

THE DEVELOPMENTAL ROOTS OF MINDFULNESS:  
AN ATTACHMENT BASED PERSPECTIVE ON THE ORIGINS OF MINDFULNESS AND  
REFLECTIVE FUNCTIONING THROUGH THE PARENT-CHILD RELATIONSHIP,  
A MIXED-METHODS ANALYSIS

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the Faculty of the College of Science

Morehead State University

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Ashley N. Morris

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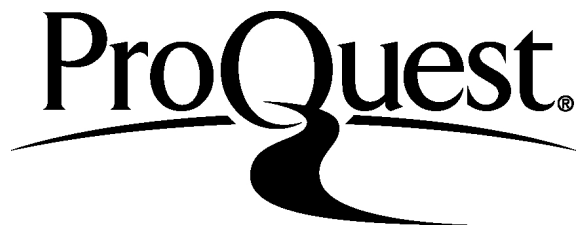
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Accepted by the faculty of the College of Science, Morehead State University, in partial fulfillment of the requirements for the Master of Science degree.

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Morehead State University, 2016

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This study sought to provide interconnection between two differing concepts in psychology: mindfulness and attachment. The current study also endeavored to elucidate the role of other parenting variables tied to attachment in the literature. Specifically, this project investigated whether child mindfulness was related to parental trauma and parental reflective functioning ability, and also whether child attachment was related to parental trauma and reflective functioning. This study also sought to test the mediational role of reflective functioning in the relationship of child attachment and parental trauma.

The current study was a part of a larger, longitudinal study, and included data primarily gathered at three different time points for 20 families. The fourth time point has two families' data, one of which was utilized for qualitative analysis. Families were largely Caucasian and of low to moderate income. Children averaged 4, 5.5, 12, and 16.75 years of age at the four time

points. Child attachment was assessed at age 4 with Ainsworth's Strange Situation separation and reunion procedure, coded by Crittenden's Preschool Assessment of Attachment coding scheme. Parental childhood trauma was measured from a concurrent interview. Parental reflective functioning was based on a 7-point rating scale of interviews when children were 4 and when they were 5.5 years old. These ratings were averaged into one score, as they were highly associated. Child mindfulness was measured from ratings of an emotions interview conducted at age 12. These took into account both verbal statements and also behavioral observations. The 4-point ratings were combined into two variables- one for mindfulness regarding anger and one regarding sadness. Finally, two questionnaires were used to gauge mindfulness at age 16.75 for the two participants.

Findings revealed that child mindfulness for mad emotional experience was related to parental reflective functioning and parental trauma, consistent with expectations. Additionally, findings supported hypotheses that child attachment would be related to both parental trauma and parental reflective functioning. Unfortunately, the expected relationship between child attachment and child sad and mad mindfulness was not supported by the current study. This may be due to low power, the rating scales used, or the well-practiced skill of compulsive children to appear that everything is quite alright for them. Additionally, the mediational hypothesis could not be fully tested, since reflective functioning (proposed mediator) was not associated with parental trauma.

These findings have the potential to inform clinical treatment with high risk families, along with providing some attempt at an integrated conceptual framework. For example, it may suggest the means through which to begin treatment (i.e., trauma and/or reflective functioning therapy focus for parent and mindfulness based approach for child). This study also supports a

call for further research in elucidating the potential relationship between child mindfulness and child attachment, as well as teasing out other important influencing factors of the parent child relationship.

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## **Chapter 1**

### **Introduction**

The world of psychology has had a steadfast increase in growth over the previous century and a half. Several schools and theoretical approaches have withstood the test of time, and have found importance both empirically in offering insight into the human condition, and for practical and applicable purposes of conceptualizing psychopathology, enabling us to begin to better understand how to treat it. Many of these theoretical approaches have branched and strongly diverged from one another, often leading to dogmatic approaches that strive to be defined as the “best” treatment, discarding the rest as subpar.

In terms of psychotherapeutic approach, it is a common assumption that it is best to stick to one form of treatment. It is perceived that using an eclectic approach can muddy the goals, impair selecting the best measure of progress, and cloud focus and confuse the target of psychotherapy. Scholars have called for integrative psychotherapeutic approaches, and have implored researchers to elucidate and validate important connections between existing psychotherapies and theoretical orientations. A commonly scientifically explored route to this mixing process is recognized in the literature as theoretical integration in which "two or more therapies are integrated in the hope that the result will be better than the constituent therapies alone" (Norcross, 2005, p.8).

Successful integration and assimilation of differing psychotherapies has occurred in the past, most notably with the commonly practiced, and highly touted Cognitive Behavioral Therapy (Beck, 2011). By combining two theoretical orientations, a therapy has emerged that has had pronounced benefits for anxiety, depression, and a multitude of other diseases and conditions (National Institute for Health and Clinical Excellence, 2008).

Mindfulness is currently a hot topic in mainstream psychotherapy and has been found to be a strong component in many third wave therapy treatments such as Dialectical Behavioral Therapy, Mindfulness-Based Stress Reduction, and Acceptance and Commitment Therapy. Mindfulness is commonly incorporated into interventions as a core coping skill for stress, anxiety, and depression (Hayes, Strosahl, and Wilson, 2012). Mindfulness techniques are not always being applied or understood in a manner that is integrated with theory, and interpretations of this construct vary considerably, especially in terms of what is entering the mainstream culture. For example, mindfulness is often touted as a method to gain happiness or to rid the self of negative emotions.

Nevertheless, there is now considerable evidence that lacking contact with the present moment, actively utilizing avoidance, and experiencing over-engagement with emotions are all associated with worse mental and physical health outcomes (Gross, 2002; Salovey, Rothman, Detweiler, & Steward, 2000). It is less clear, however, what characterizes healthy engagement with emotions. Mindfulness embodies an avenue through which full engagement is much more central to the experience. Mindfulness training provides a technique that fosters emotional balance and reduces the hold of routine patterns that muddy perception and impede one's judgment (Kabat-Zinn, 1990).

Attachment emerges from a differing theoretical perspective, and finds its birth in psychodynamic and ethological lines of thinking. Attachment's importance is clearly demonstrated in its impact on children's psychological development and resilience to aversive life events (Bowlby, 1973). This impact is directly made via parenting skills, the parent's own mental health, and the quality of the early environment fostered by the parent during the child's early upbringing (Cicchetti & Toth, 1995).

We also know that trauma experienced by a parent appears to resurface in the relationship with their own children, often with events and emotions being reenacted and re-experienced (Dixon, Hamilton-Giachritsis, & Browne, 2005).

Parents who also endure considerable psychological distress have been found to often misinterpret the behavior and motives of their children, leading the parent to reactively respond with aggression or withdrawal (Lieberman, 2007). Teasing out the modes through which parents most directly influence the well-being of their children and the factors which place their children most at risk in terms of caregiving practices, is vital to informing treatment and targeting goals in therapeutic application.

Parental trauma has been considered of some importance to clinicians researching both attachment and mindfulness; yet there has been no published study attempting to understand how all three constructs might be understood together, in an integrated theoretical manner. This study endeavors to do just that. It is hoped that these efforts will contribute to the clinical applicability of this project, leading to practice guidelines in the future.

## Chapter 2

### Literature Review

#### I. Mindfulness

Mindfulness has been described as, “the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience, moment to moment” (Kabat-Zinn, 2003, p.10). This relatively new scientific construct, with roots that spiritually extend thousands of years, has become increasingly influential in the realm of psychotherapy for the last several decades. As a psychological construct, mindfulness is very flexible in how it is defined. Brown, Ryan, and Croswell (2007) found that mindfulness is typically defined based on who in particular is researching it and how it is being applied. State-like perspectives on the construct of mindfulness define it as something that must be evoked and measured during that particular state, and thereby requires regular practice (Lau et al., 2006). Mindfulness is not only fostered through training, but it is also conceptualized as a naturally occurring trait. Dispositional mindfulness is assessed using self-report questionnaires and inventories. These indicate the level of present minded cognitive processing, and assess how well an individual acts with awareness, observes and describes the present, and is able to non-judge and non-react (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006).

Clinically, mindfulness has been found to be an effective intervention and therapeutic tool for a variety of disorders and conditions. For example, children with Attention-Deficit Hyperactivity Disorder (ADHD) benefit from mindfulness attention training, paralleled with parental mindfulness training (Weijer-Bergsma, Formsma, Bruin, & Bögels, 2012) and mindfulness and acceptance-based treatments are effective in the treatment of social anxiety disorder (Norton, Abbott, Norberg, & Hunt, 2015). Also, low mindfulness is associated with

psychological inflexibility and increased symptoms of both generalized anxiety disorder and depressive mood disorder (Curtiss & Klemanski, 2014). In terms of reforming drug habits, women appear to benefit tremendously from meditation and mindfulness-based substance abuse treatment. While benefiting to a lesser degree, men appear to also improve when using this intervention method that forces them to recognize the function of drugs and other mind altering substances that enable them to avoid the present moment—which for many drug abusers is distressing due to trauma or other adverse life events (Chen, Comerford, Shinnick, & Ziedonis, 2010). Mindfulness allows you to be fully engaged in the present moment, aware and absorbed in what you are doing, reducing the impact of painful thoughts and distressing feelings about the past and future, all while maintaining a pure attitude of openness and healthy curiosity (Harris, 2009).

Mindfulness focus over the past two decades has been primarily on adult clinical populations; however, recently these techniques have been adapted for intervention use with children and adolescents (Greco & Hayes, 2008). The bulk of current research focuses on clinical implementation, and the outcome of mindfulness training in child and adolescent populations. As this process is studied in clinical populations, an understanding has developed which presupposes that mindfulness processes may be an issue mostly when there are clinical problems present. Much work remains to document the development of mindfulness-related skills over time among children of different ages and varied backgrounds.

Mindfulness is often tied to the theoretical construct of experiential avoidance (EA). Though EA can be conceptualized as a very broad construct, one common form is thought suppression (Riley, 2014). There are many different ways one may experientially avoid, some of which are intrinsically harmful, such as drinking, using drugs, working too hard, experiencing

delusions, behaving aggressively, etc. EA has been shown to be a fundamental process in the growth and continuance of psychological distress (Hayes, 1987). EA has been defined as the unwillingness of an individual to experience private events that often lead to discomfort (in the form of bodily sensations, thoughts, urges, emotions, etc.), often triggering the individual to take measures to not experience those private events via avoidance, dissociation, and escape (Hayes et al., 1996). This process of avoiding often removes the individual from the distressing emotions, thoughts, and urges, but can inadvertently prevent the individual from taking committed and purposeful action in these situations when discomfort is perceived as unbearable, and an escape is sought.

Research has strongly suggested that having higher degrees of EA may help maintain or lead to psychological difficulties as diverse as Post Traumatic Stress Disorder and Trichotillomania (Begotka et al. 2004, Orcutt et al. 2005). This is believed to stem from the fact that experientially avoiding makes an individual's life significantly more restricted, and paradoxically aversive and unrewarding. When engaging in EA in the moment one will achieve a temporary reward, which encourages further avoiding of an action, thought, and/or emotion in the future. Often this behavior, while providing short-term reinforcement that can be ephemerally satisfying, will be detrimental to long-term goals, ideals, or action in accordance to one's values.

If one is being experientially avoidant, it is difficult to be connected and fully aware of the present moment. One would conceivably struggle to experience both states at once. Mindfulness promotes and builds on having open and undefended contact with the present moment, and this regards both the public environment as well as the private experience (Hayes & Strosahl, 2004). EA promotes distance from distressing thoughts and emotions, which are perceived as threats to the individual.



In clinical application of these ideas, clients are taught to label what is occurring, but to refrain from judging or even evaluating the experiences, rather, simply letting them be for what they are. This action of simply allowing an emotion to occur as it does freely, and not acting against or reacting to it is encompassed in the ACT principle of acceptance. This helps encourage the understanding of the self as a process of ongoing awareness of experiences, allowing thoughts to come and go without struggling with them (Hayes, Strosahl, & Wilson, 2012). When the desire to avoid or dissociate occurs, the individual is instructed to hold the thought in mind rather than to remove it.

Therapeutically, the application and development of understanding of these tied processes help individuals to discover the simplicity of the life that is happening right now, and to not be preoccupied by their thoughts of both the past and the future, to help clients make contact with the life they are currently living, and to help individuals notice what is happening in their relationships in the moment (Luoma, Hayes, & Walser, 2007).

## **II. Reflective Functioning**

The Reflective Functioning (RF) concept emerged during roughly the same period that mindfulness and emotional avoidance were being elaborated on. RF is a thought and mental state based construct that has been garnering much attention from the developmental and psychoanalytic schools of psychology in the past decade. RF involves the capacity one has to understand one's own behaviors, as well as those of others, in terms of underlying mental states (Fonagy, Steele, Moran, Steele, & Higgitt, 1991). RF is an aspect of the larger concept of mentalization, the reflective process through which we make sense of emotional processes, and states (intentions, feelings, thoughts, beliefs, desires) which allow us to interpret and anticipate our own and other's actions (Fonagy, Steele, Steele, & Target, 1998). It is the method through

which we use our intellect to come to a deep understanding of relationships and ourselves. Our social relationships, and the development thereof, are constructed on this complex reflexive capacity, and on a very primitive level it benefits our survival (Slade, 2005).

Mentalizing is believed to have several key aspects, including thinking about oneself versus thinking about one's child (Berthelot et al., 2015). For the purpose of this study we will be looking at parental reflective functioning, or a parent's capacity to reflect upon and hold in mind the inner life of his or her child as well as the self as a parent (Fonagy & Target, 2005). Fonagy and his colleagues believe this construct to be vital to attachment security between parent and child, and developed a scale for use with the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984) (Fonagy et al., 1998). Through the 60-minute AAI, RF is assessed via the adult's capacity to come to insightful conclusions when discussing their parent's behavior and its impact on them. Slade and colleagues developed a way to assess for RF from the Parent Development Interview (PDI; Aber, Slade, Berger, Bresgi & Kaplan, 1985), which elicits the parents' thoughts about their child and their parenting capacity.

Children are not born with an innate capacity to mentalize, rather they develop this skill via some kind of parental transmission process. Gergely and Watson (1996) believe this deep understanding of the self is generated by parental affect mirroring, and that the infant is first able to organize his self-experience via the mother's process of exaggerating realistic emotion expressions, "marking" (or symbolizing a self-state) infant affect displays, and reflecting the infant's state back in "re-presentations". For true mentalization to occur, the child must come to recognize that the mental states are mere representations of genuine thoughts and feelings and can be interpreted in many different ways (Fonagy & Target, 1996).

From this realization stems the deeper understanding that his or her mental states do not

define those experienced by another, and from this emerges a subjective understanding of mental states. For example, a person comes to learn that his or her experience of sadness over a falling out of a friendship is genuine, and up to his or her personal interpretation. This same mental state would be felt and expressed differently by the other person in the scenario. A person high in RF would be able to see how the mental state he or she is experiencing is influenced by personal and unique thoughts, to see how these mental states influenced his or her behavior in the situation, and could recognize that others may perceive the situation in a very different manner with completely different conclusions.

RF disparities on the behalf of the parent can result in similar distortions or misrepresentations in the child, potentially leading to serious emotional or psychopathological consequences. A fault in the construction of self can occur in misattuned caregiving, where the child is forced to internalize a false representation of the self as a core aspect of his identity (Fonagy, Gergley, Jurist, & Target, 2002). Abusive parents can also taint their child's experience with fear and hatred, causing the children to become dysregulated. This results in the child's failure in being able to understand themselves and their own intentions or feelings because, if these are reflected back to them in any capacity by the caregiver, they are heavily distorted (Fraiberg, Adelson, & Shapiro, 1984). This results in an intergenerational cycle of poor mentalizing.

Impairments in RF (either misattuned, or simply the lack there of) have been linked to the development of borderline personality disorder (Fonagy et al., 1995). Polarized patterns of reflective functioning abilities among bulimia nervosa patients, extreme high and low scores, indicate that RF may play an intricate function in the etiology of this disorder (Pederson, Lunn, Katznelson, & Poulsen, 2012). A pattern has also been seen with avoidant-attached fathers and low RF mothers in the development of childhood anxiety, indicating that attachment and

mentalizing abilities may have interactive parenting influences on such disorders in early upbringing (Esbjörn, et al., 2013). Thus, disordered affect and self-regulation results from attempts by the child's mind and nervous system to adapt as best as possible. These processes are necessary for the child to survive emotionally and are needed for the relationship to continue (Slade, 2000).

In contrast, a parent high in RF is able to grasp the connection between her personal mental state, as well as the child's, and the delicate interplay that also exists for herself and her child regarding internal experience and behavior (Slade, 2002). Crittenden (2008), the theorist who proposed the Dynamic Maturational Model (DMM) of attachment that diverged from the traditional attachment model (detailed in the next section), has stated that knowing a parent's ability to integrate her own reflective mental states, as well as those of her child, can and should heavily inform clinical treatment plans. She hypothesizes that some parents may benefit strongly from psycho-education, while others may reap less clinically meaningful change from the same intervention. A parent who is able to hold his or her child's mental state in mind (tapping into the RF processes), but needs assistance in deciphering how to respond could benefit from such intervention. On the other hand, if a parent is unable to adapt her perspective and understand her child's mental state, these interventions may not yield much in terms of therapeutic progress. Helping the parent learn to take the child's perspective before introducing psycho-educational and/or behavioral strategies for treatment may be a necessary first step.

### **III. Attachment**

Attachment first started garnering attention in the field of psychology nearly half a century ago when Bowlby proposed that parents play very central roles in child development through means of information processing and the concept of self via cognitive representations, termed internal working models (Bowlby 1969/1982, 1973, 1980). At the heart of Bowlby's introduction

of a new psychology paradigm for parenting was the idea that these attachment behavior systems are crucial for survival in terms of natural selection for a species. Given the process of natural selection, one would come to assume that the most environmentally adaptive behaviors concerned with reproduction and care and protection of the young would be passed on. He proposed that children must be equipped with a behavioral system that orients them to promoting sufficient proximity to the mother or the principle caregiver. Bowlby believed that this emotional bond between parent and child was how the child's needs for security are met, and serves as the base from which the child can investigate and explore his or her environment (Bowlby, 1973). Bowlby didn't disregard emotions in his theory; instead he conceptualized them as "appraising processes" (Bowlby, 1969). Affect is the means through which different input (state of the organism, conditions in the environment, etc.) is conveyed and processed as "pleasant" and "unpleasant" in terms of its consequences. These internal comparisons are what individuals use to control their behavior and make decisions.

The term "attachment" wasn't utilized by Bowlby until the latter volumes in his research on loss (Bowlby, 1980). He defined attachment as being one's strong tendency to seek comfort, proximity and contact with another specific person. He declared that attachment was a vital and fundamental need for an individual, likened to the need for feeding or sex. For an infant this behavior system is satisfied through contact with the parental caregiver. From the many and varied interactions between child and parent, the infant develops a sense of security (or lack thereof). While it made a significant impact in its heyday, attachment is still impacting the field years later. Cassidy and Shaver (1999) described attachment as "one of the broadest, most profound, and most creative lines of research in 20th-century psychology" (p. xi).

Ainsworth, a student of Bowlby's, pioneered a method for assessing attachment and its

relative security through the development of the Strange Situation Separation and Reunion task (Ainsworth, 1970). The pattern of attachment that leads to the healthiest and most adaptive outcomes was termed 'secure', wherein children openly express feelings, seek caregiver's contact, and explore productively. This pattern is typically found in children with parents who are sensitive and responsive to the child's needs for emotional security as well as exploration of the environment (Farnfield, Hautamaki, Norbeck, & Sahhar, 2010). Other 'insecure' patterns of attachment were also seen in this task. Anxious-resistant, better known today as anxious-ambivalent, was a pattern categorized by a clingy and overly anxious or exceptionally angry child. The parent of such a child was often found to be inconsistent in soothing, at times lacking in sensitivity, and unavailable when most needed. These parents could be considered helpful in some situations, but absent, ineffective, or harmful in others. For example, these parents may actually utilize separations, and the threat of absence and abandonment, as a method of control. Finally, a salient third type of attachment pattern was identified, termed anxious-avoidant. These children appeared to have no belief that they would be soothed or cared for when needed and would often strive to soothe themselves, independently of their caretaker. Parents of these individuals were often turning down the child's request for comfort and protection, or were found to be neglectful in these instances. The model proposed by Ainsworth, Blehar, Waters, & Wall (1978) suggested that most individuals fall within one of those three categories (A=anxious-avoidant, B=secure, C=anxious-ambivalent). It was later proposed by Main and Solomon that those individuals that don't appear to fit into one of those three groups are put into the disorganized category (D) (Main & Solomon, 1986). This conceptualization of attachment patterns is the traditional model.

In more recent years, a new model emerged and expanded on the traditional conceptualization, dubbed the Dynamic-Maturational Model of attachment and adaptation

(DMM; Crittenden, 2008). The DMM interprets danger, rather than safety, as the key component of attachment behavior. Rather than identifying the hard to categorize children as ‘disorganized’, the DMM recognizes the children’s behavior in terms of organized self-protective and adaptive strategies that function to increase protection under threatening or unsafe conditions.

Following Ainsworth’s method, the DMM coding system classifies the children’s strategies into A, B, and C categories; however the types of individual differences in information processing and attachment behavior are greatly expanded. Type B represents a secure attachment where affect and cognition are integrated for the individual as equally impactful sources of information. A and C indicate insecure patterns, with biases towards utilizing one source of information over the other, with C’s preferring affect and A’s preferring cognition. Patterns of preference for cognitive vs. affective sources of information are thought to reflect an individual’s history of this source being protective and adaptive in response to psychological and/or physical danger. Even at a young age, individuals exposed to the most unpredictable parenting may use both A and C strategies, in alternation, and these individuals are considered at the highest risk for psychopathology. (See Appendix A for circumplex model and category descriptions). In the model, the further away from the B strategy, the more extreme and inflexible the information processing bias and attachment strategy.

Whereas cognition and affect are processed differently in the brain, an individual who favors one strategy over the other may be more prone to processing the same stimuli in a particular manner (Crittenden, 2008). Individuals relying predominately on cognitive processing (type A), organize their behavior according to semantic and procedural contingencies, discounting and often omitting connotative and evocative information (i.e.,

affect and images). This is often displayed via the inhibition of desire for comfort, the rejection of feelings and emotions (especially those deemed forbidden), and distortion of cognition (e.g., self-blame and idealization of others). In reference to the example presented earlier in the RF section, regarding an individual experiencing fall out with a friend, one could visualize how an individual using an A-strategy would respond. He or she might be more prone to distancing the self from feelings of anger or sadness over the event, and might engage in more cognitive processing of what occurred, and what actions personally contributed to it. Often this will lead to self-blame, and will increase attempts in the future to avoid a repeat of the situation (i.e. the use of contingent if-then, or context information).

On the other hand, those that employ and favor affective processing (type C) act more according to their feelings, and find that semantic and procedural contingencies are misleading and unpredictable. This strategy is considered to be more complex than the cognitively biased type A strategy (Crittenden, 2008). The affective strategies often utilized by children can include approach with aggression, requests for comfort, and escape, according to the situation at hand. The behavioral responses of the child vary on what appears most adaptive at the time, and this can be very confusing to parents. Because only part of the experience of negative affect is displayed, it also quite confusing to the child. If an individual using a C strategy were going through a fall out with a friend, he/she may have a more emotional reaction. There would likely be blame towards the other party involved, and with an inability to take the other's perspective, the lesson learned for the future would be to attend to one's own feelings, not the context or the interpersonal contingencies.

Lastly, in conceptualizing how a B strategy individual would understand the situation of the fall out with the friend, he or she would be more likely to try to understand both



perspectives in the matter, would not neglect any negative emotional states associated with the issue, and would be able to appropriately see how behavior from either side may have contributed to the conflict.

#### **IV. Trauma**

Trauma is known to have definite effects on parenting, and is thought to have profound effects on mentalizing, especially on RF. Trauma can be defined as the impact of acute physical or psychological stressors that overwhelm an individuals' ability to cope. Such experiences include (but are not limited to) the threat of physical injury, psychological integrity or death of another person (Lieberman, 2007).

In interview based attachment assessments unresolved trauma is defined as having psychological impact that is ongoing, often in a pre-occupying manner. It can be seen within the intensive Adult Attachment Interview assessment, and has been shown to be greatly elevated in clinical risk samples (Crittenden & Landini, 2011); thus, it is hypothesized to be quite disruptive to the individual's life. Parents with childhood trauma often show impairments in emotion regulation skills (Allen, 2013), as well as disruption of autobiographical memory integration (Smeets, Giesbrecht, Raymaekers, Shaw, & Merckelbach, 2010).

Trauma has been revealed as having serious and hazardous impacts on the way one parents. Some of the literature has pointed to vicarious or secondary traumatization to explain these risk patterns that emerge (Baranowsky, Young, Johnson-Douglas, Williams-Keeler, & McCarrey, 1998; Rosencheck & Nathan, 1985). The concept of vicarious traumatization describes a process by which children adopt or mimic their parents' trauma-related symptoms (Baranowsky, et al., 1998). A great portion of the literature focuses on children of parents who experienced trauma from the Holocaust, were Vietnam Veterans, or had PTSD (Baranosky, et al., 1998; Felsen, 1998;

Jordan et al., 1992, Samper, Taft, King, & King, 2004). Vicarious traumatization has been demonstrated as presenting an increased risk of psychological disorders and generally poorer global functioning for individuals who have a parent struggling with PTSD (Baranosky, et al., 1998, Davidson & Mellor, 2000).

## **V. Integration of Ideas**

The relationship of RF and attachment has been explored in depth in recent years, with RF being touted as one of the mediating factors that may shed some light on the intergenerational transmission gap of attachment (Fonagy & Target, 2005) (i.e., why more than just parenting sensitivity is needed to explain attachment continuity from parent to child). Attachment-perspective and psychoanalytic guided clinicians have found that therapy geared towards increasing mentalization can greatly benefit individuals and families, and can be used to treat severe trauma-based psychopathology, such as borderline personality disorder (Allen & Fonagy, 2006). Fonagy and Allen go as far as saying that mentalization-based treatment is “no innovation” in the realm of psychotherapy, as “it addresses the bedrock human capacity to apprehend the mind” which is often a chief therapeutic goal, regardless of the theoretical approach (p. 19).

It has been found that parental RF and child attachment are strongly associated (Slade, Grienenberger, Bernbach, Levy, & Locker, 2005). RF coded from AAI's with Fonagy's method are associated with both parent and child's attachment (Arnott & Meins, 2007; Fonagy et al., 1991; Toth, Rogosch, & Cicchetti, 2008). When assessing a mother's representation of her relationship with her toddler via the Parent Development Interview, it has also been found that maternal RF is associated with the mother's own attachment security (Slade, Abner, Belsky, & Phelps, 1999). Maternal insightfulness is another form of mentalization that has been documented as being strongly associated with child development, especially early attachment (Openheim, Koren-Karie,

& Sagi, 2001). Among the variables being discussed in this thesis, mentalization/RF and attachment have the most well documented relationship. However there is no research relating it to attachment using the clinically-sensitive DMM coding system.

Trauma has many implications for attachment, many of them leading to poor outcomes (e.g. lessening of parental sensitivity, cycle of abuse, psychological disorder.). Recent research by Brothers (2014) has found distinct connections between trauma and attachment. She strives to create a theoretical framework based on parents who dissociate when aspects of their trauma appear in raising their own children. This dissociation is strongly associated with the child's attachment pattern, and in turn, also is associated with how the mothers care for and raise their own future children. In a study with mothers and infant children, the majority of infants (83%) of mothers with a history of abuse and/or neglect were classified as insecure. Trauma specific RF accounted for a good portion of the variance in infant insecure attachment (Berthelot, et al., 2015).

Connections between mindfulness and attachment are less certain, and a call for more research has been made by top empiricists (Snyder, Shapiro, & Treleaven, 2012). The limited research that is present has investigated mindfulness training on soon to be mothers (Duncan & Bardacke, 2010), the impact of teaching mindfulness to new mothers with their infants present (Hassan, 2008), and the impact of parents' mindfulness practice on children's behavior (Singh et al., 2007). What has been performed thus far is rather limited in scope, and still begs the question of to what degree these two concepts are related, and to what extent mindfulness may help foster secure attachment. Neither parent nor child attachment was formally measured in any of the aforementioned studies. Moreover, there appears to be no empirical data showing connections between child attachment and child mindfulness. This is a new and necessary area for exploration with pertinent clinically relevant questions worthy of being investigated.

Mindfulness and mentalization are often likened to one another, but differ fundamentally. Whereas mindfulness is present centered, the focus of mentalization is much more broad and encompassing, often perceived as embracing the past and the future (Allen & Fonagy, 2006). It has been suggested that mindfulness, specifically the facet of attentiveness to the moment, is an effective method to cultivate mentalizing (Ekman, 2003). For example, cognitive therapy geared for depression, paired with mindfulness training (Mindfulness Cognitive Behavioral Therapy, MCBT), is an emerging approach that endeavors to shift to a cognitive processing mode that is fully present and attentive regardless of emotional valence (Segal, Williams, & Teasdale, 2002). It has been posited that the use of mindfulness as a therapeutic strategy can have positive impact on mentalization capacity as well. The aim is to reduce the experiential avoidance that contributes to various forms of psychopathology. However, there appears to be no empirical data connecting these two concepts of mindfulness and mentalizing.

We suspect that we should find individual differences in attachment strategy and mindfulness capabilities. Insecure attachment is correlated with impaired mentalization. There are suggestions that mentalization (such as RF) and mindfulness should be associated. If one delves back into the theoretical framework of what constitutes an A or C insecure strategy, one is inclined to remember that type C individuals often struggle with adopting any perspective outside the self. Langer and Moldoveanu (2000) asserted that awareness of multiple perspectives is crucial to mindfulness. In theory, these individuals should have a deficit. Those individuals who have a C attachment pattern will be aware and in touch with some of their emotions, but lack full emotional clarity in regards to themselves and especially others. This in theory should result in decreased healthy self-regulation as well as emotional acceptance, which should be associated with lower dispositional mindfulness.

Type A pattern individuals rely expressly on cognition and reject affective information, failing to integrate important information about their emotional state in their experience of the present moment. This strategy also presents what must be construed as a deficit in mindfulness, in that acceptance of emotional state is often absent, especially when emotions are deemed forbidden or dangerous, causing the avoidant strategy to be in full effect. Individuals with an A pattern will be less aware of their emotional state, more focused on external context or contingency-based information, and thereby less observant of their personal internal state. Often, these individuals will lack healthy self-regulation as they will often exhibit repeated dependence on suppression of distress. Hayes and colleagues (Hayes, Strosahl, & Wilson, 1999) have also proposed that rule-governed behavior is of serious disadvantage when it comes to psychological flexibility, which requires mindfulness. Individuals who have an A attachment pattern often rely on overly rigid thinking and understanding of situations, and do not have the flexibility necessary to nourish a mindful and accepting state. However, these connections have not yet been subject to empirical inquiry, thus the importance of this thesis.

## **VI: The Current Study:**

The present project examines early parental RF in regards to when the children were preschoolers, in association with both preschool child attachment security and child mindfulness at early and latter adolescent ages. There does not appear to be any published research of a longitudinal nature that explores potential roots of child mindfulness. RF is also investigated in this study as a potential mediator of parental trauma and child attachment. The study also involves a multi-method approach to assessment, using interview, observational, and questionnaire data. Additionally, this study employs a mixed-method analysis approach which provides a deeper understanding of the relationships of the variables, and addresses our research questions at

different levels. Thus, the findings are expected to add meaningfully to the current clinical and developmental literature. A diagram is provided in Appendix B that visually demonstrates the hypotheses.

1) Establish the relationship of child mindfulness and aspects of the parent child relationship (i.e. parental traumatic experiences and parental RF ability). Based on theoretical similarities and assumptions, it is predicted that:

- a. Child mindfulness will be positively associated with parental RF. (i.e., A child with high mindfulness will tend to have a parent high in RF).
- b. Child mindfulness will be negatively associated with attachment risk. Children with low mindfulness will tend to have higher attachment risk.
- c. Child mindfulness will be negatively associated with parental trauma. Children with high mindfulness will tend to have parents with less trauma.

2) Replicate findings from other studies with regards to the relationship between child attachment security and the variables of parental RF and parental trauma. Based on previous research, it is predicted that:

- a. Child attachment risk will be inversely associated with parental RF functioning. (i.e., A child with higher attachment risk will tend to have a parent with lower RF ability.)
- b. Child attachment risk will be positively related to parental trauma. A child with high attachment risk will tend to have a parent with more trauma.

3) Determine if reflective functioning mediates the relationship between parental trauma and child attachment. Previous literature and discussion has lent plausibility to this prediction.

Research in this area, and based on theoretical conventions we can assume that:

- a. Reflective functioning will mediate the association between trauma and attachment.

## Chapter 3

### Methods

#### I. Study Design:

This was a longitudinal design with four visits over approximately 12 years. This data was collected as part of a larger study.

#### II. Demographic Information:

A questionnaire was created for the first wave of data collection that assessed for the participant's age, gender, marital status, race/ethnicity, family constellation, education level, income, etc.

#### III. Participants:

Families were originally recruited through community announcements and local preschools for the first period of data collection. Families were given monetary compensation for their participation after all visits. All parents participating in the study were primary caregivers and the vast majority were mothers. Families were of primarily low to moderate income, and 42% had some college-level education. Children averaged 4 years at time 1, 5.5 years at time 2, 12 years at time 3, and 16.75 years at time 4. Approximately fifty percent of the children were female. The families who have participated in this study lived in rural Kentucky and were mostly of Caucasian ethnicity. All four phases of the project received IRB approval.

#### IV: Assessments

A table listing each assessment and when collected appears in Appendix C.

##### Time 1.

##### *Pre-school Assessment of Attachment and Strange Situation Procedure.*

The Strange Situation Procedure (SSP) is Ainsworth's classic assessment for

determining child attachment to a primary caregiver and can be used for children approximately a year to five years of age (Ainsworth et al., 1978). The Preschool Assessment of Attachment (PAA) is this procedure placed within a DMM framework. The assessment spans over a 25-minute period, consisting of seven orchestrated episodes (Crittenden, 2004). Please see Appendix D for an in-depth description of the procedure. There are a series of separations and reunions with periods of free play, with the procedure filmed through a two-way mirror and timed by the manager. The most important part of the procedure, and most informative in terms of child attachment strategy, consists of the reunion behavior of child and parent. This assessment occurred during the first wave of data collection when the children were approximately four years of age.

Attachment ratings have previously been coded by the committee chair. Eleven children were coded independently by a second trained rater, resulting in 91% agreement for exact subcategory (i.e., C1–2 versus C3–4) (Cohen's  $\kappa = .87, p < .000$ ). Disagreements were resolved through discussion. The committee chair has received direct training from Patricia Crittenden, and has been deemed reliable on this assessment with other samples.

In regards to attachment, we have utilized what we have termed as the 'Continuum of Risk' model in order to run analyses (Kwako, Noll, Putnam, & Trickett, 2010). This was the suggestion of Patricia Crittenden, as this model allows the attachment status to be continuous and places the strategies of attachment in six distinct categories. These rank from lowest risk (0) to highest risk (5). For a visual representation of this method, refer to item M along with A of the Appendix.

***Trauma from the Intergenerational Parenting Survey/ Mini-AAI.***

Trauma was coded from the Intergenerational Parenting Survey, also referred to as the



Mini AAI (IPS: Kidwell, 2002a), which was used to measure attachment style in adults. It is a modified version of the Adult Attachment Interview (AAI: George, et al., 1985/1996) that examines a person's state of mind regarding their attachment in their family of origin. The Mini AAI interview focuses on childhood experiences and important caregivers involved in an individuals' early life. Interviews were originally audio recorded then transcribed for coding purposes.

Trauma was coded using the Traumatic Antecedents Interview (TAI; Herman, Perry, & Van der Kolk, 1989) scale to rate relevant questions and responses about abuse, loss, and neglect. The TAI coding system was utilized to provide a gross trauma score. The original TAI has 100 items, and is a semi-structured interview used to elicit the recollection of childhood trauma. Fisher (2000) has produced a method for adapting this coding system for use with the AAI, and similar interview measures. The trauma inquiry is not only made about abuse and neglect, but extends into other important areas of the individual's experiences with major illness, family discipline, separations from caretakers, and conflict resolution.

The coding system currently used for this particular measure assesses 10 different areas of gross trauma. The following areas were analyzed: parental discord, domestic chaos, physical abuse, sexual abuse, verbal abuse, witnessing violence, physical neglect, emotional neglect, losses, and significant separations. The various forms of trauma are given scores of 0 (indicating absence) or 1 (presence) for each area. The criteria for this coding system are provided with the instrument's scoring manual (Herman et al., 1989) See Appendix E for the IPS Instrument. Two previous undergraduate research students utilized the mini-AAI to code for parental trauma, reaching inter-rater reliability with 100% agreement on trauma coding (i.e., presence or absence).

### *Experiences of Caregiver Interview.*

During the first time of data collection this task was completed, with the children being approximately 4 years of age. This is adapted from the Parent Development Interview (PDI; Aber, Slade, Berger, Bresgi, & Kaplan, 1985), and is considered clinical in style and intent, with a focus on tapping issues relevant to parents of young school-aged children. During the Experiences of Caregiver Interview (George & Solomon, 1996), participants are asked to describe themselves as parents, to elaborate on the descriptive aspects of their relationship with the child, and how attachment-related issues (e.g., separation and the child beginning school) were navigated and managed by the parent.

This interview was coded for reflective functioning using a scale developed by the Chair and author, utilizing concepts from Fonagy's reflective functioning coding manual (1998) and a coding system catered to the Parent Development Interview. Reflective functioning was rated globally from this interview, with a score rating between 0 and 7. Lower ratings on the scale may indicate either absence (0) of reflective functioning, or blunted use and expression (1 or 2). Mid ratings (3-5) indicate an effort to tap into mental states, with potentially little exploration or insight. The highest ratings (6 or 7) demonstrate a clear understanding of mental states in the self and others and how they relate to emotions and behavior. While a number of questions were separately rated for RF, the global score is declared through modal, rather than mean analysis. This task is the first of two coded for reflective functioning. Ten interviews were coded to assess inter-rater agreement with ratings of the two interviewers achieving an average .746 intra-class correlation agreement. This is characterized as a 'good' level of agreement. (The instrument is under Appendix F, with the RF coding system under Appendix H.)

## **Time 2.**

### ***Mothers Empathetic Understanding Procedure.***

This interview was used during the second wave of data collection when the families were brought back into the lab, when the children were approximately 6 years of age. The child was in a separate room with another researcher, while the Mothers Empathetic Understanding Procedure, now labeled the Insightfulness Interview (Oppenheim, Koren-Karie, & Sagi, 2001) was administered to the parent. This procedure was introduced as a way to help the researcher better understand the children by having the parent produce information about them, with the emphasis placed on the child's emotions and thoughts.

After three tasks were completed with parent and child, the mothers were asked to reflect on what they just experienced with their child. The tasks included a Lego building task that should have been difficult for the child to create, a discussion of a time when the child was good, and a discussion of time when the child was bad. Questions were asked regarding their thoughts of what they believed occurred and how the child felt. The task probes the degree to which the mother can see the situation from the child's perspective. Throughout the interview the mothers were asked to support their statements about their child with examples from the observation and/or from everyday life. This interview was relatively brief, taking approximately 10-15 minutes to fully administer. (The instrument is under Appendix G, with the RF coding system under Appendix H.)

This interview was also coded for reflective functioning using the same 0-7 rating scale that was utilized for the Experiences of Caregiver Interview. The author and a graduate student trained by Dr. Shari Kidwell coded RF from the Insightfulness Interview. They were blind to the status of study variables for each family and to the ratings given for the other parent interview.

Seven interviews were coded to assess inter-rater agreement with ratings of the two interviewers averaging .852 intra-class correlation agreement. This is characterized as a ‘optimal’ level of agreement.

### **Time 3.**

#### ***Child Emotions Interview.***

The Child Emotions Interview was an interview measure given to the children at about 12 years of age, while the parents were being given a separate task in another room. The interview took approximately 20 minutes to administer. The focus of the interview is largely on eliciting personal episodes of sadness and anger, similar to that of the Meta-Emotion Interview (Katz & Gottman, 1996). There are additional questions that push for RF that are derived from the PDI.

The coding system developed for this project assesses the responses for mindful (healthy self-regulation, acceptance of emotions, awareness, observation of internal states) vs. non-mindful behaviors (distraction as coping, experiential avoidance, impulsivity). The coding system was developed based upon a ratings scheme used at age 4 and age 6 for this study, but these were expanded and significantly adapted to reflect concepts described by child and adolescent mindfulness experts (Baer et al., 2006; West, Penix-Sbraga, & Poole, 2005). Both behavioral observations of the process of discussing feelings and the content relayed were rated on a scale ranging from 0 (minimum/least adaptive) to 4 (maximum/most adaptive).—These ratings included: how readily a story is thought of, how fitting the story and the display of emotion are for the feeling, how engaged vs. distracted the individual is during the story, how aware of complex emotions, causation, and place of self in regard to emotional state, and ability to observe inner states or emotional states of others/parents. (The child emotion interview in

located under Appendix I, and the mindfulness coding system is included in Appendix J).

The Child Emotions Interview was coded by an undergraduate and graduate student trained by the author. Inter-rater reliability was established for each emotion, and on all eight components being assessed. For sad mindfulness ratings, six cases were coded for reliability, and intra-class correlations ranged for the eight components from .878-.960. Average reliability for sad mindfulness was .93, which is considered excellent. For mad mindfulness ratings, six cases were coded for reliability, and intra-class correlations ranged for the eight components from .545-1.00. Average reliability for mad mindfulness was .911, which is also considered excellent.

#### **Time 4.**

##### ***Children's Acceptance and Mindfulness Measure.***

The Children's Acceptance and Mindfulness Measure will be used (CAMM; Greco, Baer, & Smith, 2011) for all participants at approximately 16 years of age; however qualitative discussions of the measure will be provided for the first two subjects. The CAMM is a self-report mindfulness survey consisting of 10 Likert items. This questionnaire is a measure of acceptance and mindfulness in school age children and adolescents, yielding one overall score. Validation studies suggest that the CAMM is a developmentally appropriate measure for the teenagers on the project, with adequate internal consistency. It is recognized as the gold standard by which to assess children and adolescents for mindfulness. CAMM scores have been found to be positively correlated with quality of life, social skills, and academic success and negatively correlated with somatic complaints, internalizing symptoms, and externalizing behavioral issues (Greco, et al., 2011). The full measure is located under Appendix K.

### ***Mindful Thinking and Action Scale for Adolescents.***

The Mindful Thinking and Action Scale for Adolescents (MTASA; West, 2008; West, et al., 2005) is a 39-item self-report scale developed to assess mindfulness in terms of healthy self-regulation, awareness, observation, and acceptance of the present moment. This scale is designed for use with adolescents aged 13 to 17. The measure employs 5-point Likert responding ranging from 1 = never to 5 = almost always. Scores on this measure are significantly related to measures of life satisfaction, happiness, positive and negative affect, feelings of unwellness, degrees of substance use, and an adolescent measure of Big Five personality traits (West, 2008). Low scores indicate more mindfulness, while high scores indicates a relative lack of mindfulness.

Both the CAMM and the MTASA will be utilized because the scales differ slightly, with the MTASA providing us a broader scope of impact on healthy emotional regulation and mindfulness, and the CAMM having better validation data. As with the CAMM, the MTASA will be explored qualitatively for the first two participants. The full measure is located under Appendix L.

### **V: Statistical Analyses:**

Data were analyzed using SPSS 18. Hypothesis 1 (a and c) was analyzed using Pearson r correlations. Hypothesis 1 b and hypothesis 2 were analyzed using Spearman's rho correlations. Hypothesis 3 was analyzed using multiple linear regression analysis, to test the mediation effects of reflective functioning on the association between trauma and attachment.

## Chapter 4

### Results

#### I. Data Preparation

During the first phase of the study, 54 families participated. At time 2, 35 families participated, at the third time point there were 21 families able to return, and lastly at time 4 there have been two families brought back into the lab for participation in the study (data collection is ongoing.) Some families that participated at time 3 were not able to be scheduled for time 2. Also, data collection at time 1 expanded the use of parenting interviews over time, eschewing questionnaires of parenting quality. These latter two problems are fairly typical in longitudinal studies, leading to missing data.

Additionally, for some families, there were technical difficulties when recording their interviews. Again, this is particularly relevant for reflective functioning coded from the Insightfulness and Caregiver Interviews. However, RF ratings were highly associated for the two interviews for those parents for whom both could be coded [ $r(21) = .72, p < .001$ .] By creating an average RF rating we both decreased the number of analyses and maximized our sample size. That is, if a family was missing an interview, the one rating they did have was used as their average RF. We deemed this to be consistent with standard missing data procedures and especially important in this very small, longitudinal sample.

For data collected at time 3, the first family did not have the Child Emotions Interview from which mindfulness was coded. Similar to parenting data, a decision was made to emphasize interviews after pilot data was collected. Therefore, analyses involving mindfulness were maxed at 20.

In order to decrease Type I error, the associations of the ratings were examined in an attempt to collapse them into a smaller set of meaningful variables. Mindfulness was coded separately for both sad and mad emotions from the Child Emotion Interview. Each emotion (sad and anger) was coded using 8 subscales: behavioral observations of 1. Enthusiasm for the Task, 2. Affective Range, 3. Adaptive Emotion Regulation, and 4. Response Latency, and narrative coding of 5. Content Appropriateness, 6. Acceptance, 7. Awareness of Feelings, and 8. Emotional Observation. Table 1 contains inter-correlations for each emotion and each component. Ratings of mindfulness during the discussion of sadness averaged .503 (range .202-.778). Ratings of mindfulness during the discussion of anger averaged .53 (range .250-.799). A lower average correlation was obtained when examining ratings across sad and angry ratings ( $M=.34$ , range=.012- .769), and a number of correlations approaches zero. When sad ratings were combined into one variable and angry ratings into another, these total scores were associated [ $r(20) = .578$ ,  $p=.008$ ]. However, the decision was made to keep these total sad and mad scores separate, and to not combine them into a total Mindfulness score. This was both a psychometric decision, based upon the pattern of inter-correlations described above, and a theory-driven one. It is believed that individuals with different attachment patterns likely have different deficits for differing emotions. By analyzing each emotion separately, we believe we are able to provide richer interpretation of the findings.

Attachment was analyzed by utilizing the Continuum of Risk Method, which places attachment patterns on a continuum of risk. The distribution of attachment styles at each level at times 1, 2, and 3 is indicated in Table 2.



## **II. Sample Demographics**

Demographics information was collected at all time points. This information can be found in Table 3. A cumulative risk variable was computed to assist in understanding of the sample at each testing time point. Eight separate risks were examined and coded for absence or presence, and these included: the parent being married, the parent not graduating high school, parent not being employed, the parent perceiving frequent and/or intense financial distress, the family having more than 3 children, receiving aid given to families with dependent children, and/or receiving this support for four years or more. The mean sum for these eight variables was 3.39 (SD=1.73) at Time 1, 2.63 (SD=2.14) at Time 2, and 2.81 (SD=2.14) at Time 3.

## **III. Descriptive Statistics**

Table 4 provides means and standard deviations for all study variables: T1 (time 1): Child Attachment, Trauma, and RF, T2 (time 2): RF, and T3 (time 3): Mindfulness. Averaged scores of RF were from both T1 and T2.

## **IV. Attrition Analyses**

The longitudinal nature of the study suggested the possibility of differential drop out across time that could affect the generalizability of the results. In a series of t-tests and chi squares, the following time 1 variables were examined for differences in those participating at time 3 vs. those not participating: parental reflective functioning; parental trauma exposure; child attachment; sociodemographic composite; child ethnicity, age, and gender; child receptive language ability; parental depression; parent mental health services receipt; child developmental/mental health services receipt; child trauma exposure; family child protection involvement; and parent- and teacher-reported child symptoms. Only child symptoms differed significantly for the returning families. Child emotional and behavioral problems at preschool

were reported at higher levels for families returning eight years later, relative to families who did not return [ $t(1,52)=-2.41, p<.05$ ]. Interestingly, teacher-report did not reveal similar differences, though a parallel measure was used (Achenbach & Rescorla, 2001). This suggests that parents retained at time 3 perceived a bit more risk in their children than did parents for the larger, original sample.

## V. Inferential Statistics

Prior to the examination of hypotheses, potential covariates for the mindfulness interview ratings were explored. Cumulative sociodemographic risk, child age at the time of the interview, and child gender were not significantly associated with the ratings.

Hypothesis 1 examined the relationship between child mindfulness and the following variables: parental reflective functioning, child attachment security, and parental trauma history. A positive significant association was found between child mad mindfulness and parental reflective functioning,  $r(20) = .46, p = .04$ , but child sad mindfulness was not quite found to be significantly related to parental reflective functioning in this sample [ $r(20) = .388, p = .091$ ]. A negative significant association was found between child mad mindfulness and parental trauma,  $r(20) = -.553, p = .012$ . Child sad mindfulness was not found to be significantly related to parental trauma in this sample [ $r(20) = -.336, NS$ ]. Child sad and mad mindfulness were not found to be significantly related to attachment security for this sample [ $\rho(20) = -.146, NS$  for sad and  $-.250, NS$  for mad].

Hypothesis 2 examined child attachment security in relation to parental reflective functioning and parental trauma. A positive significant association was found between child attachment security and parental trauma,  $\rho(54) = .555, p < .001$ . A negative significant association was found between child attachment security and parental reflective functioning as well,  $\rho(46) =$

-.386,  $p = .008$ . Table 5 contains a complete bivariate matrix for study variables tested in hypothesis 1 and 2.

Hypothesis 3 examined reflective functioning as a mediator in the relationship between trauma and attachment. The methods for examining mediation in ordinal level data require statistical packages and techniques that are beyond our current means (see Hayes & Preacher, 2014, for example). However, we can examine simple low vs. high risk attachment using traditional multiple regression. As hypothesis 3 is important but not the central question of this thesis, we believe this is sufficient. According to Baron and Kenny (1986), a variable can be considered a mediator if certain criteria are met. (1) The independent variable (in this case, attachment risk high vs. low) is significantly related to the dependent variable (parental trauma), (2) the independent variable is significantly related to the proposed mediator (reflective functioning), (3) the proposed mediator is significantly related to the outcome variable, and (4) the indirect effect of the independent variable is reduced in the presence of the mediator (i.e. the indirect effect is significantly different from zero). Step one is satisfied as child attachment (low vs. high) and parental trauma are related in the regression analyses,  $\beta = .57, p < .000$ . Step two is also satisfied, as attachment risk is associated with parental reflective functioning,  $\beta = .40, p < .01$ . Step three is not satisfied as parental trauma and reflective functioning were not significantly related. Therefore, we cannot test this hypothesis further as criteria cannot be fully met.

## **VI: Qualitative Analyses**

The two children who did return to the lab for time 4 assessments completed the CAMM, MTASA, and the Acceptance and Fusion Questionnaire (AFQ-Y; Greco, Murrell, & Coyne, 2005) with some interesting results. The full AFQ-Y is located under Appendix N. The Acceptance and Fusion Questionnaire assesses the child's levels of emotional acceptance, and

fusion to particular thoughts, emotions, or processes. Additionally, psychological symptoms were assessed using the well-validated ASEBA instruments, the Youth Self-Report and Child Behavior Checklist (Achenbach & Rescorla, 2001). For the purposes of qualitative analyses, we will look at one particular family in-depth and their central assessments for the project's empirical questions.

**The “North” Family: Alex and Kelly.**

A good starting point would be to evaluate the previously tested variables of this current study for this particular family, in order to establish a profile. Mrs. North scored moderately high on reflective functioning, with a score of 4 on both interviews. (Five was the highest any parent managed to score on RF). This indicates the mother often took the child's point of view, was often positively appraising her child, and was moderately insightful in her responding, but perhaps lacked the depth and integration commonly seen in a higher level answer. This mother also often assumed to know what exactly was occurring inside her son's mind, when a higher level response would likely indicate that a parent can only make an informed and insightful guess to the child's mental state. Mrs. North tended to respond with a lot of certainty, and this indicates that she may often be making mis-attuned assumptions about her son's thought processes and feelings. Behavioral observations of parenting interactions would be helpful in confirming this.

Interestingly, researchers have found that parent's RF in relation to trauma may be an important predictor of child attachment security (Berthelot, et al., 2015). Mrs. North scores relatively high in terms of traumatic experiences, receiving a 4. No parent scored above a 5. This indicates that she likely endured multiple and complex traumatic events during her childhood. It may be that she is attuned to Alex's mental states at least some of the time, when traumatic

experiences are not invoked. Importantly, neither the Caregiving or Insightfulness Interviews would ordinarily elicit reminders of trauma; rather they allow ‘cool,’ cognitive processing from a distance. Also, if she is able to maintain moderate RF in everyday interactions with her son, this could also be why he is at least able to appear reasonably mindful in some of our assessments.

Alex’s mindfulness scores from the Child Emotion Interview were moderately high. He scored a 25 in both categories, sad and mad mindfulness. The highest one can score in each is a 32, which does indicate that he had minor deficits in some areas. He scored high in the majority of the narrative responding, as he was able to provide ample evidence of awareness of his emotional response, physiologically observations were also provided by him, so as to explain how he felt it in his body, and how others could detect the emotion as he was experiencing it (i.e. via changes in posture, body language, tone, etc.). In contrast, his ratings were considerably lower for some behavioral observations. For example, he was subject to many maladaptive emotionally distracting displays during the interview (whether he was cognizant of it or not). His body often would indicate when he was experiencing distress during the interview (as he would twitch, move more often, cough, shift in his seat, flip his hair, scratch his arms, etc.). He did not appear comfortable in the interview during discussion of anger, especially, though his words and the narrative of what he was saying would indicate otherwise. His ratings were also docked for providing (while appropriate in nature) excessively long responses, often leading to a tangent which was not quite fitting as a response to the original question. In terms of narrative responding, his ratings were also reduced for non-acceptance when he endorsed several experientially avoidant coping strategies for his emotional distress. For example, when talking about coping with sadness he stated he would think to himself: “I’ve got to do something. I’ve got to get rid of it. Got to get rid of it.”. He touted this as his primary response to negative

emotion, and that he would need to find a way to distract himself. This response, indicating some kind of action must be made to busy himself, and rid his mind of the distress, embodies the very basic nature and function of experiential avoidance.

Alex's child attachment strategy, assessed at time 1 in the PAA, has him as belonging to a high risk attachment pattern category. He is an A3-/4-, which indicates that as a child he was compulsively doing what his mother needed of him, busying himself, and providing her caregiving and attention. The PAA induces mild stress in both child and parent, through a series of separations. Alex's attachment strategy reveals a reliance on suppressing negative affect when it arises, which could explain his non-accepting coping strategies that emerge in his Child Emotion Interview. From the attachment perspective, it was likely psychologically dangerous for him to display either anger or sadness with his mother, as she needed him to be in a role-reversed strategy where her own negative feelings held sway. She might have responded negatively to such displays, becoming irritated or sad. Thus the child grew up with an internal working model of needing to suppress negative emotional responses, and relying on semantic memory (e.g., they were 'always close' and the relationship was 'always great') and procedural memory, which consists of remembering how things have been in the past and how they 'should' be in the future. The child learns to act on expected consequences, i.e. "If I react strongly and emotionally in an angry or sad way, my mother will withdraw or become upset with me". Thus cognitive sources of information are the most crucial to his future adaptation and attachment relationship. Alex discounts emotional responses because, theoretically, they could lead him to do the things that are forbidden within the relationship.

Additionally, something interesting occurs when looking at Alex's questionnaire data from time 4 of the data collection. On the CAMM he obtained a moderately high score of 30,

with the maximum you can score on the assessment being 40. This measure appears to indicate that he is fairly mindful in his approach to emotions, just as some of his verbal responses during the interview might indicate. On the Youth Acceptance and Fusion Questionnaire, we do not seem him noting much of an issue with accepting his emotional experience. Lower scores typically indicate more adaptive and accepting emotional regulation strategies, while high scores indicate emotionally non-accepting and maladaptive coping methods (i.e., experiential avoidance). He scores a low 6 out of a potential 68, indicating an open and accepting approach to his emotions. On the MTASA, Alex generally scores within the healthy and adaptive range, but he does score relatively lower on this measure, particularly on one subscale. In terms of awareness, he appears to indicate a moderate deficit, scoring 23 of 44 possible points. For example, he answered ‘almost never’ to the question ‘when I am stressed out about something, I know I’m tense.’

At the fourth point of data collection, a Youth Self Report was given to Alex and a Child Behavior Checklist was given to Mrs. North. The son does not indicate any issues that are remotely near clinical, or borderline clinical, levels. The mother, on the other hand, appears to indicate significant somatic complaints for her son (clinical in nature, above the 98<sup>th</sup> percentile for adolescents his age), and endorses that her son experiences anxious and depressed symptomology to a borderline clinical extent (around the 93<sup>rd</sup> percentile for adolescents his age). This is vastly discrepant from his self-report. How can we explain this discrepancy? If Alex is at clinical risk, this is particularly important.

First, Alex scored quite high on a measure of social desirability. It is possible that his denial of symptoms and endorsement, mostly, of mindfulness-consistent attitudes and coping, reflects what he perceived as the best way to present himself, as ‘normal.’ Second, his

compulsive A attachment strategy would encourage him to provide the semantically ‘correct’ answers that he is doing well, while neglecting his somatic and affective state. Third, the lack of awareness of his physical/emotional state indicated on the MTASA may be able to account for a portion of this observed inconsistency. That is, if Alex does not attend to organic physical cues of distress, he may not be able to accurately answer questions of an internalizing nature. Interestingly, however, he does endorse signs of somatic arousal that might be seen as behavioral (e.g., biting his nails, having trouble sleeping).

Alex’s Child Emotion Interview seems to be a crucial source of information about how he deals with feelings. Being pressed repeatedly to discuss particular experiences with being sad and being angry seemed to reveal bodily signs of discomfort and distress. Although he reported to his interviewer that it was “fun” and he was “fine,” fully consistent with a compulsive A attachment strategy, his repeated statements of needing to “get rid” of sad and angry feelings do not reflect allowing himself to be mindfully present with all emotions. And this strong need to avoid negative affect may actually result in increased internalizing and somatic symptoms, consistent with Acceptance and Commitment Therapy principles (Hayes et al., 2012).



## Chapter Five

### Discussion

The current study attempted to elucidate the relationship between the DMM perspective of attachment and mindfulness, as developed through the parent child relationship, with a focus on such factors as parental trauma and parental reflective functioning. A call has been made for more research exploring potential interconnections between these two differing theoretical approaches (attachment and mindfulness), but the current study did not find a significant relationship between those two core variables. Although child mindfulness was not related to attachment for this sample, child mindfulness about anger was significantly associated with parental trauma and parental reflective functioning. This same association was not found with those variables and child mindfulness about sadness. Thus the current study was able to pinpoint some rather important parental influences on some aspects of child mindfulness, but could not support the assumed association of child attachment and child mindfulness.

The hypothesized relationships between mad mindfulness for anger and trauma and reflective functioning were all found in the expected directions. Relative to children with lower mindfulness abilities, children who had higher mindfulness for anger were more likely to have parents who experienced less traumatic life events and stressors. Children with higher mindfulness for anger were also more likely to have parents who were more capable of reflective functioning in regards to their child's mental states.

Mindfulness regarding sadness was associated in the expected direction with these variables, but failed to reach significance. Lack of power can account for these findings, but it does appear that difficulty with anger could be more closely tied with childhood adverse experiences than sadness. That is, parents who have experienced trauma may be perceiving and

socializing anger differently in their children, thus leading their children to display less mindful attitudes and behaviors regarding their own anger. The larger project does include a parental interview that discusses their approach to both anger and sadness in themselves and their children. It may prove very informative to understanding the child mindfulness results to code these interviews for reflective functioning. Also, similar to recent ground-breaking research by Bertholet and colleagues (2015), our assessments likely will allow the measurement of parental trauma-specific RF.

Conceptual and methodological issues may also be a factor in why results were obtained for anger and not sadness. The emotions interview asked about the sadness first, then anger. Possibly the lack of counterbalancing could be aiding in a priming effect. The children may be more willing and able to discuss the second emotion, when negative affect has been induced and the requirements of the task are understood. Also, anger and sadness differ in cultural acceptance. Discrete emotions theory portrays anger as typically directed towards others due to grievances, with high arousal that disposes an individual to action which is often self-protective in nature. Sadness, in contrast, is most relevant to the self and does not always guide an individual to mobilize. Rather it is up to the individual to find their own way to cope with these feelings (Ekman, 2003). This may often reinforce a notion that anger is beneficial and more acceptable to an extent, especially in relation to the emotion of sadness. It is possible these differences in individual's arousal and in perceptions of the social context created differences in how children discussed anger vs. sadness.

Quite importantly, mindfulness may prove to be a difficult construct to measure. We have attempted to observe it from a purely behavioral standpoint; but can we observe a process that is often a private event and largely occurs within the context mind? An individual may look

mindful in appearance but not be fully present in the moment, and vice versa. Clearly defining and understanding what mindful observable behavior and action is will be essential to further developing this interview assessment of mindfulness. It may be helpful in future research to have multiple informants on a children's dispositional mindfulness. This could provide a more detailed and broad assessment of the child's mindfulness behavior in multiple contexts.

Although several of our mindfulness results were promising, these findings will need further replication in future studies, as the method employed for determining child mindfulness is novel. Validation of this mindfulness interview with empirically tested and solidly supported questionnaire assessments of mindfulness is key to determining if this new interview effectively assesses the constructs it was built to test. It may be helpful as well for future research to explore developmental and normative child dispositional hypothesis (prior to or without specific mindfulness training, and separate from a clinical sample). This could assist in developing a better understanding of the range of normative mindfulness ability. We will also need to examine the pattern of associations of interview ratings vs. questionnaires with respect to outcomes of interest, such as internalizing symptoms. The present study was not able to assess enough families with questionnaire methods in order to include them in our quantitative analyses. Two families participated thus far in time 4 of the study, and were given a protocol which included both the CAMM and the MTASA, as well as other assessments which may be of interest for future analyses. Data collection is ongoing, so these questions can be subjected to further empirical inquiry.

As expected, this study was successful in demonstrating the links between parental reflective functioning and child attachment, as well as between parental trauma and child attachment. Lower RF and greater childhood trauma are both associated with having children

that utilize riskier attachment strategies. Although these relationships are relatively well-documented in the literature, there appears to be few, if any, publications using DMM assessments of attachment. Traditional approaches to attachment find these parenting constructs related to elevated risk for disorganized child attachment, whereas the DMM may allow for a finer-tuned understanding of the relative importance of variables. For example, in this sample, RF seems to be lower for all insecure types relative to secures, whereas trauma seems to increase in a roughly linear fashion with the attachment continuum of risk variable. Also, the view of A and C as having opposite information processing biases is unique to the DMM. This has considerable implications for mindfulness-related concepts, so warrants further investigation in spite of null results here.

Additionally, reflective functioning did not function to mediate the hypothesized relationship between parental trauma and parent attachment for this current study. Several notable researchers (e.g. Toth, Meins, and Slade) have investigated RF as a mediator between aspects of parenting or between child and parent outcomes, but these relationships have proven elusive to establish. Further research exploring potential mediation effects of reflective functioning could prove extremely beneficial to the research literature, and is currently being strongly sought after.

### **Limitations**

This current project looks at parental trauma, child attachment security, child mindfulness, and parental reflective functioning from a small sample of parents in a distinctly rural area of Eastern Kentucky over the course of nearly 12 years. The data used in this student thesis comes from a large, ongoing study, the Morehead State University Family Development Study, which is now working on data collection for its fourth time point. Not all constructs of

interest were available at all time points. The small sample limited statistical power, which may be further decreased by restriction of range for some measures (e.g., child emotion ratings, reflective functioning scores). Additionally, attrition analyses showed that parent-report of child emotional and behavioral problems was elevated in those returning to complete the emotions interview at time3/age 12 vs. those who dropped out. This may mean that the results are not fully generalizable to the original sample; however, most attrition analyses proved non-significant.

A notable limitation of this current study is that child mindfulness has been assessed approximately 8-10 years after child attachment was measured. This might function to explain the lack of significant findings between child attachment level of risk and child ability for mindfulness towards sad and mad emotions. Child attachment from the DMM perspective is viewed as subject to change and further development as the child ages. When the children were assessed for mindfulness at age 12, they could have moved either closer to or further away from secure attachment based on parent life events, parent or family member loss, child social structure, etc. Bowlby (1980) himself theorized that current attachment security is based on early childhood experiences as well as later relationships and varying circumstances and life conditions. Children who were mildly or moderately insecure in terms of attachment pattern at time 1, could potentially be classified as 'reorganized' and B (secure) when assessed 8 years later. Children who were secure could have experienced considerable hardship in the context of their family, or from social relationship issues, and may have developed strategies more consistent with an insecure attachment pattern. This could account for this discrepancy in expected findings and the current study's results.

Therefore, we plan to fully code all attachment data for the child when they are age 12, as

well as age 16 when they return for time 4 data collection. Further analyses can be made for mindfulness from the Child Emotion Interview presented at both the time 3 and time 4 data collection points with concurrent attachment. Importantly, both age 12 and 16 assessments of attachment are interview-based, allowing comparison of semantic and procedural vs. affective information. It was discrepancies between such types of information that seemed key for understanding potential difficulties with mindfulness experienced by Alex North, our qualitative time 4 case study. Also, the time 4 Child Emotion Interview has been considerably expanded to more comprehensively inquire about mindfulness-related processes.

It was expected that trauma would be related to reflective functioning, but it was not found to be related in this current study. Trauma was coded from the Mini-AAI given to the mother or father at time 1. Some parents did not disclose information readily to the interviewer, and there were no additional prompts outlined for them to utilize in these instances. Some interviewers may not have approached these situations with ease and comfort, and likely did not prod further for information that would have been helpful for accurate coding. Thus it is likely that a number of reports of the parent's trauma history may be inaccurate or incomplete. One future solution could be to combine the multiple methods (interview, questionnaire, etc.) used during the course of the longitudinal study to assay for trauma, and to come to a combined trauma measurement from all available resources.

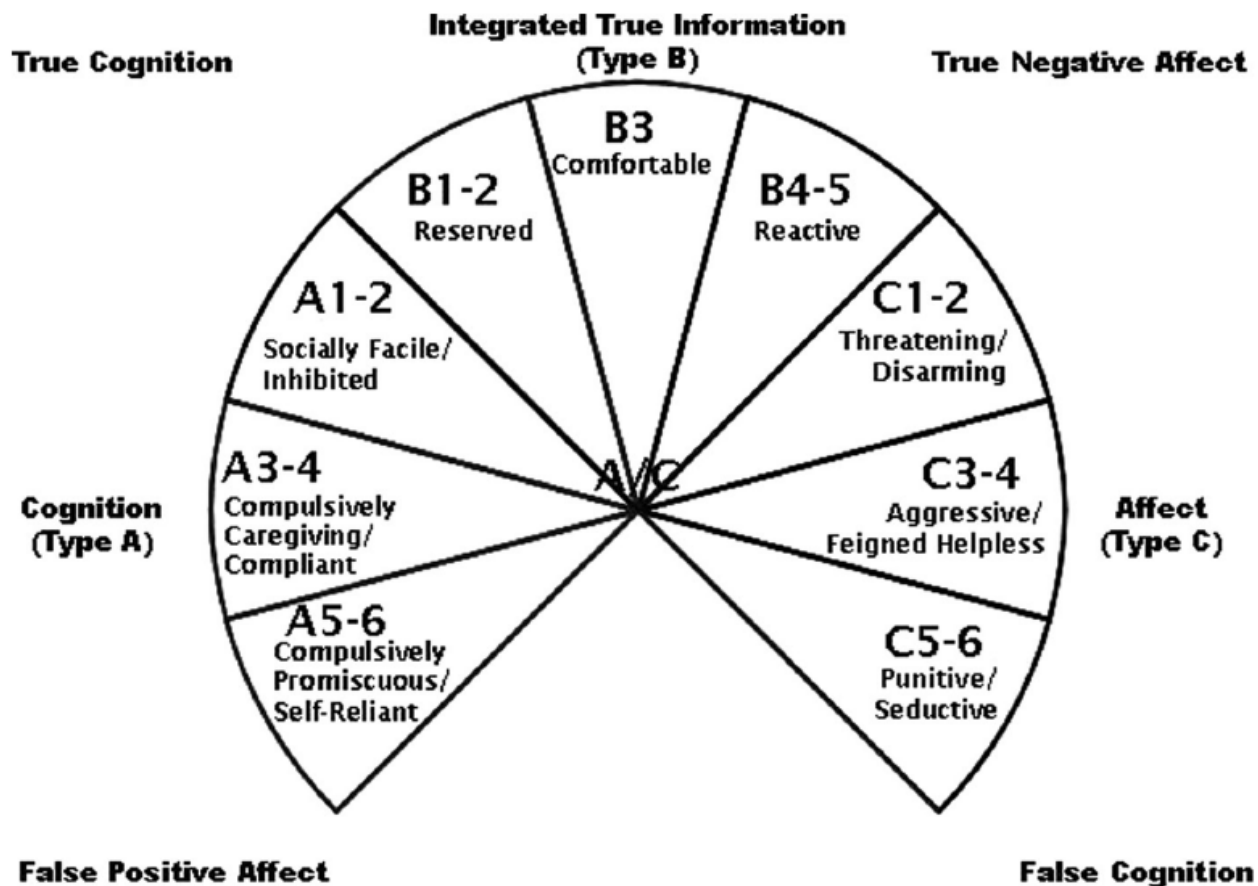
As a result of the lack of a trauma-RF connection, mediation could not be completed fully because all criteria was not satisfied. Although small sample size could be a potential explanation for this lack of findings, the obtained effect size is rather small. This suggests that measurement error may be a better explanation, though again, other prominent researchers have sometimes obtained similar results. Crittenden (2008) has suggested that examining

discrepancies between what parents know they should do or say vs. what they actually do when stressed is crucial. Data exists amongst the various measures in the study to examine such discrepancies both quantitatively and qualitatively. For example, we have several parent-child interaction tasks at each time point so that what parents say on questionnaires or in interviews can be compared to how they behave with their children.

Continued research aimed at delineating important parental influences on child attachment and child mindfulness is essential. This discussion has focused on the quantitative results of the study and why some results may not have been obtained; however, the qualitative case study of Alex North and his mother allow for a deeper understanding of how these constructs may be related, as well as how they may be connected with risk for internalizing and somatic problems. It may be that clinical risk cases, such as the North's, will allow us to determine better assessments of this study's chief variables and inspire us to see if our hypotheses can be generalized to a larger sample. This would allow for a more meaningful movement toward integration of these two approaches into the form of a coherent therapeutic approach for treatment, with chief importance and applicability in the context of the parent child relationship.

Appendices

Appendix A: The Dynamic Maturational Model of Attachment and Adaptation, for School-Aged Children



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## **Categorical Descriptions of DMM Patterns from Family Relations Institute.**

### ***Secure Strategies.***

B3: The Type B strategy involves a balanced integration of temporal prediction with affect. Type B individuals show all kinds of behavior, but are alike in being able to adapt to a wide variety of situations in ways that are self-protective, that protect their children, and that as often as possible cause others no harm.

B1-2: Individuals assigned to B1-2 are a bit more inhibited with regard to negative affect than B3s, but are inherently balanced.

B4-5: Individuals assigned to B4-5 exaggerate negative affect a bit, being sentimental (B4) or irritated (B5), but are inherently balanced.

### ***A Strategies.***

A1-2: The A1-2 strategy uses cognitive prediction in the context of very little real threat.

Attachment figures are idealized by over-looking their negative qualities (A1) or the self is put down a bit (A2). Most A1-2s are predictable, responsible people who are just cool and businesslike. Type A strategies all rely on inhibition of feelings and set danger at a psychological distance from the self. This strategy is first used in infancy.

A 3-4: Individuals using the A3 strategy (compulsive caregiving, cf., Bowlby, 1973) rely on predictable contingencies, inhibit negative affect and protect themselves by protecting their attachment figure. In childhood, they try to cheer up or care for sad, withdrawn, and vulnerable attachment figures. A4: Compulsively compliant individuals (Crittenden & DiLalla, 1988) try to prevent danger, inhibit negative affect and protect themselves by doing what attachment figures want them to do, especially angry and threatening figures.

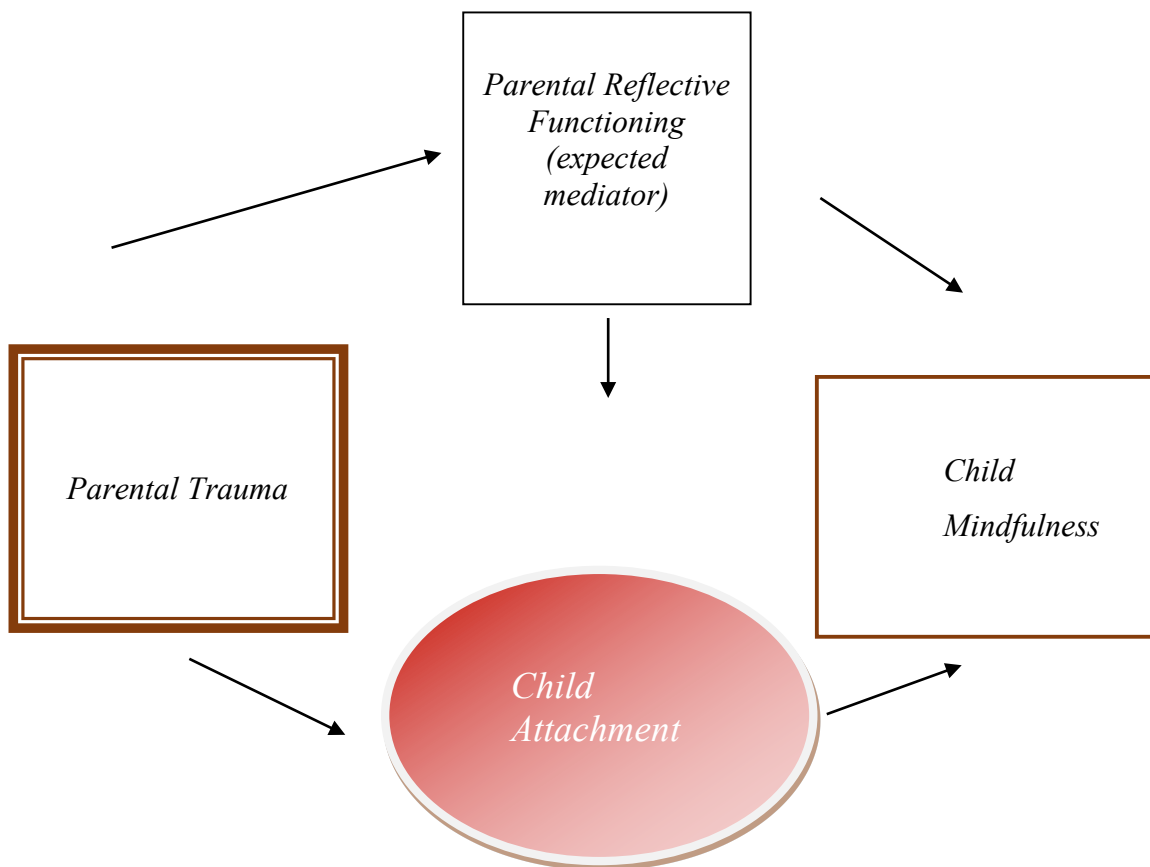
*C Strategies.*

C1-2: (threatening-disarming) strategy involves both relying on one's own feelings to guide behavior and also using somewhat exaggerated and changing displayed negative affect to influence other people's behavior.

C3-4: The C3-4 (aggressive-feigned helpless) strategy involves alternating aggression with apparent helplessness to cause others to comply out of fear of attack or assist out of fear that one cannot care for oneself. Individuals using a C3 (aggressive) strategy emphasize their anger in order to demand caregivers' compliance. Those using the C4 (feigned helpless) give signals of incompetence and submission. The angry presentation elicits compliance and guilt in others, whereas vulnerability elicits rescue.

## Appendix B: Visual depiction of expected associations between variables

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\*arrows not intended to suggest directionality

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**Appendix C: Measures used and when given during the longitudinal study.**

MEASURE	WHEN TESTED	CHILD AGE
Preschool Assessment of Attachment (PAA)	Time 1	4
Mini Adult Attachment Interview (Mini-AAI)	Time 1	4
Experiences of Caregiver Interview	Time 1	4
Insightfulness Interview	Time 2	5.5
Meta Emotions Interview (MEI)	Time 3	12
Child and Adolescent Mindfulness Measure (CAMM)	Time 4	16
Mindful Thinking and Action Scale for Adolescents (MTASA)	Time 4	16

## **Appendix D: Strange Situation Episode Overview**

1. The first episode involves the manager leading the attachment figure and child into the room from which the interaction is to be observed.
2. During the second episode the attachment figure is instructed to let the child play with the toys, and to respond to the child, but to not initiate or actively play with the child. The attachment figure is instructed to sit in a designated chair and should stay there unless invited by the child to move elsewhere.
3. At the 3-minute point of play, the stranger enters the room, starting episode 3. She introduces herself and sits in the other adult chair. She engages the attachment figure with small talk. After a minute and a half, the stranger begins to engage the child.
4. At 6 minutes into the procedure the attachment figure is signaled to leave the observation room by a knock at the door, thus begins episode 4. The parent is to give any excuse he or she deems necessary in parting with the child. The stranger continues to play with child then returns to her chair.
5. After 3 more minutes have elapsed, episode 5 begins. The attachment figure re-enters the room, the stranger fades from sight. The attachment figure calls the child's name, then waits at the door a moment before sitting down. This is the first reunion.
6. After 3 minutes have once again elapsed, the parent is to depart again upon hearing a knock at the door.
7. This is the most important parent and child reunion of this protocol. The parent is to pause at the doorway then hug, touch, or pick-up child. If child does not approach the caregiver, he or she should approach the child. The parent and child resume play, and recording will continue for 3 more minutes before procedure is fully complete.

**Appendix E: Intergenerational Parenting Survey/Mini AAI**

1. First, please describe your family growing up.
  - a. Were you raised in a home with both parents?
  - b. Were there any other adults involved in raising you like grandparents, aunts, uncles, or older siblings?
  - c. Were there any other children in the family besides you?
2. What was the mood of your family like growing up?
3. How did your family show love and affection?
  - a. Please provide an example of how your family showed love and affection.
4. How were you disciplined?
  - a. Please relate a time you were disciplined this way.
5. When you were hurt or upset as a child, how did your parents respond to you?
  - a. Please provide an example.
6. Who are the people you can depend on to help you in times of need?
7. What is your relationship like with your parents now that you are an adult? Specifically, how has it affected who you are and what you are like as a person?
  - a. What are some specific ways that their relationship has influenced you?
  - b. How has it affected your relationship with others?
  - c. How has this affected you as a parent?

**Appendix F: Experiences of Caregiver Interview**

1. First tell me how you would describe yourself as a parent. What are you like as (child's name) parent?
2. What makes you the happiest about being (child's name) parent?
3. What worries do you have about being (child's name) parent?
4. What makes you frustrated about being (child's name) parent?
5. What five words would you use to describe your relationship with (child's name)? And I'd like you to give me an example or story about each word. I can help you keep track.
6. What was it like when (child) started school for the first time?
7. Has your child ever been separated from you for a long period of time? Did you do anything to protect your child from this kind of stress?

## Appendix G: Insightfulness Interview

We'd like to start the parent interview by having you help us better understand your child, particularly how your child thinks and feels. I'm going to ask you to talk about the two tasks you just completed with your child in the other room. I will need to tape this part of the interview so you can talk freely. Is this OK? Do you have questions before we get started? First, I'd like you to tell me more about when your child worked on the Lego task just now. Specifically, I'd like to understand more about your child when he/she had to do the last Lego task, which is pretty challenging for a child of his/her age.

1. What do you think went through your child's head during this task? What did he/she think and feel?
2. Does the behavior we saw show traits that are typical of your child? Does he/she usually act like this? (If needed, state, "For example, does your child usually ask for help? Usually stay calm? Usually get frustrated?")
3. How do you feel talking about this now? Did anything surprise or concern you or make you happy?

Now I'd like you to tell me more about when you talked to your child about a time when he/she was bad.

1. What do you think went through your child's head during this task? What did he/she think and feel while talking about it just now?
2. Does the behavior we saw show traits that are typical of your child? Does he/she usually act like this?
3. How do you feel talking about this now? Did anything surprise or concern you or make you happy?



Next I'd like you to tell me more about when you talked to your child about a time when he/she was good.

1. What do you think went through your child's head during this task? What did he/she think and feel?
2. Does the behavior we saw show traits that are typical of your child? Does he/she usually act like this?
3. How do you feel talking about this now? Did anything surprise or upset you?

## **Appendix H: RF Scale for Insightfulness Interview and Experiences of Caregiver Interview**

The highest scores are reserved for parents who describe internal processes. Behavioral descriptions, even if accurate, do not indicate the highest levels of RF. A highly reflective stance, further, involves: (a) an awareness of mental states, such as acknowledgement that we cannot fully know what is in another's mind or that individuals can mask what they are feeling or thinking; (b) explicit effort to understand the mental states of the self and other spontaneously and in the moment, including how the 2 individuals could see things very differently; and (c) knowledge that the child is a child, with differing ability to think, to regulate their emotions and behavior, etc., as compared to themselves (Fonagy et al., 1998; Slade et al., 2004). In the 7-point scale below, parents with "ordinary RF" will fall at the mid-range.

1. Very low RF. Dismissive, derogating, or highly defended regarding the reflective process. Does not utilize the interview to better understand their child or themselves. Clearly have a preconceived, negative notion of their child and their relationship with him/her. The rater will feel the parent is distorting the child's internal experience, if it is presented at all. They will likely feel irritated at the parent and feel their answers are self-serving and self-focused, focused on how bad their child is or how stressed they themselves are. An additional type of very low RF is a parent who responds "I don't know" to the majority of questions and ends up with a very short transcript.
2. Low RF. Minimal effort to reflect. Parent seems uncomfortable and disengaged and does not provide a complex picture of the child and/or his/her relationship with them. Reflection seems to be a foreign idea to this parent, though they are cooperative and try to focus on their child. They do not use the discussion as an opportunity to "bash" their child or otherwise present their own point of view.

3. Moderately low RF. Parent describes child to some degree accurately, including having some insight that may be correct regarding mental states, but he/she does not show real empathy or understanding –OR- parent does not engage in discussion of child mental states, but likely provides an accurate description of behavior. Parent does not show evidence of distortions in their perceptions of their child’s internal states. In other words, they provide a dry, descriptive, or factual account (the latter) or provide a reflective-sounding answer that sounds better than what you will ultimately decide it is (superficial or pseudo RF). Parent may also be more focused on his or her own mental state.
4. Ordinary understanding. Some effort to discuss thoughts and/or feelings of the child and/or themselves. Parent shows empathy, understanding, and acceptance of the child. Parent may show some hesitation, but does seem to value of the importance of reflecting on mental processes. Answers, however, are less sophisticated and complex in the ways described for a 6 or 7. Parent predominately focusses on child’s mental state, instead of solely their own.
5. Somewhat reflective. Less hesitation, and more certainty in value and importance of reflection. More likely to delve into reflection without needing excessive prompting from the interviewer. Parent does not appear to present evidence of distortions of child mentalization, and is not overtly negative in portrayal of child’s mental states or abilities.
6. Moderately reflective. Includes both thoughts and feelings of child and description of these and behavior seems likely to be accurate. A picture of the child as unique and complex is evident. However, some elements below (for a ‘7’) are absent. For example, engaging in mentalization may be less comfortable and therefore answers are shorter, there is less comparison or integration with what their child is usually like, or they

provide less information about their own thoughts and feelings. However, they are balanced, accepting, and warm and their answers are coherent and psychologically-minded. Begins to demonstrate that statements about child's mental state is a close approximation, but that the parent cannot truly know the full breadth of the experience.

- 7- Highly reflective. Not only describes child's emotions, thoughts, and behaviors in a believably accurate way, but really integrates this with what they know of the child. Provides a complex (including both good & bad), rich, and unique description of the child overall. While they seem to understand their child's motives and internal experience very well, they know they often can only guess at what their child feels or thinks. (i.e., They are tentative and say things like, "Probably" or "I wonder").
- Balanced, accepting and warm describe the child developmentally, understanding what a child of this age can think about, can know, etc. Highly coherent and detailed. They also are insightful about their own thoughts, feelings, and behaviors and express how there is a connection between their own and their child's. Mentalizing is easy or comfortable for this parent.

## **Appendix I: Child Emotion Interview**

### **Introduction.**

We would like to ask you some questions about how you feel about feelings. There's no right or wrong answer for these questions. Everyone is different. I am going to be asking about your feelings, but also about your mom's/dad's feelings. OK? Any questions before we start?

### **Part One: Sadness.**

We're going to start off with the feeling of sadness.

#### ***Self.***

- a) What does it make you think of when I mention the word "sad?" Can you recall a specific time when you were sad?
- b) What would you look like if you were sad? Could I tell you were sad? Could your mom/dad tell?
- c) What do you do to get over feeling sad?
- d) What's it like to be sad in your family? How does your mom/dad deal with you when you're sad?

#### ***Parent.***

- a) What about your mom/dad? How can you tell that (s)he's sad?
- b) How do you feel when he/she's sad? What might you do?
- c) Can you tell me about a specific time that he/she was sad?
- d) Has he/she ever been sad about something you did? How was that for you?

**Part Two: Anger.*****Self.***

- a) What does it make you think of when I mention the word “mad?” Can you recall a specific time when you were mad?
- b) What would you look like if you were mad? Could I tell you were mad? Could your mom/dad tell?
- c) What do you do to get over feeling mad?
- d) What’s it like to be mad in your family? How does your mom/dad deal with you when you’re mad?

***Parent.***

- a) What about your mom/dad? How can you tell that (s)he’s mad?
- b) How do you feel when he/she’s mad? What might you do?
- c) Can you tell me about a specific time that he/she was mad?
- d) Has he/she ever been mad about something you did? How was that for you?

## Appendix J: Child Emotions Interview Coding Manual- Mindfulness Focus

### Behavioral Coding.

Observe and rate behaviors based upon the entire discussion of each feeling. Provide separate ratings for each separate emotion experienced by the child (Sad/Angry). Each rating should be based on what behaviors are observed a majority of the time during the observation.

### *Enthusiasm for the Task.*

In this section we are observing how motivated and engaged the child is throughout the interview. Observer should not focus on the content during the interview, the main focus should be on the child's behavior. *From a mindfulness perspective, the ability to stay engaged in spite of the induction of negative affect suggests very adaptive emotion regulation skills.*

- 1 Pretty unresponsive, inattentive, and disinterested (looking in mirror...). May appear to want to comply, but does not follow-through in any way. Does NOT attempt a story for that feeling -OR- may be oppositional in refusing to complete task.
- 2 Some attempt at completing task, but little sense that it is really enjoyed at all.  
"Going through the motions." Reserved but tries to cooperate. May be unable to tell a story -OR- Child would be characterized as neutral.
- 3 Enjoying task, though in a somewhat quiet or reserved way.  
Cooperative, interested, and positive. Complies quickly to tell a story, but does not use much expressiveness or enthusiasm (may seem neutral).
- 4 Enthusiastic, motivated, and engaged. Seems to be enjoying self. Engages in the task with extra flourish or expressiveness. (e.g., hand gestures, expressive voice, offering own input about task) –OR- if not extra expressive, complies quickly and enthusiastically.

*Affective Range and Appropriateness.*

Here we are not interested in whether the child necessarily shows the appropriate emotion the whole time he/she is discussing it, but whether there is a sense that the child is displaying more of the emotion being discussed than other, inappropriate emotions. Some children will be able to easily take on new emotions as needed. Others may seem "stuck" on certain emotions. Others may not seem to understand how to access their feelings as required by the task. Be sure not to rate children downwards for engaging in social smiling when smiling would otherwise seem inappropriate. (e.g., Child smiles at interviewer briefly when engaging in telling sad story.)

From a mindfulness approach, we think this is measuring open and flexible expression of emotion.

- 1 Shows little sense of emotion appropriate to the feeling being discussed. Nor is tone of voice appropriate for this feeling. Child's facial expressions are not appropriate (smiling when talking about a sad event). Emotion is flat or otherwise not at all appropriate for the affect being discussed (inappropriate laughter).
- 2 Fairly poor facial displays and voice of emotion being discussed. Poor and spontaneous displays of the appropriate emotion are limited or occasional in manner. Affect displayed will be somewhat inappropriate overall to the emotion child is supposed to be accessing and discussing.
- 3 Some evidence that child can access the appropriate affect. Any affect that is inappropriate is expressed only briefly. Spontaneous displays generally show the appropriate emotion quite well.
- 4 Child definitely can access the appropriate affect. Displays a similarly good face and voice spontaneously, even if only briefly. Inappropriate emotions are not displayed.



*Adaptive Emotion Regulation.*

This reflects use of adaptive and normative emotion regulation strategies vs. impulsive displays of negative affect, distraction, or avoidance of affect (e.g., asking to leave room during interview, pointing to something in the room to get the interviewer's focus elsewhere, etc.). Impulsive displays are more prevalent in the mindfulness emotion regulation literature as maladaptive responses during the emotional experience.

- 1 Child demonstrates frequent signs of impulsive displays of negative affect, distraction from the task, and blatant avoidance of affect when telling the story. The child may literally leave the room, or continually attempt to get the interviewer off task. The child may need constant redirection, and the interviewer often appears exasperated in this attempt.
- 2 There is moderate attempt at signs of distraction via impulsive displays, and often high avoidance of affect in telling the story. The child may be more likely to pace the room during the interview, or behave in a manner that detracts from what is being discussed.
- 3 There is mild distraction from the task, but the child easily redirects self and gets back on topic without much intervention from the interviewer. Some impulsive displays, but nothing that detracts too heavily from the interview.
- 4 There are no discernable signs of impulsive displays of affect, distraction from the interview task, or behaviorally avoidant actions. The child is on task and does not need any redirection at any point.

### ***Response Latency.***

This is defined as the length of time it takes the child to begin to tell their story, as measured in seconds. The end point should reflect when the child begins telling an actual story or episode, whether or not it is about the correct feeling. Um, pauses, and other such place fillers count the same as silence, that is, they do not indicate the beginning of an episode/story.

- 1 Child has lengthy pauses that do not serve a purpose in the telling of the episode or for the nature of the response. Child extremely hesitant in providing a response, and many times is unable to produce a response. The interviewer often has to elaborate on what is needed, and prompt with further help in order to get the child to respond in an appropriate manner. The child almost always requires intervention from the interviewer in order to produce a complete answer.
- 2 The child has noticeably long pauses, but is often able to respond in a semi-relevant manner with an appropriate response. Child does lag noticeably, or jumps to answer the question before it has been fully presented by the interviewer, producing an answer that does not fully broach the topic at hand. The child will often need clarification and prompts from the interviewer in order to provide a complete answer.
- 3 There is some noticeable hesitancy in responding, but only a few seconds in length. The child is still often able to produce a good answer. The child may also answer too quickly with responses that are semi-appropriate, but with little elaboration. As compared to a '2' response, the child does allow the whole question to be presented in its entirety before jumping to respond. Sometimes the child will need some clarification or prompts from the interviewer.

- 4 There is an appropriately long pause before the child responds to the question (typically 1-3 seconds in length). The child replies in a competent manner and does not fail to answer the question as presented. The child rarely needs further prompting or clarification from the interviewer.

### **Narrative Coding.**

Provide separate ratings for each separate emotion experienced by the child (Sad/Angry). Each rating should be based on how dominant or frequent the 'behavior' of interest occurs across the sections of the interview.

### ***Content Appropriateness.***

The degree to which the story or episode itself is consistent with the feeling the child is being asked about. Appropriateness is determined by how prototypical the story is for that feeling. Note that more than one feeling can be described, and in fact, this will be reflected in other ratings. *From a mindfulness perspective, telling a story that fits the feeling demonstrates emotional clarity.*

The following are suggestions for prototypical content:

Happy-- spending time with others, playing, success, obtains desired objects

Excited-- parties, new and special things and activities

Calm-- watching TV, reading, relaxing, sitting with others

Sad-- loss of or separation from objects or people, rejection, failure

Scared-- separation from people, monsters, ghosts, the dark, dogs, general perception of threat

Mad-- rejection, punishment, being deprived of people or things, child's goals or wishes conflict with others', intrusion by others

- 1 Very inappropriate/Little relevance. The content fits the prototype for another feeling much better than prototypes for the feeling at hand. The child will often go on tangents that take the interviewer off topic and require much redirection.
- 2 Fairly inappropriate/Slight relevance. Only with great inference or in unusual circumstances is the content possibly consistent with the feeling at hand. The interviewer typically needs to ask several follow up questions to ascertain the relevance of the response.
- 3 Fairly appropriate/Moderate relevance. Some inference may need to be made, but the story is fairly similar to a prototype for the feeling at hand. A slightly unusual but easily understood as appropriate story may also be told. Or a story is told that contains few details, but it does fit the feeling discussed reasonably well. There is little need for follow up questions in order to determine the relevance of the response to the question.
- 4 Very appropriate/High relevance. No inference needs to be made. A prototypical story is told for the affect at hand. The interviewer has no need to ask extensive follow up questions in order to determine relevance.

***Signs of Non-Acceptance.***

For this rating, we're looking for distress over feelings, reluctance to discuss emotions, not delving into feelings, and/or showing high distress over feelings. Complete a frequency count of such things and then rate the child with the 4-point scale below.

- 1 Child will not delve into feelings, and/or shows high distress over feelings (i.e. crying or laughing at the discomfort). Either way fails to discuss ways of coping that embody

presently experienced emotions. May either endorse that they never feel that particular emotion, or state that they attempt to ‘rid the self’ of that emotion.

- 2 There is some, but very limited attempt at discussing feelings, with moderate distress over feelings. Child may endorse healthier, more present minded ways of coping with distress (talking with an adult, etc.) but is likely to state that it does not help.
- 3 There is a moderate attempt at discussing emotions, with slight distress over feelings (nearly tearing up or giggles in inappropriate places). But child does a good job of discussing feeling itself, and provides healthy ways in which he or she copes with feeling (i.e. think about cause of feeling, let it be there and work with it, or discussing it with an adult).
- 4 There is a full attempt to discuss emotions, with no noticeable distress over feelings. Child demonstrates competent and present minded coping strategies that allow the child to fully express emotion, without rumination or worry involved. Child understands that emotional expression is important, and that thoughts and feelings should not be suppressed.

***Decreased Awareness of Feelings.***

The degree to which the child describes feelings in a complex, sophisticated manner.

- 1 Complexity is nearly completely lacking, and there is no discussion of causation or results of behavior. Child is at a loss of how emotion occurs and why. There is no depth to the experience, and child has a one-dimensional understanding of the emotion (e.g., all anger is the same).
- 2 There is slight complexity to the response, but depth is still majorly lacking. The child may appear to understand a bit of what leads to emotion, and what the effects of that

- emotion typically are, but cannot elaborate when prompted further. Understanding of expression is stunted.
- 3 There is moderate complexity of emotional expression and understanding. The child appears to be able to attribute rational reasons why an emotion occurs, and in response to what. The child may still struggle in demonstrating a fully in-depth understanding of the emotion.
  - 4 High complexity in response. Child appears to understand the cause of the emotion, how it is produced, and how it is expressed. Child is likely to understand that not all forms of an emotion are the same, and that emotion can vary in intensity for various reasons.

***Decreased Emotional Observation.***

The degree to which the child describes external examples of affect and inner physiological states. For example, may have limited description of how we or parent would know if they were sad/angry.

- 1 There is no knowledge of how others would see emotion, no physiological descriptions of emotion.
- 2 There is little knowledge of how others would see the emotion in the self and some slight potential for physiological descriptions of the emotion.
- 3 The child presents moderate knowledge of how others would see the emotion in the self, and some physiological descriptions of the emotion as it is present in facial expression and felt in the body.

- 4 There is a full and rich knowledge of how others would see the emotion as expressed by the self with plenty of physiological descriptions and support for how the emotion would be felt and visibly expressed.

**Appendix K: Child and Adolescent Mindfulness Measure (CAMM)**

	Never True	Rarely True	Sometimes True	Often True	Always True
1. I get upset with myself for having feelings that don't make sense.	0	1	2	3	4
2. At school, I walk from class to class without noticing what I'm doing.	0	1	2	3	4
3. I keep myself busy so I don't notice my thoughts or feelings.	0	1	2	3	4
4. I tell myself that I shouldn't feel the way I'm feeling.	0	1	2	3	4
5. I push away thoughts that I don't like.	0	1	2	3	4
6. It's hard for me to pay attention to only one thing at a time.	0	1	2	3	4
7. I get upset with myself for having certain thoughts.	0	1	2	3	4
8. I think about things that have happened in the past instead of thinking about things that are happening right now.	0	1	2	3	4
9. I think that some of my feelings are bad and that I shouldn't have them.	0	1	2	3	4
10. I stop myself from having feelings that I don't like.	0	1	2	3	4



## Appendix L: Mindful Thinking and Action Scale for Adolescents

(\*same rating scale used for CAMM, 0 to 4)

(reverse scored items denoted by †)

1. I accept myself even if I still have things to learn.
2. I can enjoy time alone.
3. If I realize I've forgotten what I'm doing in the middle of a task, I can bring my focus back.
4. I listen to the sounds around me.
5. It's impossible for me to pay attention to something I don't like.†
6. When I find myself lost in a daydream, it's easy for me to come back to the present.
7. I need to get revenge if I'm insulted
8. I feel my moods in my body.
9. Others could describe me as patient with myself.
10. In my mind there is a chain reaction to how my thoughts unfold.
11. I don't know I'm angry until somebody else tells me.†
12. I have a peaceful attitude toward myself.
13. It is interesting to sit quietly.
14. When I am stressed about something, I know I am tense.
15. My anger comes on too fast for me to stay in control.†
16. I try to really pay attention to what I am doing.
17. I appreciate simple pleasures in life.
18. When I get annoyed I have a healthy way to calm down.
19. I hate it when there is nothing to do.†
20. I recognize when I'm getting upset and calm myself.
21. I can stop myself from saying mean things.
22. I can focus on what I am doing.
23. People who know me well could describe me as "self-aware."
24. I am known to lose my temper.†
25. When I do something I don't feel good about, I try to understand why I did it.
26. If I pay close attention when I am bored, things get more interesting.
27. I am patient with other people.
28. I get so caught up in thinking about what just happened that I lose track of what's going on.†

29. I have a healthy and natural way to relax.
30. I notice feelings I'm having about other people.
31. When things get slow, my mind wanders.<sup>r</sup>
32. I plan before I act on my ideas.

**Appendix M: Coding of Attachment Continuum of Risk Variable**

LEAST RISK (0)	B (ALL TYPES)
(1)	C 1/2
(2)	A 1/2
(3)	C 3/4
(4)	A 3/4
Highest Risk (5)	A/C, Depressed, Insecure Other (complex and difficult strategies to classify)

### Appendix N: Acceptance and Fusion Questionnaire for Youth (AFQ-Y)

	Not at all True	A Little True	Pretty True	True	Very True
1. My life won't be good until I feel happy.	0	1	2	3	4
2. My thoughts and feelings mess up my life.	0	1	2	3	4
3. If I feel sad or afraid, then something must be wrong with me.	0	1	2	3	4
4. The bad things I think about myself must be true.	0	1	2	3	4
5. I don't try out new things if I'm afraid of messing up.	0	1	2	3	4
6. I must get rid of my worries and fears so I can have a good life.	0	1	2	3	4
7. I do all I can to make sure I don't look dumb in front of other people.	0	1	2	3	4
8. I try hard to erase hurtful memories from my mind.	0	1	2	3	4
9. I can't stand to feel pain or hurt in my body.	0	1	2	3	4
10. If my heart beats fast, there must be something wrong with me.	0	1	2	3	4
11. I push away thoughts and feelings I don't like.	0	1	2	3	4
12. I stop doing things that are important to me whenever I feel bad.	0	1	2	3	4
13. I do worse in school, when I have thoughts that make me feel sad.	0	1	2	3	4
14. I say things to make me sound cool.	0	1	2	3	4
15. I wish I could wave a magic wand to make all my sadness go away.	0	1	2	3	4
16. I am afraid of my feelings.	0	1	2	3	4
17. I can't be a good friend when I feel upset.	0	1	2	3	4

## Results Tables

Table 1

**Inter-correlations for Emotion Coding.**  
*Sad Mindfulness.*

	Sad Enthus.	Sad Affect	Sad Adapt	Sad Latency	Sad Appro.	Sad Accept	Sad Aware	Sad Observe
Sad Enthus.	.....	.294	.486*	.307	.599**	.682**	.453*	.567**
Sad Affect	.....	.....	.375	.600**	.496*	.411	.441	.202
Sad Adapt	.....	.....	.....	.484*	.687**	.774**	.523*	.488*
Sad Latency	.....	.....	.....	.....	.488*	.366	.453*	.411
Sad Appro.	.....	.....	.....	.....	.....	.790**	.328	.361
Sad Accept	.....	.....	.....	.....	.....	.....	.582**	.645**
Sad Aware	.....	.....	.....	.....	.....	.....	.....	.778**

*Mad Mindfulness.*

	Mad Enthus.	Mad Affect	Mad Adapt	Mad Latency	Mad Appro.	Mad Accept	Mad Aware	Mad Observe
Mad Enthus.	.....	.711**	.509*	.397	.602**	.704**	.522*	.430
Mad Affect	.....	.....	.525*	.646**	.607**	.617**	.392	.350
Mad Adapt	.....	.....	.....	.237	.555*	.587**	.352	.250
Mad Latency	.....	.....	.....	.....	.539*	.493*	.522*	.553*
Mad Appro.	.....	.....	.....	.....	.....	.647**	.714**	.626**
Mad Accept	.....	.....	.....	.....	.....	.....	.610**	.464*
Mad Aware	.....	.....	.....	.....	.....	.....	.....	.799**

\*p<sub>≤</sub>.05\*\*p<sub>≤</sub>.01

**Table 2****Attachment risk distributions: Child attachment at time 1,2, & 3.**

	<b>N (Time 1)</b>	<b>N (Time 2)</b>	<b>N (Time 3)</b>
<b>B – all types (0)</b>	13	10	4
<b>C 1-2 (1)</b>	7	2	1
<b>A 1-2 (2)</b>	7	4	3
<b>C 3-4 (3)</b>	5	2	1
<b>A 3-4 (4)</b>	11	8	6
<b>A/C, Dp, IO (5)</b>	11	9	6

Table 3

**Demographics Information.**

<i>Parent demographics</i>	<i>Mean</i>	<i>Percentage</i>	<i>N</i>
Sample Size			
<b>T1</b>			54
<b>T2</b>			33
<b>T3</b>			21
Child Gender- Female			
<b>T1</b>		43%	
<b>T2</b>		49%	
<b>T3</b>		48%	
Parent Age			
<b>T1</b>	29.28		
<b>T2</b>	31.75		
<b>T3</b>	37.70		
Primary Caregiver Employed			
<b>T1</b>		51.7%	
<b>T2</b>		64.7%	
<b>T3</b>		38.1%	
Education (Some College)			
<b>T1</b>		77.5%	
<b>T2</b>		52.9%	
<b>T3</b>		61.9%	
Marital Status (Currently Married)			
<b>T1</b>		58.6%	
<b>T2</b>		62.9%	
<b>T3</b>		52.4%	
Income (\$1,201 or more per month)			
<b>T1</b>		56.9%	
<b>T2</b>		61.8%	
<b>T3</b>		52.4%	

**Table 4****Descriptive Statistics: Means and Standard Deviations for Observed Variables.**

	<i>N</i>	Min	Max	Mean	SD
1. Attachment T1	54	0	5	2.50	1.91
2. Reflective Functioning T1	39	1	5	2.67	1.20
3. Reflective Functioning T2	25	1	5	2.84	1.43
4. Reflective Functioning Average	46	1	5	2.77	1.24
6. Trauma T1	54	0	5	1.87	1.40
7. Sad Mindfulness T3	20	9	30	21.60	5.71
8. Mad Mindfulness T3	20	10	30	21.90	5.62



**Table 5****Complete bivariate matrix for all study variables.**

	Trauma T1	Attachment T1	RF Average (T1 and T2)	Mindfulness Mad T3	Mindfulness Sad T3
Trauma T1	.....	.555**	-.136	-.553*	-.336
Attachment T1 <sup>a</sup>	.....	.....	-.386**	-.250	-.146
RF Average (T1 and T2)	.....	.....	.....	.462*	.388
Mindfulness Mad	.....	.....	.....	.....	.578**

<sup>a</sup> All analyses completed with attachment in this table were Spearman's Rho correlations.

\* $p \leq .05$

\*\* $p \leq .01$

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