural, low-income, African American families suggest that these children and youth are vulnerable to numerous cognitive, social, and emotional problems, and there may well be unique attributes of family life that differentiate this population of families from those that have been more widely-studied (e.g., Brody et al., 2006; Vernon-Feagans, Cox, & The FLP Key Investigators, 2013). Examining the link between early caregiving and later attachment in this population will help to a) understand the applicability of attachment theory in general and the MCAST in particular to an understudied socio-cultural context, and b) inform efforts to promote high-quality attachment relationships among a vulnerable group of children and families.

Potential Associations between Parenting and Attachment Representations

The notion of sensitive caregiving has been privileged in research on early parent-child relationships in middle-class and European American families, and has dominated investigations linking early parenting to attachment security (e.g., DeWolff & van Ijzendoorn, 1997). However, a great deal of conceptual and empirical work has revealed qualitative differences in parental beliefs and behaviors among African American vs. European American parents (e.g., Brody & Flor, 1998; Lansford et al., 2011; Nelson, Leerkes, O'Brien, Calkins, & Marcovitch, 2012), as well as families living in poverty vs. middle class families (e.g., Bradley, Corwyn, McAdoo, & Garcia Coll, 2001; McLoyd, 1998). African American parents and parents living in poverty are more likely to engage in authoritarian parenting behaviors, and endorse harsh disciplinary practices even in infancy (e.g., Burchinal, Skinner, & Reznick, 2010). In general, early parenting composed of harsh disciplinary practices and coercive patterns has been implicated in behavior problems and problematic relationship functioning throughout the lifespan (e.g., Patterson, 1982), again in predominantly normative middle-class, white samples.

However, these same behaviors thought to be critical determinants of maladaptive development may not have equally deleterious consequences in African American, low-SES cultural contexts (Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004). Numerous studies have demonstrated that the effects of harsh discipline on children's emotional and behavioral difficulties are weaker among African American than European American children (e.g., Deater-Deckard, Dodge, Bates, & Pettit, 1996; Gunnoe & Mariner, 1997; Lansford et al., 2004). The relatively high prevalence of harsh discipline in African American families and communities (e.g., MacKenzie, Nicklas, Brooks-Gunn, & Waldfogel, 2011) may dampen the severity of harsh parenting practices in part because these practices are perceived as normative (e.g., Deater-Deckard & Dodge, 1997; Gershoff et al., 2010). Particularly in low SES environments some (non-abusive) forms of harsh parenting are even posited to play a protective role for African American children by controlling children's behavior to keep them safe in contexts that are hostile, dangerous, and/or threatening (e.g., Dodge, McLoyd, & Langford, 2005; Ispa & Halgunseth, 2004; Stevenson, 1994). Still, the question of whether harsh and intrusive parenting practices have negative consequences for attachment relationships in low-SES and African American parent-child dyads is not yet known. Thus, there exists a clear need to examine aspects of early parenting beyond sensitivity as predictors of attachment security in this population, particularly parenting behaviors that include harsh, strict, or controlling elements.

A related issue is the high potential for disorganized phenomena in representations of parent-child attachment relationships among this at-risk population. Attachment disorganization is associated with maltreatment in infancy, as well as frightened or frightening behaviors (Lyons-Ruth & Jacobvitz, 2008) that may be particularly common in impoverished communities and home environments such as those in the current investigation. There are also reasons to believe that high levels of parenting behavior that can be described as "atypical" (i.e., disrupted and contradictory forms of affective communication, extreme withdrawal of caregivers, boundary dissolution; see Lyons-Ruth, Bronfman, & Parsons, 1999) may be prevalent among rural, low SES families

(Vernon-Feagans et al., 2013), thus placing children at risk for disorganized attachment representations, or episodic disorganized behaviors in those representations. The present study will assess both a) the security of children's attachment representations, and b) the presence of episodic disorganized behaviors in those representations, and their relation to earlier forms of sensitive and harsh-intrusive parenting in a sample of rural, low-SES, African American families.

Covariates

In addition to caregiving, other variables have the capacity to affect the development of children's attachment representations. The inclusion of these variables will be critical for establishing the unique, nonspurious effect of early caregiving on subsequent security and disorganization of attachment representations. Of major concern is the reliance on children's language and narrative abilities to yield the responses to the story stems. Thus, it is important to test whether the MCAST is affected by early caregiving independent of cognitive and language abilities. Given long-standing discussions in the literature regarding the relations between temperament and attachment (e.g., Vaughn, Bost, & van Ijzendoorn, 2008), it seems especially critical to control for child temperament as a predictor of attachment representations. Given past work demonstrating that higher rates of insecurity may be associated with lower levels of maternal education (e.g., Tarabulsky et al., 2005) (e.g., Candelaria, Teti, & Black, 2011) this variable will also be examined as a relevant covariate. Documented differences in the correlates of attachment among single-parent vs. two-parent households (Solomon & George, 1999; Finger, Hans, Bernstein, & Cox, 2009) and high rates of father absence in low-income and African American families (e.g., Adamsons & Johnson, 2013) suggest the need to consider fathers' residential status as a control variable. Some investigations have found differences in the rates of attachment classifications for boys vs. girls, including work with the MCAST (e.g., e.g., Del Giuduce, 2008; Granot & Mayseless, 2001; see Del Giuduce, 2009 for a review). In light of these findings, child gender was also considered as a potential correlate of children's attachment representations.

The Present Study

In summary, the present study builds upon recent advances in attachment theory and measurement to examine associations among multiple dimensions of early maternal care in infancy and children's representations of attachment relationships in middle childhood for rural, low-SES, African American families. The study was guided by the following research questions: 1) Is early maternal care related to the security of later attachment representations and/or the extent of episodic disorganized behaviors in those representations? and 2) To what extent do these associations hold after accounting for child and contextual characteristics (i.e., IQ, language, temperament, gender, SES, household composition, and maternal education).

Method

Participants

Participants were a sub-sample drawn from The Family Life Project, a large longitudinal study that employed complex sampling procedures to recruit a representative sample of 1,292 families at the time that mothers gave birth in three nonurban counties in eastern North Carolina and three target counties in central Pennsylvania. Mothers who lived in the target counties but gave birth outside these counties (e.g., due to pregnancy complications) were identified by county birth records and contacted and recruited approximately 1 month after giving birth. To participate in this study, mothers had to report that English was the primary language spoken in the home. Further details on the Family Life Project sampling plan and recruitment procedures are available in Willoughby, Burchinal, Garrett-Peters, Mills-Koonce, Vernon-Feagans, and Cox, (2013). In the overall project 773 participants resided in North Carolina (59.8% of the total sample). Of these participants, 519 were African American (67.1% of the North Carolina sample). For the current study, 276 African American families from the North Carolina site were randomly selected to participate in an additional data collection visit during which the MCAST task and maternal interviews were conducted. Children in this subsample ranged from 6.1 to 7.4 years of age ($M = 6.7$, $SD = 0.3$), 52.9% of children were female, and 4.7% of primary caregivers indicated that the child had been diagnosed with a developmental delay. All of the primary caregivers reported being the child's primary caregiver for the past 3 years.

Procedures

Families were visited in the home at three separate timepoints when the child was 6, 15, and 24 months of age. Maternal care was assessed via videotaped parent-child interactions at each timepoint. All relevant covariates (child temperament, child language and IQ, and parent/family demographic characteristics) were assessed during a home visit at 58 months. Families were visited again to assess children's representations of attachment relationships during the fall of first grade when the child was approximately six years of age.

Maternal caregiving.—At the 6-, 15-, and 24-month visits, mothers engaged in either a free-play (at 6 and 15 months) or puzzle play activity (at 24 months) interaction that was recorded for 10 minutes (Cox, Paley, Burchinal, & Payne, 1999; NICHD ECCRN, 1999). The free-play interaction involved asking each caregiver to use a standardized set of toys and to play with her infant as she normally would. The puzzle play activity involved presenting the child with a jigsaw puzzle to complete and asking the mother to assist the child in any way that she chose. After a puzzle was completed, another puzzle of increased complexity was presented to the child (up to a total of three standardized puzzles).

Free play and puzzle play activities were rated by trained coders to assess levels of mother's sensitivity, detachment, intrusiveness, stimulation, positive regard, negative regard, and animation in interacting with the child (Cox & Crnic, 2002; see also NICHD ECCRN, 1999). Ratings for each code were made on a scale ranging from 1 (not at all characteristic) to 5 (highly characteristic). An exploratory factor analysis with oblique rotation indicated that individual parenting codes were subsumed by two broad-based

parenting factors, reflecting sensitive and harsh-intrusive behaviors. Sensitivity included five ratings: sensitivity (level of responsiveness to child's needs, gestures, and expressions), detachment (emotional unavailability, reverse scored), positive regard (positive feelings expressed toward child), animation (level of energy), and stimulation of development (appropriate level of scaffolding of activities with child). Harsh-intrusiveness included two parental characteristics: intrusiveness (the level at which the parent's agenda dominated that of the child) and negative regard (the level of harsh, negative feelings expressed toward the child). Averaged Sensitivity and Harsh-Intrusiveness composites at each timepoint were then used as observed indicators of the underlying latent variables of Sensitive Parenting and Harsh-Intrusive Parenting, respectively. Interrater reliability was determined by calculating the intraclass correlation coefficients for ratings made by pairs of trained coders. A minimum of 30% of all observations were double coded; any discrepancies in coding were resolved by conferencing. Intraclass correlations ranged from .89 to .94 for sensitive parenting and from .77 to .83 for harsh-intrusive parenting for the current subsample at the various assessment timepoints. Mean parenting composite scores were near the scale midpoint at all assessments; mean scores for sensitive parenting were 2.57, 2.48, and 2.56, and mean scores for harsh-intrusive parenting were 2.77, 2.52, and 2.76 at 6-, 15-, and 24-months, respectively. These data have been used in prior published work, and more detail on coding practices is available in Family Life Project Key Investigators (2013).

Child characteristics and demographic covariates.—When children were 58 months old, children's language and IQ were assessed in the home, and parents completed questionnaires reporting on child temperament and demographic variables. Child IQ was assessed using the Block Design and Receptive Vocabulary subtests of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI-III) at 58 months of age. This battery is a widely-used and well-validated assessment of child intelligence. Child language ability was also assessed at 58 months using the Woodcock Johnson (WJ III) Picture Vocabulary subtest, which is designed to assess children's language development and lexical knowledge. Mothers reported on children's temperamental characteristics using the Child Behavior Questionnaire (CBQ; Rothbart, Ahadi, Hershey, & Fisher, 2001). Two primary temperament dimensions were the focus of this investigation: Inhibitory Control (degree to which children regulate impulsivity) and Attention Focusing (prolonged time spent with a single activity), both of which are important aspects of emotion regulation and executive functioning in children of this age. Mothers also reported on their current marital status, level of education, income (as assessed by income-to-needs ratio), as well as the child's sex.

Attachment representations.—Children's attachment representations were assessed with the Manchester Child Attachment Story Task (MCAST; Green et al., 2000). Trained research assistants administered the MCAST to children in their homes when they were approximately six years old. The MCAST was administered in a separate room with only the child and research assistant present, so that parents would not interfere with the procedure and children's responses would not be influenced by the presence of their mother or other family members. The procedure was videotaped and coded at a later time.

The MCAST is a doll-play vignette completion task designed to assess patterns of children's representations of their attachment relationships with primary caregivers. In this task, the child is introduced to the play materials (a doll's house with furniture and multiple dolls) and asked to pick a doll that represents him/herself and one to represent his/her primary caregiver. Then an initial breakfast vignette is introduced to orient the child to the task and to serve as a non-attachment-eliciting comparison. Next, there are four attachment-related 'distress' vignettes, including the following: 1) The child awakes at night alone with a nightmare; 2) The child is playing outside and falls over and hurts his/her knee and is in pain and bleeding; 3) The child develops acute abdominal pain; and 4) The child finds him/herself lost and alone while shopping with the caregiver in a large crowd.

In each vignette the child doll is placed in a situation of specific distress with the caregiver doll close by but not proximate, thus giving the child an opportunity to represent proximity-seeking and other attachment behaviors in the story completion. To elicit these behaviors, each 'distress' vignette begins with an initiation phase during which the interviewer amplifies the intensity of the distress presented in the child doll figure as a means of elevating the child's involvement and sympathetic arousal. This phase serves to deepen the child's engagement with the vignette story, focus the child's mood state around the particular distress represented in the story, and gradually increase the child's emotional tone or arousal to facilitate a smooth transition or "handing over" to the child during the vignette completion. During the next phase of the vignette, children play out a story completion both verbally and non-verbally using the available dollhouse and figures. Once the child has finished, the interviewer asks a series of structured probes aimed at clarifying the intention behind the play, the degree of assuagement experienced by the child doll, and the mental state attributions made by the child to the dolls.

MCAST coders rate a series of dimensions related to the content, coherence, and organization of the children's stories. Based on the patterns that emerge from these codes a 'primary strategy of assuagement' is identified for each vignette and subsequently an overall classification is made according to the predominant pattern across all four vignettes. These final classification categories are analogous to Strange Situation classifications: Secure (B) representations are those in which the child typically seeks some proximity to the caregiver and is assuaged via their interaction with the caregiver; Avoidant (A) representations tend to minimize distress and/or engage in self-assuagement without seeking the help of the caregiver; Ambivalent (C) representations result in anger or conflict between the child and caregiver; Disorganized (D) representations lack a coherent strategy either in the content of the narrative or children's behaviors during the completion of the story task. The percentage of secure representations for the 4 vignettes ranged from 72.7% – 82.4%, with an average security rate of 77.7% across the four vignettes. The majority of insecure representations were avoidant (10.8% - 18.6% of the total sample across the four vignettes). Comparisons among the four-category classifications were not conducted due to underrepresentation of ambivalent (did not exceed 5% of the sample in three of the four vignettes) and disorganized (did not exceed 5% of the sample in any of the four vignettes) classifications. Thus, for the purposes of the present study, children's 4-category representational classifications were collapsed to form secure (B) and insecure (A, C, or D) categories. When considering overall MCAST classifications, a total of 15 participants were rated as having primarily

disorganized representations. Among these, equal numbers of children (6 in each category) were judged as having secondary classifications of avoidance and ambivalence, respectively. Three children who received a primary classification of disorganization were assigned a secondary secure classification.

Continuous ratings of episodic disorganized behaviors (1–9) were also assigned for each vignette based on overall narrative organization and discrete disorganized behaviors observed during the vignettes. This coding procedure is standard in the MCAST, and analogous to the coding of continuous disorganization in the Strange Situation described by Main and Solomon (1990). Episodic disorganized behaviors represent periodic intrusions or disruptions in the flow of the narrative. These behaviors may be observed in the child's behavior, but are most often represented in the vignette completion itself. Common examples include sudden shifts by the child doll into contradictory and out of context behaviors, or incomplete movements that are started but not finished. Though often mild, these episodes are thought to be markers for some unresolved or contradictory emotional states about the topic of the vignette. Although few participants were classified as disorganized overall, lower levels of episodic disorganized behaviors were prevalent, with the majority of narratives (57.2% - 66.3% across vignettes) indicating at least some episodic disorganization (scores greater than 1). Mean episodic disorganized behavior scores ranged from 2.11 – 2.64 across the four vignettes, with an average mean score of 2.36 across all vignettes. Notably, scores in this range represent mild and relatively infrequent episodes of disorganized behavior. Thus, although the presence of episodic disorganized behaviors is noteworthy in and of itself, most children showed levels that would be considered minor blemishes on narrative coherence rather than major disruptions to these narratives.

MCASTs were coded by two trained coders who were blind to the observational parenting data and all other child assessments. The primary coder completed the official MCAST training workshop in Manchester, England, and was a certified reliable MCAST coder after successfully achieving inter-rater reliability with Dr. Jonathan Green's laboratory on a standard set of MCAST reliability videos. For the current study, a reliability coder affiliated with this same laboratory was chosen. The reliability coder was fully trained and certified, and has a well-established history of coding MCASTs, as well as organizing and conducting MCAST training sessions. The two coders overlapped on 16.4% of the total cases. Coders agreed on the security/insecurity classification in 97.6% of all cases (Cohen's Kappa = .91), and agreed on the 4-category (A/B/C/D) classification in 95.1% of the cases (Cohen's Kappa = .80), suggesting good inter-rater reliability. The few coding discrepancies were resolved through conferencing. Inter-rater reliability for episodic disorganized behaviors was good across all four vignettes, with Cohen's Kappa ranging from .83 - .97, with mean of .93. MCAST data from this study have not been published elsewhere.

Results

Associations among key variables were examined using structural equation modeling in MPLUS version 7.0. Analyses proceeded in several steps: 1) Measurement models were tested to examine the fit of observed indicators for the latent variables of sensitive parenting, harsh-intrusive parenting, and MCAST security and episodic disorganized behaviors (tested

in separate models), 2) Structural models tested associations between these latent variables in each model to assess the strength of relations between early parenting and later representations of attachment security and disorganization, and 3) a series of covariates (demographic, child IQ and language, and child temperament) were added to the models, and overall model fit and individual path coefficients were re-examined for both the security and episodic disorganized behaviors models.

Measurement Models

Attachment security.—Confirmatory factor analyses tested the factor loadings of three observed variables for each of three latent variables. The first latent variable was early sensitive parenting, which was hypothesized to underlie the observed sensitive parenting composite scores at 6, 15, and 24 months of age. The harsh-intrusive parenting latent variable was constructed similarly, with observed harsh-intrusive parenting at 6, 15, and 24 months specified as indicators of this latent construct. A latent variable for MCAST attachment security was also constructed from four observed indicators. These indicators were the secure/insecure classification on each of the four MCAST vignettes. The overall model fit the data well, $\chi^2(32) = 54.69, p = .01$; CFI = .95; TLI = .92; RMSEA = .05. The full measurement and structural model predicting attachment security is presented in Figure 1.

Factor loadings in Figure 1 indicated that each of the observed variables loaded significantly onto their underlying latent constructs.

Episodic disorganized behaviors.—An identical measurement model was tested, substituting MCAST episodic disorganized behaviors in place of MCAST attachment security. For this model, the 9-point continuous episodic disorganized behaviors scores for each vignette were used as indicators of a latent episodic disorganized behaviors variable. Sensitive parenting and harsh-intrusive parenting latent variables were again constructed from the 6, 15, and 24 month observations of sensitive and harsh-intrusive parenting, respectively. This model also fit the data well, $\chi^2(32) = 57.15, p < .01$; CFI = .95; TLI = .94; RMSEA = .06. The full measurement and structural model predicting episodic disorganized behaviors is presented in Figure 2.

Each of the observed factor loadings presented in Figure 2 were also significant.

Structural Models

To test for associations among latent variables, paths were added to the first model from early sensitive parenting and early harsh-intrusive parenting to the latent variable representing MCAST attachment security. Model fit statistics indicated good model fit, $\chi^2(32) = 54.69, p = .01$; CFI = .95; TLI = .94; RMSEA = .05. As seen in Figure 1, there was a significant (negative) path from early harsh-intrusive parenting to later secure attachment representations, suggesting that children who were exposed to higher levels of harsh-intrusive parenting in infancy were less likely to develop secure representations of caregivers in middle childhood. In contrast, the path from early sensitive parenting to

children's attachment representations was non-significant. The correlation between sensitive and harsh-intrusive parenting was only modest.

The model for episodic disorganized behaviors also added paths from the sensitive and harsh-intrusive parenting latent variables to the episodic disorganized behaviors latent variable. This model also fit the data well, $\chi^2(32) = 57.15, p < .01$; CFI = .95; TLI = .94; RMSEA = .06. Standardized path coefficients are presented in Figure 2, and again indicated that the path from early harsh-intrusive parenting to higher levels of episodic disorganized behaviors was statistically significant whereas the path from sensitive parenting to episodic disorganized behaviors was non-significant.

Models with Covariates Included

Family demographic characteristics (maternal education, marital status, income-to-needs ratio, and child sex), child language and IQ, and maternal perceptions of child temperament were added to each of the models to examine whether any of these variables predicted children's attachment representations, and whether early parenting predicted later attachment representations over and above the influence of these covariates. After including all covariates, the overall fit of the security model was actually reduced, $\chi^2(104) = 144.79$, CFI = .88, TLI = .84, RMSEA = .04. This model indicated only modest fit to the data, and the reduction compared to the structural model (without covariates) was marginally significant. Standardized beta weights for all paths in this model are represented in Table 1

Results in this table indicated that none of the control variables were significantly related to children's representations of attachment security. Furthermore, the negative path coefficient from early harsh-intrusive parenting to later representations of attachment security remained significant after accounting for all of these control variables. Separate models were also analyzed in which each block of covariates was examined in independent models. After including paths from all family demographic variables (maternal education, marital status, income-to-needs ratio, and child sex) to attachment security the overall model fit was again reduced, $\chi^2(68) = 129.66$, CFI = .84, TLI = .80, RMSEA = .06. Similarly, the fit of the model was also lowered after adding child language and IQ to the structural model, $\chi^2(50) = 84.28$, CFI = .90, TLI = .87, RMSEA = .05, as well as the model including child temperament variables as covariates, $\chi^2(50) = 74.66$, CFI = .93, TLI = .91, RMSEA = .05. These results confirm that these sets of covariates were unrelated to MCAST attachment security.

The full covariate model for episodic disorganized behaviors showed similar results. That is, the overall model fit was only modest, $\chi^2(104) = 183.14$, CFI = .85, TLI = .82, RMSEA = .06, and showed a significant decrease in model fit compared to the structural model presented in Figure 2. Standardized path coefficients for this model are presented in Table 2.

Results in this table also indicated that harsh-intrusive parenting is the only variable related to episodic disorganized behaviors, and that this association held even after controlling for all relevant covariates. Separate models including only demographic characteristics ($\chi^2(68) = 133.51$, CFI = .89, TLI = .86, RMSEA = .06), child IQ and vocabulary ($\chi^2(68) = 96.61$, CFI = .91, TLI = .88, RMSEA = .06), and children's temperamental characteristics, (χ^2

(50) = 90.75, CFI = .92, TLI = .90, RMSEA = .06) also fit the data less well than the original structural model, and indicated that episodic disorganized behaviors in the MCAST narratives were unrelated to any of these covariates.

Discussion

Overall, these findings provide evidence for the legacy of early caregiving experiences in infancy for at-risk children's representations of attachment relationships as they make the transition to the school years. Specifically, early harsh-intrusive parenting (but not early sensitivity) predicted less security and higher levels of episodic disorganized behaviors in children's attachment representations, even controlling for a range of family and contextual covariates. Results provide some preliminary support for the MCAST as a useful measure of attachment representations among rural, low-SES, African American children.

Relations Between Parenting and Attachment

From a conceptual and methodological perspective, the most important finding in the present study was the documented associations between early caregiving quality and the later security of attachment representations. This finding dovetails with much past work on attachment (e.g., DeWolff & van Ijzendoorn, 1997), and bolsters the notion that the MCAST may indeed capture rural, low-SES, African American children's representations of their early caregiving experiences. Although the link between parenting and attachment is well-established in the literature, this is one of relatively few investigations documenting longitudinal associations between observed parenting of infants and representational measures of attachment in middle childhood. Such a finding is particularly impressive given the approximately four year gap between the latest assessment of maternal parenting and the assessment of children's attachment representations. Although attachment relationships (and, presumably, representations of those relationships) are thought to be relatively stable across childhood (e.g., Waters, Hamilton, & Weinfield, 2000), our results suggest that the MCAST may be tapping into not just representations of current parent-child relationship quality, but representations of caregiving that are formed in the first two years of the child's life. Although this finding fits with attachment theory's predominant focus on early infant-caregiver interactions, future longitudinal work incorporating later assessments of parenting and multiple representational measures of attachment will continue to shed light on the critical period(s) in which IWMs develop and the stability of those models across time.

This study is also the first that we know of to document associations between parenting and attachment in rural, low-SES, African American parent-child dyads. In addition to establishing the potential utility of the MCAST within this population, this work also provides some support for the value of applying the tenets of attachment theory to better understand this understudied and at-risk population of families. Many of these families face a scarcity of home and community resources, and the prevalence of factors such as household chaos, economic distress, and racial discrimination that have the capacity to overwhelm the experiences of early caregiving and severely alter children's expectations for

relationships. Nonetheless, it appears to be the case that parent-child interactions persist in the form of attachment-related schemas as children make the transition to the school years.

However, the nature of the association between early parenting and subsequent attachment representations in this study is somewhat provocative. Parental sensitivity has long been considered the primary determinant of attachment security, with a vast body of work linking observed sensitivity to behavioral measures of parent-child attachment security (e.g., De Wolff & van IJzendoorn, 1997). In contrast, the present study found no association between sensitivity and children's representations of attachment security or episodic disorganized behaviors. This result may be due to the incongruity of assessment tools used in this study, with early parenting being assessed behaviorally and later attachment assessed representationally. The association between sensitivity and attachment could be mitigated to some extent by the use of representational rather than behavioral measures of attachment.

In contrast, observed harsh-intrusive parenting did predict lower rates of secure attachment and higher rates of episodic disorganized behaviors. The link between harsh-intrusive parenting and episodic disorganized behaviors is consistent with past work linking anomalous parenting, including frightening and threatening maternal behavior to infant-parent attachment disorganization (e.g., Schuengel, Bakermans-Kranenburg, van IJzendoorn, 1999; Lyons-Ruth et al., 1999; Madigan, Bakermans-Kranenburg, van IJzendoorn, Moran, Pederson, & Benoit, 2006). Although the present study measured harsh and intrusive parenting behaviors that were largely within the normative range, this study extends this past work by linking early parental harshness to later disorganized elements in representational narratives. From a measurement perspective, it is noteworthy that variation in MCAST episodic disorganized behaviors -- which were generally mild and infrequent for the sample as a whole -- were related to harsh parenting behavior measured several years prior. However, caution should be exercised when interpreting these results, given the low base rates of episodic disorganized behaviors. Although future work is warranted, there is currently little conceptual or empirical support for the notion that low, sub-threshold levels of episodic disorganized behaviors would necessarily predict children's developmental outcomes or meaningful aspects of developing parent-child relationships.

That harsh and intrusive parenting behaviors (and not sensitive parenting) appeared to be reflected in the security of children's attachment-related narratives may speak to the unique attributes of representational measures of attachment. Although a sensitive and responsive pattern of parenting may govern behavioral interactions between parents and children, regular instances of harsh, controlling parenting may be particularly salient when children are required to explicitly access IWMs. Early harsh parenting has consequences for children's long-term emotion dysregulation, lowered cognitive performance, and poorer social functioning (e.g., Chang, Schwartz, Dodge, & McBride-Chang, 2003; Lansford et al., 2011; Patterson, 1982, Scaramella & Leve, 2004). Perhaps representations of early caregiving experiences are one mechanism by which these maladaptive parenting practices continue to affect children throughout development. Child maltreatment is often associated with severe emotional distress, which in turn is related to robust memory for emotionally salient events in many cases (e.g., Goodman, Quas, & Ogle, 2010). Similarly, harsh and intrusive parenting behavior may be internalized into children's memories of their primary

attachment figures, and accessed when working models of attachment are activated. The frequency with which these models are retrieved, and the ways in which they are used to guide subsequent relationship functioning, remain to be seen.

Furthermore, the relation between attachment security and lower levels of harsh-intrusive parenting (but not sensitive parenting) may be unique to the population at hand. Indeed, past work on the MCAST with English samples has identified sensitivity as a key correlate of MCAST attachment security (e.g., Matias et al., 2014). Nonetheless, the meaning and consequences of harsh parenting may well be different among low-income, African American, rural families than it is for families in other ethnic and/or socioeconomic contexts. Given the cumulative stressors that place these children at risk for socio-emotional adjustment in middle childhood (e.g. Brody & Flor, 1998; Vernon-Feagans et al., 2013), children in these contexts may be particularly likely to internalize episodes of intrusiveness and conflict. Such an interpretation is consistent with the family stress model (e.g., Conger, Reuter, & Conger, 2000), in which the combined effects of poverty, resource scarcity, and racial discrimination may result in harsh-intrusive parenting practices that are ultimately consolidated in the child's working model of caregiving relationships.

These findings have important implications for conceptualizations of parenting and attachment in low SES, African American families. In particular, results highlight the long-term punitive effects of early harsh and intrusive maternal care for attachment relationships in these families. Some prior studies have argued that harsh or controlling parenting practices are highly normative and culturally accepted among African American parents, and further that these practices are not only explicable but essential for preparing African American children for the rigors of a hostile world (e.g., Deater-Deckard & Dodge, 1997; Stevenson, 1994). Findings from the present study contradict these assertions by demonstrating that early harsh-intrusive parenting damages later attachment representations of rural, low SES, African American children. Indeed, the detrimental consequences of harsh-intrusive parenting appear to persist across at least several years of childhood and exert their influence uniquely and independently from sensitive parenting and a host of possible confounds. Harsh-intrusive parenting in certain contexts may well serve an important and protective purpose for some aspects of African American children's development, but parental harshness carries with it clear costs for working models of attachment relationships in this population.

Although harsh-intrusive parenting was prevalent among some families, children in this sample developed secure representations of their caregivers at rates that exceeded those in normative samples, suggesting that many rural, poor, African American parents provide supportive care for their children in spite of challenges inherent in these communities. Indeed, for this population of families, the absence of harsh-intrusive parenting in early childhood may in and of itself serve as a source of resilience that helps to facilitate positive expectations for close relationships at the transition to school. As they make the critical transition to the school years, these children may develop secure working models of parent-child relationships when mothers do not engage in punitive, harsh, or controlling behaviors in early childhood. For parents facing the cumulative stressors associated with poverty, rurality, and racial stigmatization, prototypically sensitive care may not be a requisite for

attachment security. Instead, parents who are able to avoid harsh-intrusive behaviors amidst family and community chaos may be viewed by their children as a trustworthy source of emotional support.

Use of the MCAST in a Novel Population

In general, use of the MCAST in this rural, low-SES, African American sample was clearly feasible. Children were generally highly engaged with the task, responsive to administrator prompts, and able to attend to the MCAST despite other distractions (visitors, pets, television, etc.) that were sometimes present in the home. Overall, narratives tended to be somewhat short, and relatively few included detailed and creative elaborations. Nonetheless, nearly all cases were codeable without modifications to the original coding system, inter-rater agreement was good across all vignettes, and no systematic challenges to the administration of the procedure in the home environment were noted. Results of confirmatory factor analyses suggested that a latent variable approach in which latent security and disorganization underlie observed security and disorganization in each of the four vignettes may be fruitful for future research using this measure. The final “separation” vignette demonstrated somewhat lower factor loadings than the other three story stems that occur in the home setting, whereas the “hurt knee” vignette showed the highest loading. This pattern of factor loadings is similar to what was observed in the original MCAST validation study sample of British children, with the “hurt knee” and “illness” vignettes more strongly associated with overall attachment security than the “separation” and “nightmare” vignettes (Green et al., 2000). Nonetheless, all four narratives appeared to effectively represent their underlying latent constructs in this sample.

Interestingly, despite the many challenges and cumulative risks faced by both children and families in our population of interest, the present study had slightly higher levels of security than many past investigations with children of other nationalities, ethnic groups, and socioeconomic statuses (e.g., Green et al., 2000, Barone et al., 2009). It may be that amidst the chaos inherent in many households and the numerous threats to healthy development in rural, low-SES, and African American communities, many (or most) children view their mothers as key sources of support and resilience. Despite the challenges to successful relationships faced by these families (see Vernon-Feagans et al., 2013), results from this study work against stereotyped views of poor, African American families by revealing that children from these families possess mostly positive representations of early caregiving experiences in middle childhood. Still, the possibility exists that the overrepresentation of secure representations and the relative lack of insecure (and particularly ambivalent and disorganized) representations reflects administrative challenges and/or the measure’s lack of suitability for this unique population. In particular, disorganized and ambivalent narratives are often characterized by detailed elaborations, and long stories that reflect an overall lack of coherence, the presence of magical or fantastical thinking, and/or a preoccupation with a particular state of mind with respect to attachment relationships. Either by choice or due to cognitive/linguistic limitations, the majority of children in this sample provided relatively straightforward narratives that are more common among those with secure or avoidant attachment representations. Although neither security nor narrative coherence were tied to child language or IQ, whether or not the patterns of representations found in this sample

represent a replicable and meaningful preference for narrative style among these children and/or a substantive difference in the relative prevalence of attachment representations remains an important question for future research.

Limitations and Future Directions

Although this work contributes to our understanding of the measurement and development of attachment representations among rural, poor, African American parent-child dyads, the present study has a number of limitations. Despite reasonably strong evidence for convergent and discriminant validity, the relatively high rates of security in this sample may represent problems with measurement invariance or administrative issues among this population of children. Psychometric work with the MCAST (e.g., Barone et al., 2009; Green et al., 2000) suggests that the distribution of classifications in the present study (which necessitated collapsing across insecure strategies) may well be masking important distinctions between children with avoidant, ambivalent, and disorganized attachment classifications. The inability to differentiate among these insecure representations may in part contribute to the non-significant association between sensitivity and attachment security in this sample. In particular, the scarcity of disorganized classifications and relatively low levels of episodic disorganized behaviors preclude a nuanced understanding of the predictors and consequences of disorganization (both as a primary attachment strategy and as a contributor to episodic behaviors within the narrative) in this population. Subsequent investigations should continue to examine the reliability and validity of the MCAST across diverse cultural and economic contexts.

Furthermore, observations of maternal care encompassed multiple domains of parenting, but may not exhaustively capture the full range of influences on children's attachment representations. For example, given the substantial impact of harsh-intrusive parenting, bizarre and atypical parenting (e.g., Lyons-Ruth et al., 1999) may also predict the security and organization of children's attachment representations. Future work should also continue to develop culturally sensitive assessments that are attuned to the unique strengths and challenges of low-income, African American parents. Importantly, the present study also only examined maternal caregiving, despite the fact that many rural, low-income, African American children are being raised in the context of multiple caregivers and extended kinship networks (e.g., Taylor, Chatter, Woodward, & Brown, 2013). Research on attachment should continue to explore the ways in which interactions with multiple caregivers and/or attachment figures may be integrated into children's working models of relationships.

The present study also tells us little about the optimal timing of maternal care for children's attachment representations. Specifically, it remains to be seen whether MCAST security and/or disorganization are purely a reflection of parenting during infancy, or continued parent-child interactions into middle childhood. Samples that contain greater variability in the stability and trajectories of parenting behavior may be useful for this purpose.

Finally, future research should investigate the consequences of low-SES, rural, African American children's attachment representations for adaptation to the school years. Past research suggests that secure representations of attachment figures may be critical

for subsequent school functioning, including fewer behavior problems, greater social competence, closer student-teacher relationships, and increased academic achievement motivation (e.g., Sroufe, 2005). However, the extent to which these associations hold (or not) in this unique population of families remains to be seen. An important next step involves documenting the developmental consequences of attachment representations for social and emotional functioning among rural, low-income, African American children.

Despite these limitations, the present study supports attachment theory's assertion that early caregiving experiences may be represented in children's later representations of their attachment figures during the transition to school. This work provides some specificity by demonstrating the critical role of harsh and intrusive parenting (or the lack thereof) for rural, poor, African American children's IWMs of attachment. Furthermore, this study provides some preliminary support for the MCAST as a valid and reliable measure for understanding attachment relationships in this population. Future work should continue to examine the processes by which these children may draw upon early caregiving experiences to facilitate healthy psychosocial functioning in the school years.

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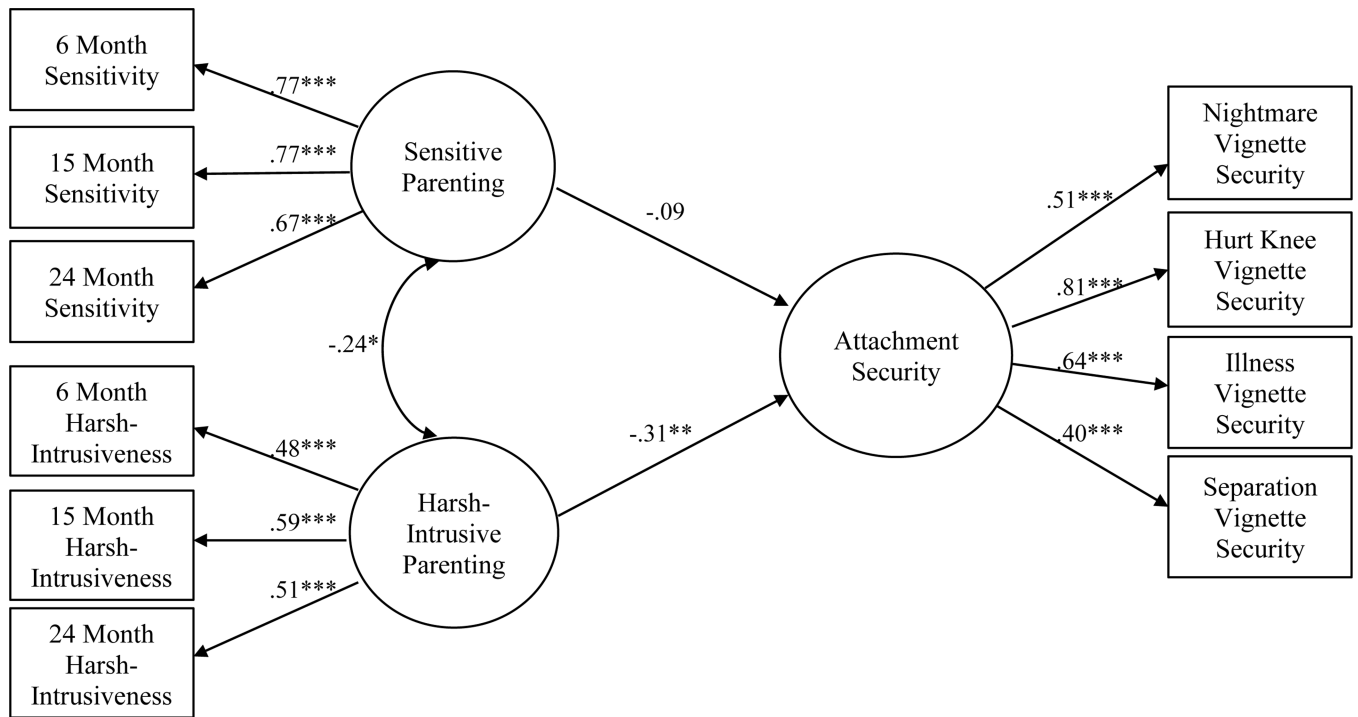


Figure 1.
Structural Equation Model Diagram: Early Parenting Predicting Attachment Security
** $p < .01$ *** $p < .001$

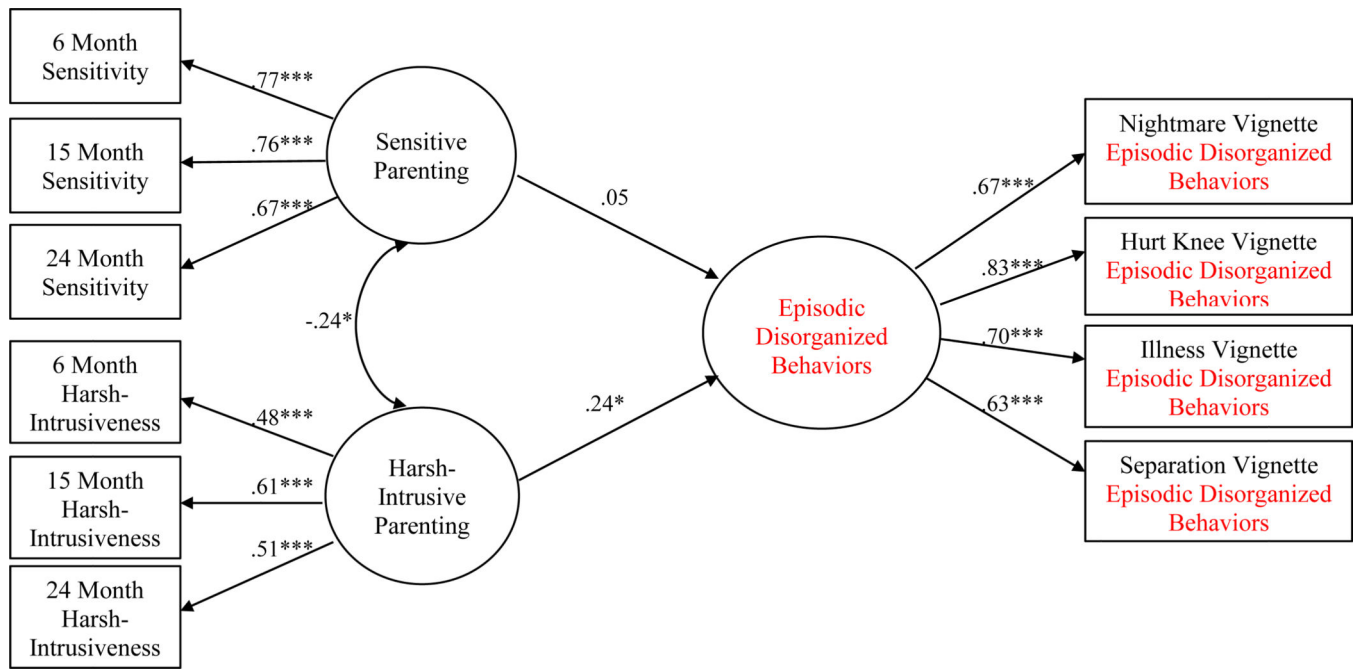


Figure 2.
 Structural Equation Model Diagram: Early Parenting Predicting Episodic Disorganized Behaviors
 * $p < .05$ *** $p < .001$

Table 1.

Parameter Estimates for Structural Model with all Covariates Predicting Attachment Security

Parameter Estimate	Unstandardized	Standardized	p
<i>Parenting → Attachment Security</i>			
Sensitive Parenting	-.27 (.14)	-.17	.07
Harsh-Intrusive Parenting	-.52 (.23)	-.29	.02
<i>Demographics → Attachment Security</i>			
Maternal Education	.01 (.04)	.03	.78
Marital Status	.04 (.13)	.03	.73
Income-to-Needs Ratio	.09 (.09)	.14	.27
Child Gender	-.04 (.13)	.02	.79
<i>Cognitive Development → Attachment Security</i>			
Child IQ	.00 (.03)	.01	.91
Child Language	.00 (.01)	.00	.97
<i>Child Temperament → Attachment Security</i>			
Attention Focus	.12 (.07)	.16	.12
Inhibitory Control	.00 (.07)	.00	.99

Notes: Parenting variables are latent variables with observed 6, 15, and 24 month old parenting as indicators. All other variables are observed. Standard Errors presented in parentheses.

Table 2.

Parameter Estimates for Structural Model with all Covariates Predicting Episodic Disorganized Behaviors

Parameter Estimate	Unstandardized	Standardized	p
<i>Parenting → Episodic Disorganized Behaviors</i>			
Sensitive Parenting	-.26 (.18)	-.17	.15
Harsh-Intrusive Parenting	-.62 (.34)	-.29	.04
<i>Demographics → Episodic Disorganized Behaviors</i>			
Maternal Education	.04 (.04)	.03	.34
Marital Status	.05 (.16)	.03	.73
Income-to-Needs Ratio	.03 (.07)	.14	.67
Child Gender	-.04 (.15)	.02	.77
<i>Cognitive Development → Episodic Disorganized Behaviors</i>			
Child IQ	.03 (.03)	.01	.37
Child Language	.00 (.01)	.00	.72
<i>Child Temperament → Episodic Disorganized Behaviors</i>			
Attention Focus	.08 (.09)	.16	.38
Inhibitory Control	.10 (.08)	.00	.22

Notes: Parenting variables are latent variables with observed 6, 15, and 24 month old parenting as indicators. All other variables are observed. Standard Errors presented in parentheses.