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Investigating the association between parental reflective functioning and distress tolerance in motherhood

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ABSTRACT

Parental reflective functioning, referring to the capacity of a parent to consider their child's mental states as they relate to their behavior, may support sensitive and adaptive parenting. We investigated the relationship between parental reflective functioning and tolerance of distress in a sample of recent mothers ($N = 59$). Participants completed self-report measures of parental reflective functioning and distress tolerance, as well as two behavioral distress tolerance tasks. We also examined blood pressure and heart rate during the laboratory session. Mothers reporting more difficulty in recognizing and understanding their child's mental states displayed decreased tolerance of distress on our behavioral and self-report measures. Further, we found evidence of a relationship between these measures and assessments of peripheral physiology. These findings are discussed in the context of reflective functioning and distress tolerance in parenthood, and their implications for parenting interventions.

Accumulating research is beginning to document the neurobiological and psychological changes that accompany the transition to parenthood in humans (Barrett & Fleming, 2011; Rutherford & Mayes, 2011; Swain, 2011). These findings suggest that neurocognitive faculties may support emotional reactivity and regulation to infant affective cues, and may be shaped by being in the parenting role (Bridgett, Burt, Edwards, & Deater-Deckard, 2015; Crandall, Deater-Deckard, & Riley, 2015; Rutherford, Wallace, Laurent, & Mayes, 2015). In particular, there has been significant interest in how reflective functioning may help scaffold adaptive parent–child interactions (Slade, 2005). Reflective functioning can be considered as the manifestation of mentalizing—the capacity to recognize and understand one's own mental states, the mental states of others, and how these mental states may influence behavior (Fonagy, 1991; Fonagy, Gergely, Jurist, & Target, 2006). This capacity, emerging in the context of early secure attachment relationships, is critical to understanding one's own mind, encouraging the formation of social relationships, as well as affect regulation (Fonagy et al., 2006).

Reflective functioning may be considered as a more generalized construct, applicable to multiple relationships and social interactions. However, it may also be a faculty that is shaped by becoming a parent—both from a neurobiological and experiential perspective (Mayes, Rutherford, Suchman, & Close, 2012). Unlike other relationships, the capacity of a parent to understand their infant's inner mental world requires greater interpretation of non-verbal signals (Luyten, Fonagy, Lowyck,

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& Vermote, 2012). Further, parental reflective functioning may be associated with affect regulation in the parent in a way that is not typical of other attachment relationships. For instance, a common experience for new parents is soothing their crying child. The infant cannot communicate the source of their distress, and this necessitates parents to remain regulated and consider the potential sources of discomfort or distress—potentially over significant periods of time. Consequently, caregiving may hold unique demands and experiences for parents, likely shaping cognitive faculties such as reflective functioning and mentalization.

Parental reflective functioning is a multidimensional construct that encompasses the core principles of mentalization. This includes a parent's (1) genuine interest and curiosity in their child's inner world and how their child's mental states may be reflected in their behavior (e.g., *I like to think about the reasons behind the way my child behaves and feels*); and (2) recognition of the opacity of their child's mental states and their effects on behavior (e.g., *I sometimes misunderstand the reactions of my child*) (Luyten, Mayes, Nijssens, & Fonagy, under review; Slade, 2005, 2007). Concurrently, it is also important to consider difficulties in mentalization for parents. For instance, parents may struggle in recognizing and understanding that their child has a subjective inner world of thoughts and feelings (e.g., *My child's behavior is too confusing to even begin to understand*). For those parents who do not recognize their child's inner mind, evidence of pre-mentalizing may be in the form of malevolent attributions toward their child's mental states (e.g., *My child fusses just to annoy me*) as well as difficulties in recognizing their child's limited sense of self and behavior given their stage of development (e.g., *My child cries around strangers because she knows it embarrasses me*).

Understanding variability and difficulties with mentalization are important given the consequences for multiple child outcomes, including attachment security and social cognitive skills. Fonagy, Steele, Steele, Moran, and Higgitt (1991) reported that reflective functioning measured in parents prenatally predicted their children's attachment security at 12 and 18 months. Further, children's attachment security has been found to be associated with their performance on false-belief reasoning tasks—tasks that require an understanding of theory of mind (Fonagy, Redfern, & Charman, 1997). Similar associations have been reported with respect to maternal mind-mindedness (i.e., the mother's recognition that their child has mental states), wherein higher levels of mind-mindedness were associated with children's attachment security at 12 months (Meins, Fernyhough, Fradley, & Tuckey, 2001) and their later performance on theory of mind tasks (Meins et al., 2002). This accumulating evidence suggests an important role for a parent's capacity to think about their child's mental states and how these mental states relate to behavior in children's developing attachment and social cognition. In considering the intergenerational transmission of attachment, Slade, Grienenberger, Bernbach, Levy, and Locker (2005) reported that parental reflective functioning also mediated the relationship between parental attachment security and child attachment security postpartum. Consistent with these findings, data from a home-based mentalization intervention with a maternal sample suggested that infants in the intervention (vs. controls) were more likely to have a secure attachment and show less disorganization at one year of age (Sadler et al., 2013).

Parental reflective functioning has also been associated with overt parenting behaviors. For example, in a study that considered mothers with lower levels of reflective functioning, Grienenberger, Kelly, and Slade (2005) found higher levels of disruption to communications with their 10–14 month old infant during the strange situation procedure (Ainsworth, Blehar, Waters, & Wall, 1978). A similar finding has been reported where improvements in parenting behaviors in substance-using mothers have been observed in intervention efforts focusing on enhancing maternal reflective functioning, including mothers' increased sensitivity, contingent responding and promotion of socio-emotional and cognitive growth during interactions with their children (Suchman, Decoste, Castiglioni, Legow, & Mayes, 2008; Suchman, DeCoste, Castiglioni, et al., 2010). Taken together, these studies suggest that parental reflective functioning may play a critical role in parenting behavior and the developing child's attachment security, reflective functioning capacity and consequently their child's ability to regulate their emotions and navigate the social world.

We recently examined whether parental reflective functioning would be associated with tolerance of infant distress in a small pilot study (Rutherford, Goldberg, Luyten, Bridgett, & Mayes, 2013). We wanted to assess whether this capacity was associated with the routine experience of many parents in needing to maintain a regulated state and soothe their crying child in the absence of any verbal indicators of the source of distress. To achieve this, mothers completed a baby simulator (BSIM) paradigm that required them to soothe a life-like crying baby simulator that, unbeknownst to them, was inconsolable. This task was designed to mirror other behavioral tasks developed to assess distress tolerance (Lejuez, Kahler, & Brown, 2003; Strong et al., 2003), enabling an ethically sensitive as well as ecologically valid approach to measuring tolerance of infant distress. We measured how long parents persisted in their attempt to soothe the BSIM, which continued to cry for a fixed period of time (20 min) unless the participant opted to finish the interaction early. Our main finding was that mothers reporting higher levels of parental reflective functioning – specifically in respect of interest and curiosity in their own infant's mental states – persisted for longer in soothing the BSIM. We also included a second distress tolerance task (the paced auditory serial addition test, PASAT-C; Lejuez et al., 2003), which measured persistence in a computer-based frustration task, unrelated to infants and the caregiving role. Parental reflective functioning was not associated with persistence times in this more generic task. Hence, these findings suggested that parental reflective functioning might be specific to tolerance of infant distress, but not distress tolerance more generally when measured by persistence times. We also found that in a subset of this sample ($N = 15$) where physiological recording was possible, heart rate and systolic blood pressure increased pre- to post-BSIM interaction, validating the distressing nature of the task.

The purpose of the present study was to replicate and extend these previous findings in a larger sample of mothers, employing multiple measures of distress tolerance and a more extensive examination of peripheral physiology during the