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Linking Hostile/Helpless Maternal Representations in Pregnancy and Later Child Protection Involvement: A Pilot Study

Madeleine Terry

The Graduate Center, City University of New York

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Linking Hostile/Helpless Maternal Representations in Pregnancy

and Later Child Protection Involvement: A Pilot Study

by

Madeleine Terry

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of
the requirements for the degree of Doctor of Philosophy, The City University of New York

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and Later Child Protection Involvement: A Pilot Study

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Madeleine Terry

This manuscript has been read and accepted for the Graduate Faculty in Psychology to satisfy the dissertation requirement for the degree of Doctor of Philosophy.

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THE CITY UNIVERSITY OF NEW YORK
ABSTRACT

Linking Hostile/Helpless Maternal Representations in Pregnancy and Later Child Protection Involvement: A Pilot Study

by

Madeleine Terry

Advisor: Arietta Slade

The present pilot study examined whether there are reliable indices in the narratives of pregnant women that can be used to identify child abuse and neglect potential before the birth of the child. The Hostile/Helpless (HH) Classification system (Lyons-Ruth et al., 1995-2005), which detects mental states associated with trauma, disturbances in early attachment, and severe pathology, was adapted for use with the Pregnancy Interview (PI), a semi-structured clinical interview (Slade, 2003) that assesses a woman's emotional experience of pregnancy, and quality of her developing relationship with her baby. The study sample was drawn from a replication study of the Minding the Baby® (MTB) attachment-supportive home-visiting intervention currently underway in the United Kingdom. The adapted HH system was used to code 13 pregnancy narratives of mothers whose infants were removed from custody due to maltreatment within 2 years of childbirth, and 13 pregnancy narratives of mothers who did not have their infants removed (N=26). Results indicate that mothers whose infants were removed from their custody had significantly higher HH scores than mothers of infants who were not removed from their care. The relation between HH classification and infant removal status was also significant. This is the first study to use the HH system to systematically investigate pregnancy narratives. Study results provide preliminary support for a prenatal approach to maltreatment risk assessment in at-risk populations.
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CHAPTER ONE: INTRODUCTION

The nine months of pregnancy entail enormous physical and psychological upheaval, with dramatic and uncontrollable hormonal, neurobiological and bodily changes. An expectant mother experiences her physicality in new ways that are inextricably linked to the fetus growing inside of her. This transformation is accompanied by psychological reorganization that is inherently destabilizing, leading Bibring (1959) to describe pregnancy as a “crisis” for all mothers (p. 116). Each pregnant woman is faced with the task of imagining herself as a mother, and of redefining herself with respect to her new role. This process is intrinsically tied to a woman’s attachment to her own primary caregivers, and to her internal representational world. Beginning to see herself as a caregiver necessitates revisiting her early experiences, identifications with her parents, and the conflicts and ambivalence that are a natural part this process (Slade, Cohen, Sadler, & Miller, 2008; Slade & Sadler, in press). In particular, a pregnant woman’s identification with her own mother profoundly impacts her developing representation of herself as a caregiver. Women who achieve a healthy consolidation of their own early experiences of care and nurturance are well prepared to meet developmental challenges during pregnancy, and to make the transition to motherhood.

Particularly for women who have suffered from interpersonal trauma and/or disturbances in early attachment, the inevitable regression precipitated by pregnancy and motherhood can be a painful and frightening experience (Benedek, 1959; Pines, 1982; Slade et al., 2008; Slade & Sadler, in press). In such cases, unintegrated mental contents can disrupt the necessary psychological reworking that is intrinsic to pregnancy. This interference often perpetuates conflicts, ambivalence, and affective disengagement or dysregulation. Pregnant women with more traumatic or conflictual early histories can struggle to negotiate the overwhelming barrage
of affects that is triggered by their identifications and internal representations (Slade et al., 2008; Slade & Sadler, in press; Spinelli, 2003). Thus, pregnancy can also be an emotionally tormenting phase during which identifying with one’s primary caregiver, reflecting on one’s unborn baby, or imagining oneself as a new mother are toxic and threatening prospects, with the potential to exacerbate preexisting pathology. Failure to adapt to the demands of pregnancy can set the stage for postpartum relational dysfunction between mother and baby, and pose risks to a child’s development (Slade et al., 2008; Slade & Sadler, in press). A woman who is plagued by her ambivalence, who cannot regulate negative affect, and/or who cannot begin to develop an identity as a mother over the course of her pregnancy has not made the necessary psychological gains to provide a secure and safe base for her child (Bowlby, 1988; Slade et al., 2008; Slade & Sadler, in press). Thus, the prenatal period is a critical phase for clinical intervention and prevention.

In the spring of 2014, a clinical problem was presented to the Minding the Baby® (MTB) research team. Minding the Baby® is led by principal investigators Lois Sadler, RN, PhD, Arietta Slade, PhD, and Linda C. Mayes, MD, through the Yale Child Study Center, the Yale School of Nursing, and community health centers in New Haven, Connecticut. Begun in 2002, MTB is an intensive, interdisciplinary home-visiting intervention program that begins during pregnancy and follows mothers and their children for two years after childbirth. Developed in collaboration with the Yale Child Study Center, Yale School of Nursing, and a number of community partners, the intervention is aimed specifically at addressing both the health and mental health needs of women whose risks in both domains are amplified by the multiple stressors of poverty, youth, and multiple generations of adversity. MTB promotes competent, flexible parenting, and secure, reciprocal mother-child attachment relationships.
Two previously conducted RCTs evaluated the MTB intervention in a US sample of first-time mothers between ages 14 and 25 (Sadler et al., 2013, Slade et al., under review). RCT results indicate a range of positive health and attachment outcomes, including notably higher levels of secure attachment in infants, lower levels of disorganized attachment, greater increases in reflective functioning (RF) in the most vulnerable mothers, lower levels of obesity in toddlers, and lower levels of externalizing behaviors post-graduation (Ordway et al., 2014; Ordway et al., 2018; Sadler et al., 2013; Slade et al., under review).

MTB is currently being replicated in the United Kingdom under the auspices of the National Society for the Prevention of Cruelty to Children (NSPCC). The NSPCC is the leading children’s charity organization in the UK, and was established in 1884. The NSPCC specializes in child protection, and has some legal authority (under a Royal Charter) to safeguard children against maltreatment. The goal of the NSPCC is to reduce and ultimately eliminate cruelty to children in its many forms (Longhi et al., 2018). The UK MTB study includes 3 different geographically dispersed sites in York, Sheffield, and Glasgow, and serves medically underserved, socioeconomically disadvantaged young mothers and their children. An initial cohort of mother-infant pairs (N = 132) was enrolled between 2011 and 2014. When the first cohort of families completed the intervention, it was noted that of the 132 children in the study, a total of 22 had been removed from their parents’ care. The MTB intervention is aimed at preventing child protective service involvement, generally, and maltreatment, specifically. Data from the first 105 families in the original US sample showed a lower rate of child protective service involvement among families that received the intervention, compared to families in the control group (p<.07). To date, no children in the MTB US sample (N=140) have been injured or
permanently removed from their parents’ care. As will be discussed below, the discrepancy between the UK and US samples in rate of removal appeared to reflect very different “cultures” of child protection in the two countries, and in the NSPCC, particularly. There is no evidence to suggest that there is more maltreatment in the UK, or that the intervention was more successful in the US. However, the high rate of removal in the UK sample provided an opportunity to see whether there were prenatal indices of maltreatment potential in mothers whose infants were later removed. Thus, the central aim of this research was to examine mothers’ representations of pregnancy and their unborn babies, with the aim of differentiating mothers whose infants were subsequently removed from those who were not.

In order to address this research question, a system was identified that could be used to assess MTB pregnancy narratives. The Pregnancy Interview (PI) (Slade, 2011) is administered to all mothers enrolled in MTB sometime between the end of the second trimester and delivery. The PI is a semi-structured clinical interview designed to assess a woman's emotional experience of pregnancy, and the nature of her developing relationship with her baby. While a number of different systems have been previously used to code PIs, the most common has been the assessment of parental reflective functioning (RF; Slade, 2005). Assessing RF did not seem an adequate approach, however, since this was generally a very high-risk population with low levels of RF characteristic of the entire sample (Sadler, et al., 2013). In addition, the study’s focus on child maltreatment required an approach with the potential to detect parental mental states associated with trauma, disturbances in attachment, and severe pathology. As will be described more fully below, Karlen Lyons-Ruth’s system for identifying parental helpless and hostile mental states on the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984, 1988, 1996) seemed most relevant to this study’s central aims (Lyons-Ruth et al., 2005). A hostile or
helpless parental stance towards the infant, Lyons-Ruth argues, “points to the presence of an unbalanced, helpless versus hostile-controlling relational template” that is transmitted intergenerationally from the parent to the infant (1999a, p. 42), leading to disrupted dyadic communication and infant disorganized attachment (Lyons-Ruth et al., 1999b).

This study was conducted in two stages. During the first stage, the HH coding system (Lyons-Ruth, Melnick, Yellin, & Atwood, 1999-2005) was adapted for use with the Pregnancy Interview (PI). Given that this interview focuses on the mother’s representation of a future relationship, and not on the mother’s childhood experiences with her own mother, coding focuses on women’s capacity to envision themselves as caregivers, identify with their primary caregivers, and imagine and identify with their unborn children, rather than on memories of needing care and seeking protection from primary attachment figures. The adapted HH coding system assesses the expectant mother’s evolving caregiving system and her representations of herself, of her baby, of the father of her baby, and of her own caregivers.

The second stage of the study involved using this newly adapted system to code the previously collected UK interview sample. Once coded for HH phenomena, PIs of mothers whose children were removed from their care were quantitatively and qualitatively compared to PIs of mothers whose children remained in their care. This investigation examined the relationship between maternal HH states of mind during pregnancy and infant removal status after two years, to explore whether there are distinguishing features of maternal narratives during pregnancy that reliably predict child abuse and neglect outcomes.
CHAPTER TWO: LITERATURE REVIEW

The Case of Annie and Greg

In their seminal work, *Ghosts in the Nursery*, Fraiberg, Adelson and Shapiro (1975) review the case of 16-year-old mother Annie Beyer, and her 3.5-month-old son, Greg. Annie and Greg received treatment through what was probably the first documented infant mental health program, in which Fraiberg and her colleagues (Fraiberg et al., 1975) treated young mothers in their homes. At the time of the first home visit, Annie was neglecting her baby, and Social Services were considering removal. Fraiberg’s program was the family’s last hope. Annie refused to care for Greg, avoiding physical contact with him and failing to adequately feed him. Greg’s 19-year-old father had largely assumed responsibility for his care since birth. Annie presented as “a cold and silently hostile” mother, whom Greg did not reach for or orient toward (p. 403). She belonged to a third generation of mothers in her family characterized as “psychologically [abandoning] their babies.” Speaking to her therapist in a “flat, dull voice with only an edge of bitterness,” Annie shared her aversion to holding babies with her therapist (p. 404). She went on to describe having been responsible for her younger sister’s care and for maintaining her family’s household at the age of nine. Annie’s biological father died when she was five years old, and her mother repeatedly “deserted” the family. Raised by an “alcoholic and likely psychotic stepfather,” Annie was beaten in his woodshed with a lathe when she made minor mistakes. While her son pulled at her hair during a session, Annie spontaneously shared that her stepfather had once cut her hair off as a punishment, registering no emotion as she discussed his preference for locking her and her sister outside of the house. The authors also describe an interchange they observed, during which Annie noticed Greg reaching for a plastic toy hammer, and taking it in her own hand, began lightly tapping him on the head, murmuring,
“I’m gonna beat you, I’m gonna beat you … when you grow up, I might kill you” (p. 405).

Fraiberg and her colleagues (Fraiberg et al., 1975) noted the considerable risk to Greg’s safety in this case, arguing that Annie was repeating painful aspects of her past within her relationship with Greg, and that this dynamic interfered with her capacity to care for him. It seemed that as a young child, Annie learned to identify with her aggressive, terrifying caregiver. This allowed her to defend against and isolate overwhelming affects that were chronically triggered by abuse and deprivation. As a new mother, relational patterns that had been set down during childhood reemerged through Annie’s continued tendency to identify with her stepfather, while she assimilated her now role as a caregiver. This state of mind interfered with Annie’s capacity to recognize and respond to Greg’s needs, and interfered with the developing mother-infant relationship. During her treatment, Annie was helped to gradually and safely identify with her childhood self, reviving buried affects of rage, terror, and helplessness within the therapeutic relationship (Fraiberg et al., 1975). Through a process of remembering and reliving the suffering she had endured, and becoming aware of the extent of her aggression, Annie began to protect Greg and to prevent the pathological repetition of abusive, neglectful parenting.

Fraiberg and colleagues (Fraiberg et al., 1975) sought to identify “factors in the psychological experience of [the parental] past which determine repetition in the present” (p. 389). “The baby is already in peril by the time we meet him,” they wrote, observing that “the baby in these families is burdened by the oppressive past of his parents from the moment he enters the world … the parent … is condemned to repeat the tragedy of his childhood with his own baby in terrible and exacting detail” (p. 388). Their work focused on treating mothers in the throes of active parenting, when aggression, rage, and helplessness were brought to life in the parent-infant relationship. The present investigation will explore whether markers of the
phenomena that Fraiberg and her colleagues (Fraiberg et al., 1975) describe are detectable before mothers give birth to their babies. How do unprocessed, unintegrated childhood affects, identifications, and pathological repetitions manifest in a pregnant woman’s mental life? The severity of maternal pathology and, as a result, the considerable risk posed to infants in these cases, necessitates not only a nuanced understanding of the roots of infant maltreatment, but also of the ways in which they may be manifest in a pregnant woman’s mind.

Prevalence of Infant and Child Maltreatment

Affecting millions of children and their families each year, child abuse and neglect is one of the most serious public health concerns in the U.S. (Norman et al., 2012; U.S. Department of Health & Human Services, 2018). The U.S. Department of Health and Human Services Children's Bureau presents national data about child abuse and neglect known to and collected by child protective services (CPS) agencies in the United States. These data are reported to the National Child Abuse and Neglect Data System (NCANDS) of the Children’s Bureau, and are released in annual reports. The most recent 2018 report includes national statistics based upon data from the 50 states, the District of Columbia, and the U.S. Territories. All states have child abuse and neglect reporting laws that mandate certain professionals and institutions to report suspected maltreatment to a CPS agency. Federal legislation defines child abuse and neglect as “any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm” (USDHHS, 2018). Based on this foundation, each state has its own definitions of child abuse and neglect, jointly referred to as ‘maltreatment.’ Most states recognize four major types of maltreatment, including neglect, physical abuse, psychological maltreatment, and sexual abuse.
In 2016, CPS agencies received an estimated 4.1 million referrals involving approximately 7.4 million children. Approximately 3.5 million children were the subjects of at least one investigated report, and 17.2 percent of these children were found to be victims of substantiated maltreatment. The report estimates a total of 676,000 victims of child abuse and neglect in 2016, amounting to a rate of 9.1 victims per 1,000 children in the population. Most victims were of three races or ethnicities – White (44.9%), Hispanic (22.0%), and African-American (20.7%). American-Indian or Alaska Native children had the highest rate of victimization at 14.2 per 1,000 children of the same race or ethnicity; African-American children had the second highest rate at 13.9 per 1000 children of the same race or ethnicity. Consistent with reports from previous years, the greatest percentages of children suffered from neglect (74.8%) and physical abuse (18.2%); victims also may have suffered from multiple forms of maltreatment. 51 states reported that more than one-quarter (28.5%) of victims were younger than three years (USDHHS, 2018). Children in their first year of life had the highest rate of victimization, at 24.8 per 1,000 children of the same age in the population. Infants experience maltreatment, and are involved with child welfare services, more frequently than any other age group (Williams, Tonmyr, Jack, Fallon, & MacMillan, 2011). The data also show that abuse and neglect in the infant population is substantiated more often than children from other age groups (Williams et al., 2011). The majority of perpetrators (91.4%) were a parent of their victim (USDHHS, 2016). The 2016 data indicate that 70.0% of victims were maltreated by a mother, either acting alone (40.3%) or with a father and/or nonparent (28.4%).

Younger children are the most vulnerable to death as the result of maltreatment. More children die from maltreatment between ages 0 to 3 than during any other time (USDHHS, 2002). In 2016, the USDHHS (2018) estimated a national child fatality rate of 2.36 deaths per
100,000 children. Nearly three-quarters (70.0%) of all children that died were under the age of 3. Children under the age of 1 died from maltreatment at a rate of 20.63 per 100,000 children in the population of the same age; this is equal to nearly 3 times the fatality rate for children who were 1 year old. Of the children who died, 74.6 percent suffered neglect, and 44.2 percent suffered physical abuse (either exclusively or in combination with another maltreatment type). Boys had a higher fatality rate than girls, at 2.87 per 100,000 boys in the population; girls died of abuse and neglect at a rate of 2.11 per 100,000 girls in the population. Data showed that more than three quarters (78.0%) of child fatalities involved at least one parent.

CPS data have a number of advantages, including that they are routinely collected, widely available, and that cases are identified in which neglect is highly likely to have occurred. However, it is estimated that child welfare agencies fail to detect up to half of the cases of child maltreatment that actually occur (Cross & Casanueva, 2009; Dubowitz et al., 2005). Assessing prevalence of these types of trauma is complicated by the considerable risks to families that are associated with reporting abuse, neglect, and other forms of maltreatment. Some research has investigated the prevalence of abuse and neglect cases that are not reported to professionals or the child welfare system. For example, Finkelhor and colleagues (Finkelhor, Turner, Shattuck, & Hamby, 2015) examined data from a household survey (N=4,000 children) conducted by phone called the National Survey of Children’s Exposure to Violence (NatSCEV). Data generated by the NatSCEV provides ongoing national estimates of a wide range of violence against youth, and is an initiative that aims to address the current problems in the epidemiology of child maltreatment in the United States and elsewhere (Finkelhor, et al., 2015). This nationally representative sample was surveyed from August 2013 to April 2014. Results showed that more than 1 in 10 children in the study sample (15.2%) experienced some type of maltreatment by a
caregiver. According to the study, 5.0% of children were physically abused, 9.3% were emotionally abused, and 5.1% of children were neglected by their caregivers in the population sample. While defining abuse and neglect is complex (Scannapieco & Connell-Carrick, 2005), and despite the difficulties in gathering accurate data (Easterbrooks, Bartlett, Raskin, Goldberg, & Contreras, 2013; Finkelhor et al., 2015; MacMillan, Jamieson, & Walsh, 2003), it is clear that child maltreatment constitutes a pervasive problem in the US population.

Child maltreatment rates in the UK population, from which the sample of the current study is drawn, are reported by Radford and her colleagues (2011) at the NSPCC. Their report specifies that 1 in 17 (5.9%) children under age 11 in the UK have experienced severe child maltreatment (6.1% of these children were female, 5.8% were male) (Radford et al., 2011). A total of 18.6% of children between ages 11-17 and 25.3% of 18-24-year-old young adults are reported to have experienced severe maltreatment. Specifically, 8.9% of children under age 11, 21.9% of children between ages 11-17, and 24.5% of 18-24-year-olds are reported to have had one or more experiences of physical violence, sexual or emotional abuse, and/or neglect by a parent or guardian during their childhood. Within the 12 months prior to the NSPCC report, rates of maltreatment and physical punishment by a parent or guardian were as follows: 2.5% for children under age 11, and 6.0% for children and young adults ages 11-25. Based on these data, UK child maltreatment rates are comparable to US national rates based on Finkelhor and colleagues’ results, discussed above (2015).

Sequelae of Infant and Child Maltreatment

“Exemplifying a toxic relational environment,” maltreatment is one of the most severe risk factors that a child may experience (Alink, Cicchetti, Kim, & Rogosch, 2009; Cicchetti & Toth, 2005, p. 410). It is well documented that childhood maltreatment, and concurrently, poor
quality of associated parental care, contribute to diverse social, emotional and behavioral disturbances, as well as interfere with health outcomes. Early maltreatment is associated with psychological and neurobiological impairments throughout development, increasing the risk for maladaptation and trauma-related psychopathology (Bugental, Martorell, & Barraza, 2003; Cicchetti & Toth 2005; Cicchetti & Valentino, 2006; Dayton, Huth-Bocks, & Busuito, 2016; Teisl & Cicchetti, 2008). As Spinelli (2003) puts it, the trauma of maltreatment “can become an organizer for future development and conflict, merge with wishes and inhibitions, and affect adult behavior and neuroses” (p. 237). Overall, onset of maltreatment during infancy is hypothesized to increase the potential for harm (Cicchetti & Barnett, 1991) and to reduce the likelihood of resilient functioning in children (Bolger & Patterson, 2003).

**Infant Maltreatment**

During a child’s first year of life, establishing a foundation for healthy physical and emotional development is critical (Stern, 1995). This is also a time during which developmental gains depend largely on the quality of the caregiver–infant relationship (Williams et al., 2011). Further, infants require a stimulating environment as well as an available caregiver to nurture optimal development. Infant abuse and neglect can disrupt and alter normal development, leading to lifelong consequences in the absence of intervention. Infant victims of maltreatment are at risk for social, emotional, academic and physical problems, as well as developmental delays (Scannapieco & Connell-Carrick, 2005). Minimal or absent contingent responsiveness in maltreating families can impair an infant’s ability to develop feelings of security, self-worth and trust in others, all of which are essential for successful social and emotional adaptation throughout development (Hecht, Cicchetti, Rogosch, & Crick, 2014).
Physical abuse during infancy and toddlerhood is associated with a range of immediate complications including medical problems, brain and abdominal injuries, lethargy, vomiting and irritability (Scannapieco & Connell-Carrick, 2005). Long-term outcomes can include delayed language development (Oates, Peacock, & Forrest, 1984), increased likelihood of avoidant behavior when interacting with caregivers and other children, increased aggression compared to neglected children (Egeland, Sroufe, & Erickson, 1983), increased aggression with peers, and decreased positive response toward friendly gestures (George & Main, 1979). Severe physical abuse in infancy can lead to global developmental delays, retardation and paralysis (Perry, 2002).

Neglected infants have been shown to suffer from deficits that accumulate over time (Scannapieco & Connell-Carrick, 2002). Early neglect is associated with delayed cognitive development, including declines in both expressive and receptive language skills (Culp et al., 1991; Gowan, 1993). Cicchetti and Lynch (1993) found that, compared to non-maltreated toddlers, neglected infants use language less frequently in social or affective exchanges. Some research has shown that neglected infants may fail to develop gross motor skills comparable to those of non-maltreated children (Scannapieco & Connell-Carrick, 2002). The lack of sensory stimulation and cognitive experiences that are inherent to conditions of infant neglect can lead to development of a smaller cortex and fewer neural pathways, with long-term negative consequences for brain development including permanent intellectual damage (Perry, 1997; Perry & Pollard, 1998). Infant neglect can also manifest in a serious condition referred to as “failure to thrive” (FTT), which typically occurs within the first two years of life and can result from physical or emotional neglect (DePanfilis, 2006). FTT is a medical condition in which there is “a significantly prolonged cessation of appropriate weight gain compared with recognized norms for age and gender after having achieved a stable pattern” (Block, Krebs, & the American

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Research has suggested that even “subtle” forms of maltreatment during infancy (e.g. frequent corporal punishment) have potential consequences for the functioning of the adrenocortical response system (Bugental et al., 2003). Infants who received frequent corporal punishment were shown to have elevated hormonal reactivity to stress in the laboratory, and infants who experienced frequent emotional withdrawal by their mothers (either as a result of maternal depression, or mother’s strategic use of withdrawal as a control tactic) were shown to have elevated baseline levels of cortisol. The authors suggest that there are hormonal “costs” to the infant when a mother’s response patterns interfere with her capacity to buffer her infant against stress. In terms of neuroendocrine functioning, the hypothalamus-pituitary-adrenal (HPA) axis is particularly sensitive to conditions of maltreatment (Bernard, Dozier, Bick, & Gordon, 2015). Specifically, Bugental and colleagues’ (Bugental et al., 2003) research indicates that hormonal responses of maltreated infants alter the functioning of the HPA axis. If these responses to relational stress do not attenuate, risk for immune disorders, sensitization to later stress, cognitive deficits, and social-emotional problems are likely. Further, history of maltreatment has often been found to be associated with reduced basal levels of cortisol and/or reduced adrenocortical reactivity (e.g., Cicchetti & Rogosch, 2001a). However, additional evidence suggests that for some infants, maltreatment may in fact lead to elevated levels of cortisol production, which are associated with internalizing disorders in childhood (Cicchetti & Rogosch, 2001b). Overall, there is considerable evidence to suggest that early maltreatment is associated with disruptions to HPA axis functioning (Bernard et al., 2015), both in terms of basal activity and stress reactivity (Bugental et al., 2003). This effectively strains the infant’s
physiological response systems, which are repeatedly activated in response to stress. This finding supports the theory (discussed in more detail below) that abused and neglected children tend to be less able to habituate to new events, and struggle to regulate their own emotional reactions in adaptive ways (Bugental et al., 2003).

**Implications for Child Development**

Prospective empirical studies have shown that maltreated children are vulnerable to internalizing emotional difficulties, including increased likelihood of developing depressive symptomatology (e.g., Cicchetti & Toth, 1995; Toth, Manly, & Cicchetti, 1992; Widom, DuMont, & Czaja, 2007), anxiety (e.g., Shenk, Noll, & Cassarly, 2010), as well as externalizing behavioral dimensions of psychopathology, including increased aggression and disruptive behavior (Teisl & Cicchetti, 2008; Teisl, Rogosch, Oshri, & Cicchetti, 2012), conduct disorder and delinquency (Smith & Thornberry, 1995), and higher rates of ADHD (Famularo, Kinscherff, & Fenton, 1992). Children with a history of maltreatment also evidence poor academic achievement outcomes (Cicchetti & Toth, 2005). When compared to their peers, these children were disproportionately more likely to have poor mathematics, reading, and language outcomes. They were also more likely than their peers to be placed in special education (Veltman & Browne, 2001).

When essential needs for security and protection are not met within the compromised caregiving environment, children can experience and internalize a lack of value and worth (Cicchetti & Lynch, 1995). Maltreated children develop representational models of self and other that are more negatively toned and less coherent compared to non-maltreated children (Dayton et al., 2016; Lynch & Cicchetti, 1991; Toth, Cicchetti, Macfie, Maughan, & VanMeenen, 2000a). They are also more likely to have socio-emotional problems than other children, “which can
range from mild interpersonal difficulties to the loss of capacity to form any meaningful relationship” (Scannapieco & Connell-Carrick, 2005, p. 64). These youth experience greater negative peer relationship qualities (e.g., aggression, withdrawal, rejection), and fewer positive peer relationship qualities, such as prosocial and socially competent behavior (Alink, Cicchetti, Kim, & Rogosch, 2012; Kim & Cicchetti, 2010; Rogosch, Oshri, & Cicchetti, 2010), compared to non-maltreated children.

Maltreatment poses a significant threat to the development of a child’s capacity to regulate affect (Cicchetti & Toth, 2005; Dayton et al., 2016). In a maltreating environment, minimizing emotions or emotional expressions in response to a stressor may prove adaptive in reducing the likelihood of abuse (Dayton et al., 2016). Maltreated children have also been shown to express “overbright positive affect,” which has been attributed to a false sense of self (e.g., Cicchetti & Rogosch, 1994; Koenig, Cicchetti, & Rogosch, 2000). Kim and Cicchetti (2003) posit that inflated self-efficacy exhibited by some maltreated children may be a result of their engagement in defensive processing and suppressed negative affect. While protective in the short-term, all of these emotional adaptations prove detrimental as a child grows. Children who were neglected as infants have been shown to act angry, easily frustrated, impulsive, and to demonstrate low enthusiasm for play (Erickson & Egeland, 2002). Curtis & Cicchetti (2011) found that abused and neglected children were hyperresponsive to anger, which tends to be a salient and predominant affect in maltreating homes. Relatedly, Maughan and Cicchetti (2002) found that maltreated children showed dysregulated emotion patterns in response to simulated inter-adult anger as compared to non-maltreated children. The impaired ability to understand negative affect and to regulate affect has been shown to relate to undercontrolled, aggressive behavior in school (Cicchetti & Toth, 2005). Overall, there is considerable research to
demonstrate that maltreated children are at elevated risk for psychological difficulties characterized by affective dysregulation, and that this may confer increased risk for developing the previously discussed internalizing and externalizing behavior problems during childhood (Manly, Kim, Rogosch, & Cicchetti, 2001).

Maltreated children also evidence cognitive deficits in the recognition and understanding of emotions (Cicchetti & Toth, 2005). Multiple event-related potential (ERP) studies have investigated the neural correlates of processing emotional stimuli in maltreated children. Cicchetti and Curtis (2005) showed that maltreated toddlers had greater P260 and Nc amplitudes in response to looking at angry facial expressions compared to non-maltreated children. Pollak and Sinha (2002) have expanded upon this work, and similarly identified an attentional bias to angry versus happy faces in maltreated children. Dayton and colleagues (Dayton et al., 2016) argue that maltreated children “tend to err on the side of anger identification when evaluating facial expressions, and to make these determinations rapidly” (p. 3). Maltreated children not only devote their attention to anger detection and perceive ambiguous facial expressions as angry, but also cognitively exclude other contextually relevant, non-threatening relationship-salient information (Pollak, 2008). While it has been shown that neglected children have difficulty discriminating and managing emotions (Pollak, Cicchetti, Hornung, & Reed, 2000), some research suggests that abused children develop a sophisticated capacity to recognize and track affective states such as anger, which is adaptive in an unpredictable environment (Pollak & Sinha, 2002).

A growing body of research suggests that maltreatment also affects the structure and functioning of neurobiology in children (Cicchetti & Tucker, 1994; DeBellis, 2001). Imaging research has shown that maltreatment may affect hemispheric asymmetry. Maltreated children
are more likely to exhibit greater right than left frontal activation (e.g., Curtis & Cicchetti, 2007). The work of DeBellis (2001) suggested that there are important neurological differences between the brains of maltreated children and adolescents and matched, non-maltreated subjects. The maltreated group was shown to have decreased intracranial and cerebral volume, decreased midsagittal and corpus callosum area, and increased lateral ventricle size, compared to the non-maltreated group. Teicher and colleagues (Teicher et al., 2004) also found decreased corpus callosum area in a group of maltreated children receiving psychiatric inpatient care, compared to a non-maltreated control group of children in outpatient care. In their neuroendocrine study, Gordis and colleagues (Gordis, Granger, Susman, & Trickett, 2008) found that the expected correlation between two components of the physiological stress response (salivary alpha amylase and cortisol reactivity) was absent in a group of maltreated 9-14 year-old children. Dayton and colleagues (Dayton et al., 2016) suggest that this asymmetry may contribute to the risk of impaired affective regulation skills and heightened levels of psychopathology in maltreated children. Taken together, these findings suggest that child maltreatment is detrimental to neurobiological development (Cicchetti & Toth, 2005).

Implications for Adolescence & Adulthood

Early maltreatment continues to exert negative effects throughout development. A prospective study by Flynn, Cicchetti and Rogosch (2014) found that childhood maltreatment experiences predicted low self-worth, low relationship quality, and both internalizing and externalizing symptoms in early and mid-adolescence. In adolescent samples, maltreatment parameters have been associated with delinquency (Kim, Tajima, Herrenkohl, & Huang, 2009), alcohol use (Shin, Edwards, Heeren, & Amodeo, 2009), cannabis use (Oshri, Rogosch, Burnette, & Cicchetti, 2011; Rogosch et al., 2010), and cigarette use (Lewis et al., 2011). Multiple
Maltreatment exposure is predictive of psychological distress, adjustment problems, and psychiatric impairment in adolescence (Arata, Langhinrichsen-Rohling, Bowers, & O’Brien, 2007; Finkelhor, Ormrod, & Turner, 2007). Maltreatment victims are at elevated risk for adult psychopathology characterized by emotion dysregulation (Shipman et al., 2007), including anxiety, depression (Bemporad & Romano, 1992), substance use disorders, and antisocial behavior (see Kolko, 2002 for review). In general, abuse and neglect in childhood have been shown to be associated with poor self-esteem and conflicted relationships in adulthood (Bifulco et al., 2002). Women who have experienced child maltreatment have a more difficult time forming trusting, intimate romantic relationships (Rumstein-McKean & Hunsley, 2001), and describe those relationships as less satisfying than women without a history of maltreatment (Testa, VanZile-Tamsen, & Livingston, 2005). Women who were maltreated during childhood are also significantly more likely to experience partner violence during adulthood (Bensley, Van Eenwyk, & Wynkoop Simmons, 2003), resulting in more chronic and cumulative exposure to aggression over time. In addition, women with a history of childhood sexual and/or physical abuse are more likely to experience suicidal ideation during pregnancy in adulthood (Farber, Herbert, & Reviere, 1996).

Longitudinal studies have shown that maltreatment during childhood predicts an increased risk for personality pathology in adulthood (Johnson, Bromley, Bornstein, & Sneed, 2006; Johnson, Bromley & McGeoch, 2005; Widom, Czaja, & Paris, 2009). Johnson and colleagues (Johnson, Smailes, Cohen, Brown, & Bernstien, 1999) found that having had a documented experience of abuse during childhood made an individual over 4 times more likely to be diagnosed with a personality disorder in adulthood, even after controlling for parental education, age, and parental psychiatric history. Norman et al. (2012) conducted a meta-analysis
of 124 studies to assess the association between early non-sexual maltreatment and various health outcomes in adulthood. Overall, childhood physical abuse, emotional abuse, and neglect were found to approximately double the likelihood of adverse mental health outcomes when combined in their analysis. A highly consistent association was found between child maltreatment and adverse mental health outcomes, drug use, sexually transmitted infections, and risky sexual behavior.

The large-scale epidemiological Adverse Childhood Experiences (ACE) Study (Felitti et al., 1998) firmly established a connection between early trauma and negative health outcomes in adulthood. A simple tally of the presence or absence of 10 adverse childhood experiences – which includes physical abuse, sexual abuse, neglect, parental mental illness, etc. yields an ACE score between 1 and 10. ACE scores from over 18,000 participants were strongly associated with a number of physical illnesses in adulthood, including heart disease, certain forms of cancer, autoimmune and musculoskeletal disorders (Felitti et al., 1998). Further, Felitti and colleagues (Felitti et al., 1998) found a significant dose-response relationship between the number of ACEs and disease conditions including cancer, ischemic heart disease, and skeletal fractures. A dose-response relationship was also established between adverse health outcomes and maltreatment, in particular, suggesting that victims of more severe abuse and/or neglect are at greater risk of developing mental disorders and health complications than those experiencing less severe maltreatment. Finally, the associations between higher ACE scores and poor health outcomes were robust across four different birth cohorts spanning 50 years (Dube, Felitti, Dong, Giles, & Anda, 2003). Taken together, results of the ACE study provide evidence that chronic trauma and unrelieved stress can perpetuate a state of fear that persists across development.

Putnam, Harris, and Putnam (2013) conducted subsequent research using the National
Comorbidity Survey-Replication sample, a nationally representative sample (N=9,282) of US residents ages 18 and older. Their study examined the cumulative effect of different types of childhood adversities on increasing risk for serious adult mental and medical outcomes. Results indicated that childhood adversities including sexual abuse and physical abuse, parental depression and/or anxiety, parental alcohol or drug abuse, and domestic violence exposure were significantly associated with complex adult psychopathology, including mood, anxiety, impulse control and substance abuse disorders that coexisted with internalizing or externalizing disorders (Putnam, Harris, & Putnam, 2013). This work suggests that intolerable affects and bodily experiences associated with toxic stress and trauma such as early maltreatment lead to a range of maladaptive coping strategies and symptoms, and are paralleled by the dysregulation of multiple systems in the body and brain (Shonkoff & Phillips, 2000). Collectively, these data suggest that providing not only intervention, but also critical prevention resources to maltreated children and their parents, is essential to impeding a negative developmental trajectory with long-term, deleterious consequences (Stronach et al., 2011).

Risk Factors for Maltreatment

Until recently, mental health and child maltreatment research was organized around the goal of seeking single or linear causal agents, despite the fact that abuse and neglect are difficult to define beyond clusters of symptoms (Dodge & Pettit, 2003). After three decades of attempting to isolate a clear set of early maltreatment risk factors and consequences, single risk variable models no longer proved helpful (Mackenzie, Kotch, Lee, Augsberger, & Hutto, 2011). The work of Rutter (1979) and Sameroff and colleagues (Sameroff, Bartko, Baldwin, Baldwin, & Seifer, 1998) established and refined a cumulative risk approach to this research, which assumes that multiple transacting factors are important to the etiology and consequences of early
maltreatment. Child maltreatment is presumed to be multiply determined (Belsky, 1993) by factors associated with the perpetrator (ontogenic factors), with the family and the child’s immediate environment (the microsystem), with the broader ecological or community systems which directly impact the family (exosystem), and with the nature of modern culture and society (macrosystem) (Cicchetti & Lynch, 1993). Current research explores how these factors interact to increase the likelihood of maltreatment (Cicchetti & Toth, 2005).

Exposure to interpersonal aggression represents one significant risk factor for maladaptive parenting and problems in the parent-infant relationship (Dayton et al., 2016). Research on emotional interactions between parents and children suggests that maltreating parents show less positive emotion (Bugenthal, Blue, & Lewis, 1990; Burgess & Conger, 1978; Kavanaugh, Youngblade, Reid, & Fagot, 1988) and more negative emotion (Herrenkohl, Herrenkohl, Egolf, & Wu, 1991; Lyons-Ruth, Connell, Zoll, & Stahl, 1987) toward their children than is observed in non-maltreating families. Studies contrasting different types of maltreating families suggest that physically abusive parents interact with their children frequently, but with high rates of verbal and physical aggression directed at them (Bousha & Twentyman, 1984; Crittenden, 1981). Maltreating parents also tend to isolate themselves and their families from others, reducing the likelihood of exposing their children to healthier models of emotional communication (Gaudin & Polansky, 1986; Salzinger, Feldman, Hammer, & Rosario, 1993).

Parental lack of understanding of the caregiving role, and a parent’s feelings about caring for the needs of an infant, can increase the risk of maltreatment (Pianta, Egeland, & Erickson, 1989; Scannapieco & Connell-Carick, 2005). For example, parental depressive symptoms are often associated with mothers’ lack of perceived parenting competency, at-risk parenting attitudes, and unrealistic expectations of child behavior (Michl, Handley, Rogosch, Cicchetti, &
Toth, 2015). Michl and colleagues (Michl et al., 2015) assert that extreme parental despondency regarding child rearing can lead to the psychological unavailability of primary caregivers, which has been shown to operate as a precursor of child maltreatment (Egeland & Sroufe, 1981; Erickson & Egeland, 1987; Mrazek, 1993). Further, a caregiver’s level of dissatisfaction with her children, as well as a caregiver’s perception of parenting as less enjoyable and more difficult, increases the risk of maltreating her infant or toddler (Trickett, Aber, Carlson, & Cicchetti, 1991). The age of a parent can exacerbate these, as well as other, parental characteristics. Young mothers also tend to experience more adversity within their proximal relationships compared to older mothers (Coley & Chase-Lansdale, 1998). Indeed, younger parents are more likely to maltreat their children, and this has been shown in studies of abuse as well as neglect (Cazdow, Armstrong, & Fraser, 1999; Bartlett & Easterbrooks, 2015).

Poverty and low income are also highly associated with child maltreatment (Scannapieco & Connell-Carick, 2005). Coohey (1998) found that mothers who did not provide adequate supervision to their children were significantly more likely to have been homeless within the last year, and were also more likely to have current inadequate housing than comparison mothers (Scannapieco & Connell-Carick, 2005). Conditions of high poverty and young maternal age confer even greater risk (Scannapieco & Connell-Carick, 2005). Lee & George (1999) found that children born to mothers aged 17 or younger in high poverty areas were found to be 17 times more likely to have a substantiated case of child maltreatment, compared to children both to mothers aged 22 or older in low poverty areas. It has been shown that neighborhood poverty is positively associated with child maltreatment, and that child neglect in particular is most powerfully associated with neighborhood poverty status (Drake & Pandey, 1996). Similarly, single parenthood status, most often when a child’s mother is the primary caregiver, is a risk
factor for maltreatment. The lack of support and diminished economic level within the microsystem compounds the stress of being single and caring for an infant, putting the dyad at risk (Scannapieco & Connell-Carick, 2005). Parental substance abuse has also been identified as a risk factor for maltreatment. As many as two thirds of all child fatalities involve a substance abusing caregiver (Chance & Scannapieco, 2002).

In terms of perinatal factors, Guterman (2015) found that unintended pregnancy predicted increased levels of psychological and physical aggression, as well as neglect. Mothers who have genetic or biological factors that result in physical problems during pregnancy or delivery are also at increased risk of physically abusing or neglecting their infants (Brown, Cohen, Johnson, & Salzinger, 1998; Scannapieco & Connell-Carick, 2005).

*Parental History of Early Maltreatment*

Over thirty years of research on the etiology of maltreatment has shown that it is more common for parents with a history of abuse or neglect to maltreat their children, compared to non-maltreating parents (Michl et al., 2015). Scannapieco and Connell-Carick (2005) characterize parental history of early maltreatment as “a paramount risk factor” for infant abuse and neglect (p. 73). There is empirical support for the hypothesis that experiencing abuse in childhood increases the risk of perpetrating child maltreatment later as a parent (Egeland, Jacobvitz, & Sroufe, 1988; Widom, 1989). In order to identify mechanisms of intergenerational transmission of maltreatment, studies have repeatedly assessed the impact of parental experiences of child abuse and neglect (Buchanan, 1996; Coohey & Braun, 1997; Egeland et al., 1988; Egeland, Bosquet, & Chung, 2002; Friedrich & Wheeler, 1982; Hunter & Kilstrom, 1979; Kaufman & Zigler, 1987; McCloskey & Bailey, 2000; Berlin, Appleyard, & Dodge, 2011; Smith, Cross, Winkler, Jovanovic, & Bradley, 2014).
Parent and family risk factors, many of which were described above, have been shown to occur at above average rates in individuals with a history of abuse (Egeland et al., 2002; Newcomb & Locke, 2001; Pears & Capaldi, 2001). Parent-level factors include anxiety, depression, poor self-esteem, emotional problems, substance abuse, mental illness and poor interpersonal skills; family-level factors include poverty or low income, and isolation or a perceived lack of social support (Crouch, Milner, & Thomsen, 2001; Egeland et al., 2002), early separation from the mother (Brown et al., 1998) and young parental age (Egeland et al., 2002; Straus, 1994). In addition, parents with a history of abuse are at increased risk of maltreating their children when they are tasked with caring for young children (Straus, 1994), when their children have physical disabilities (Goldson, 1998), and when pregnancy or birth complications have occurred (Brown & Lumley, 1998).

Mothers who were maltreated have smaller and less satisfying social support networks, and are more likely to experience higher levels of parenting stress, and to maltreat their children (Deater-Deckard, 2004; Gaudin, 2001; Vranceanu, Hobfoll, & Johnson, 2007). Mothers with a history of sexual abuse have been shown to perceive themselves as less competent and efficacious mothers, report greater parenting difficulties than non-abused mothers, and report feeling more stressed, disorganized, inconsistent, and less emotionally controlled in child rearing (Fitzgerald, Shipman, Jackson, McMahon, & Hanley, 2005; Michl et al., 2015). Michl and colleagues (Michl et al., 2015) found that mothers who had experienced extensive childhood maltreatment perceived themselves to be less efficacious as parents. Specifically, mothers who experienced a greater number of maltreatment subtypes as children reported more self-critical judgments, which in turn led to decreased levels of perceived efficacy in their maternal role. This was shown to be equally true for depressed and non-depressed mothers in the sample. Maternal
exposure to interpersonal aggression, including physical, psychological, and verbal abuse, is associated with harsh and intrusive parenting, and a pattern of dyssynchronous parent–infant interactions (Dayton et al., 2016). Given that childhood maltreatment is closely linked to higher rates of psychopathology in adulthood, psychiatric symptoms may also interfere with a maltreated parent’s ability to provide optimal parenting. This pathway has been suggested for maternal depressive symptoms, in particular (Fuchs, Mohler, Resch, & Kaess, 2015).

As discussed above, early maltreatment experiences negatively impact affect regulation. Smith and colleagues (Smith et al., 2014) found that the relationship between mothers’ own experiences of early abuse and later child abuse potential was mediated by maternal emotional dysregulation and negative affect, reported in the context of mother–child interaction (Smith et al., 2014). It is hypothesized that maternal difficulty with regulating emotions can lead to maladaptive parenting strategies, such as aggression or withdrawal (Ehrensaft, Knous-Westfall, Cohen, & Chen, 2015). Especially under stressful conditions, physically abused mothers may focus less on their babies (Gara, Allen, Herzog, & Woolfolk, 2000), and mothers who experienced sexual abuse during childhood appear to be more emotionally distant toward their children (DiLillo & Damashek, 2003). The work of Bartlett and Easterbrooks (2015) focuses on young mothers and the impact of maternal age on cycles of maltreatment. The authors emphasize that adolescent parents who are maltreatment victims not only lack empathy in interactions with their babies, but also may be especially unlikely to pick up on and respond to an infant’s needs. More than their older counterparts, they argue, young, maltreated mothers tend to endure difficult life circumstances (e.g. poverty, social isolation, and single parent status) that, “when compounded with their immaturity, may compromise their ability to demonstrate empathy and provide adequate care” (Bartlett & Easterbrooks, 2015, p. 22).
The associations between a maternal history of maltreatment, parenting behavior, and early maltreatment suggest that intergenerational transmission processes have particular relevance to the etiology of infant neglect and abuse (Bartlett & Easterbrooks, 2015). Nevertheless, the association is neither straightforward nor well understood, and generalizations regarding cycles of intergenerational maltreatment should be made cautiously (Dixon, Browne, & Hamilton-Giachritsis, 2009; Kaufman & Zigler, 1987). Indeed, an estimated two-thirds of parents who were victims of maltreatment do not go on to perpetuate the cycle of abusing or neglecting their children. Findings from research on the effects of maternal maltreatment experiences on mother–child interaction and parenting have also been inconsistent, due in part to methodological differences such as diversity in how maltreatment and interactional quality are measured (Fuchs et al., 2015). While the exact mechanisms underlying the transmission of maltreatment are not understood (Dayton et al., 2016; Fuchs et al., 2015; Dixon, Browne, & Hamilton-Giachritsis, 2005), attachment theory is particularly relevant to the study of this cycle.

The Attachment Relationship

Bowlby (1969, 1973, 1980, 1988) theorized that an infant’s behavior is driven by the “attachment behavioral system,” a motivational system that propels the infant to seek proximity to and comfort from the primary attachment figure when threatened. This system was particularly salient under fear-inducing circumstances that are novel or threatening, when the infant is experiencing high affective arousal (Slade, 2014; Slade et al., 2016). To resolve a condition that elicits fear, the infant flees towards his attachment figure (Hesse & Main, 2000). Bowlby argued that the infant’s attachment to the caregiver serves an evolutionary function, and that the predisposition to form an attachment to a caregiver from birth has been repeatedly selected for in order to ensure survival (Belsky & Cassidy, 1994; Bowlby, 1969). Forming an
effective attachment relationship with a primary caregiver has been described as the most salient developmental task in infancy (Sroufe, 1979).

The attachment relationship is fundamentally reciprocal. Caregiving behavior is the primary determinant of the attachment relationship with the infant, and provides the basis for individual differences in attachment relationships. That is, the quality of the caregiver’s responses to infant distress shapes the infant’s behavioral and cognitive strategies for regulating stress and negative affect (Slade, 2014). In order to enhance proximity to his caregiver, the infant exhibits a range of attachment-related behaviors, including sucking, smiling, clinging, crying and following. When contact is made successfully and protection and comfort are provided, the infant’s fear is regulated by the caregiver and subsides, deactivating the system (Ainsworth, 1969; Bowlby, 1969; Slade, 2014). Thus, in the context of absolute emotional and physical dependence, the infant adapts his thoughts and behaviors in response to the caregiver in order to ensure that his needs are met (Slade, 1999; Slade, 2000; Slade, 2014). The caregiver is the infant’s primary protector, and the infant’s sense of security derives from patterned interactions with that caregiver.

Therefore, it is the quality of an infant’s attachment relationships that shapes his beliefs and expectations about caregiver availability, and about his ability to master the surrounding environment. Based on the contingency of caregiver behavior during repeated interactions, the infant develops an “internal working model of attachment” (Bowlby, 1973, 1982). The infant’s internal working model consists of representations of the self, of the attachment figure, and of the attachment relationship between them. Mental representations are inherently dyadic, and include an individual’s way of participating in the attachment relationship as well as the overall relational pattern within the relationship (Lyons-Ruth, Bronfman, & Atwood, 1999a). Internal
working models are thought to operate largely outside of consciousness, and as a result, to be resistant to change (Bowlby, 1969). As the infant develops an increasingly complex internal working model, the attachment system comes to exist on a behavioral and a representational level (Slade, 2000). On one level, internal working models of attachment are expressed through observable patterns of behaviors that reflect a child’s expectations of how others will care for him. Representationally, the model both informs the infant’s expectations of his caregiver and influences unfolding relationship patterns between them, allowing him to predict the way in which she will respond to his needs, and to adapt to her style of responding so that his needs are most likely to be met. The early relational patterns between the infant and his caregiver are represented and carried forward as prototypes for interacting with others in close relationships (Crittenden & Ainsworth, 1989). Under ideal conditions, proximity to a trusted caregiver and a feeling of security become predictable outcomes of attachment behavior (Crittenden & Ainsworth, 1989). Predictably warm and responsive care leads the infant to develop internal models of relationships as fulfilling, and of himself as competent (Stronach et al., 2011).

Researching Attachment

Mary Ainsworth and her colleagues (Ainsworth, Blehar, Waters, & Wall, 1978) identified qualitative dimensions of attachment by observing the ways in which infants organized their behavior in relation to an attachment figure. This seminal research involved observing separations and reunions between mothers and infants in a standardized laboratory procedure known as the “Strange Situation” (SSP) (Ainsworth et al., 1978). Three primary patterns of behavioral responding emerged from this research. Infants were classified as either secure, insecure-avoidant, or insecure-resistant/ambivalent with respect to attachment. Caregivers who were responsive to their infants’ needs had infants who were likely to feel secure in their
attachment relationships, to successfully resolve their distress, and to feel free to readily express their needs (Main, 2000). Secure infants were able to elicit protection from their caregivers to reduce their alarm, behaved as though they presumed the source of that alarm was part of the external environment, and could effectively resolve their distress (Main, 2000). They were able to use their caregivers as a “secure base” from which to explore (Bowlby, 1988; Slade, 1999). Secure attachment has been identified as a protective factor across development, and most infants are securely attached (Sagi, 1990; Slade, 1999). Bowlby (1969, 1982) theorized that a secure attachment relationship fosters the integration of cognitive, affective, and behavioral capacities that influence relationships in the present and future, and shape the understanding of the self. On the other hand, infants whose caregivers either “rejected, ignored, or somehow distorted their needs developed less functional and adaptive means of communicating their needs when distressed and seeking comfort” (Slade, 1999, p. 798). These infants were classified as insecure. Behaviorally, avoidant infants tended not to seek proximity to the attachment figure when distressed, deactivating attachment cues in order to cope with the cool, rejecting behavior of their parents and rarely engaging in behaviors that called attention to the parent-child relationship (Ainsworth et al., 1978). Ambivalent infants sought proximity and became preoccupied with the parent-child relationship but remained distressed and were not comforted upon reunion with their caregivers, who demonstrated delayed and inconsistent yet reasonably tender responding. Insecurely attached infants were nonetheless able to strategize and organize, adjusting in order to achieve necessary minimal proximity to the parent and to mobilize the regulation of their fear and distress.

Attachment research has also focused on the mental representations that develop as a function of attachment relationships (Slade, 1999). The Adult Attachment Interview (AAI)
(George et al., 1984, 1988, 1996) was developed to assess the quality of an adult’s mental representations of attachment by activating the attachment system, and evaluating the individual’s current state of mind regarding attachment. The study of AAI narratives collected from mothers and fathers led to the identification of three patterns of adult attachment, or “states of mind regarding the relationship with the caregiver” (Main, Kaplan, & Cassidy, 1985, p. 68): the secure, dismissing, and preoccupied categories of adult attachment. Each of these patterns was classified based on analyzing the quality of parents’ narratives about past relationships, memories, and related affects (Main et al., 1985). The original AAI scoring system (Main et al., 1985) focused contradictions and inconsistencies in an adult’s discourse, and was later revised to incorporate the concept of narrative coherence (Main, 1991). Main found that some parents readily discussed their early experiences, recalling events and relationships imbued with affect and coherence. In contrast, some parents struggled to recall events, relationships, and related affects, and others became particularly overwhelmed by or preoccupied with negative affects related to early events and relationships (Main et al., 1985).

Main, Kaplan and Cassidy (1985) proposed that a caregiver’s mental representation of her own childhood attachment experiences influences the quality of the attachment relationship that develops with her infant. Their research was the first to support a strong association between the quality of caregivers’ attachment interviews and infant attachment classifications, concluding that autonomous parents tended to have securely attached infants, dismissing parents tended to have infants with an avoidant style, and preoccupied parents tended to have infants with an ambivalent style. Results indicated that 68% of the time, a mother's attachment organization predicted the quality of her infant’s attachment (Main et al., 1985). The intergenerational match between maternal attachment narratives and infant attachment classifications has been widely
replicated (Fonagy, Steele & Steele, 1991; Benoit & Parker, 1994; Ward & Carlson, 1995). Thus, the way in which a caregiver represents her own early attachment experiences and relationships mediates the quality of her interactions with her infant, which in turn influences her infant’s attachment pattern.

The Caregiving System

Bowlby (1982, 1988) posited that the infant’s attachment behavioral system is complemented by a reciprocal, evolutionarily privileged “caregiving system” in the parent. Elaborating on Bowlby’s notion of the caregiving system in a seminal 1996 paper, Solomon and George argued that it biologically predisposes the mother-to-be to provide care for and protect her infant, and is fundamental to parenthood. Designed to provide changing levels and forms of protection, the caregiving system is reciprocal to the infant’s own biological predisposition to seek proximity and safety to the attachment figure. The two systems each rely on the other to function (Solomon & George, 1996).

Bowlby theorized that caregivers have an internal working model of the caregiving role that is shaped by their mental representations of their own attachment experiences. This internal caregiving model determines a parent’s thoughts and feelings related to her child, and influences parenting behavior (Solomon & George, 1996). A caregiver’s ability to provide protection is a mature transformation of earlier relational experiences and representations of having been cared for. According to this framework, the way in which a parent imagines caring for and actually cares for her child is likely to be deeply informed by her own experiences of being parented. Early identification with one’s own caregivers, whether benevolent, malevolent, or fearful, as well as the affects and defenses associated with that identification, set the stage for an individual’s representation of herself as a caregiver and of her child as the recipient of her care.
Solomon and George propose that two basic questions drive the construction of self as a caregiver, including “Will I be a good mother … and will I have a good child?” and “Will I be able to protect a (this) child … want to protect (this) child?” (1996, p. 190). These questions, they argue, call up and resonate with earlier experiences of having been cared for, including “successes and disappointments with caregivers.” On one hand, caregiving can trigger a parent’s implicit or explicit memories of safety and pleasure in receiving care. On the other hand, the experience of being sought out for comfort can evoke early experiences of longing for care and protection in the face of malevolence and fear (Slade, 2014). The triggering of affects such longing, rage, or fear can initiate defensive maneuvers and affect regulation strategies on the part of the parent. The experience of being parented invariably shapes one’s view of oneself as a parent, and of one’s child.

Solomon and George (1996) emphasize that the caregiving system is not simply an extrapolation from parents’ earlier models of attachment, but rather is a distinct model of relationships with its own developmental trajectory. They suggest that an individual begins to construct a representation of the self as a caregiver or protector during adolescence (p. 190). After consolidation in adolescence, the system undergoes its greatest growth during the transition to parenthood. Throughout pregnancy and in the first few months after birth, the caregiving system initiates the expectant mother’s protective behaviors, and her provision of a secure base to her unborn baby (Bowlby, 1988). Her primary goal shifts from seeking and securing protection to being a provider of protection. A maternal representation of the unborn child, which is distinct from her representation of her own early attachment experiences, develops in tandem with her representation of herself as a caregiver. Both types of representations will affect the mother’s parenting of her child (Malone, Levendosky, Dayon, & Bogat, 2010).
Attachment Disorganization

Preliminary attachment research on populations with known parenting problems, such as infant maltreatment (Crittenden, 1985; Egeland & Sroufe, 1981), found that the behavior of approximately 5-10% of infants was not easily classified according to the three-category system (that is, secure, avoidant, and resistant/ambivalent categories). Some of these infants had been deemed unclassifiable, or had received classifications that were inconsistent with their histories; for example, some severely maltreated infants had been classified as secure (Main & Solomon, 1986). In order to gain a better understanding of this subsample, Main and Solomon (1986, 1990) examined SSP data from over 200 unclassifiable infants and observed a different and striking pattern of responding. These infants engaged in atypical behaviors when separated from and reunited with their caregivers, including freezing, stilling, mistimed movements, and dazed expressions (Hesse & Main, 1999). They either rapidly shifted between avoidant and resistant behavioral strategies, or evidenced a total breakdown in their behavioral strategies. Main and Solomon (1986) proposed that these behavioral patterns were driven by the infant’s fear of the attachment figure. Based on this theory, Main and Solomon developed coding criteria for a fourth “disorganized/disoriented” attachment classification.

Main and Hesse (1990) went on to suggest that a “disorganized” attachment relationship develops when “the origin of the infant’s fear resides in the actions of the attachment figure” (Madigan, Moran, & Pederson, 2006, p. 293). That is, when a potentially protective parent is also a source of fear, the infant is simultaneously motivated to avoid his caregiver and to seek proximity to her (Lyons-Ruth & Block, 1996; Main & Hesse, 1990). Confronted with this approach-avoidance paradox, failure to cope with distress becomes unavoidable. Either the infant is unable to develop an organized strategy that allows for use of the attachment figure to regulate
distress, or experiences a breakdown of existing strategies when faced with this fear.

Characteristic freezing behavior, for example, is thought to indicate an infant’s inability to choose, rendering him immobilized without an alternative. Main and Hesse (1990) point out that, in addition to patterns of frightening parental behavior, frightened parental behaviors may be “all the less comprehensible to the infant, and most likely seem not only unpredictable as patterns of behavior, but also inexplicable in origin” (p. 176). Main and Hesse theorized that apparent fear on the part of the caregiver provokes dysregulation in the infant, who expects the parent to function as a vital indicator of threat. Neither activating nor inhibiting attachment-related behavior can reestablish a sense of security.

Accordingly, attachment disorganization is thought to reflect the breakdown of organized attachment strategies, and is considered the most insecure form of attachment (Lyons-Ruth & Jacobvitz, 2008). In the SSP, disorganized infants display a variety of odd, unusual, contradictory, and/or conflicted behaviors in the presence of their caregivers (Main & Solomon, 1990). These infants tend to display sequential or simultaneous, contradictory behaviors that appear to reflect fear, apprehension, and/or confusion toward the caregiver. For example, they may seek proximity followed by sudden freezing, or avoid the caregiver while appearing distressed or angry. The movements of these infants are mistimed, misdirected, incomplete or interrupted, and they may appear overtly fearful of their caregivers. All of these behaviors suggest an underlying inability to maintain a “consistent, coherent coping strategy,” and the breakdown of an organized response to stress (Madigan et al., 2006, p. 294). The disorganized infant’s attachment behaviors are distinguished by contradictory behavioral tendencies (Lyons-Ruth et al., 1999). Whether an infant perceives his caregiver as hostile and intrusive, or as frightened and withdrawn, when his attachment system is activated he responds based on the
history of interactions with his caregiver.

Disorganized attachment is a well-established marker for a number of poor outcomes in childhood and adolescence, including aggression (Lyons-Ruth, 1996), personality disorders (Lyons-Ruth, Yellin, Melnick, & Atwood, 2003; Diamond, 2004), dissociation (Ogawa, Sroufe, Weinfeld, Carlson, & Egeland, 1997; Carlson, 1998), affective and dissociative disorders, and psychopathy (Hesse & Main, 1999). Children with a history of disorganized infant attachment are more likely to display oppositional, hostile-aggressive behavior and coercive styles of peer interaction (Lyons-Ruth et al., 1993), and a meta-analysis of 12 studies found a significant association between disorganized attachment and later behavior problems (van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). The incidence of disorganized attachment in infancy has ranged from 13 to 82 percent, depending on the presence and type of family risk factors (Lyons-Ruth & Jacobvitz, 2008). Greater prevalence of disorganized attachment in high-risk samples (up to 77%; Carlson, Cicchetti, Barnett, & Braunwald, 1989; Carlson, 1998) suggests that it is more likely to arise in chaotic and maltreating environments.

Maternal Unresolved Loss and Unintegrated Mental Contents

Identification of the disorganized infant classification led to further investigation into the etiology of infant disorganization and fear observed in the SSP. It was initially thought that many disorganized infants had been abused by their caregivers. This was supported by Carlson’s (Carlson, Cicchetti, Barnett, & Braunwald, 1989) study in which 86 percent of infants in a maltreated group were classified as disorganized, compared to 20 percent of matched control subjects. However, infants from low-risk samples in which abuse was less prevalent continued to receive disorganized classifications. Main and Hesse (1990) observed that the mothers of these infants had a high incidence of unresolved trauma (see also Main & Solomon, 1986). Initially,
‘unresolved trauma’ referred specifically to a lack of mourning in the context of loss, which was manifest when mothers became disoriented by questions about past loss during the AAI. Main and Hesse (1990) emphasized the striking shifts in subjects’ affect states during the AAI, and noted marked lapses in the monitoring of reasoning or discourse during discussion of loss as well as experiences of abuse and other traumas. Main and Hesse argued that the mechanism responsible for the propensity to make conversational/linguistic slips during the AAI is attributable to unintegrated or partially dissociated fear that is aroused by discussion of trauma.

They posited that unintegrated affects related to unresolved loss and trauma, such as fear and anxiety, were incorporated into these mothers’ multiple, conflicting internal working models of attachment. As a result, these affects were reflected in their attachment relationships. Failure to process past loss and/or trauma could perpetuate fear and anxiety within the caregiver. As the intensity of the attachment relationship stimulated the emergence of dissociated fear tied to the mother’s own early attachment relationships, she would respond to her infant’s needs in frightened, threatening, and/or dissociative ways (Hesse & Main, 2000, p. 1117). Fear of the caregiver, they suggested, then led the infant to behave in the incoherent, contradictory ways observed by Main and Solomon. Trauma-related affects could also produce frightening anomalies when these parents interacted with their infants. Main and Hesse identified maternal behaviors that were likely to frighten an infant, either by being directly threatening (e.g. suddenly moving one’s own face very close to the infant’s face; calling infant while assuming a threatening posture), or by indicating fright on the part of the parent (e.g. handling infant with pronounced timidity; withdrawing from infant). A caregiver’s unresolved loss and trauma plays an important role in evoking fear in her infant, and is therefore implicated in the genesis of disorganized infant attachment behaviors.
As a result of this work, Main and Hesse (1990) identified a fourth adult attachment pattern that was termed “unresolved or disorganized with respect to loss or trauma.” This classification is based on Bowlby’s argument that when attention is continuously focused on the attachment figure in the context of total dependence, losing that attachment figure is by definition disorganizing and disorienting (Main & Hesse, 1990). Unresolved loss and trauma foster incoherence in the internal working models of adults in this category, and causes lapses in monitoring or reasoning on the AAI (Lyons-Ruth et al., 1999b). Narratives of unresolved individuals are characterized by significant failures of reasoning or breaks in discourse during discussion of traumatic experiences as well as loss, which are hypothesized to reflect the interference of unintegrated, dissociated affective states or memories (Main & Hesse, 1990). These lapses occur in response to either “spontaneous intrusions from alarming memories or ideation and/or something in the environment idiosyncratically associated with those ideas or memories” (Hesse & Main, 2000, p. 1113). Such responses are thought to reflect frightened or hostile affects tied to their experiences, as well as a failure of defensive strategies (Fonagy et al., 1995; Main, Goldwyn, & Hesse, 2002).

The psychological phenomenon of dissociation and splitting appear to be particularly relevant to intergenerational transmission of disorganization, and indicate pervasively unintegrated states of mind on the AAI. Dissociation entails the maintenance of disparate self and other representations in separate mental “compartments” that are not integrated with one another, yet are available to consciousness in alternation with one another (Lyons-Ruth, Yellin, Melnick, & Atwood, 2005). When the attachment system is activated, traumatized individuals often dissociate, or mentally segregate, affects that otherwise disrupt and disorganize coping efforts. Splitting is a particular form of dissociation, in which “an unconscious process separates
contradictory positive and negative affects, and their related mental representations of good and bad aspects of the other and the self” (p. 6). Contradictory representations are maintained, rather than integrated. Splitting plays a major role in phenomena associated with traumatic childhoods, and with personality pathology, particularly borderline psychopathology. Hesse and Main (Hesse & Main, 2000; Main & Hesse, 1990) proposed that the same mechanisms that leads to lapses and dissociation when discussing loss or abuse on the AAI can also produce frightening anomalies in daily interactions between caregivers and their infants. Therefore, these shifts are thought to disrupt dyadic interchanges, forming the basis for a disorganized attachment relationship (Madigan et al., 2006).

The landmark research of Steele, Steele and Fonagy (1996) provided evidence that caregivers’ mental representations of their past caregiving experiences are relationship-specific, and are transmitted from one generation to the next. Specifically, their research found a significant association between independently obtained AAI classifications of parents during pregnancy, and subsequent attachment classifications of their infants in the SSP. Associations between infant attachment at age 1 and maternal attachment classification, and between infant attachment at 18 months and paternal attachment classification, were shown to be independently significant. This work empirically demonstrated that infants are able to both “discern and represent significant differences in their parents’ states of mind concerning attachment in ways that influence their behavior with each parent” (Steele et al., 1996, p. 553). Relatedly, van IJzendoorn and colleagues’ (van IJzendoorn et al., 1999) meta-analysis showed that 65 percent of parents (in a sample of 854 parent-infant dyads) received AAI classifications that corresponded to their infants’ SSP classifications. In addition, approximately 53 percent of parents who were classified as unresolved had infants with disorganized attachment
classifications.

**Frightened and Frightening Caregiver Behavior**

In their continued efforts to explore the relationship between unresolved loss or trauma and maternal behavior, Main and Hesse (1992, 1995, 1998) developed a coding scheme to systematically describe patterns of frightened and frightening caregiver behavior (FR). The system incorporates six subscales of FR behavior: anomalous frightening/threatening behavior (e.g. looming), frightened behavior (e.g. backing away from infant in a frightened voice), dissociated behavior (e.g. using a “haunted” voice with the infant), sexualized behavior (e.g. sexualized caressing of the baby), disorganized/disoriented behavior (e.g. mistimed movements), and deferential, timid, and submissive behavior (e.g. acting as if control is deferred to baby). The latter subscales encompass behavior that, while not overtly frightening, may reflect a dissociated state and the increased the likelihood of additional FR behavior at other times (Hesse & Main, 2006).

Schuengel, Bakermans-Kranenburg, and van IJzendoorn (Schuengel, 1997; Schuengel, Bakermans-Kranenburg, & van IJzendoorn, 1999) were the first to empirically assess Main and Hesse’s model in a sample of 85 middle-income mothers and their 10-month-old infants (1992; 1995; 1998). They confirmed that unresolved mothers exhibited significantly more FR behavior towards their infants compared to non-unresolved mothers. In addition, maternal FR behavior was marginally associated with infant disorganized attachment, and dissociated behavior predicted infant disorganization more strongly that FR behaviors alone. This relationship was also found in a sample of mothers and their infants in West Africa (True, Pisani, & Oumar, 2001). Abrams, Rifkin, and Hesse (2006) observed the behavior of 75 parents and their children during a play session and found a robust relationship between FR behavior and disorganized
attachment, with dissociative behavior as the best predictor of disorganization. FR behavior has also been empirically linked to unresolved states of mind. In a study of 113 middle-income mothers and their 8-month-old infants, mothers with unresolved states of mind regarding loss or abuse during a prenatally administered AAI were significantly more likely than non-unresolved mothers to display FR behavior when engaging with their infants (Jacobvitz, Leon, & Hazen, 2006). This result was also found in the study by Abrams and colleagues (Abrams et al., 2006), in which unresolved parents engaged in FR behavior more frequently than non-unresolved mothers.

Thus, discontinuity or dissociation of mental contents occurs at the level of mental representation among unresolved parents of disorganized infants. Further, unresolved experiences of loss or trauma affect parenting behavior. As discussed above, disorganized attachment strategies are thought to develop as a function of exposure to the caregiver’s unintegrated fear. Contradictory mental organizations of the unresolved parent are therefore likely implicated in the transmission of disorganized attachment to the infant, referred to by Main and Hesse (1990) as a “second generation effect.”

*Maltreatment and Attachment*

The attachment perspective deepens and extends current understanding of pathways and negative correlates associated with maltreatment, offering an “organizational view of the integrated behavioral, affective, physiological, and representation patterns that are being transmitted from parent to child” (Lyons-Ruth & Jacobvitz, 1999, p. 543). Thus, when an early caregiving relationship is characterized by instability, neglect, or abuse, the child responds with behaviors that reflect conflicting cognitive strategies for having his or her needs met (Main & Hesse, 1990; Main & Solomon, 1990). There is a strong presumption in the literature that
maltreating caregivers are indeed frightened or frightening, and that their representations of attachment can be characterized by a lack of resolution, and by contradictory, unintegrated mental contents (Hess & Main, 2000; Lyons-Ruth & Jacobvitz, 1999). Maltreatment in a caregiver’s history, Lyons-Ruth and Jacobvitz argue, is an antecedent to later disorganized, inadequate caregiving. It necessitates the development of psychological mechanisms that guard against the rage, fear and helplessness that permeated the early life of traumatized mothers. A number of empirical findings currently support the theory that fear generated in the infant by frightening, threatening parental behavior, including abusive and neglectful patterns of interaction, underlies the association between maltreatment by a parent and disorganized attachment.

A growing body of research has shown that maltreated children are at considerable risk for developing insecure and, in particular, disorganized attachment relationships (Cicchetti, Rogosch, & Toth, 2006; Cyr, Euser, Bakermans-Kranenburg, & van IJzendoorn, 2010). Longitudinal data suggests that maltreated infants are significantly less likely to be securely attached than nonmaltreated controls, and are more likely to have disorganized/disoriented attachments to their caregivers from infancy through childhood even when compared to other high risk children (Barnett et al., 1999; Cyr et al., 2010). Maltreatment by a parent has been associated with infant disorganization in both middle- and low-income samples (Carlson et al., 1989; Cicchetti et al., 2006; George & Main, 1979; Lyons-Ruth, Connell, Grunebaum, & Botein, 1990). Specifically, Carlson and colleagues (Carlson et al., 1989) observed maltreated infants in the SSP with their respective maltreating caregivers, and found that 86 percent of the infants were classified as disorganized, compared to approximately 17 percent of matched controls in a low-income control group. Relatedly, Cicchetti and colleagues (Cicchetti et al., 2006) observed
that 90 percent of maltreated infants in their sample were disorganized, compared to 43 percent of low-income controls. In another study, Lyons-Ruth and colleagues (Lyons-Ruth, Connell, Grunebaum, & Botein, 1990) found 55% of maltreated infants and 34% of low-income controls were classified as disorganized in a study of maltreating families receiving home-visiting services.

Prior research has also demonstrated that maltreated children have more negative representations of their caregivers than do nonmaltreated children (Toth, Cicchetti, Macfie, & Emde, 1997; Toth, Cicchetti, Macfie, Maughan, & Vanmeenen, 2000). Stronach and colleagues (Stronach et al., 2011) confirmed that maltreatment has deleterious effects on attachment and on the development of infants’ representational models of their mothers and their relationships with their mothers. Once again, maltreated preschoolers were shown to be significantly more likely to have insecure and disorganized attachment organization compared to nonmaltreated, high-risk preschoolers. In addition, maltreated children expressed global views of the mother-child relationship as “less fulfilling, safe, and reliable” than did nonmaltreated children (p. 142). As discussed above in the section detailing abuse and neglect outcomes, maltreatment is also consistently associated with many of the developmental sequelae of disorganized attachment. Thus, maltreated children are not only more likely to develop disorganized attachment relationships, but also to experience more negative family relationships and have poorer developmental outcomes across domains (Lyons-Ruth & Jacobvitz, 1999). Maltreatment negatively influences internal representations of intimate relationships (Lyons-Ruth et al., 1999a). Further, internal working models of attachment that were once adaptive in the face of early maltreatment can negatively influence subsequent caregiving behaviors (Hesse & Main, 1999; Lyons-Ruth et al., 1999a).
In addition to frightening or frightened behavior, Lyons-Ruth suggested that insensitive or disrupted caregiving might represent an additional pathway by which disorganized attachment relationships develop. Lyons-Ruth and Block (1996) postulated that mothers with severe trauma histories might have adapted to early trauma according to two different pathways, which were evident either in their emotional and physical withdrawal from their infants, or in hostile stances they took towards their infants. Specifically, Lyons-Ruth and Block described increased maternal withdrawal, flatness of affect, covert hostility, and interference with the infant goal-directed activity as examples of such communications. When interacting with their children, women with histories of physical abuse showed more hostile behaviors, while women with histories of sexual abuse were more likely to show withdrawn interactions, characterized by flat affect. While the hostile stance appeared consistent with the work of Main and Hesse regarding frightened and frightening behavior, the data reported by Lyons-Ruth and Block suggested that maternal trauma exposure is associated with a broader range of parent-infant dysfunctional communications. Whether maternal behaviors were active or involved withdrawing from the infant, “the consistent factor was the overriding of repeated and clear infant communications, with little or no attempt to repair derailed interactions” (Lyons-Ruth & Block, 1996, p. 272). Lyons-Ruth asserted that Main and Hesse’s conceptualization needed to be expanded to include both directly frightening behavior, and also a “minimally responsive” maternal stance toward infant affective communication (p. 273).

An instrument, known as the Atypical Maternal Behavior Instrument for Assessment and Classification (AMBIANCE), was developed to integrate this broader range of disrupted parental interactive behaviors (Bronfman, Parsons, and Lyons-Ruth, 1992; 2004) with the frightened and
frightening behaviors from the original system (Main & Hesse, 1992). Specifically, the AMBIANCE was designed to capture a mother’s propensity to display insensitive behaviors when interacting with her infant, and her inability to repair disrupted interactions with her infant. The AMBIANCE contains five dimensions of disrupted behavior: affective communication errors (e.g., contradictory signaling to infant); role/boundary confusion (e.g., treats child as sexual/spousal partner); fearful/disorientation behavior (e.g., appears frightened in relation to the infant); intrusive/negative behavior (e.g., behaves aggressively toward infant); and withdrawal behavior (e.g., maintains interaction at a distance). In addition, the instrument includes a 7-point summary scale for rating the global level of disrupted communication, and categorical classification of mothers as either disrupted or not disrupted.

Using the AMBIANCE, Lyons-Ruth et al. (1999b) found that these atypical parental behaviors were associated with disorganized attachment in a high-risk sample of 65 low-income, disadvantaged mothers and their 18-month old infants. In the SSP, mothers of disorganized infants showed elevated levels of disrupted interactive behavior, and specifically displayed more affective communication errors compared to mothers of organized infants. Disorganized infant attachment behavior was more strongly associated with a broader context of maternal fear-related behaviors than with behaviors captured by frightened or frightening codes alone. Goldberg, Benoit, Blokland, and Madigan (2003) explored the association between disorganized attachment at 12 months of infancy and disrupted maternal behavior in a low-risk community sample of 107 mother-infant dyads. Similarly, they found that mothers of disorganized infants had higher levels of disrupted communication than mothers whose infants displayed organized attachment patterns. Mothers with unresolved states of mind displayed higher levels of disrupted communication, fearful/disoriented behaviors, and withdrawal behaviors compared to mothers
where were not unresolved. Grienenberger, Kelly, & Slade (2005), and Madigan et al. (2006) further replicated this finding.

Thus, Lyons-Ruth and Block (1996) demonstrated that caregivers who repeatedly provoke fear in their infants also tend to be unable to respond appropriately to their infants’ cues. In order for an infant to maintain organized behavioral strategies, at least a minimal level of appropriate parental responsiveness to attachment cues is necessary in order to confirm the infant’s sense of security and modulate his fear. A caregiver who has not received adequate soothing and comfort in relation to her own unresolved experiences must use “a variety of psychological mechanisms to guard against the re-experiencing of the fear, helplessness, and rage associated with earlier trauma” (p. 272). This necessary maternal adaptation impedes the fluid responsiveness expected by the infant in his distress. The caregiver’s need to regulate her own arousal takes precedence over the infant’s needs, a dynamic that renders mother-infant interactions less balanced and less mutually regulated (Lyons-Ruth et al., 1999b, p. 38). Under these relational conditions, mental representations of the attachment relationship become discontinuous and contradictory. Thus, there is an inherent relationship between the experience of unresolved fear, on the one hand, and “the openness of the caregiving system to hear, to respond to, and to help modulate fear-related affects” (p. 38). The authors argue that repeated evocation of fear in the infant is paralleled by the mother’s inability to monitor and respond to attachment cues and related affects. According to Lyons-Ruth and her colleagues (Lyons-Ruth et al., 1999b), maternal failure to respond, failure to repair responses to the infant, and/or insensitive responding, all can prove as frightening to an infant as overtly frightened or frightening behavior. Lyons-Ruth suggests that experiencing an inability to either deactivate or
to increase the activation of attachment cues that otherwise mobilize the caregiver’s response
incites fear in the disorganized infant and causes attachment-behavioral breakdown.

The Hostile/Helpless Relational Diathesis Model

Lyons-Ruth, Bronfman and Atwood (1999a) consistently observed two different maternal
behavioral stances with respect to disorganized infants over the course of their study. Mothers in
the “hostile” group “displayed increased rates of frightening and total FR behaviors, disrupted
affective communication and contradictory, hostile rejecting, as well as role reversed caregiving
strategies” (p. 63). Mothers in the “helpless-fearful” group “combined non-hostile and
superficially responsive behavior with subtle indicators of fearfulness, withdrawal, and disrupted
affective communication around infant attachment goals” (p. 63). Lyons-Ruth and her colleagues
(Lyons-Ruth et al., 1999a) suggested that these two stances derive from a single, unbalanced
“Hostile/Helpless” internal working model of attachment that is shaped over the course of the
caregiver’s own attachment history. Both involve a common underlying conceptualization of the
role of self and other within relationships.

On one side of this model, the caregiver experiences others as malevolent and
threatening, and maintains an internal representation of the self as frightened, overwhelmed, and
helpless. Alternatively, the caregiver adopts a hostile role, while the infant becomes a helpless
victim; in order to preserve the self in a world that is experienced as fundamentally hostile,
others must be dominated. Lyons-Ruth theorized that the hostile stance reflects a sense of
internal malevolence, while the helpless stance reflects a sense of personal inadequacy that
deserves to be victimized (Finger, 2006). Lyons-Ruth and colleagues (Lyons-Ruth et al., 1999a)
propose that the caregiver assumes one or both of these positions in order to minimize her level
of emotional responding to the infant. The caregiver withdraws unresponsively or intrudes
aggressively, avoiding the activation of her own unintegrated memories and affects, effectively protecting the self.

The caregiver’s gravely misattuned responses to the infant’s attachment behavior provoke fear in the infant, who cannot reliably influence his parent’s behavior under stress. The affects evoked within the relationship, related to separation and lack of protection as well as the helplessness or hostility of the caregiver, go perpetually unchecked. Therefore, “hostile-helpless dyadic models are actualized in unbalanced parent-infant relationships in which one partner’s initiatives are elaborated at the expense of the other’s” (p. 37). The caregiver’s unresolved fear impinges upon the attachment system, profoundly disrupting affective discourse between mother and infant, Lyons-Ruth argues. This provokes infant fear and helplessness, and disorganized attachment behavior, signaling the transmission of unintegrated mental contents and contradictory behavioral strategies. This “relational diathesis model” suggests a vulnerability to disorganized attachment in the context of relational trauma. According to the model, caregivers who experience early trauma are at elevated risk for developing hostile or helpless caregiving stances, and for perpetuating disorganized attachment in their infants.

*The Hostile/Helpless Coding System*

Lyons-Ruth developed and validated an interview-wide classification and coding system based on the HH theoretical model. Entitled *Pervasively Unintegrated, Highly Defended/Helpless States of Mind on the Adult Attachment Interview*, the system operationalized the states of mind that can present on the AAI in the context of traumatic history, and is designed to extend the power of the AAI to identify disorganized states of mind in relationally traumatized individuals and at-risk populations. The system identifies HH states of mind with respect to attachment (Lyons-Ruth et al., 2005). As previously discussed, van IJzendoorn’s (1999) meta-
analysis revealed that parental unresolved states of mind predicted only 53% of infant disorganization. Further, receiving the unresolved classification on the AAI requires that subjects report specific instances of loss or abuse in their narrative. Given the limitations of traditional AAI coding, the HH approach to coding examines the entire attachment narrative without focusing on content or relevance to a particular experience, and is not contingent upon the subject identifying specific instances of past loss or abuse, as is the case with the code for unresolved states of mind. Indicators of HH phenomena were identified based on theoretical literature on trauma and attachment, as well as empirical examination of maternal AAI.

The HH classification system assesses the extent to which an individual mentally represents attachment figures in contradictory and malevolent ways, and appears to identify with and thus adopt the characteristics of these figures. The system assumes that a broad range of relational events in early development can lead to dysregulation of fearful arousal, symptom formation, and intergenerational transmission of disorganized attachment. A subject with a HH state of mind positively identifies with the psychological stance of a childhood caregiver, while either globally devaluing the same caregiver or representing the same caregiver as helpless/abdicating over the course of a single interview. The subject specifically identifies with a malevolent (hostile) stance (e.g. “We fight all the time because we're so much alike”), or with having abdicated his/her parental role (helpless stance) (e.g. “I think she was frightened most of the time”), or both. Thus, contradictory mental contents characterize HH narratives. The rapid oscillation between positive identification and global devaluation that is typically demonstrated in HH interviews indicates that a HH subject has relatively simultaneous access to both positive and negative representations, and has not effectively segregated incompatible working models of attachment figures.
The HH system is designed to capture primitive mental states, as well as subjects’ attempts to defend against those states that are typically prevalent in chronically traumatized populations (e.g. splitting). Individuals with HH classifications seem unable to bring contradictions in past or current attachment experiences to a conscious level, which means that they cannot reflect upon them, and as a result, they cannot make sense of them over time. Therefore, interviews of individuals with a HH state of mind are also characterized by efforts to cope with attachment and trauma-related affects that continue to be overwhelming because they have not been processed. These subjects often fail to consciously reflect upon what they feel during interviews. Thus, the HH state of mind is particularly relevant to understanding processes involved in child maltreatment and neglect, and the ways that these phenomena can persist from generation to generation (Lyons-Ruth et al., 2003; Lyons-Ruth et al., 2005). In capturing the most severe and globally apparent representational distortions of interpersonal relationships, researchers can assess specific parental characteristics that are hypothesized to predict infant attachment disorganization. The system has dramatically advanced our ability to predict long term, clinically meaningful outcomes in children (Crawford & Benoit, 2009; Lyons-Ruth et al., 2005; Finger, 2006).

Empirical Support for the Hostile/Helpless Diathesis

HH states of mind are particularly important in understanding the intergenerational transmission of disorganized attachment, and more specifically, the perpetuation of early maltreatment. In a sample of 45 mothers who experienced high rates of childhood trauma, HH state of mind was related to the severity of childhood abuse, and to disturbances in mother-child affective communication, while there was no relationship between maternal unresolved state of mind and abuse severity. HH classification also explained a significant proportion of the variance
in disorganized infant attachment that was not accounted for by unresolved status (Lyons-Ruth et al., 2003; Lyons-Ruth et al., 2005). HH states of mind were also shown to predict infant disorganization above and beyond the unresolved classification in a high-risk, methadone-dependent sample of mothers (N=62) and their 12-18 month old children, compared to a non-addicted matched control group (N=87). In this study, HH states of mind were strongly correlated with disorganized-insecure infant attachment (Finger, 2006). Osbuth and colleagues (Osbuth, Hennighausen, Brumariu, & Lyons-Ruth, 2014) have further demonstrated that HH states of mind, but not unresolved states of mind, are more prevalent among young adults who exhibit punitive interaction patterns with parents.

Byun and colleagues (Byun, Brumariu, & Lyons-Ruth, 2016) found a significant association between HH states of mind and both dissociation and severity of childhood abuse, in a sample of 116 low-income young adults. HH states of mind partially mediated the well-documented association between childhood abuse and dissociation. The significant relation between HH states of mind and dissociation was a new finding, suggesting that the maintenance of pervasively contradictory representations of attachment is implicated in a lack of integration in other areas of thinking. A study of 103 young adults from low to moderate income families was conducted by Finger and colleagues (Finger, Byun, Melnick, & Lyons-Ruth, 2015), in which participants were assessed for HH and unresolved states of mind on the AAI, borderline and antisocial psychopathologies, and childhood abuse experiences. Results indicated that childhood abuse was related to the extent of borderline and antisocial personality features, and to HH states of mind. Further, borderline and antisocial personality features were significantly related to HH states of mind, and HH states of mind mediated the association between childhood abuse severity and later borderline and antisocial personality features. Thus, pervasively contradictory and
unintegrated states of mind regarding attachment experiences play key role in linking past abuse to current personality pathology (Finger, Byun, Melnick, & Lyons-Ruth, 2015).

Recent infant and child maltreatment research has integrated and further validated Lyons-Ruth’s HH system. Milot and colleagues (Milot et al., 2014) found that mothers with HH classifications had been emotionally abused, sexually abused, or physically neglected during childhood more frequently than mothers without HH classifications. Further, 64% of mothers who had neglected their own child received HH classifications. Frigerio, Constantino, Ceppi, and Barone (2013) found that HH states of mind more strongly differentiated maltreating from non-maltreating, socially-at-risk parents than did unresolved states of mind. Barone and Frigerio (2009) also demonstrated higher rates (70%) of HH states of mind compared to unresolved states of mind (40%) in a small sample of mothers with trauma histories who were being monitored by social services for the protection of juveniles. Frigerio and colleagues (Frigerio et al., 2013) evaluated a sample of 67 women, composed of a community subgroup, a low-SES population subgroup (N=20), and a maltreatment risk subgroup (N=15) that included mothers being monitored by social services. Rates of HH classification increased in relation to the risk status of three samples, ranging from 9% for the low-risk sample, to 60% for maltreatment risk sample, to 75% for mothers within the maltreatment risk sample who were documented as having maltreated their infants (Frigerio et al., 2013). Barone and colleagues (Barone, Bramante, Lionetti, & Pastore, 2014) evaluated a number of factors that differentiated mothers who had murdered a child (n = 23) from mothers with mental illness (n = 37), and also from healthy controls (n = 61). After accounting for the variance associated with SES, traumatic events, and mental illness, HH states of mind were shown to uniquely contribute to the prediction of filicide,
while unresolved states of mind did not. HH classification contributed significantly to distinguishing between the mental illness and filicidal groups in the study (Barone et al., 2014).

In a sample of mothers who demonstrated high levels of helplessness and role-confusion when discussing their relationships with their young adult children, both HH states of mind and unresolved loss, but not unresolved trauma, were more prevalent (Vulliez-Coady, Osbuth, Torreiro-Casal, Ellertsdottir, & Lyons-Ruth, 2013). In this study, the HH system captured the parental helplessness that is also associated with unresolved loss. Taken together, research data to date suggest that HH coding extends the power of the AAI to identify disorganized, unintegrated states of mind implicated in hostile and in helpless caregiving behavior and in maltreatment transmission, beyond what is identified by traditional AAI coding.

**Psychic Upheaval in Pregnancy**

As described above, this study will focus on whether there are indicators of maltreatment potential in pregnancy narratives collected two to three months before the birth. Pregnancy is a time of enormous upheaval and transformation, in which representations of past caregiving and careseeking are revived, making it a dangerous opportunity for the intergenerational transmission of trauma. During her pregnancy, a mother-to-be is challenged to adapt to and to consolidate dramatic changes at every level of her experience. Impending parenthood entails considerable psychological reorganization, which calls up internalized representations of self and of others. Thus, it is within a context of pervasive psychological upheaval and transformation that pregnancy activates maternal representations of the mother-infant relationship and caregiving system (Bibring, 1959; Benedek, 1959; Raphael-Leff, 1982; Slade et al., 2008; Slade & Sadler, in press; Solomon & George, 1996). A pregnant woman faces several key tasks, including imagining her baby both as part of her and as separate from her, and beginning to imagine herself
as a mother, and to feel like a caregiver. These reciprocal processes stimulate identifications with
the woman’s own primary caregivers, and she draws primarily upon her experiences of having
been cared for as she develops a representation of herself as a mother. A pregnant woman’s
personality is disrupted as the structure by which she has defined herself prior to motherhood
disintegrates. As a result of this turmoil, her connection to the fetus is therefore experienced as
contradictory, even under the healthiest of circumstances (Bibring, 1959; Slade et al., 2008;
Slade & Sadler, in press). The manner in which a mother-to-be navigates this stage of
psychological disequilibrium has direct implications for her own mental and physical health, and
for the wellbeing of her baby.

Accepting and ultimately incorporating her evolving identifications and internal
representations is fundamental to envisioning herself as the caregiver upon whom her baby will
depend (Slade et al., 2008; Slade & Sadler, in press). The quality of these representations,
whether they are coherent, organized, and balanced, or contradictory, disorganized, and
negatively tinged, directly affects the woman’s experience of pregnancy and of her fetus, and
shapes her representation of herself as a mother (Pines, 1972; Slade et al., 2008; Slade & Sadler,
in press). Therefore, emotions, behavior, and motivation during pregnancy are shaped by
maternal representations derived from a woman’s past attachment experiences (Bergner, Monk,
& Werner, 2008). The quality of maternal representations ultimately determines access to
thoughts and feelings in relation to a woman’s unborn child, which will in turn guide caregiving
behavior (Ammaniti et al., 2006; Cohen & Slade, 2000; Slade et al., 2008; Slade & Sadler, in
press).

In particular, a pregnant woman’s internalized object relationship with her mother is
brought to the foreground. In the transition to motherhood, women’s representation of their own
mothers have long been assumed to relate to subsequent mother-child relationships (Winnicott, 1965) and to the acquisition of maternal identity (Pines, 1972; 1982). A woman reworks her representation of her mother during pregnancy while simultaneously developing a representation of her unborn child and of herself as a caregiver (Stern, 1995). A woman’s relationship with her mother, and more specifically, the degree of her psychological freedom from her mother, plays a central role in pathology that arises during pregnancy (Deutsch, 1945; Pines, 1994). Both Pines and Deutsch held that a complicated history of identification with the internalized maternal object leads to psychologically complicated pregnancy. “The ego of the pregnant woman must find a harmonious compromise between her deeply unconscious identification with the child, which is directed towards the future, and her identification with her mother, which is directed towards the past,” Deutsch wrote, “Whenever one of these identifications is rejected, difficulties and mood disturbance arise. In the first case, the fetus becomes a hostile parasite, in the second, the woman’s capacity for motherhood is weakened by her unwillingness to accept her identification with her own mother” (p. 145). The evolving relationship with the fetus may represent an attempt to establish a relationship that will compensate for the unsatisfactory internalized one with the mother of early childhood. If the woman’s differentiation from her fetus becomes conflicted, she may imbue her baby with a negative identity. Research has shown that a conflictual attitude during pregnancy can predict a higher probability of difficulties in maternal caregiving after the baby’s birth, and increased risks for the interaction between the mother and the infant (Ammaniti et al., 2006; Ammaniti & Tambelli, 2010; Rosenblum, Dayton, & McDonough, 2006).

In order to meet the emotional demands of pregnancy, a woman must weather a partial disintegration of previously established psychical organization, and must be receptive to
regression, reintegration and change. For some women, the experience of becoming a parent can be enormously disorganizing and dysregulating, and can interfere with their capacity to tolerate the developmental crisis of pregnancy (Bibring, 1959). When object or self-representations are predominantly negative, the anxiety, ambivalence, and conflict that reemerge during pregnancy can impede or even prevent the necessary reworking that otherwise lays a foundation for integration (Slade et al., 2008; Slade & Sadler, in press). Under these circumstances, the psychic shifts of pregnancy can provoke a resurgence of unresolved, unintegrated past experiences and conflicts as well as rigid defenses and distorted perceptions, stimulate early fantasies, and revive ‘ghosts’ from the past as well as those in the woman’s imagined future (Raphael-Leff, 1982; Bibring, 1959; Fraiberg, 1975; Slade et al., 2008; Slade & Sadler, in press).

Lyons-Ruth and Block (1990) postulated that motherhood is likely “[impossibly demanding]” for “severely traumatized mothers” who received inadequate parenting (p. 272). Some women develop ambivalent or even hostile feelings towards their pregnancy and/or fetus, as a function of re-experiencing feelings of vulnerability, helplessness, despair or fear (Spinelli, 2003; Pines, 1978). A woman’s history of trauma associated with early attachment figures, and breaches of trust and protection in attachment relationships, may predispose her to struggle when attachment-related affects and identifications are inevitably triggered in pregnancy. Further, the rigid defensive organizations that otherwise prohibit re-experiencing of early vulnerability and distress may impede the necessary adaptations a mother-to-be must make over the course of pregnancy. Indeed, women’s early histories are a most important predictor of outcomes during their pregnancies (Spinelli, 2003). Although disturbances of mother-infant attachment are most often described in the postpartum, these complications can be identified and therefore explored during gestation to facilitate resolution before delivery (Spinelli, 2003). In essence, the antenatal
period is the paramount time for attachment-supportive intervention (Bibring, Dwyer, Huntington & Valenstein, 1961; Spinelli, 2003; Slade et al., 2008; Slade, 2002; Slade & Sadler, in press).

Prenatal Attachment

While postnatal bonding between caregivers and their infants has been the primary lens through which to conduct attachment research and intervention, the attachment relationship begins during pregnancy. In their 2009 review paper, Brandon and her colleagues (Brandon, Pitts, Denton, Stringer, & Evans, 2009) review the history of the theory of prenatal attachment. “Prenatal attachment” refers to process by which a pregnant woman’s psychic energy becomes emotionally invested in her fetus (Benedek, 1959; Benedek & Liebman, 1958; Bibring, 1959; Bibring et al., 1961; Deutsch, 1945). Over the course of pregnancy, the fetus becomes more human to the mother-to-be, ultimately coming to represent both an extension of the self and an independent object (Brandon et al., 2009).

This formulation was initially supported by the work of Kennell, Slyter and Klaus (1970), who observed that mothers whose infants died during childbirth suffered from intense grief irrespective of whether they made physical contact with their infants in the postpartum period. Based on her work as a maternity nurse and researcher, Rubin (1967a, 1967b, 1975) extended this work, attributing the postnatal bond between newborns and their mothers to prenatal processes. Specifically, Rubin (1975) posited that a woman undertakes “pregnancy work” in four broad, interdependent areas (p. 145). These include (1) seeking safe passage for herself and baby, (2) ensuring that the baby is accepted by significant others, (3) “binding-in,” in other words, incorporating the idea of the child into her own system of self and developing a sense of “we-ness” (Rubin, 1975, p. 149), and (4) giving of herself. While Rubin did not conceptualize these
tasks from an attachment theoretical perspective, she described the experience of pregnancy as one during which the mother becomes aware of her fetus, and imbues it with considerable value.

Subsequent theory and research reinforced Rubin’s framework. Lumley (1972) found that women imagine their babies in an increasingly human way over the course of pregnancy. Lumley suggested that prenatal attachment is an “established relationship with the fetus in imagination,” a point at which mothers thought of their babies as a “real person” (Lumley, 1982). Leifer (1977) provided evidence that psychological growth throughout pregnancy and into early motherhood could be predicted by the degree of a woman’s personality integration during the first months of pregnancy. Cranley (1981) offered the first formal definition of prenatal attachment (also referred to as maternal-fetal attachment in the literature) and generated the first scale used to measure prenatal attachment (Maternal-Fetal Attachment Scale MFAS)), both of which focused on women’s behaviors as indicative of “affiliation and interaction with their unborn child” (p. 282). Muller (1990) later revised this definition, emphasizing the importance of thoughts and fantasies as indicative of the growing bond between mother and fetus, and defining prenatal attachment as “the unique, affectionate relationship that develops between a woman and her fetus” (p. 11). According to Muller, a pregnant woman’s own early caregiving experiences form the basis for her internal representations, which in turn influence subsequent attachments to important others. In their review of the literature on prenatal attachment, Doan and Zimmerman (2003) argued that “prenatal attachment is an abstract concept, representing the affiliative relationship between a parent and fetus, which is potentially present before pregnancy, is related to cognitive and emotional abilities to conceptualize another human being, and develops within an ecological system” (p. 110). While Brandon and colleagues (Brandon et al., 2009) point out that a consistent definition of prenatal attachment is lacking in the literature, there is consensus
that prenatal attachment has behavioral and representational dimensions. Simply put, prenatal attachment refers to greater preoccupation with and emotional closeness to the fetus (Laxton-Kane & Slade, 2002).

Prenatal attachment is considered both a developmental task as well as an indicator of adaptation to pregnancy, typically increasing over the course of pregnancy (Alhusen, 2008; Laxton-Kane & Slade, 2002). Research suggests that prenatal attachment motivates good health practices during pregnancy, facilitates adaptation to the role of parenthood, and may serve as a protective factor against perinatal depression (Brandon et al., 2009; Alhusen, 2008). Prenatal attachment is thought to be emotionally protective against the typical developmental challenges of pregnancy, paving the way for a healthy reorganization of a woman’s own early experiences of having been cared for (Bergner et al., 2008; Slade et al., 2008; Slade & Sadler, in press). Poor prenatal attachment has also been associated with fetal and child abuse, a finding that is particularly relevant to this review. In an English sample of 40 women referred by social services, Pollock and Percy (1999) found that “negative preoccupied” antenatal attachment (as measured by the Maternal Antenatal Attachment Scale, MAAS) was predictive of an increased likelihood of symptoms of anxiety, mood disturbance, and depression, self-reported irritation with the fetus, as well as fetal abuse. Given the association between prenatal attachment and positive outcomes, Laxton-Kane and Slade (2002) assert that “interventions to influence prenatal attachment through the mother’s representational models or, preventative strategies,” could be implemented in cases where difficulties in prenatal attachment occur (p. 254).

Empirical Study of Prenatal Representations

A growing body of research has tracked attachment during pregnancy, exploring the quality of caregivers’ representations of their unborn infants (e.g. Ammaniti, Tambelli, &
During pregnancy, most women form maternal representations of their unborn children by the second or third trimester (Ammaniti et al., 1992; Lumley, 1982). These representations are the mother’s internal and subjective experiences of the relationship between herself and her child during pregnancy (Zeanah & Benoit, 1995). Prenatal attachment refers to the extent of the bond that a woman inevitably forms with her unborn child, and the quality of her representation of her unborn child.

Both prenatal attachment and the quality of prenatal representations have been linked to infant security (Benoit et al., 1997; Huth-Bocks, Levendosky, Bogat, & von Eye, 2004a). The Working Model of the Child Interview (WMCI; Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994) was used to conduct this research on maternal representations during pregnancy. Zeanah and colleagues (1994) first developed the WMCI to assess parental perceptions and subjective experiences of their infants and relationships with their infants. This 1-hour long, structured interview asks about a caregiver’s perceptions and subjective experience of their infant’s individual characteristics. A Likert-type scale is then used to assess the interview transcript for qualitative aspects, content, and affective features of the representation. Three major classifications allow for each interview to receive an overall classification as “balanced, disengaged, or distorted” (Benoit, Parker, & Zeanah, 1997, p. 308). Balanced narratives generally include both positive and negative characteristics of the infant, and “convey a sense of the caregiver as engrossed in the relationship with the infant … as recognizing and valuing the infant’s individuality, as empathically appreciating the infant’s subjective experience, and as valuing the relationship with the infant” (Benoit et al., 1997, p. 308). Balanced caregiver perceptions of the infant are also “open to change, can accommodate new information about the
infant and parenting, and convey at least modest details about the infant and the caregiving experience” (Benoit et al., 1997, p. 308). In contrast, disengaged caregiver representations are characterized by “a pervasive sense of coolness, emotional distance or indifference towards the infant,” while distorted representations are distinguished by “an internal inconsistency within the representation of the infant and/or relationship with the infant … the caregiver may seem preoccupied or distracted by other concerns, confused and anxiously overwhelmed by the infant … or may expect the infant to please ore be excessively compliant” (Benoit et al., 1997, p. 308). Thus, WMCI narrative classifications are analogous to the secure, dismissing, and preoccupied classifications on the AAI (discussed above).

In a study of middle class mothers and their 1-year-old infants, Zeanah and colleagues (Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994) found that mothers’ WMCI classifications were systematically related to their infants’ concurrently assessed attachment classifications: Mothers whose descriptions were balanced tended to have securely attached infants, mothers whose descriptions were disengaged tended to have avoidant infants, and mothers whose descriptions were distorted tended to have resistant infants. Benoit and colleagues (Benoit et al., 1997) conducted their study in order to both assess a larger sample, and to assess the stability of WMCI classifications over time – specifically, they assessed the stability of classifications from late pregnancy to 1 year postnatally. This research demonstrated that women with balanced, positive prenatal representations of the fetus (rather than disengaged or distorted representations) were significantly more likely to have securely attached infants one year after birth. Further, several subsequent studies have found that women’s attachment security predicts the quality of prenatal representations of the fetus, and of self-as-mother (Benoit et al., 1997; Frank et al., 1994; Mikulincer & Florian, 1999; Slade & Cohen, 1996; Slade et al., 1995; Zeanah et al., 1993).
Research has also suggested that maternal prenatal representations of the unborn child are related to maternal representations of the child at 1 year of age (Slade & Cohen, 1996; Theran et al., 2005). The quality of women’s prenatal representations, assessed during the third trimester, appears to remain stable into the postnatal period, and is associated with postnatal parenting behavior (Theran et al., 2005; Vreeswijk et al., 2015). Further, positive prenatal representations have been shown to predict parental regulatory ability and infant interaction behavior three months after birth (Thun-Hohenstein et al., 2008).

In related work, Fava-Vizziello, Antonioli, Cocci, & Invernizzi (1993) classified themes identified in mothers’ representations of the baby and of the self-as-mother during pregnancy and at two time points postpartum. Results indicated that a woman’s representation of herself as a mother becomes progressively differentiated from her representation of her own mother over time. This differentiation is coupled with a process of integrating representations of the self-as-mother and the self as a woman. These findings suggest that difficulty elaborating an organized representation of parental function during pregnancy may indicate the absence of a positive maternal model with which a pregnant woman can identify, signaling risk for postnatal mother-infant dysfunction. Therefore, assessing the quality of maternal representations in pregnancy may provide a means to detect risk for parenting problems in the postpartum period, with potential for intervention and improvement when prenatal attachment is compromised.

Ammaniti et al. (2013) assessed maternal representations during the third trimester of pregnancy in a sample of 411 non-risk women, and in a sample of 255 depressed and/or psychosocially at-risk women. Based on their narratives, subjects were classified as (1) Integrated/Balanced, (2) Restricted/Disinvested, and (3) Not Integrated/Ambivalent. Results showed a prevalence of Integrated/Balanced representations in non-risk women, and a higher
frequency of Not Integrated/Ambivalent representations in at-risk women. In studies of the relationship between several maternal demographic risk factors and prenatal representations, mothers’ prenatal representations were more often non-balanced in cases of low income, low socioeconomic status, and single parenthood (Huth-Bocks et al., 2004a), and when mothers had experienced domestic violence (Huth-Bocks et al., 2004a; Huth-Bocks, Levendosky, Theran, & Bogat, 2004b). Not surprisingly, these risk factors were also associated lower rates of infant attachment security at 12 months’ postpartum (Huth-Bocks et al., 2004a). Vreeswijk and colleagues (Vreeswijk et al., 2015) found that parents with balanced representations in both the prenatal and postnatal periods received the best scores on a prenatal risk inventory, while poorer scores were associated with disengaged, rather than balanced postnatal representations of the infant. Malone et al. (2010) investigated the association between maternal history of childhood maltreatment and the quality of prenatal maternal representations during the third trimester of pregnancy. Distorted prenatal representations were shown to be associated with higher rates of self-reported childhood physical neglect. There is also preliminary research indicating that low levels of prenatal attachment may be related to subsequent fetal abuse, but only two studies to date have examined this relationship (Laxton-Kane & Slade, 2002; Pollock & Percy, 1999). In sum, prenatal attachment and maternal representations appear to be predictive of the postnatal bond, and may, in fact, determine the potential for later child abuse or even infanticide (Spinelli, 2003).

Overall, while researchers have explored the relationship between prenatal and some postnatal outcomes, “significant gaps remain in examining the relationship between maternal-fetal attachment and aspects of prenatal care” (Alhusen, 2008, p. 325). Vreeswijk and colleagues (Vreeswijk et al., 2015) call for a focus on outcomes such as early development, parenting
problems, and maltreatment, proposing that future research explore whether parents with “nonbalanced prenatal representations of their children … are more likely to experience parenting problems or to maltreat their children” (p. 610). They also emphasize that while much attention has been paid in the literature to the impact of trauma on infant development, the influence of a maternal trauma history on the prenatal attachment and the representational world of the mother remains understudied. Thus, there is little understanding of traumatized mothers’ internal experiences during pregnancy, and of how the quality of maternal mental life may be related to poor postnatal outcomes. It is our hope that the proposed research will allow an exploration of some of these issues.

**Summary of the Study**

This literature review provided a basis for understanding the context and value of this pilot study, which attempted to develop a prenatal approach to maltreatment risk assessment. Little is known about whether precursors of maltreatment can be detected in the context of the earliest attachment. The purpose of this research was to determine whether Hostile/Helpless states of mind – known to disrupt a woman’s capacity to provide a secure base for her infant -- can be detected in the narratives of at-risk pregnant women, and further, whether these mental states might help clinicians identify child abuse and neglect potential in pregnancy, a crucial time for the development of the caregiving system and caregiving representations. For pregnant women whose experiences of trauma and attachment remain immediate and unresolved, the psychic transformations of pregnancy are likely accompanied by overwhelming affects, and defenses against the activation and identifications that trigger them. Prenatal detection of HH phenomena in their narratives – of contradictions that go unnoticed, of traumatic experiences that are not reflected upon, of intense and untenable fear and rage, or persistent emotional
constriction and denial of vulnerability, and of malevolent or helpless internal representations – may offer a new approach to preventing the transmission of maltreatment. Current systems for assessing pregnancy narratives lack the nuance that is necessary to capture the aggressive, impoverished, and incoherent qualities of severely disturbed representations. This study is intended to fill a gap in the literature, and to thereby improve clinicians’ ability to identify maltreatment risk based on a better understanding of pathological mental states and representations in pregnancy.

Statement of Goals and Hypotheses

This study had three aims:

1. To complete a Hostile/Helpless coding manual for use with the Pregnancy Interview (PI; Slade, 2011), and to establish inter-rater reliability with a second coder.

2. To test the hypothesis that maternal Hostile/Helpless states of mind during pregnancy predict child removal status within the first two years of life in a UK sample, by comparing a sample of pregnancy interviews of mothers whose children were later removed by CPS to a sample of pregnancy interviews of mothers whose children were not removed by CPS.

3. To qualitatively examine the differences that exist between these two groups in the ways that mothers describe their unborn babies, describe themselves as caregivers, and describe their expectations of motherhood during pregnancy.

It was hypothesized that the presence of a Hostile/Helpless state of mind in pregnancy would negatively influence the expectant mother’s mental representations of her unborn baby and of herself as a potential caregiver, therefore increasing the likelihood of infant maltreatment or neglect after childbirth.
Hostile/Helpless states of mind were coded based on a 9-point numerical scale, and interviews that received scores of 5 and above were classified as Hostile/Helpless. Overall scoring took into account the following key dimensions:

1) The degree to which the mother represents herself and her unborn child with hostility, devaluation, and negative affect,
2) The degree to which the mother represents herself or her unborn child as helpless, vulnerable, and overwhelmed by fearful affect,
3) The degree to which the mother’s statements about herself and her unborn child are contradictory and incoherent, and
4) The degree to which the mother is able to reflect upon her feelings when she makes intensely affective statements.

We expected that mothers whose PIs received Hostile/Helpless classifications would be more likely to have had their children removed due to maltreatment within two years of childbirth. Thus, it was hypothesized that the pregnancy narratives of mothers whose children were removed from care would receive scores in the upper range (5-9 on the H-H scale), which describes the degree and severity of the subjects’ Hostile/Helpless state of mind. We further hypothesized that the pregnancy narratives of mothers whose children remained in their care would receive scores in the lower range (1-4 on the H-H scale), which could include mild to moderate levels of incoherence, but would not evidence the specific features of a Hostile/Helpless state of mind.

A growing literature indicates that HH states of mind may be particularly relevant to understanding processes involved in the intergenerational transmission of maltreatment (e.g. Frigerio et al., 2013; Barone et al, 2014). This study has integrated these findings and expanded
upon them, in order to inform preventive, attachment-focused clinical approaches that can be used with at-risk pregnant mothers before childbirth.
CHAPTER 3: METHODS

The current study is a secondary analysis of data collected as part of a randomized controlled trial (RCT) of Minding the Baby® in the United Kingdom, aimed at replicating findings from the original US study (Sadler et al., 2013). The RCT from which the data were drawn for this study began in 2011, and it is being led by Pasco Fearon, a professor at University College London, and supported by the National Society for the Prevention of Cruelty to Children (NSPCC). This multi-site study of the effectiveness of the MTB intervention aims to provide targeted support where UK health and social care systems offer limited services to young families. Each UK MTB clinical team includes two practitioners, a nurse or health visitor and a social worker, who are highly trained and supervised in MTB techniques and developmental approaches tailored for working with vulnerable young mothers. The UK RCT is based on the same relationship-based theoretical model as the US-based study, delivering a flexible model of care designed to match the varying and often complex needs of young, at-risk families. The study uses a two arm design, randomizing at the case level: participants are allocated to either receive MTB services plus treatment as usual, or treatment as usual only. The UK study was approved to recruit a minimum of 200 participants, enrolling 100 participants in each arm.

In this RCT, the primary outcome is the presence (versus absence) of verified child abuse or neglect. Key secondary outcomes include postponed childbearing, maternal mental health, maternal sensitivity, and child cognitive and language development. Study sites are located in York, Sheffield, and Glasgow; researchers at these sites collectively enrolled a cohort of mother-infant pairs (N=132) between 2011 and 2014. When data collection was completed on this cohort, it was discovered that 17% of children in the UK cohort were subsequently removed
from their parent’s care. This study was designed to examine maternal caregiving representations in the mothers of children had been removed.

Sample

The sample for this study consisted of 26 first-time mothers who were enrolled in the UK MTB study. All participants were medically underserved, socioeconomically disadvantaged young mothers and their children. The mothers in this sample lived in low-income, urban as well as remote rural areas. Factors such as chronic poverty, single parenthood, social isolation, poor educational achievement were exacerbated by personal histories of trauma and abuse, interpersonal violence in the home, depression, post-traumatic stress, legal issues, and substance abuse among family members (Longhi et al., 2018).

Primary care physicians, midwives and/or obstetricians referred participants to one of the three MTB sites. Inclusion criteria were that mothers must have been expecting their first child, and either have been 1) age 19 or under, or 2) between ages 20-25 while also eligible for either means-tested benefits, unentitled to employer maternity pay, living in a postcode within the highest quintile of social deprivation as defined by national government statistics, or living in sheltered accommodations (Longhi et al., 2018). Participants were pre-screened for drug use and serious medical conditions, the presence of which precluded their participation. Participants were also excluded from the study if they had a serious mental condition or were found to be active substance abusers. A total of 13 women in this sample had their infants removed from their care by child protective services, while the remaining 13 women did not have their infants removed from care.

Setting
The UK MTB study involved two regional hubs. One was located in Manchester, which is approximately equidistant from the sites in York, and Sheffield, and one was based in Glasgow. All research assessments were coordinated from these two hub locations. Participants were interviewed about their pregnancies by a social work clinician, either in their homes, or in local community settings (such as library children’s rooms or health centers) when they did not wish visits to take place in the home.

Procedures

The Pregnancy Interview was collected as part of the Engagement-Assessment Phase of the MTB intervention. During this phase, which usually takes 4-6 visits, the home visitors first explained the program and obtain consents. In subsequent sessions, the nurse practitioner obtained a health assessment of the mother, and a social worker obtained a psychosocial history of the mother. In a separate session toward the end of this phase, the social work clinician administered the Pregnancy Interview; typically, the nurse was present for this visit. During this clinical interview, which is described in detail below, the expectant mother was asked about her experience of pregnancy and her expectations related to motherhood. These interviews were conducted separately from all other research instruments in the MTB study, which were administered by research assistants.

Measures

The two key measures in this study were the Pregnancy Interview and the adapted Hostile/Helpless scoring system (HHPI).

Pregnancy Interview – Revised (PI) (Slade, 2011): This is a semi-structured clinical interview that contains 22 questions designed to assess a woman's emotional experience of pregnancy, and the nature of her developing relationship with her baby. The PI is administered during the third
trimester, and takes approximately one hour to complete. Questions are open-ended and ask the mother to describe her feelings about being pregnant, and about upcoming parenthood. She is also asked to describe the ways that she thinks about her baby and imagine her relationship to her child, both during pregnancy and once it is born, and to discuss the feelings that arise when she is asked to envision herself as a mother. Participants are encouraged to reflect on their reasons for wanting a child and to describe pleasurable and emotionally difficult moments during their pregnancy, as well as lifestyle changes they have made.

A number of questions are designed to elicit the mother’s prenatal representation of her fetus, for example, asking mothers when they first “really believed” there was a baby growing inside them, whether they feel they have a relationship with their unborn baby (and if so, asking them to describe the nature of that relationship), and what they imagine the unborn baby will be like. Other probes capture the mother’s prenatal representations of herself as a caregiver, as evidenced by the extent of her capacity to identify with and respond to the present and future needs of her unborn baby. The mother is also asked about her own mother and past experiences of receiving care, allowing for assessment of the quality of her representations of her own caregivers. The instrument has been used with a number of clinical samples (see for example Pajulo et al., 2012; Sadler, Novick, & Meadows-Oliver, 2015; Smaling et al., 2015; Smaling et al. 2016).

Each mother’s responses to the interview were audiotaped and then transcribed verbatim. For the purposes of this study, PI transcripts were de-identified and assigned randomly generated ID subject numbers. The principal investigator did not have access to the record that links ID subject numbers to identifying information, nor to child removal status.
The Hostile/Helpless (HH) Coding System (Lyons-Ruth et al., 1995-2005): Pregnancy narratives were assessed for Hostile/Helpless states of mind using an adaptation of the original Hostile/Helpless (HH) classification system designed by Lyons-Ruth and colleagues for use with the Adult Attachment Interview (Main, Goldwyn, & Hesse, 2002). This adaptation of the HH system for the Pregnancy Interview was used to score the interview sample. According to the original coding manual, two key features characterize the AAI protocols of individuals with HH states of mind. First, one or both caregivers are represented as Hostile or Helpless (or in some cases both features are present), and second, efforts to cope with still overwhelming attachment and trauma-related affects are present. Individuals with a Hostile state of mind appear to identify with a malevolently represented attachment figure. Individuals with a Helpless state of mind show evidence of identifying with a helpless or fearful caregiver, toward whom they attempted to adopt a caregiving role in childhood. HH states of mind are rated on a 9-point scale, with a score of five or above resulting in a HH classification. HH classification is linked to specific features of the transcript based on a set of 16 indicators, or frequency codes, that are central to the original coding system. A subset of these indicators is weighted particularly highly in assigning a rating on the HH scale, including instances when the individual globally devalues the attachment figure as malevolent, or refers to the attachment figure as helpless/abdicating, and also goes on to identify with that figure. Other heavily weighted indicators include references to having controlled or punished the attachment figure in childhood, references to having engaged in caregiving towards the attachment figure in childhood, instances of laughing while describing one’s own pain or the pain of others, and any explicit references to past or present fearful affect during the interview. A more detailed description of the original HH coding system is reported elsewhere (Lyons-Ruth et al., 1995-2005, 2003, 2005, 2007). A through description of the
process of adapting the HH classification system for use with the Pregnancy Interview is provided below.

*Phase 1: Adapting the HH Coding System for use with the PI*

The current study is the first to use the HH system to systematically investigate pregnancy narratives. As a result, the investigation was conducted in three phases. During the first phase, the existing HH coding system was adapted for use with the PI. This process evolved based on in-depth study of the original HH system and the theories and research that form its foundation, in conjunction with detailed exploration of pregnancy narratives drawn from the UK sample.

The research team (Madeleine Terry & Arietta Slade) first read a series of de-identified PIs. The team met weekly and discussed prominent themes as well as differences between interviews, working to contextualize their observations within a range of theoretical frameworks. During this period of immersion in the qualitative aspects of the data, the team also read four pairs of interviews. Each pair included one interview of a mother whose child was later removed by CPS, and one interview of a mother whose child remained in her care. Readers were blinded to outcome and were tasked with meticulously reading each narrative, experimenting with different approaches to assessing the quality of maternal representations, predominant affects that emerged, and the extent of each mother’s ability to reflect upon her past experiences. After separately reviewing and then collaboratively discussing these interview pairs, a clear consensus was reached. There appeared to be powerful differences in the ways that these mothers represented themselves as caregivers and represented their fetuses. Further, after a careful and nuanced review of each interview pair, readers were able to accurately identify which interviews...
were conducted with mothers whose children were removed, and to reach a consensus about the prominent features of these narratives.

The team then sought to identify a coding system with the potential to detect the kinds of phenomena that began to emerge during this initial period of investigation. A number of systems that were previously used to code PIs were considered at length for use with this sample, including the Pregnancy Interview Coding System (Slade et al., 1994), the Addendum to Reflective Functioning Scoring Manual for use with the Pregnancy Interview (Slade & Patterson, 2005), the Differentiation-Relatedness Scale of Self and Object Representations (Diamond, Blatt, Stayner, & Kaslow, 2011), and the Mind-Mindedness Coding Manual, version 2.0 (Meins & Fernyhough, 2010). However, Karlen Lyons-Ruth’s Hostile/Helpless relational diathesis model (1999a) offers a theoretical approach developed for use with at-risk populations. In addition, the HH system has the potential to detect mental states associated with trauma, disturbances in attachment, and severe psychopathology. After conducting a preliminary literature review and discussing a number of recent studies that integrated the HH system, the team obtained permission from Dr. Lyons-Ruth to review the most current coding manual. The research team then reviewed the same set of paired interviews, as well as a new set of four additional interviews, grounding this process in the HH model and coding manual.

Based on this preliminary work, the team identified a structural shift that was necessary to adapting the HH system for use with pregnancy narratives. While the HH system was developed for use with the AAI, an interview designed to activate the interviewee’s attachment system, the PI is structured to activate the reciprocal caregiving system that emerges during pregnancy (Solomon & George, 1996). It was determined that the new coding approach should prioritize the mother’s representations of herself and her unborn baby within an imagined, future
caregiving relationship, rather than on the mother’s own childhood experiences of care that are integral to the current HH/AAI coding system. Based on this new goal, a rudimentary coding structure was developed and used to independently code the same set of paired pregnancy interviews. Further discussion and in-depth analysis of the narratives based on this basic coding structure informed an initial set of revisions. The team attended the 2015 Biennial Society for Research in Child Development meetings and met with Dr. Lyons-Ruth and her colleague Dr. Brent Finger. Dr. Finger is psychologist who worked closely with Dr. Lyons-Ruth to develop and validate of the original HH coding manual. He has extensive expertise coding for HH pathology on the AAI, and considerable experience coding AAI protocols using a number of other scoring systems. During this preliminary discussion, key aspects and codes of the HH system were reviewed, project goals were clarified and made more specific, and guidance and specific recommendations for adapting the manual for use with pregnancy narratives was obtained. With the support of Drs. Lyons-Ruth and Finger, it was agreed that the focus of PI coding would center on women’s capacity to envision themselves as caregivers, imagine and identify with their unborn children, and identify with their primary caregivers.

Adaptation of the manual was closely supervised by Drs. Slade and Finger. This supervision and collaboration ensured that adequate validity was established and maintained. The adaptation process was also directly informed by extensive discussion of interview transcripts throughout the reliability coding phase (discussed below). The new coding manual, entitled, An Adaptation of Karlen Lyons-Ruth’s Pervasively Unintegrated, Highly defended/Helpless States of Mind Classification and Coding Manual for the Pregnancy Interview (HHPI), assesses the expectant mother’s evolving caregiving system and her representations of herself, of her baby, of
the father of her baby, and of her own caregivers. The current manual has undergone one major revision, and will continue to be revised and refined based on future research and collaboration.

**Phase 2: Establishing HHPI Reliability**

Once the manual was initially adapted (August 2017), reliability coding began. The research team followed the precedent set by Lyons-Ruth and her team when they developed the HH coding manual for use with the AAI, and a reliability set of 20 PIs was coded using the HHPI system. These 20 PIs were randomly selected from within the New Haven MTB sample. The reliability sample was stratified to include interviews of mothers of insecure (N=10) and disorganized (N=10) infants. This ensured that the research team continued to refine and adapt the manual in the context of disturbed attachment and more severe psychopathology. Two reliability coders (Madeleine Terry and Dr. Finger) were blind to all other sample data. Coders’ qualitative impressions of interviews, the coding process and coding decisions, and implications for manual revision were discussed regularly (typically, approximately every two weeks, or after three to five interviews had been scored by both coders) over the course of three months.

Discussion of these interviews was consistently supervised by Dr. Slade.

The statistics employed to assess reliability were the intraclass correlation coefficient (ICC), which measures the degree of consistency between independent raters, and Cohen’s kappa coefficient, which measures the interrater agreement for qualitative (categorical) items. Lyons-Ruth and her colleagues require an ICC value of .70 or higher for HH level (HH scaled score) for minimum reliability. A kappa value of .65 or above for overall HH classification is also required.

There was strong agreement between the two coders’ HH classifications, $\kappa = 1.00$ ($p < .001$). Further, the ICC (2, 1) for HH level was significant, $r_i = .96$ ($p < .01$). A total of 11 HHPI frequency codes were used to code this reliability set, and some of the codes were later revised or
removed as the manual underwent revision. The ICC could not be computed for one of these codes, because it was not used by either coder. Frequency code reliability coefficients ranged from .64 to 1.00, and all ICC values were statistically significant ($p < .01$).

Once interrater reliability was established for the HHPI system based on this sample, the coding manual was substantially revised. The coding team elected to remove several frequency codes that were found to be extremely infrequent or redundant during reliability coding. In addition, many of the frequency codes were revised, and several new frequency codes were developed and added based on the most prominent and relevant themes that emerged during team discussions. Scoring guidelines were also revised. Drs. Slade and Finger then approved this manual revision.

*Phase 3: HHPI Coding and Interview Analysis*

In the final phase, the HHPI manual was used to code the study sample of UK PIs. All of the interviews (N=13) from the sample of mothers whose infants were removed were included. A total of 13 interviews were randomly selected from the sample of mothers whose infants were not removed from their care. Interview coding and scoring was based on procedural guidelines outlined in the HHPI manual, which are briefly summarized here. Coders were blind to infant removal status. However, it should be noted that within the study sample, a total of three PIs had been administered during the postpartum period. It was evident to coders during transcript reading that subjects had already given birth, although the standard PI questions were asked, encouraging subjects to reflect on their experiences of pregnancy. In addition, a total of two mothers were aware during pregnancy that their infants would be “accommodated,” meaning removed from their care at birth. This, too, was apparent to coders while assessing their interviews. Finally, one PI in the sample was incomplete. Due to the already small sample size,
none of these interviews were excluded from statistical analyses. However, these circumstances pose obvious limitations and created potential for coder bias, particularly given that in two cases, coders were aware of plans to remove the infant after delivery.

Scoring and classifying a PI protocol as HH involves several steps. First, coders read each PI transcript three times, referring to a ‘coding sheet’ designed to help organize their impressions on a number of levels. Coders outlined their earliest thoughts about each narrative after the first reading, when observations were most fresh. Coders also tallied the frequency codes that they assigned, and specified any contradictions in the protocol. Coders then wrote a narrative summary of the interview, detailing their impressions of the subject, and the quality of her maternal representations. Finally, coders designated whether a HH state of mind was present or absent (HH classification Yes/No), and assigned a final HH score (HH Level) for the transcript. Interviews that received a score of 5 or above on the 9-point HH scale were classified as Hostile/Helpless. Within the upper range (5-9), scores varied depending upon the degree and severity of the subject’s Hostile/Helpless mental state. Narratives that showed mild to moderate levels of incoherence, but did not evidence the specific features of a Hostile/Helpless state of mind, received scores in the lower range (1-4).

The principal investigator coded 100 percent of the interviews (N=26) using the adapted HHPI manual. In order to maintain reliability, expert coder Dr. Finger coded over 20 percent (N=6) of the interviews. All interviews in this subset were complete, and the subset did not include interviews conducted in the postpartum period or interviews of mothers whose infants were removed at birth. The ICC (2, 1) for HH level was significant, \( r_i = .99 \) (\( p < .01 \)). Reliability coefficients could not be computed for 5 of 22 HHPI frequency codes, because one or both coders did not use them. Of the remaining frequency codes, significant reliability
coefficients ranged from .78 to 1.00 ($p < .01$). For six of the frequency codes, the ICC value was not found to be significant; five of these codes were new to the manual following its revision, and one belongs to the original set of HH frequency codes. All of these codes will continue to be refined by the research team.
CHAPTER FOUR: RESULTS

The present study combined quantitative and qualitative approaches to data analysis, which will be discussed in the sections below. After a review of the results of empirical analysis of rates of HH and level of HH in the sample, the pregnancy narrative of a mother who did not receive the HH classification (scaled score = 3), and whose infant remained in her custody, will be compared to the HH-classified pregnancy narrative of a mother whose infant was removed from her care (scaled score = 8). The quality of and differences between these interviews will be discussed in detail.

Sample Description

The mean age in this study sample at the time of enrollment in the Minding the Baby® intervention was 19.77 years. A detailed description of the group of mothers whose infants were removed from care is provided below. This level of detail is available because this group of mothers came to clinical attention due to risk of maltreatment, and was closely followed by the clinical team working within the NSPCC framework. It should be noted that the group of mothers whose infants were not removed from custody was drawn from an identical sample of participants, and in fact, likely shares many of the characteristics of group whose infants were removed. However, such data were not available for this investigation.

Additional Data for the Infant Removal Group

A total of 4 mothers were enrolled at the Glasgow site, 5 were enrolled at the York site, and 4 at the Sheffield site, all of whom identified as white, and were of British descent. Most of these women (N=7) were cohabitating with the fathers of their unborn children, 1 woman had some contact but was not living with the father, 2 women became separated during pregnancy, and 3 women had no involvement with the fathers of their infants. Of the 13 women in the child
removal group, 9 endorsed at least one psychiatric diagnosis, including personality disorder, depression, and anxiety symptoms, as well as a generally pervasive, chaotic quality to their lives and daily functioning. Eight of these women reported learning issues, including low cognitive functioning. Further, a total of 4 women reported histories of alcohol and substance use.

Four of the women in this group had been raised outside of their biological parents’ care, including adoption and receiving care from another family member. A total of 4 women had histories of maternal death or abandonment, and 3 others in this group had been in foster care due to histories of sexual abuse or neglect. Overall, 9 of these women reported early childhood trauma, including severe neglect and sexual abuse. In addition, 5 women reported histories of domestic violence in relationships with partners, in particular endorsing that they were controlled by their partners.

The mean age of infants at the time of removal from care in this group was 6.36 months. A total of 2 infants were removed from care at birth, 1 infant was removed at 19 months, and all other children were removed within 12 months of birth. In 6 cases, infants were removed due to neglect or risk of neglect. Circumstances included a case of perceived risk of sexual abuse due to a history of incest in the family, cases in which care was inconsistent and chaotic, one case in which acetaminophen was administered to the infant, and one case in which the infant was dropped off at the hospital. In 3 cases, concerns about risk of abuse led to infant removal. Within this group there were also multiple instances of non-accidental injury to the infant, and observed signs of physical abuse (e.g. bruising). One infant was removed due to additional concerns about the extent of domestic violence in the home, and related risk of exposure and harm. Infants of this group of mothers were temporarily placed in a number of settings following removal, including with maternal grandparents (N=2), siblings (N=1), and adoptive parents (N=1), and in
foster care (also referred to as Kinship Care) (N=9). In terms of final outcomes, 2 of the infants were ultimately returned to their mothers’ custody. However, the majority of these infants were not returned to their mothers’ care. A total of 7 infants were referred for adoption, 3 infants were placed under Special Guardianship Orders (infant is placed with family or friends who are granted legal decision-making powers over the child, rather than the biological parent) and 1 infant continued to reside with a maternal sibling.

Quantitative Results

It was hypothesized that mothers whose PIs received HH classifications would be more likely to have had their children removed due to maltreatment or neglect within two years of childbirth. To test this hypothesis, scaled HHPI scores were compared in removed and non-removed groups. As shown in Table 1, the mean scaled score for the interviews of mothers whose infants were removed (N=13) was 5.7 (SD=1.69). The interviews of mothers whose children were not removed (N=13) had a mean scaled score of 3.5 (SD=1.27).

Table 1.
H/H Scaled Scores by Group Based on Infant Removal Status

<table>
<thead>
<tr>
<th>Infant Removal Status</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>95% CI for Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Removed</td>
<td>13</td>
<td>3.5385</td>
<td>1.26592</td>
<td>.35110</td>
<td>2.7735</td>
</tr>
<tr>
<td>Removed</td>
<td>13</td>
<td>5.7692</td>
<td>1.69085</td>
<td>.46896</td>
<td>4.7475</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>4.6538</td>
<td>1.85308</td>
<td>.36350</td>
<td>3.9052</td>
</tr>
</tbody>
</table>

An analysis of variance (ANOVA) revealed that mothers whose infants were removed from their custody had significantly higher HH scores than mothers of infants who were not removed from their care, $F(1, 24) = 14.500, p < .001$, as shown in Table 2.
Table 2.
One-Way Analysis of Variance of H/H Scaled Score by Infant Removal Status

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>32.346</td>
<td>1</td>
<td>32.346</td>
<td>14.500***</td>
</tr>
<tr>
<td>Within groups</td>
<td>53.538</td>
<td>24</td>
<td>2.231</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>85.885</td>
<td>25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *** p = .001.

In addition, a Chi-Square analysis of independence was performed to examine the relation between HH classification and removal status. The relation between these variables was also found to be significant, \( \chi^2 (1, N=26) = 12.462, p < .001 \), as shown in Table 3.

Table 3.
Results of Chi-Square Test and Descriptive Statistics for H/H Classification by Infant Removal Status

<table>
<thead>
<tr>
<th>H/H Classification</th>
<th>Infant Removal Status</th>
<th>Not removed</th>
<th>Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not H/H</td>
<td></td>
<td>11 (42%)</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>H/H</td>
<td></td>
<td>2 (8%)</td>
<td>11 (42%)</td>
</tr>
</tbody>
</table>

Note. \( \chi^2 = 12.462 \), *** df = 1. Numbers in parenthesis indicate column percentages. *** p < .001.

Therefore, the hypothesis that maternal HH states of mind during pregnancy predict child removal status due to maltreatment in a UK sample within two years of childbirth was supported, as mothers in the child removal group were both more likely to have higher scores on the HH scale, and were more likely to receive HH classifications.

Qualitative Results

In order to better illustrate and understand the ways in which HH phenomena manifest in pregnancy, the PIs of two mothers are reviewed here. This analysis will highlight the particular
features that characterize and distinguish Hostile/Helpless narratives. Prominent themes as well as each mother’s capacity to reflect upon her past experiences so that she is affected rather than defined by them will be discussed. Identifying information has been removed to protect confidentiality.

Jane: A Non-Hostile/Helpless narrative

The pregnancy narrative of Jane, as she will be called here, received a HH scaled score of 3, which indicates that the discourse was relatively well organized. At the time of her PI, Jane was an adolescent, enrolled in school, and 35 weeks pregnant. She was living with her father and sister, both of whom she described as supportive, and whom she expected would be involved in future care of her baby. She stated that although the father of the baby was initially positive about the news, he had become distant and disengaged over the course of her pregnancy.

Jane described herself as a “proud” mother-to-be, giving voice to excitement and anticipation. She demonstrated some willingness to make necessary changes to her lifestyle, such as changing her diet and spending more time resting. She also reported feeling connected to her fetus, describing the sensation of feeling her baby kick as making her “quite happy.” She acknowledged her ambivalence about her changing role (e.g. “I was crying because I didn’t think I’d have my teenage years like everybody else”) as well as her need for family support. Further, she was also forthcoming about her fear of the increased responsibility of parenting:

**I: What do you think your baby will need from you after she’s born?**
J: Attention, em, love, yeah all my attention, she’s gonna need it all.
**I: And how do you feel about taking care of that need?**
J: It’s quite a good feeling actually because you’re knowing you’re responsible for someone. I know that could be like quite scary, but I’m quite looking forward to it, in a way.

In some respects, Jane came across as mature, realistic and hopeful. The coder sensed that this had much to do with strong attachments to her father and sister. Jane described her
father as loving, idealizing him at times, while also acknowledging some conflict with him (e.g. arguing) that was not explained further. While she anticipated an angry response from her father when she told him of her pregnancy, she recalled that “He just gave me a hug. He didn’t put his feelings first or his opinion first, he just put mine. Em, he just said … he would stay by me whatever.” Jane spoke similarly about her sister who was described as a steady, supportive presence, reassuring her when she felt afraid or overwhelmed. At the same time, Jane’s narrative also suggests considerable dysfunction and risk to the caregiving relationship.

Jane had a ruptured attachment\(^1\) relationship with her mother, which had persisted over three years. Jane reported no desire to be in contact with her mother, and she did not offer information about the reason for the rupture, nor did she further explain her own stance:

I: Since you’ve been pregnant what’s your relationship with your mum been like?
J: Hasn’t changed.
I: Would you like to say anything about your relationship with your mum?
J: I just don’t see her, I don’t count her as my mum. It hasn’t changed in the slightest. I don’t think about her anymore or anything so it’s just the same to me.
I: Would you like to say anything about why that is?
J: I haven’t seen her in well, it’ll be three years next year so I don’t know, it’s not like oh god I haven’t seen her, then got pregnant. It’s been the same for three years so it’s not a big surprise now.

The interviewer went on to ask Jane about how she imagined she might be similar or different to her own mother as a parent:

I: Do you think you’ll be the same or in what ways do you think you’ll be different as your mum?
J: Oh, I’ll be completely different.
I: Can you say a little bit about how you think you’ll be different?
J: (Laughs) I won’t lie to them, I’ll be honest and I’ll be there, and just everything she’s not.
I: Anything you would like to be similar?
J: No, not really.
I: The opposite question to that is whether you have any worries that you will be similar in some ways to your mum?

\(^1\) Italicized terms refer to codes in the HHPI manual (Terry, Finger, Slade & Lyons-Ruth, 2018).
J: I worry that I end up like her. Like she’s got mental problems. She’s not mentally stable so I worry it’ll make me like that. I don’t think it will, I think that’s just me panicking and not wanting to be like her.

In this passage, Jane’s laughter at pain was evident, reflecting a mixed strategy of both denying and displaying vulnerability related to painful subject matter. She alluded to her experience of her mother as dishonest, and absent, but did not explain further. Jane then contradicted herself in her discussion of her mother. She made a globalized assertion that she would be “completely different” from her mother, and then when she was asked about any worries she had about being similar to her mother as a parent, she acknowledged her concern that she might, in fact, parent similarly to her mother. Jane had limited ability to represent her mother in a nuanced way. She mentioned her mother’s “mental problems” but, again, did not elaborate, suggesting that she had difficulty contextualizing this information within the broader maternal representation. She was also unable to dismiss the interview question and move on. Thus, the quality of her stance toward her mother reflected a failure to make meaning of the affects triggered by the representation, as well as an inability to integrate them.

In addition, Jane’s relationship with the father of the baby had deteriorated throughout her pregnancy. Overall, this was another maternal representation that was sparse in detail. She was disappointed in him, and generally minimized these feelings. Jane and the father of the baby spoke infrequently, but she maintained some hope that he would be present when the baby was born, and would stay involved over the course of the child’s life.

In addition to the rupture with her mother, another striking feature of Jane’s narrative was that she could not provide a clear representation of her baby, and had marked difficulty imagining her child in the future:
I: Try and imagine what kind of person do you think your baby’s going to be and see if you can give us an idea or a description or a picture that comes into your mind when you try to imagine your baby in the future.
J: Em … really I hadn’t thought about it before.
I: That’s ok, don’t worry.
J: Em … I don’t have a clue.
I: Not sure?
J: No.
I: Do you ever imagine beyond a baby, like what she might be like as she starts to get a bit older?
J: Yeah but I can’t ever imagine it, I think about it, but I can’t imagine it.

Throughout the interview, Jane’s representation of her unborn baby was vague at best. She tended to be concrete, and was able to focus on what the baby needed currently, for example, healthy nutrition and a peaceful environment. Despite supportive encouragement and probing from the interviewer, Jane struggled throughout the narrative to offer any representation of the baby. While it is not uncommon for subjects to have initial difficulty with questions that invite them to imagine their unborn child within the first few years of life, Jane’s inability to represent her unborn child was notable.

Nevertheless, despite the fact that Jane appeared to be struggling considerably with the transition to motherhood, her PI did not meet criteria for HH state of mind. Her narrative showed evidence of some HH features, but was largely integrated, and devoid of stark contradictions. She was consistent, coherent, and adequately focused on her pregnancy. Jane had some difficulty managing the emotional contradictions that are inherent to pregnancy, but was intermittently able to reflect on her experience, and on the affects brought about by this transformative time.

Tending to dismiss and/or minimize her distress, Jane’s defenses appeared to be organized and relatively stable. Overall, she demonstrated a consistently integrated state of mind, with one or two significant lapses into a less integrated position. Therefore, the content and structure of Jane’s narrative do not evidence a HH state of mind. This is not to say that the areas of risk
identified by the PI, notably the rupture with her mother, and her strikingly sparse representations of her unborn child, were insignificant. They undoubtedly point to vulnerabilities that increase the risk of an insecure parent-child relationship. They do not, however, indicate the level of disruption and risk associated with a HH classification.

Mary: A Hostile/Helpless narrative

Mary’s pregnancy narrative received a HH Level score of 8, and reflected a mixed presentation of both helpless and hostile features. Her infant was removed from care at 10 months of age, and was ultimately adopted rather than returned to Mary’s care. Mary was 23 years old, unemployed, and 35 weeks pregnant at the time of her PI. She was living alone in an apartment provided by supportive housing, and she had minimal contact with the father of her baby. She also mentioned a current romantic partner who was present in her life, but whom she did not expect to help her care for her baby; she stated that he had agreed to “guide her” but would not help her “look after the little one.” Mary reported that she would take care of her baby “on her own,” although her father planned to visit and help once per week.

As a general qualitative observation, it should be noted that during this PI, Mary did not attempt to elicit the coder’s agreement with her view of her experiences. Instead, there tended to be a final, closed quality to Mary’s statements about being cared for, and about caring for her baby, even as she demonstrated notable preoccupation with these topics. The coder also had the impression that Mary was leaving out some of what had happened during her pregnancy, and what transpired during her childhood.

Although she had made some healthy changes to her lifestyle, Mary began the interview reporting with resentment that she had to eat healthily because her mother “won’t let [her] do anything else.” Mary also noted that the typical insomnia she was experiencing was distressing
to her. Even at this early juncture in the transcript, the coder had a sense that Mary was feeling constrained and overwhelmed by her pregnancy. Next, Mary reported that she “took 12 pregnancy tests to be sure” that she was indeed pregnant. While repeating at-home pregnancy tests is common, Mary’s behavior struck the coder as extreme, and foreshadowed a level of denial that ultimately pervaded the rest of her interview.

Mary informed the interviewer that she had a history of multiple miscarriages, since as early as age 15, and also stated that she was diagnosed with a gynecological condition at age 18 that led her to believe she would have future difficulty conceiving. Although she did not provide additional detail, she referred often to the traumatic experience of having miscarried several times in the past, and mentioned acute, current anxiety about another miscarriage or other pregnancy complications that was understandable given her reproductive history. Mary reported that early in this pregnancy, “I thought I was going to lose it again.” Mary’s use of “it” to describe the fetus was coded, here, as a correlate of dehumanizing imagery and language. This code denotes instances in which the mother imbibes the fetus with a negative identity as a result of a conflictual attitude during pregnancy, and an inability to manage such internal conflict, which leads to intolerable affects including rage, hate, loss, or fear. Mary also mentioned that her mother as well as a friend of hers “didn’t believe” that she was pregnant when she shared the news with them, after which she exclaimed “‘Told you!’ Trying to rub it in her face and everything.” She went on to describe feeling “happy” when her pregnancy was confirmed, believing that this “proved those bloody doctors wrong” who had informed her that her chances of a successful pregnancy were low. This juxtaposition of subtle aggression with vulnerability and fear was typical of Mary’s discourse.
An early contradiction emerged as Mary described her emotional experience of her pregnancy. She stated she had “not been depressed in pregnancy,” describing herself as feeling “on top of the world, no one can bring me down.” She was then encouraged to expand on this topic:

I: Are there any other good feelings you’ve had?
M: I’m just looking forward to getting him out now. *(Laughs).* I actually want to meet him now. I want him out.

I: So looking forward to meeting him?
M: Yeah, I want him out. I’ve had enough of this pregnancy now, ha ha!

There was an empty quality to her initial description of feeling positive about the pregnancy, and she began to make comments that suggested considerable difficulty tolerating the pregnancy. The coder also noted laughter at pain in this passage, when Mary laughed about a situation that she experienced as painful. In doing so, she was likely distancing from inherent discomfort and making light of this context. Mary was then asked about more difficult feelings, and she reported, contrary to what she had just stated, that she had “a really, really bad depressive stage” approximately 2.5 months into her pregnancy:

M: I was just like you know what, I want to get rid of him. Well, get rid of it, I don’t want him … I can’t do this, coz I was so low and depressed in myself and just a mixture of things of everyone letting me down, and it just kind of got on top of me and I just felt like nothing was worth living, and why should I bring a kid into that sort of situation … I just wanted to kind of do myself in”

I: And why do you think you felt like that then?
M: I’ve been let down so much in my life, I didn’t really want the same for my kids.

Mary went on to make contradictory statements about her pregnancy, herself as a caregiver, her unborn baby, her own caregivers, and the father of the baby over the course of the transcript, with little awareness of the need to reconcile these discrepancies, and with little effort to do so. In this passage, Mary introduced disappearing imagery and language that would recur throughout the interview. We theorize that the use of language or imagery related to ending her
pregnancy and/or “getting rid” of her baby signaled the presence of a fantasied, pretend state in which Mary’s fetus did not exist for her, psychically. This seemed to be necessary for Mary to cope with the barrage of affects she was currently experiencing. In the above passage, Mary also referred to suicidality early in her pregnancy, and this was noted by the coder as an instance of self-destructive thoughts and behavior that often arise in the context of HH narratives. Mary’s description of her emotional experience at that time represented an isolated moment during this PI when she was more forthcoming and insightful about the depth of her emotional pain.

Mary also made a number of comments during the interview that reflected a sense of special badness or unworthiness that is typical of the HH presentation. She referred to herself as “a stupid hormonal cow,” “blubbery my eyes out like a baby,” “causing an argument and then I end up being tears … it’s my own fault for being so stupid, trying to cause an argument.” Mary added that she tended to “just sit there and babble on to [my support workers] about anything and everything, and I probably do their head in half the time.” These remarks likely belied the internalization of a global, devalued representation that had been carried into adulthood, and thus into her pregnancy. Further, as the transcript continued, it was apparent to the coder that Mary continued to “buy into” this sense of badness or unworthiness, with the presumption that she deserved to feel that way (Terry et al., 2018, p. 51).

Mary’s denial of her pregnancy was frequently evident. The denial of pregnancy phenomenon is inherently linked to dissociation (Spinelli, 2003), acting as a “shut-off mechanism” that can prevent overstimulation and flooding by excessive incoming stimuli, or painful or intolerable experiences (Terry et al., 2018, p. 38). For a woman like Mary who denies her pregnancy, the pregnancy itself is thought to be a reality so unacceptable that it cannot be integrated into her representational world. As she recalled taking 12 pregnancy tests, she stated,
'I didn’t believe it. I was like no, no, no, I’m not. I’m not believing that, no, not happening!’” She went on to report that the pregnancy still “doesn’t seem real” to her, then in her third trimester. She described her experience of her 12-week sonogram: “I was just like this is not happening, this is not real … but it just seemed like I was watching someone else’s baby in the womb, sort of thing, someone else that’s going through it, rather than me, I was just like this isn’t real.” Encouraged to elaborate, Mary added, “I just can’t quite believe I’m almost a mum and it just doesn’t seem real, it still doesn’t feel real … still feels like a dream. (Laughs). So, it just feels like someone else is going through all this, but yet I’m getting the feeling of it.” The interviewer then asks the following:

I: So what would you say, is it that makes you not quite a mum?
M: Just the fact he’s not here yet … he’s not out yet, so and it’s like I’m trying to get used to the fact of like, basically convincing myself I’m a mum, no matter what happens, because either way he’s going to be coming out, whether he comes out alive or the worst way possible, but either way, no matter what, I’m going to be a mum now, whichever way it turns out. So, but it just doesn’t seem real and it’s like convincing myself even when it comes to this … Oh god! It’s moving about again, ha ha! (Referring to fetus)

In this passage, there was evidence of continued denial of pregnancy, as well as marked fear, and a grappling with the imminent transition to motherhood that led to additional disappearing imagery when she mentioned “whether he comes out alive or the worst way possible.” Here, Mary’s expectable anxiety and stress related to losing the pregnancy, based on her history of miscarriages, was difficult to distinguish from unchecked fear and dread that likely shaped this striking remark. Mary’s internal experience was so threatening that she may have been, in part, managing her internal conflict about the pregnancy by resolving to rid herself of her baby on an unconscious level.

Particularly during the first portion of the narrative, Mary made numerous references to fear-inducing situations, her sense of “panic” about the pregnancy, and her concern that there
might be a complication. This is typical of a primarily helpless HH presentation. When asked explicitly about worries she felt about the baby, Mary denied such fears, and instead focused on concerns about whether she would be “a good mum,” and whether she would “be able to cope” with motherhood. She wondered, “Am I going to be able to adjust to a new change that I’m not used to? But I seem to be fine with everyone else’s kid, coz you just hand them back, but it’s different when it’s your own (Laughs).”

Mary’s narrative was rife with contradictions and uncertainty about her relationship with the father of the baby, informing a fragmented internal representation. She had difficulty recalling telling him about her pregnancy, but noted that she informed him by taking the image of the first sonogram and “shoving it under his nose.” The coder had a sense that their relationship was conflictual, noting several instances of coercive behavior on Mary’s part. Coercive behavior includes behavior such as physical fighting, inflicting verbal abuse, or oppositionality. During childhood, coercive behavior is an important antecedent to disorganized attachment, and the adapted HHPI manual directs coders to capture instances of coercive behavior during pregnancy given this significance. Mary was generally unclear about the extent to which the father would be involved in her baby’s life, which appeared to cause her considerable anxiety. One the one hand, she stated that he told her he would “stick by [her]” if she kept the pregnancy, and on the other hand, Mary noted that he had been uninvolved throughout the pregnancy and had no desire to change his level of involvement. The one instance of blocking out in the narrative also arose in the context of the baby’s father, when Mary stated “I try and avoid speaking to him now because all he does is stress me out … unless I really, really need to speak to him about something I try to ‘he’s not existing’ sort of thing.” This comment indicated that Mary was using mental manipulation, and was consciously attempting to
suppress her memory and emotion about the baby’s father, revealing a division of her mental agency in the process. This code helps to index dissociative processes in the transcript.

While assessing maternal representations in this PI, it was the coder’s impression that Mary was not trying to understand or make sense of her experiences of being cared for, or her current experience of becoming a caregiver. This was too frightening and activating for her.

Mary’s representations of her caregivers were striking. Some detail about her relationship to her father was provided when Mary described his negative reaction to the news of her pregnancy. She stated that her father had urged her to “get rid of it coz it’ll only wreck your life,” which led to a 2-month period of not communicating with him. Mary reported that she initiated this break in contact: “Let’s put it this way, if he’d been stood in front of me he would have ended up getting punched or slapped or something (Laughs). I was at the point of actually wanting to disown him there.” This description included further coercive behavior, and while the rupture with her father did not receive an official code in this circumstance, the narrative reflected Mary’s attempt to manage the malevolent representation of her father by cutting herself off from contact with him. Mary later offered an identification with her father, whom she characterized as angry and impatient. The coder did not learn about specific abusive behavior inflicted by her father, and thus this response was not coded as an identification with a hostile caregiver.

However, it was still a notable aspect of the constellation of Mary’s caregiving representations:

I: Are there things you’re afraid you’ll do as a parent, perhaps that your parents did that you’re afraid you might do?
M: Not having enough patience, losing my temper quite quickly … my dad … he was one, and unfortunately I do take after my dad, so I’m worried about that, I’m not going to have enough patience. Worried I’m going to turn out like my dad and I’m going to lose my temper and I can’t afford to do that.

Mary’s representation of her mother is globally helpless and abdicating:
M: “I’ve always said right from day one from when I was with my mum that I’d never, ever turn out like her, in the fact of letting me down and not really sticking to what she says and then saying one thing and meaning something else and I was just like yeah, enough’s enough! Ha ha!”

I: **Ok, so in what ways do you imagine you’ll be like your mum as a parent?**

M: More the fact I’m getting lazy, but I think that’s because I’m getting towards the end of my pregnancy … just not really wanting to go out or do much or do anything, I just want to have a rest all the time and lie down and let everyone else do everything else.

In this response, Mary also endorsed an identification with her abdicating mother. She described her mother as generally unsupportive. However, later in the narrative she referred to her mother as the person she would be most likely to call if she needed help. She stated that her mother was better able to pay her some attention when they spoke by phone, although Mary could rarely afford the expense of calling her mother, who lived some distance away. When she and her mother were actually able to see one another, Mary stated that her mother paid more attention to her pets than she did to Mary. Mary also added that since about 3 months into the pregnancy, she had felt “closer” to her mother, stating “she knows what I’m going through, knows how hard it is.” The quality of the current relationship with her mother remained vague, however, and did not extend beyond statements such as “we’re closer.” Mary reported additional concerns:

M: I’m worried that I’m going to turn out like my mum … I know it’s hard having 2 kids under 5, but all through growing up, I just felt like I was the one that was always left out, that I didn’t really have as much as my sister, and I should have had more, and I didn’t have the attention to what my sister had … she was a special one and I just got replaced and thrown aside sort of thing, and I didn’t matter anymore … I had to fend for myself… so it was absolutely horrible … since that, really I’ve just been worried I’m going to turn out like that, and I don’t really want to be like that.

Her representation of her mother deeply informed the representation Mary had of herself as a caregiver. For example, Mary wondered, “Am I going to be able to do everything right? … am I going to be able to actually be up and be there for him to how he needs me to be, rather than just be like how my mum was and left me to cry myself to sleep?” In attempting to differentiate
herself from her mother as a parent, Mary also asserted that she would “get the baby lots of toys to keep him occupied.” In so doing, she in fact aligned with her abdicating mother, and defaulted to identifying with a passive, withdrawing caregiver.

Mary’s representation of her unborn baby was perhaps the most complicated and conflicted. She had considerable difficulty articulating the relationship she had with her fetus, which ultimately led to a pathological comment about the baby “coming out one way or another,” and which likely also contributed to her experience of the unreality of the pregnancy. Her representation of the baby was entangled with her projections about the baby’s father, and Mary described the baby as “the double of his dad,” with “hardly any of me in him,” effectively distancing herself further from the fetus. When queried, the “wishes” she had for her unborn baby centered on discipline and addressing bad behavior; she hoped the child would “do what he’s told, not be naughty, do what he’s supposed to do … doing as I want him to do really, rather than doing the opposite.”

I: Have you got a little idea or a picture in your mind of what he might be like?
M: Stubborn, naughty, playing up all the time, not listening, disobedient, erm, eating junk food.
I: So why do you think that idea or picture comes into your mind when you think about your baby?
M: Mainly because of the pregnancy that I’ve had so far with him, and the fact that he’s been the way he has been. Being stubborn and kicking about and making it hurt, and making me crave all sort of crap that I don’t really want to eat, and then making me feel rubbish because I’m not really sort of persisting and saying “no,” not having that … he just wants crap and it’s horrible coz I don’t want him to have that.

This passage exemplifies the unreasonable attribution of mental state to the fetus code, which indexes a lack of appropriate differentiation from the fetus and raises concerns about enmeshment. When Mary attributed stubbornness and negative intentions to her fetus, she failed to retain her grasp on the fetus’ true capacities, and ultimately blurred the boundary between self and other. During pregnancy, this enmeshment is pathognomonic.
Importantly, Mary showed clear evidence of current, helpless caregiving behavior related to her unborn baby when prompted to discuss the baby’s future needs:

**I:** When the baby’s here, what will baby need from you after he’s here?
M: A calm environment. Chilled out. Loads of cuddly toys to keep him occupied and stop him crying when he’s just not really wanting anything he’s just crying for attention or because he’s bored or wants a cuddle or something. Try and keep him occupied with something.

**I:** How will you feel of taking care of all the different things that he may need?
M: I feel like it’s going to be bliss … but I know that it’s going to be a lot harder when he’s here … everyone tells me … you’ll be wishing that he’s back inside you when he’s out!

Again, Mary struggled with the threat of her baby’s arrival. Perhaps most striking here was Mary’s abdication of parenting responsibility to stuffed animals and other distractions that she imagined could soothe her baby. Mary was egocentric in her discussion of her current relationship with her fetus. For example, she mentioned a wish that her baby “not be clingy … oh god, I couldn’t do with a clingy kid.” Mary also remarked, “I don’t really see much of me in [the baby] apart from when, well, I wouldn’t say asleep, because I can’t tell when he’s asleep and when he’s awake, but when it seems like he’s asleep or resting or something, when he’s just laid still and he’s not bugging me and moving about or kicking (Ow! That was my rib again!) … when he’s actually settled down is when I actually see me in him really, because I’m more of a settled person.” Taken together, these comments pointed to a *hostile caregiving stance in pregnancy*, from which Mary made multiple references to feelings of resentment, bitterness, and dread in relation to her caregiving role and caregiving representations. She felt most identified and aligned with her fetus when the fetus was not making itself known. This theme continues:

**I:** So why do you think you’ll be happiest then, when he’s [crawling]?
M: Just the fact that really I’m not going to have to … well I’m going to have to keep an eye on him, but not as much, sort of thing. He’s going to be a little more sort of, he can do his own sort of thing and not cry as much and being so dependent on me and I suppose. Probably the fact that he’s not going to need me as much as what he would do when he’s only a few days to a couple of weeks old. He’ll be able to go a few hours
without a feed, like between one from the next, and sleeping a little bit longer, and giving me more of a break.

When Mary was asked what she anticipated being most difficult in the postpartum period, she spoke about the phase when her infant would be teething, which is a common response to this PI question. As she elaborated, she stated:

M: I’ll get so stressed out with it (teething) and I don’t really know how I’m going to deal with it. Just the screaming and screaming constantly and not having a break. (Laughs).

I: So the screaming will be the hardest.

M: Yeah. I can deal with the crying, it’s the proper screech that goes through you, coz when I’m on the bus and there’s babies screeching and I’m like ‘will you shut the bloody baby up please’ … now going through the pregnancy it’s like maybe it’s not as easy as what I actually thought to shut a baby up … it’s a lot harder.

While she may have made light of or tried to create distance from her own pain, which was not directly stated, the discourse suggested that Mary was struggling profoundly. She was overwhelmed by memories and affects related to past experiences of receiving care, and her current experience of becoming a caregiver was disturbed and distorted as a result.

Mitigating factors in Mary’s case included her assertion that she did feel connected to her fetus, often talking to her stomach despite family and friends dissuading her from that behavior; she asserted her conviction that “Yes, he can hear me.” Mary gave voice to hope that she could give her baby a better life than she had had. Mary also mentioned, in the midst of a number of deeply conflicted relationships, that her sister was consistently supportive when Mary reached out to her in moments of vulnerability. Mary showed some appealing psychological-mindedness at times, but it was rare in her interview. In addition, she reported some openness and desire to change, to provide care differently than her parents did, and she engaged in some brief moments of struggle or reflection about her experience and her feelings. These moments were not, however, integrated with the rest of her discourse.
“It’s a nightmare. The amount I’ve gone through is doing my head in, and I’m still going through them,” Mary remarked, part way through the interview. This comment begins to capture the extent of the disorganization that characterized her state of mind with respect to caregiving, and to attachment. She continued to be overwhelmed by her early experiences of primarily abdicating and intermittently hostile caregiving, and by related affects that had been exacerbated during this pregnancy. The coder was left with a range of powerful imagery, but one specific image that continued to linger was of Mary, alone at her 12-week sonogram, afraid, angry, and “wanting to cry” after the father of the pregnancy failed to show up. It is no wonder that Mary was eager for her pregnancy to end, given the extent of this inner turmoil, and at the same time, she was utterly unprepared for motherhood and for caring for her inherently needy, vulnerable baby.

In sum, Mary’s discourse was often tangential and disorganized, and throughout her narrative she appeared intermittently dysregulated and easily overwhelmed. This PI evidenced a clear constellation of HH phenomena, including contradictory and unintegrated mental contents, intense affectivity with little reflection, pathological representations of herself as a caregiver, of her unborn baby, of the father of the baby, and of both of her own caregivers, in the context of clear past and ongoing HH relational patterns.
CHAPTER FIVE: DISCUSSION

The overall goal of this pilot study was to determine whether HH states of mind could be reliably detected in the narratives of pregnant women whose children were later removed by child protective services. The study confirmed that maternal HH states of mind during pregnancy – measured both categorically and continuously – were strongly associated with infant removal status due to maltreatment in a UK sample within two years of childbirth. A qualitative analysis of the Pregnancy Interviews of two mothers – one with a HH classification, the other without – provided a deeper look at the quality of representations and reflection in these two groups of mothers. These findings both add to the literature linking parental trauma and inflicting child maltreatment, and extend its reach into the prenatal period.

Revisiting Fraiberg’s hypothesis: The fate of affects in childhood

Fraiberg and her colleagues (1975) sought to determine the mechanism that underlies parental repetition of a traumatized past in the relationship with the child. They asserted that the “presence of pathological figures in the parental past will not in itself predict identification with those figures and the passing on of morbid experience to one’s own children,” and posited that there might be “other facets in the psychological experience of that past which determine repetition in the present” (p. 194, p. 166). Based on their work with severely traumatized mothers, Fraiberg and her colleagues hypothesized that parents who repressed the terror, helplessness, and suffering they had experienced at the hands of their own caregivers had learned to mobilize “a form of repression … which [provided] motive and energy for repetition” (p. 194). While some of their adult patients could recall memories of abuse and neglect, they appeared to have isolated associated affective experiences that they were unable to remember. The function of this repression in childhood, Fraiberg argued, was to enable identification with
hostile, betraying, and aggressive caregivers, and thereby defend against overwhelming affects chronically triggered by maltreatment. At the time, these researchers were less clear about another subset of their patients. “Some children who later become parents keep pain alive,” Fraiberg wrote, “they do not make the fateful alliance with the aggressor which defends the child ego against intolerable danger and obliterates the conscious experience of anxiety” (p. 196).

Fraiberg’s remarkably vivid and astute observations suggest that the mothers she and her colleagues worked with were distinctly similar to those in the current study sample – namely, mothers with Hostile-Helpless states of mind.

The Hostile/Helpless relational diathesis model and coding system lie at the heart of this exploratory investigation (Lyons-Ruth et al., 1999a; Lyons-Ruth et al., 2005), providing an ideal theoretical framework for analyzing the pregnancy narratives in this sample. Our pilot study took a new approach to exploring antecedents of abusive and/or neglectful caregiver-infant interaction by focusing on the developing caregiving system during pregnancy. Reciprocal and complementary to the infant’s attachment behavioral system (Bowlby, 1982, 1988), a woman’s caregiving system predisposes her to protect and care for her infant (Solomon & George, 1996). Becoming a mother, a process that is framed by emerging representations of caregiving and also inextricably linked to the attachment system, appears to be particularly fraught and precarious for women with HH states of mind. During pregnancy, a mother-to-be who has suffered relational trauma is likely to be besieged by intense, trauma-related affects and memories of dysfunctional caregiving, while she herself prepares to provide care. This psychic turmoil exerts detrimental effects on the mother-infant system, can impair the mother’s investment in her relationship with her unborn child, and confers considerable risk to the postpartum period. Taken together, the results of this investigation suggest that pervasive, unintegrated maternal HH representations
may constitute the mechanism by which a mother’s trauma and related disorganization are transmitted to her child. Further, this study demonstrates that HH states of mind are detectable in pregnancy, and can profoundly bias the mother’s relationship to her unborn baby. This is significant given that, beginning with Fraiberg’s groundbreaking work and culminating in a body of mother-infant attachment research spanning three decades, this level of pathology and maternal dysfunction has been exclusively identified after the birth of the child. Identifying HH pathology prenatally, through the assessment of the mother’s developing caregiving system and related maternal representations, can inform a new approach to addressing this level of pathology, with the potential to prevent adverse and potentially disabling outcomes for both mother and infant.

*Theoretical implications for pregnancy and parenthood*

It has been well documented that, for all women, the preparation for motherhood is imbued with “stress in all areas: in the endocrinological changes, in the activation of the unconscious psychological conflicts, and in the intrapsychic reorganization of becoming a mother” (Bibring, 1959, p. 116). The mother-to-be must adapt to the circumstances of her pregnancy, and become open to unconscious representations and processes that have otherwise been defended against prior to pregnancy. Under healthy circumstances, during her pregnancy (and childbirth, and throughout infancy) the expectant mother adopts a mindset that centers on the presence, health, and protection of her unborn baby, the connection she feels to and from her unborn baby. And yet she must tolerate a destabilizing process of psychic restructuring in order to assume this new orientation to caregiving.

That process is exceptionally challenging for women who have survived early and/or relational trauma such as maltreatment, and are therefore more likely to evidence HH states of mind (Lyons-Ruth & Block, 1990; Pines, 1978; Spinelli, 2003). The typical psychological
demands, contradictions, and disturbances that are inherent to pregnancy are amplified and disordered in the context of trauma. In the prolonged absence of felt safety, trust in others, positive self-esteem, and supportive relationships, a traumatized mother-to-be is likely to feel that her body has been invaded, and that she is increasingly helpless, angry, and/or out of control. The physical challenges of pregnancy (e.g. morning sickness, weight gain, sore breasts, the sensation of the fetus moving within the body), and in addition, the pain of childbirth or intimate infant contact (e.g., nursing) may trigger traumatic memories and/or lead to re-experiencing of traumatic events during which they were rendered helpless. For the expectant mother who experienced relationships that were defined by harm and fear in her own early development, the impending responsibility for the well-being of another can be especially overwhelming (Lyons-Ruth & Spielman, 2004). The caregiving system prompts the mother to imagine herself providing care to a needy infant. This, in turn, triggers the attachment system, and activates needs for safety and comfort that were unacknowledged or dismissed when she was most vulnerable. The HH mother’s best adaptation under such circumstances is to assume a hostile and/or a helpless position in order to ward off intolerable affects, memories, and fantasies, and in doing so, attempt to manage her internal experience. In the face of this psychic bombardment, her HH internal working model of attachment directly informs the development of her caregiving system, and this in turn sets the stage for considerable postpartum risk.

The following excerpt from one narrative in the study sample is presented here to frame the implications of our results. This mother was classified as HH, and her infant was removed from her custody at birth:

**I:** So would you say you’ve got a relationship with her *(the fetus)* now?
**S:** Yeah.
**I:** Can you give me a couple of words to describe it?
**S:** Err …
I: The relationship you have?
S: If I don’t get my sleep at night she gets told off. It’s “go to sleep” – boot (referring to baby’s kick). “Go to sleep.” I get another boot. So then she gets a tapped bum and she goes to sleep. I’m not a very nice mummy at the moment cos I do like my sleep, and obviously with her being kicking and stuff I have to tap her bum, cos she sticks her bum in the air and it’s like, “ha, I’ve got your bum, there you go. Sleep.”
I: So it sounds as if it’s a bit of a struggle at the minute?
S: It is.
I: I’m trying to think of a word that describes that relationship. Almost like she’s a bit of a nuisance.
S: Yea, she is a bit of a nuisance, but I’ve got to think I’ve only got another 5 weeks and 6 days just to carry her, and then I’ll have a bigger nuisance in my life, which is a screaming baby. But she isn’t a nuisance, nuisance. Obviously, it is annoying when I can’t go to sleep and stuff, but also it’s the fact that when she’s kicking, it does put your mind at rest. At least she’s moving. At least she’s alive. Because it’s one of those things that if she doesn’t move, you panic, but if she does move, you tell her off. So the baby can’t win. And it’s just like one of them catch-22 scenarios … There’s no way of winning with this one when you’re pregnant. No way of winning.

This passage, in and of itself, is rich in HH features, and complex. Specifically, this mother’s description of the predicament in which she found herself and her fetus – “If she doesn’t move, you panic, but if she does move, you tell her off. So the baby can’t win” – powerfully reflects the HH model. This mother-to-be experienced her fetus as impinging, invasive, and intrusive. She responded punitively (distorting her representation of the fetus in the process, as if she can physically discipline the fetus for kicking her while in utero) with frustration and irritability. As the narrative unfolds, she characterized her fetus’ intermittent inactivity as a source of acute fear and anxiety, leading her to “panic.” Her developing caregiving stance toward her unborn baby is thought to reflect alternate behavioral expressions of a single, underlying dyadic internal model, shaped by her own attachment history: both hostile-intrusive and withdrawn caregiving profiles are maintained within one dyadic relational pattern of controlled self/controlling other (Lyons-Ruth et al., 1999a; Lyons-Ruth & Jacobvitz, 2016). This mother, along with several of the HH mothers in this small sample, tended to vacillate between, on the one hand, experiencing others (e.g. the fetus, the father of the baby, her
own caregivers) as malevolent and threatening, and experiencing herself as fearful and helpless, and on the other hand, representing herself as hostile and defended, and victimizing others. According to Lyons-Ruth and colleagues’ (Lyons-Ruth et al., 1999a) original conceptualization, the caregiver assumes one or both of these positions in order to minimize her level of emotional responding to her infant. In our study, this mother-to-be described inherently hostile representations of, and responses to, her fetus, and subsequently assumed a frightened, passive position in relation to the fetus. This was apparently in an effort to protect herself, and to avoid the activation of unintegrated memories and unbearable affects that were unfolding in her pregnancy (and that were also mobilized by the administration of the PI, which is designed to activate the caregiving system).

The model of caregiving for a HH mother-to-be is likely to be extreme, either defined by helpless compliance and passivity, or sadistic aggression. When she becomes frightened by destructive or abandoning thoughts and feelings about her fetus, she is experiencing affects that are familiar, yet deeply buried, and effectively reliving her relational trauma. As a result, she may then need to disavow related affects, submitting to a defended or dissociated state of mind in the process. The HH mother-to-be lacks models of balanced, structuring nurturance – she has only polarized internal models of relationships, and has developed conflicted, unintegrated mental and behavioral tendencies as a result. These emotional conflicts “clash out of the mother’s awareness,” prompting responses to the reality and changes of pregnancy that can be unpredictable and contradictory (Lyons-Ruth & Spielman, 2004, p. 327).

This examination of HH states of mind in pregnancy may also serve to broaden the current understanding of how severe psychopathology can manifest in prenatal interviews. As discussed above, the PI is structured to capture a pregnant woman’s representations of herself and her
unborn baby within an imagined, future caregiving relationship. The PI also asks women about their own families, including their parents’ response to the pregnancy, and the response of the father-to-be to the pregnancy and becoming a caregiver. Thus, the PI allows an examination of the transformation of states of mind in relation to attachment, and the role they play in the emerging caregiving system and representations of caregiving. The PI explores four distinct maternal representations (the woman as a caregiver, her unborn child, the father of the baby, and her own caregivers), and the HHPI coding system assesses the extent to which those representations are malevolent, helpless and withdrawn, frightening, and/or contradictory.

In this study, expectant mothers who received HH classifications represented themselves as malevolent and hostile, and/or frightened, helpless or abdicating. At different points in their narratives, they may have represented themselves in both hostile and helpless ways. Fetuses were represented as hostile (e.g. as aggressors, as larger than life, as devouring of their mothers, and/or as destructive to their mothers), and/or represented as helpless or abdicating, and described as passive, fearful, or nonexistent. Expectant mothers sometimes represented the fathers of their babies as malevolent, describing them as hostile or aggressive, and/or as abandoning. Further, expectant mothers’ own caregivers tended to be represented as malevolent and hostile, or as overwhelmed, frightened, and absent. In many cases, the fetus, the father of the baby, and the woman’s own caregivers were represented as having both hostile and helpless features at different points in the narrative. Taken together, these prenatal caregiving representations were thought to reflect women’s identifications with malevolent and/or helpless, fearful attachment figures, and were presumed to directly inform their emergent caregiving systems.

Study results suggest that pregnant women with HH states of mind have not effectively segregated incompatible working models of attachment figures. Some narratives reflected
relatively simultaneous access to both positive and negative caregiving representations, while some mothers had segregated positive and negative representations that were only intermittently, rather than simultaneously, accessible to their awareness. Often, these mothers didn’t seem to recognize the contradictions in their narratives, which belied the presence of unintegrated mental contents. Some women also continued to identify with a devalued or helpless parent, without reflecting on the negative aspects of this identification. These persistent identifications were manifested in mothers’ representations of themselves as harsh parents to their unborn children, or, in their feeling intensely overwhelmed and daunted by their futures as caregivers.

While it was less common for mothers to describe their traumatic histories on the PI, as opposed to the AAI, HH pregnancy narratives in this sample were characterized by a lack of reflection upon conflicting past and current attachment and caregiving experiences. As a result, these women seemed to have an inability to make sense of their experiences over time. HH mothers also often failed to consciously reflect upon what they felt about their pregnancies and about parenthood. Ineffective efforts to manage intolerable, trauma-related affects, including defensiveness and guardedness, were also prevalent. These mothers appeared to employ defenses against the activation of their attachment systems, or of HH identifications, during their pregnancies.

Several specific features that appeared to be pathognomonic in pregnancy, and relevant to the way in which HH phenomena present in pregnancy, were integrated into the repertoire of HHPI codes. These codes are discussed in detail in the HHPI manual (Terry et al., 2018). Broadly, some codes were designed to assess the quality of the expectant mother’s internal working model of caregiving. This helped coders to evaluate the extent of a woman’s ability to represent herself as a caregiver, and represent her future child as the recipient of her care, in
pregnancy. A code to assess an expectant mother’s level of differentiation from her fetus was also integrated, in order to note when boundaries between self and baby become particularly distorted. Several codes related to the way in which mothers with HH states of mind fail to manage normal ambivalence that is typical during pregnancy, triggering disruptive, overwhelming affects that are managed in a number of maladaptive ways. These include imbuing the fetus with a negative identity, fantasizing termination of the pregnancy, or by dissociating from the experience and reality of the pregnancy.

A great deal is at stake for the mother with a HH state of mind, and for her unborn child during the prenatal period. Pregnancy, an already tumultuous, emotional, and challenging time for expectant mothers, is profoundly disorganizing for women with pervasively contradictory and unintegrated mental states. This characteristic disorganization clearly has a detrimental effect on the expectant mother’s sense of herself as a caregiver, and on her relationship to her fetus. As a result, there is considerable risk for the transmission of trauma-related pathology, and for a disrupted, disordered mother-infant relationship in the context of the HH constellation.

*Integrating relevant neurobiological, genetic, and epigenetic contributions*

For the traumatized mother-to-be, the process of becoming a caregiver entails risk beyond the psychological domain. Unfolding changes to a woman’s psychology during her pregnancy are paralleled by complex physiological modifications within the mother’s body and the in-utero environment. Pregnancy precipitates a “sensitive period” that entails rapid physical, neuroendocrine, neurobiological, emotional, and social reorganization, preparing the parental brain to safely usher the newborn into the human, social world (Feldman, 2015; Slade & Sadler, in press). Burgeoning neurobiological, genetic, and epigenetic research has demonstrated that motherhood *changes the brain*, activating networks implicated in mentalizing, empathy, and
mirroring that support the infant’s socioemotional development (Feldman, 2015; Slade & Sadler, in press). Therefore, maternal HH representations and mental states may interact with and impact upon critical physiological events during pregnancy, conferring additional risk in the postpartum period.

One possible mechanism for this effect is that maternal HH representations and the re-experiencing of trauma-related affects in the setting of pregnancy contribute to the expectant mother’s level of stress and disorganization. Neurobiological research indicates that prenatal stress contributes to changes in the parental, fetal, and infant brain, and greatly increases risk for child psychopathology (Grigorenko, Cicchetti, Monk, Spicer, & Champagne, 2012; Slade & Sadler, in press). The term ‘prenatal stress’ (also referred to in the literature as maternal distress), includes chronic and acute stressors, such as socioeconomic adversity, intimate partner violence, or prolonged stress of hunger and isolation in times of emergency, as well as internal stressors such as depression and anxiety (Slade & Sadler, in press; Grigorenko et al., 2012). The fetus is particularly vulnerable to the effects of prenatal stress, which can have consequences that persist across development, negatively affecting a child’s capacities for stress and affect regulation, attachment quality, cognitive functioning, and motor development (Grigorenko et al., 2012; Slade & Sadler, in press). Prenatal stress can also negatively influence both fetal and infant behavioral and physiological outcomes. Antenatal depression and anxiety symptoms have been shown to predict increased behavioral reactivity and cortisol in response to novelty in infants, higher resting cortisol throughout the day among adolescents, and a reduction in gray matter density in the prefrontal cortex (see Grigorenko et al., 2012 for a review). These human studies are paralleled by decades of animal research indicating that prenatal stress can induce long-term
neurobiological and behavioral effects with particular consequences for the hypothalamus-pituitary-adrenal (HPA) response to stress.

There is also increasing evidence for epigenetic (molecular modifications to gene activity that do not involve changes to the underlying DNA sequences) consequences of prenatal stress for both fetal and infant outcomes. Placental functioning seems to be a key aspect in understanding the intergenerational transmission process. The placenta regulates the transfer of nutrients from the mother to her developing fetus, and buffers the fetus from toxins and maternal glucocorticoids; it also changes maternal hormonal levels, and can influence the mother’s mood to prime the parental brain (Grigorenko et al., 2012). Prenatal stress may lead to altered gene expression, and change epigenetic profiles in the placenta; this can have functional consequences for fetal as well as infant development. For example, it is likely that epigenetic mechanisms account for temporal shifts in placental gene expression that have been associated with poor birth outcomes (Grigorenko et al., 2012). Rodent research suggests that chronic variable stress in the first trimester is associated with altered placental gene expression (Grigorenko et al., 2012). In addition, the 11ß-HSD2 gene is highly expressed in the placenta, and functions to inactivate glucocorticoids. This gene plays a role in regulating the level of fetal exposure to circulating maternal stress hormones. In human studies, heightened maternal anxiety during pregnancy has been negatively correlated with placental 11ß-HSD2 mRNA levels. In other words, as prenatal maternal anxiety increases, 11ß-HSD2 mRNA levels decrease, and maternal stress hormones are not effectively deactivated. Further, reduced levels of this gene have been associated with preterm birth and intrauterine growth retardation (Grigorenko et al., 2012). The placenta is a central target of prenatal stress effects, and may be a key link between prenatal stress and infant outcomes.
In addition, early life stress (ELS) is a common risk factor in our sample, and within the at-risk population in which HH states of mind are prevalent. ELS poses additional threat to maternal health and fetal development, and is thought to be intergenerationally transmitted (Felitti et al., 1998; Toepfer et al., 2017; Slade & Sadler, in press). Women who have experienced high levels of ELS have lower concentrations of oxytocin, a social neuropeptide that is both a neurotransmitter and a hormone, and is thought to regulate adaptive interactions in the mother-infant relationship. A mother’s deficit in oxytocin levels is thought to be transmitted both pre- and postnatally, via alterations in stress-sensitive biological systems (Toepfer et al., 2017). Therefore, maternal ELS affects not only fetal development, but also the quality of postnatal dyadic mother-child interactions. Similarly, differences in fetal regulatory capacity have also been linked to maternal history of childhood abuse. Although indirect, there is an association between maternal childhood abuse history and fetal neurobehavioral development, which indicates that at least part of the intergenerational transmission of maltreatment risk occurs during pregnancy (Gustafsson, Doyle, Gilchrist, Werner, & Monk, 2017). Trauma-related maternal sleep disturbance was found to mediate this association. Maltreatment, then, may be intergenerationally transmitted during pregnancy, via abuse-associated changes in pregnant women’s functioning and, consequently, changes in the in-utero environment that shape neurobehavioral development of the child.

Finally, maternal separation studies with primates and rodents have been used to model early deprivation/neglect, and have demonstrated that this adversity negatively affects neurobiological and behavioral outcomes in offspring (see Grigorenko et al., 2012, for a review). Maternal abuse of offspring has also been modeled in rodent studies, and has illustrated that epigenetic modifications (prefrontal cortex of abuse-exposed offspring shows downregulation of
BDNF expression, and elevated levels of DNA methylation within the regulatory regions of the BDNF gene) maintaining the effects of abuse across the lifespan (Grigorenko et al., 2012). Epigenetic effects of abuse have also been found across generations; the offspring of abused versus non-abused female dams show the same changes in gene expression. There may be an epigenetic basis to the transmission of abuse, and its neurobiological and behavioral consequences, across generations (Grigorenko et al., 2012).

Lyons-Ruth and Jacobvitz (2016) point out that while “it has become popular to frame neurobiological differences associated with psychopathology as the ‘underlying mechanisms’ or potential root causes of behavioral disturbances … the ‘underlying’ casual contributors may be hiding in plain sight in the form of repetitive patterns of child-caregiver interaction that shape the expression of genes and mold responses to stress and fearful arousal” (p. 686). The contribution that the current study can make to this argument is that, during pregnancy, the maternal representational world of the HH mother is implicated in both her level of psychological distress and disorganization, and in her physiological and neurobiological functioning. Hostile-helpless maternal representations and mental states seem to contribute significantly to stress during pregnancy. Dysfunction within both domains confers urgent risk to her attachment to her unborn child, and to the impending mother-child relationship. As a result, it is of paramount importance to intervene and provide necessary support to the traumatized mother-to-be as early as possible in her pregnancy. Although her representational world is obscured from the clinician’s view relative to a mother-infant interaction that can be readily observed “in plain sight,” a carefully targeted clinical intervention holds the potential to provide desperately needed relief, containment, and regulation to both mother and unborn child.

*Surveillance bias and the UK MTB sample*
While the high prevalence of child removal in the UK sample made the present exploration possible, there are several key issues to consider. First, the large difference in removal rates between the US and UK samples should not be taken to mean that there is a higher risk of maltreatment in vulnerable UK samples than there is in US high-risk samples, or that MTB is less effective in the UK than in the US with respect to maltreatment. Rather, the high removal rate in this UK sample seems to be in large part a reflection of the dramatic differences between child protection policies in the UK and the US. Simply put, the UK system is far more focused on prevention, whereas the US system is more focused on intervention, which is typically initiated after a negative event has occurred (Stafford, Parton, Vincent, & Smith, 2012). There are ample critics of both systems, but the young women whose children were removed in the present sample had been under the watch of the UK child protection system for some time, often from the onset of pregnancy. There is no such analogous process in the US, where pregnant mothers are rarely monitored by the child protection system unless there is egregious substance use or some other extremely dangerous behavior. In the UK system, which has been implementing a model of increased surveillance and removal in recent years, pregnant women are followed closely if the mother-to-be is under 18 years old, if she has a history of mental illness or substance use, if her partner has a criminal or substance use history, or if she herself was involved with the child protection system (Stafford et al., 2012). During pregnancy, if there are significant reasons to be concerned about the safety and health of the baby, there is often discussion amongst social service and medical professionals about removal at birth. Thus, many young women in the UK MTB study were already facing the possibility of infant removal upon delivery.
There has been some discussion in the US home-visiting literature about the role of “surveillance bias,” such that the presence of home visitors actually raises the likelihood a referral to child protection. Easterbrooks and colleagues (2013) caution that potential positive impacts of home visiting on maltreatment can be obscured by surveillance effects, because families receiving home intervention maintain regular contact with professionals who are trained to identify and report instances of maltreatment. Families in the control groups of these studies are not typically exposed to same level of scrutiny. Overall, there is consensus that surveillance by home visitors can lead to increased maltreatment reporting in intervention groups (Chaffin & Bard, 2006; Duggan et al., 2007; Easterbrooks et al., 2013; MacMillan et al., 2005; Olds, Henderson, Kitzman, & Cole, 1995; Widom, Czaja, & DuMont, 2015). Obviously, within the context of the UK child protection system, these effects would be particularly heightened. To reiterate, we do not see the findings of this study as indicative of higher child maltreatment potential in the UK. Rates of child maltreatment in the US and in the UK are roughly equivalent (Finkelhor et al., 2015; Radford et al., 2011). However, removal by child protection services is much more common within the UK system (Stafford et al., 2012). We see the HH system as particularly sensitive to relational disruptions that may well challenge the mother’s capacity to protect and nurture her child. As we will discuss further below, we hope that such understanding can be used to support pregnant women with histories of trauma and abuse, and to understand how their trauma is activated within the context of becoming a parent.

**Clinical implications**

Broadly, there is much to be done in the realm of clinical intervention in pregnancy. It is an under-researched, under-resourced area that lies beyond the outreach of the maternal-infant mental health domain. Slade and Sadler (in press), as well as Lyons-Ruth and Spielman (2004),
point out that programs offering comprehensive prenatal screening and subsequent intervention are limited, and that there is a dearth of the specific training for clinicians who work with at-risk pregnant women. Too often, pregnant women who present with trauma histories, significant prenatal stress, or clear dysfunction in their daily lives that puts them at risk, are redirected by obstetricians, social workers, or case managers to pursue additional referrals, without follow-up. Their difficulties are noted, but the presenting issues are often exceedingly complicated, and there is a tendency for these woman to be dismissed, relegating the responsibility for intervention to the postpartum period when mother-infant intervention can begin. Further, risk in pregnancy is not only unsettling to consider, but also poses great challenges to clinical risk management.

However, it is the responsibility of clinicians who treat traumatized, at-risk women to understand that pregnancy is a critical *developmental period*. It represents both a time of substantial risk in these cases, as well as a distinct window of opportunity to offer vital support, and to begin to reconstitute mothers’ overwhelming experiences in a way that will be fortifying and sustaining throughout motherhood. Thus, the importance of working with at-risk women during their pregnancies cannot be overstated. If proper assessment and treatment in the context of acute prenatal risk to the mother-to-be and her future child are not implemented early, efficiently, and effectively, the transmission of disrupted and potentially harmful caregiving is likely, carrying with it long term risks for a host of poor outcomes.

Working clinically with at-risk, traumatized pregnant women is challenging and complex, for a number of reasons. Mothers who present for treatment during pregnancy, as well as the clinicians who work with them, are socialized to ascribe cultural stereotypes of pregnancy. Typically, the mother-to-be is presumed to feel calm, grounded, and blissful, with her needs met, and without cares or concerns. Bibring was one of the first psychoanalytic voices to argue that
this is not the predominant presentation we see in pregnancy, and that while there may be
moments of euphoria or serenity, affective instability is typical and expectable (1959). This
stereotype persists nonetheless, perpetuating maternal stigma about having any sort of difficulty
in pregnancy, and reinforcing problematic assumptions on the part of clinicians. The socially
constructed representation of the pregnant mother is problematic, and poses a major obstacle to
connecting expectant mothers to treatment. It is presumably difficult for most women to admit
they are having difficulty, and to summon the courage to seek help during pregnancy; for women
who are struggling as profoundly as some in our sample, the prospect may be unthinkable.

When Fraiberg and her colleagues (Fraiberg et al., 1975) discussed the “ghosts” of past
caregivers who intrude upon mother-infant relationships and “who have established their
residence privileges for three or more generations,” they wisely pointed out that some
traumatized mothers do not identify their malevolent or terrified attachment figures “as
representatives of the parental past” (p. 165). In some cases, “there may be no readiness on the
part of the parents to form an alliance … to protect the baby,” they argue, adding that it is more
likely that the clinician who is intervening, rather than the “ghosts” who are deeply ingrained in
their relational patterns, will be experienced as “the intruder.” Once they have found their way to
treatment, these mothers tend to be understandably guarded, avoidant, and withholding in the
context of a new relationship with a provider. It follows that expectant mothers with HH states of
mind will require a nuanced, flexible approach to treatment that is not only trauma-informed, but
also tailored to the particular challenges of pregnancy.

Pregnant patients under the care of mental health professionals require psychoeducation
and considerable scaffolding (a possible treatment framework is discussed below). Providing
these women with a model for understanding the inner turmoil they are experiencing may be
particularly helpful to them. For example, characteristic mood lability, vivid and possibly upsetting or frightening fantasies and dreams, and struggles with feeling out of control of the body and mind could be discussed within a framework that integrates the prenatal period with HH-related concepts. These patients should be helped to understand the way in which their past experiences of caregiving are impacting upon their current experience of their pregnancies, and should be reassured that the thoughts and feelings with which they are struggling are part of an important process that can be safely examined in treatment. In their implementation of a residential treatment program for substance-abusing pregnant and parenting women in Finland, Pajulo and colleagues (2012) advocate for a treatment that ultimately “‘[resets]’ the focus of the maternal brain reward system by encouraging the mother to become intensively involved with and interested in her future baby during pregnancy, increasing her interest and curiosity about her unborn child’s personality and developmental achievements, and experiencing satisfaction from positive interaction experiences once the baby is born” (p. 73). In order to do this effectively when working with traumatized, disorganized pregnant patients, treatment must integrate the gradual acknowledgement and processing of the psychological complications that make this so extremely difficult, and an inherently terrifying and threatening prospect, for HH mothers-to-be.

Mental health providers who treat pregnant women require additional, specialized training (Slade & Sadler, in press). This includes Slade and Sadler’s strong recommendation that clinicians be well versed in the biology and psychology of pregnancy, and the multiple impacts of trauma and early adversity on maternal and child health. The findings of this study suggest that it may be of considerable benefit to incorporate HH theory into a model of targeted therapeutic intervention in order to best serve the needs of the highest risk mothers. As we have
seen throughout the development of our manual, as well as during the study sample coding process, some of the most severe and pervasive HH pathology manifests in unique, distinctive ways that are detectable during the prenatal period. The clinical manifestations of a HH caregiving stance are likely to be subtle and difficult to identify, which makes it all the more important that clinicians be well-informed about this pathology and how to effectively address it in a way that is supportive and thoughtful.

In addition, it should be emphasized here that, even for the experienced clinician, treating HH pathology in pregnancy is likely to be overwhelming and particularly challenging. Mothers who present for treatment will likely introduce an intensity of raw affect and primitive manifestations of their internal experiences that have the potential to be frightening, disorienting, and/or enraging to the clinician. Sitting with a patient who laughs as she vilifies her fetus, fantasizes about leaving her child behind after delivery, or describes having restricted her eating in an attempt to abort her own pregnancy, can trigger a range of countertransference reactions in the clinician related to her own attachment- and caregiving-related histories. Indeed, the fact that this population of patients goes so often unacknowledged and untreated may be due, at least in part, to the inherently aversive and unnerving nature of this work. The demanding, intense nature of intervening with HH mothers necessitates that clinicians receive social and emotional support, for example, from a clinical team within which session content can be processed and better understood in order to inform subsequent intervention.

The results of this investigation also underscore a pressing need to change our conceptualization of preventive care for at-risk mothers. The child protection systems in the US and in the UK are both problematic. The US system intervenes once there has been a reportable issue such as maltreatment, and fails to identify the potential for risk early enough for
intervention to properly address the needs of vulnerable mothers. In the UK, once risk is detected, infants tend to be removed from care, creating a separation between mother and child, and interfering with the potential for prompt remediation. With this in mind, we emphasize here that our results do not advocate assessing for HH pathology in pregnancy in order to identify mothers whose infants should be removed from care, or placed under surveillance of child protective services. Rather, our intention is to contribute a new perspective to the conversation about preventive care for mothers and their young children. HH mental states in the context of pregnancy appear to be markers of significant, pervasive pathology. As such, clinicians should make concerted efforts to identify expectant mothers early in their pregnancies, to engage them in treatment and provide a safe space within which they can explore their experiences, and to work swiftly and effectively with them to reduce mother-infant risk in the postpartum period.

**Treatment recommendations**

Results of the current study can also be applied directly when conceptualizing clinical work with expectant mothers who may be struggling with HH mental states and related identifications and caregiving representations. Lyons-Ruth and Spielman (2004) suggest that treatment of mothers with HH classifications should be aimed at preventing the consolidation of a HH parenting dynamic in the relationship, based on guiding principles that are rooted in attachment theory. First, establishing security within the treatment relationship is described as paramount, in order to provide a healing attachment experience for the mother. In pregnancy, this would also be critical to helping the mother feel safe to express the full range of her affects, memories and fantasies, and in the process, to demonstrate that this would not be followed by an attack or an abandonment, but rather welcomed by the clinician. When the mother has unspeakable feelings about her fetus or her pregnancy, over time, the safety of the therapeutic
space would allow her to be increasingly open, and to explore the meanings of the feelings that get mobilized as the relationship to her fetus develops. Lyons-Ruth and Spielman further recommend that the treatment frame involve the therapist explicitly naming the HH bind, and then actively challenging the mother’s polarized internal working models by “neither being intrusive nor abandoning” (p. 330). In addition, they emphasize that a true “base of security” in the treatment takes a long time to establish; given that that is the case, it is in the best interest of pregnant mothers to undertake this work as early as possible in the pregnancy.

Secondly, Lyons-Ruth and Spielman advocate for inviting “a wider range of affective experience” into the treatment (p. 330). In pregnancy, this component would involve helping the mother integrate distressing and possibly traumatic memories of receiving care, moving her focus away from either/or relational possibilities, and discouraging the avoidance of negative affect. The expectant mother should be directed to acknowledge and feel her frustration and anger, her fear, and her vulnerability. The third recommendation involves, in the treatment of a parent-infant dyad, “differentiating attachment needs from other emotional communications of the baby” (p.330). Lyons-Ruth and Spielman are referring to the parent’s tendency to misread the infant’s cues, presuming that any discomfort communicates fear and requires immediate response, and leaving the parent confused when the infant is not distressed. In pregnancy, this would still be an important component, but might be framed instead as a task of exploring the mother’s representations of herself as a caregiver, and of her unborn baby as receiving care, and working together to consider how past experiences and affects are currently informing her attributions toward, and assumptions about, herself and her fetus. Treatment would need to provide adequate structure to the mother so that when her own internal working models leave her confused, overwhelmed, or distraught about her own attachment needs or her future baby’s
attachment needs, she is gradually able to disentangle her future child’s need for protection from other needs (e.g. affection, predictable responsiveness), as well as lesser discomforts (e.g. fussiness).

Finally, Lyons-Ruth and Spielman describe the importance of “developing new models of balancing the needs of self and baby” (p. 331). Given the degree of contradiction and unintegration in her representational world, the HH mother-to-be is likely to harbor the belief that her needs and her unborn child’s needs are in irreconcilable contradiction. This characteristic HH dilemma is rendered intense and paralyzing by the mother’s attachment history. Further, the fear of repeating her own caregivers’ actions, whether primarily helpless, withdrawing, and unaware of her needs, or hostile, malevolent, and disregarding of her needs (or both), may leave the mother “with little sense of knowing herself as an individual” (p. 331). Notably, the mothers in the current study’s sample were also relatively young in age, and in the midst of a chaotic time of identity formation that is particular to adolescence and further complicates this picture. Therefore, Lyons-Ruth and Spielman also recommend that treatment provide the mother with the space to know and feel valued in her own sense of self, “so that she [can] develop more flexible and balanced models of negotiating self-other tensions,” and negotiate her own needs in a way that feels safe.

More generally, based on the writing of Lyons-Ruth and Spielman and on the breadth of Lyons-Ruth’s broader contributions to this topic, it appears that treatment of HH pathology in pregnancy should focus on helping the mother to make links between her own history, her current affective experience, and her responses to and representations of her fetus; in other words, helping her to connect terrifying past experiences of not having been protected, for example, with her present feelings about, associations to, and behavior towards her unborn baby.
The therapist should work to help the mother find words for previously uncommunicable aspects of her experience, and to thereby share and understand her feelings in the safe presence of a caregiver figure who is “curious, accepting, and non-retaliatory” (p. 331).

Ultimately, the aim of such treatment would be to help the mother come less afraid of, and/or enraged by, the memories and affects that are aroused in her pregnancy, and for her to take an involved, proactive caregiving stance, no longer “frozen” in a position of fearful helplessness, or of hostile defensiveness. Ideally, she would develop a capacity to tolerate a broad range of feelings in the treatment and in her relationship to her fetus, without fearing loss of her attachment to her baby. Based on this theory of treatment, both in the developing prenatal attachment between mother-to-be and unborn baby, and in the treatment relationship, attachment needs will be mobilized in response to distress, and to a new level of intimacy and closeness. Essential to this framework is providing the expectant mother with her own base of security, from which she can begin to establish a sense of increased flexibility and freedom, and ideally help her baby make the same, protected transition in the postpartum period.

Study limitations

There are a number of limitations to this pilot study. This investigation was exploratory in nature, and represents a starting point for future replication and expansion of the results. First, the sample size in this study was small, and was limited by the number of available PIs of mothers whose children were removed from custody in the UK sample. The small size limits the representativeness of the sample, and diminishes the power to detect true associations. The relatively high-risk nature of the sample also limits generalizability of our results. Future research should examine the extent to which this study finding replicates when using data from broader populations of pregnant women, with or without trauma histories.
Considering the small sample size, and the fact that both coders were aware of the high risk nature of the sample, the possibility that HH states of mind might have been overestimated should also be considered. There were also some limitations in terms of the quality of PI narrative data. In some cases, the familiarity of MTB clinicians with mothers they interviewed may have interfered with obtaining full responses. In some transcripts, a lack of adequate probing was noted on some key interview questions. As previously discussed in the Methods chapter, a total of three PIs were administered during the postpartum period, and coders were aware during transcript reading that subjects had already given birth. In addition, a total of two mothers were aware during pregnancy that their infants would be removed from their care at birth, which was also apparent to coders. Finally, one PI in the sample was incomplete, which may have limited validity of coding results for that narrative. Due to the already small sample size, these interviews were not excluded from the sample. These complications represent additional study limitations, creating potential for coder bias, and in the case of the postpartum interviews, it is possible that the timing of the PI may have affected the information that was collected. Reports of experiences and representations in pregnancy would likely have been different had they been obtained in the third trimester.

There were numerous potential confounding variables in this study, none of which were controlled for due to its exploratory nature. For example, the control group of mothers whose children were not removed was selected at random, and cases were not matched on any main variables of potential interest (e.g. age, socioeconomic status). Finally, this study was unfortunately unable to examine whether additional variables of interest moderate the reported association between HH mental states and infant removal. Future research should consider the role that other variables – such as gestational age, severity and chronicity of maternal trauma,
presence versus absence of the father of the baby – might play in explaining or modifying the association between HH states of mind and infant maltreatment.

**Future Directions**

Going forward, the MTB research team intends to investigate HH in pregnancy in an ongoing way. The larger, New Haven-based MTB study has a sizable dataset that presents opportunities to expand this research. Dr. Finger is currently training an additional HHPI coder, in preparation for replicating this method with another sample of PIs, and examining additional variables that may correlate with HH mental states in pregnancy. In particular, the team will incorporate the variable of reflective functioning (RF), also referred to as mentalization. RF is defined as the capacity to envision mental states in the self and the other, and to ultimately be able to think about and respond to one’s own and others’ mental states (Slade et al., under review). Future endeavors will involve examining potential relationships between RF and HH scores in pregnancy. Our team also hopes to adapt the HH coding system for use with the PDI. This additional adaptation would allow for additional research on pre- and postnatal HH scores, which could then be compared to prenatal RF, and RF as assessed using the PDI at two years postpartum. Data on infant attachment classification, which is part of the larger MTB dataset, can also be integrated into these analyses. Further, Dr. Finger has recently been contacted by a graduate student at Northwestern University who has expressed interested in assessing pregnancy narratives using the HHPI system. Thus, there is potential for not only replication, but new and promising collaborations.

**Conclusion**

The relative absence of attention to the prenatal period as a critical developmental phase, both in the theoretical literature and in the clinical domain, is striking. In her recent review of the
research to date on disorganized attachment, Lyons-Ruth argues that clinical indications for disordered attachment should include addressing parental as well as child behavior, and considering the caregiving environment when assessing and diagnosing the spectrum of attachment disorders that present to clinical parent-infant services (Lyons-Ruth & Jacobvitz, 2016). That spectrum should include prenatal attachment-related dysfunction in the mother-to-be, which was reliably assessed in this study, and which appears to have significant implications for mother-infant interaction in the postpartum period. Lyons-Ruth and Jacobvitz (2016) also emphasize that it should be a priority to move the considerable research on disorganized attachment and deviant caregiving “into clinical application” (p. 688).

Pregnancy appears to play an integral role in the intergenerational cycle of helpless-hostile caregiving, and HH theory may be helpful to informing, refining, and advancing preventive, attachment-focused clinical approaches that are used with at-risk pregnant mothers. Indication of a woman’s HH caregiving stance in pregnancy may inform approaches to clinically intervening on her behalf. More nuanced understanding of pathological mental states and representations in pregnancy may also improve clinicians’ ability to identify prenatal risk, which could in turn help to prevent the transmission of maltreatment. This study, although preliminary in nature, represents a first step toward optimizing intervention, and ultimately assisting in the prevention of early maltreatment in at-risk dyads before birth. Although developing the necessary supports and treatments for HH mothers represents a significant public health challenge, bringing this imperative to the forefront of the infant mental health field will be vital to protecting and raising psychologically healthy children, and to mobilizing and fostering at-risk mothers’ abilities to nurture and to be nurtured in return. That is the opportunity that every new mother deserves.
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