The Transgenerational Transmission of Emotion Regulation: The Effect of Maternal Coping on Child Executive Functioning

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THE TRANSGENERATIONAL TRANSMISSION OF EMOTION REGULATION:
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by

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

2017
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This manuscript has been read and accepted for the Graduate Faculty in Psychology 
in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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ABSTRACT

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There is a recognized link between maternal trauma history and adverse child outcomes, however the mechanisms underlying this intergenerational relationship are less clearly understood. Maternal emotion regulation, as measured by coping style, may help explain this cross-generational transmission, implicating the role of a mother’s coping in her child’s capacity to plan, attend, and self-inhibit. **Objective:** The purpose of this study is to examine the association between maternal coping style and child executive functioning (EF) in a sample of 188 urban mothers and their pre-adolescent and adolescent children. Data was analyzed from a larger cross-sectional and cross-generational study of maternal difficulties and child outcomes. **Method:** Mother-child data was analyzed from a hospital-based study that examined an impoverished, minority sample of women in New York City. Lifetime trauma history was assessed using *The Life Events Checklist (PTSD)*; maternal coping was measured by the *Coping Orientations to Problems Experienced Scale*, and child executive functioning (EF) was captured by *The Wisconsin Card Sorting Task & The Stroop Color and Word Test*. **Hypotheses:** Distinct coping patterns were expected to emerge from mothers with a significant trauma history as compared to those who have with no lifetime exposure. It was further anticipated that maternal coping style would influence child’s executive functioning such that a mother’s tendency to use Problem-Focused Coping (PFC) would be associated with her child’s superior capacity to plan,
sequence, and self-inhibit, while Emotion-Focused Coping (EFC) in mothers would be linked to child deficits in these EF arenas. The conceptual model of the current study was based on theories of emotion regulation—that emotion dysregulation impacts the intergenerational transmission of maladjustment in multiple ways. The study further posited that trauma disrupts a mother’s capacity to self-regulate, thereby leading to negative child outcomes. **Results & Conclusions:** While results did not support this predicted impact of trauma, findings did partially support the model that maternal emotion dysregulation is linked to negative child regulatory outcomes as maternal EFC was linked to poorer child EF. Alternatively, Problem-Focused Coping represented adaptive emotion regulation and was partially linked to positive executive function outcomes in children. Implications for clinical interventions targeting trauma survivors are discussed, with consideration given to the role of coping and its potential to interrupt the cross-generational cycle of trauma.
Acknowledgments

This dissertation marks the end of 5 challenging years of graduate work. Throughout this time, I have been lucky to rely on the strength and support of my community.

Denise Hien modeled how research can have a personal voice. In her presence, the daunting becomes manageable; it was a gift to work with an advisor with such a superpower. My committee members- Elliot, Diana, Lesia, and Theresa- offered guidance on this paper, but more, supported my clinical training along the way, helping me consider how to create a therapeutic space.

To Fred Rothbaum- who noticed my thinking in a new way and invited me hear my calling to become a clinician. My work in graduate school has been an extension of the conversations that started in his office. When I do good work, I consider it a part of his legacy.

To my dad, who believed in the value of getting it done—an approach that carried newfound utility during this process. He would be excited about the doctorate I am sure, but perhaps most proud of the endurance, humor, and productivity that was needed along the way.

Blake and Tessa, you are a privilege and a delight!

This paper is about how a mother’s way of being shapes her child’s way of being. I could dedicate it to my mom, but in some ways, my entire journey to become a psychologist is a love letter to her. This is to say, her curiosity about the internal landscape and external presentation of all sorts of humans is an intergenerational transmission I get to carry with me.

And to Greg. When my days were brimming with work, you somehow carved out space for love and play. You supported me like no other. Our bond has been my favorite antidote to the slog of graduate school. Having you by my side is where I want to be.
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CHAPTER ONE

Introduction

While parenting can be a demanding task for anyone, it carries specific challenges for mothers with a history of trauma (Banyard, Williams, & Siegel, 2003; Chu & DePrince, 2006; Cohen, Hien, & Batchelder, 2008). Mothers with past exposure to trauma tend to have weakened access to emotion regulation strategies (Cohen et al., 2008), which can exacerbate parenting stressors and limit their capacity to effectively cope (Patterson & Chamberlain, 1994). In addition to trauma, mothers living in poverty also experience chronic and multi-level stressors linked to childrearing; these factors further contribute to parenting stress and may inhibit effective emotion regulation (Raver, 2004). Parenting pre-adolescent and adolescent children is also thought to pose uniquely demanding challenges given a child's normative developmental push toward parental separation, individuation, and demonstration of agency (Scharf & Shulman, 2006). As such, mothers with a history of trauma, living in poverty, and raising pre-adolescent or adolescent children will likely experience increased levels of stress and may, in turn, demonstrate less than optimal parenting.

Historically, the literature on maternal trauma and parenting has focused on the associated negative child outcomes (Yehuda, Halligan, & Bierer, 2001). This trend similarly holds true for research on parenting practice and low socioeconomic status (Bradley, Corwyn, 2002; Hoff, Laursen & Tardif, 2002). Early data on parenting adolescents also emphasizes the challenges and related problems (Steinberg & Silk, 2002). However, recent research has begun to challenge the deterministic discourse around trauma, parenting, and negative child outcomes, pointing to the variability of maternal emotion regulation strategies from this population and suggesting a wide range of child adjustment outcomes (Agaibi & Wilson, 2005; Tedeschi & Kilmer, 2005; Wright, Fopma-Loy, & Fischer, 2005). This line of research emphasizes the
significant variability involved in the “transmission risk” between maternal adversity and developmental outcomes (Monk, Spicer, & Champagne, 2012).

Growing evidence similarly suggests that despite the challenges of parenting as a mother with a history of trauma, trauma history does not inherently translate into negative outcomes for the children of trauma survivors (Egeland, Jacobvitz, & Sroufe, 1988; Jaffee et al., 2013). This finding is aligned with the study of resilience which examines positive adaptations in the context of significant adversity (Luthar, 2003). Such a construct has notable appeal for its capacity to shape effective prevention and intervention efforts: if we can empirically understand the mechanisms that buffer the negative impact of trauma, we can better promote such processes within at-risk populations (Luthar, Sawyer, & Brown, 2006).

While factors that generate resilience are context specific and non-universal (Rutter, 2006), the resilience literature has identified core protective factors that seem to reliably mitigate the detrimental impact of trauma (Osofsky, Thompson, Shonkoff, & Meisels, 2000). Several of such variables focus on parental temperament and child disposition, while others highlight the role of parenting behaviors (Putnam, Sanson, & Rothbart, 2002; Rutter, 1987), revealing the powerful impact potential of warm, supportive, and responsive parental attunement (Kilmer, Cowen, Wyman, 2001; Yates, Egeland, & Sroufe, 2003) and parental emotion regulation (Barbarin, 1993; Betts, Gullone, & Allen, 2009; Karreman, van Tuijl, Van Aken, & Dekovic, 2006; Kim & Cicchetti, 2010; Melnick & Hinshaw, 2000).

To pinpoint and operationalize variables linked to resilience may be instrumental in promoting resilient functioning, yet the identification of protective factors is daunting and inexact because the underlying processes by which an individual can access such variables remain somewhat unclear (Breen & McLean, 2010). The body of knowledge around emotion regulation offers a possible framework to understand these processes. Emotion regulation theory
conceptualizes resilience as the outcome of adaptive internal work or mental meaning-making, which in turn, can promote more manageable affective responses (Gross, 2007). From an emotional regulation lens, resilience marks the quick and effective use of down-regulatory strategies during stressful events (Davidson, 2000; Urry et al., 2004). One approach to better grasp the mechanisms underlying resilience is to examine these mental processes by which individuals deal with adversity (Rutter, 2006, 2007). Such an investigation can be understood as the study of coping (Folkman, 1991, 2011).

The coping literature is as expansive as it is generative, offering substantial findings with relevant and applicable implications for intervention (Luthar, Sawyer, & Brown, 2006). Its aims are multifold: to examine patterns in response to adversity, to connect such patterns with various outcomes, and more generally, to explain the variability in human response to trauma or adversity (Aldwin, 2007, 2011; Frydenberg, 2008; Somerfield & McCrae, 2000). Coping is certainly a valuable construct at the self-level—a mother who engages with effective coping strategies will likely report feeling generally better than her maladaptive coping counterpart (Aldwin & Revenson, 1987; Folkman & Lazarus, 1988; Scheier, Weintraub, & Carver, 1986). And yet, in the context of parenthood, a mother's coping may reach further than the individual level, extending its impact to her child.

Our understanding of how maternal coping may reveal itself in child outcomes is somewhat unclear (Fonagy, 1996), with evidence pointing to the complicated, sometimes transient and contradictory nature of maternal interventions on child outcomes (Luthar & Suchman, 2000; Luthar, Suchman, & Altomare, 2007). Further, our understanding of how coping practices within a trauma population may impact child outcomes is extremely limited (Bar-On, 1996). Indeed, the vast majority of research on traumatized populations brings a deficit model to the transgenerational transmission dialogue, noting the link between parental trauma history and
myriad negative child outcomes (Kaplan-Sanoff, 1996; Osofsky et al., 2000). As such, ‘the transgenerational transmission of trauma’ is widely understood as a pathway yielding detrimental or non-optimal patterns (Kaplan-Sanoff, 1996).

To examine the coping of mothers with a history of trauma from a resilience perspective is to look beyond this notorious cross-generational pathway, examining how adaptive coping may buffer these deleterious effects or even carry positive intergenerational transmissions. As such, the current study can perhaps serve as a small offering to the missing discourse around trauma, coping, and parenting. The current research study will respond to this gap in literature by looking at the coping styles of mothers with a history of trauma, and examining whether her approach to coping plays a protective role in the life of her child.

There is growing consensus that a mother's capacity to regulate her emotions impacts her child's ability to do the same (Eisenberg, Cumberland, & Spinrad, 1998). This study aims to investigate whether the patterns of maternal coping impact a child beyond emotion regulation, affecting the child's capacity to think, plan, and inhibit. The present study examined this link in mothers of 8-15-year-old pre-adolescent and adolescent children. A coping questionnaire was used to identify patterns of maternal coping style and two standard neuropsychological measures were used to assess child executive functioning. It was hypothesized that maternal emotional regulation, as captured by coping style, will be linked to pre-adolescent's executive functioning skills. Further, it is predicted that, regardless of trauma history, mothers who use a particularly goal-oriented coping style (Problem-Focused Coping) will be more likely to have adolescents with superior executive functioning skills when compared to the adolescents of mothers who are less goal-oriented in their coping approach (Emotion-Focused mothers).
CHAPTER TWO

Literature Review

Parenting and Trauma

The relational and emotion difficulties associated with trauma are well documented: individuals with a history of trauma are more likely to experience disruptions in interpersonal functioning and problems regulating emotions (Ehring & Quack, 2010). Further, the severity of such detriments is thought to intensify for those with chronic or early trauma histories (van der Kolk, 1996). However, the ways in which such negative outcomes impact and impair parenting is less empirically understood (Hien, Litt, Cohen, Miele, & Campbell, 2009).

Studies have recognized parental trauma history as a risk factor for non-optimal parenting behavior (Gara, Allen, Herzog, & Woolfolk, 2000) with some research pointing to cumulative parental trauma as a predictor for various problematic child-related parenting practices including physical discipline, parental abuse potential, and emotional aggression (Banyard, Williams, & Siegal, 2003; Cohen, Hien, and Batchelder, 2008). In other words, parenting has been identified as a core player in the processes by which a family may become a "trauma-organized system" (Banyard, Englund, & Rozelle, 2001). The intergenerational transmission of trauma relates to the ways in which parental trauma history is communicated to offspring through non-optimal attachment patterns, insensitive attunement, and maladaptive parenting behavior (Dekel & Goldblatt, 2008).

Hien and colleagues (2009) provide clinical explanation for the intergenerational transmission of trauma, suggesting that parenting can be an especially triggering experience for mothers with a history of trauma. Their conceptualization points to the ways in which some mothers may unconsciously use their offspring to reenact aspects of their own traumatic
experience. Further, early trauma may have ruptured a mother's own attachment patterns, thereby impacting her capacity to attach to her child. While parents with trauma histories are often especially concerned with their child's safety, their trauma related symptoms may thwart these concerns; trauma history is known to impair parental judgment or even block a parent's capacity "to attend to potential danger signs" (Hien et al., 2009, p. 102).

The intergenerational transmission of trauma is likely heightened for mothers with trauma histories that result in posttraumatic stress disorder (PTSD), as the severity of PTSD symptoms can hinder a parent's efforts to provide optimal parenting (Hien et al., 2009). Several studies have documented the ways in which maternal behavior can be disrupted and disorganized by trauma symptoms, detailing the connection between trauma history and tendencies to enact hostile, dissociated or fearful behavior towards offspring (Hesse & Main, 1999; Lyons-Ruth, Bronfman, and Parsons, 1999; Schuengel, Bakermans Kranenburg, & Van IJzendoom, 1999).

Furthermore, when compared to individuals with no trauma history, trauma survivors have a higher rate of co-morbid disorders, including depression, substance use disorders, and of course, PTSD (Dixon, Howie, & Starling, 2005; Reynolds et al., 2005). Psychiatric disorders, especially depression, have been extensively correlated with non-optimal, harsher parenting, impoverished parent-child bonds, and more negative parent-child interactions (Lovejoy, Graczyk, O’Hare, & Neuman, 2000; Oyserman, Mowbray, Meares, & Firminger, 2000). Critically, maternal depression is also considered a risk factor for child abuse and neglect (Downey & Coyne, 1990).

Clearly, for mothers with a history of trauma, parenting can be especially fraught, activating, and rife with dysfunction. Yet in their review of the transmission of trauma, Hien et al. (2009) point to resilience as modal behavior: "although the transmission of…trauma is not uncommon, quite often women with trauma histories...find ways to interrupt this detrimental
cycle" (Hien et al., 2009, p.102). In response to this finding, trauma-focused parenting research has begun to examine the mechanisms at play that possibly mitigate trauma's potential to harm the parent-child relationship. For example, some research questions the generalized role of maternal depression or psychopathology in non-optimal parenting for populations with trauma history, pointing to maternal affective dysregulation, regardless of trauma history, as a more precise predictor of negative parenting behavior (Lovejoy et al., 2000). In consideration of the variability of findings related to the intergenerational transmission of trauma, it is clear that multiple underlying factors are at play. One of the most compelling among them seems to be maternal emotion regulation.

*Trauma and Emotion Regulation*

Mothers with lifetime trauma histories tend to have impaired access to effective emotion regulation (Hien & Miele, 2003; Hien & Honeyman, 2000). Emotion regulation relates to a sense of agency around both the experience and expression of emotion (Gross, 1998, p. 274). At the crux of effective emotion regulation is the capacity to tolerate a range of affect with flexibility, self-monitor internal states, and modify one's own affective sphere in such a way that emotions may feel powerful and alive, but ultimately do not derail functioning (Eisenberg, Fabes, Guthrie, & Reiser, 2000; Thompson, 1994). Limited access to effective emotion regulation is linked to an experience of affect as potentially unpredictable, extreme, or overwhelming. As such, emotion dysregulation can be understood as the ineffective management of emotions or the experience of being hijacked by emotion, both of which may lead to negative consequences related to internal experience as well as subsequent physiological reactions (Gross, 2007). In other words, without access to self-regulatory processes, the affective realm can become intolerable.
Hien and colleagues note, "for those with traumatic pasts, difficulties with emotion regulation significantly defines their day-to-day functioning" (2009, p. 55). Indeed, research has consistently identified trauma history as a significant risk factor for impaired emotion regulation (van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005), thereby highlighting the relevance of coping for this population. Hien and colleagues (2009) explain that when faced with overwhelming emotions, trauma survivors may employ maladaptive, self-destructive, or ineffective coping strategies on account of limited internal resources—“these behaviors represent the only ways they have learned to relieve emotional pain…they do not have faith or the skills to soothe themselves otherwise” (p. 73). In this way, coping can be particularly complicated for trauma survivors because certain non-optimal coping mechanisms may have served adaptive functions during acute experiences of trauma or in short-term moments (e.g. dissociation), while ultimately, such strategies exacerbate distress.

Coping as Emotional Regulation

Effective emotion regulation strategies facilitate a sense of control and agency over demanding affective experience; they offer internal organization. One notable aspect of emotion regulation takes form in coping style: the ability to access and implement effective regulating strategies in times of stress (Carver, Scheier, & Weintraub, 1989). As such, coping can be understood as a central aspect of emotional regulation. Just as Jurist (2005) defines affect regulation as “a convergence zone between cognition and affect, wherein the former is used to alter, but not eradicate, the latter” (p. 426), coping is similarly a self-regulatory process that relates to the intersection of thinking and feeling. The most widely accepted conceptualization of coping is that of Lazarus and Folkman’s (1984) transactional cognitive-mediational model of stress and coping. Their framework details the dynamic nature of coping strategies, which are defined as “constantly changing cognitive and behavioral efforts to manage specific external
and/or internal demands that are appraised as taxing or exceeding the resources of a person” (Lazarus & Folkman, 1984, p. 141). Such a model suggests the goal of coping is twofold: 1) to manage situational or external stimuli causing internal distress and 2) to regulate the emotional response to stress (Lazarus & Folkman, 1984).

The coping research suggests that certain patterns in coping style are more effective in achieving emotion regulation than others. For example, coping is typically categorized as adaptive or maladaptive, with other studies similarly categorizing coping styles as effective or ineffective. To better understand the underlying factors that drive an individual's approach to coping, a great deal of empirical work clusters coping behaviors as either Emotion-Focused Coping (EFC) or Problem-Focused Coping (PFC). Each style-cluster is associated with a set of distinguishing behaviors, cognitions, and emotional responses. More importantly, each coping style links to varying degrees of effectiveness, which refers to how well a coping style typically allows an individual to manage emotional arousal without obstructing functioning.

Specifically, the literature highlights PFC, sometimes described as instrumental or solution-oriented coping, as an especially effective approach to self-regulation. PFC primarily maps onto the first goal of coping, with a focus on managing distress actively, with strategies like planning, brainstorming solutions, or seeking instrumental help and support. PFC also includes appraisal work, such as rewriting an existing narrative around a negative event into one that carries a more positive interpretation. On the other hand, research tends to connect EFC with less positive outcomes. EFC centers around venting feelings and seeking emotional social support, but without the inclusion of strategic solutions of PFC. Other components of EFC include religious coping or denial of a stressor. EFC maps onto the second goal of coping, dealing primarily with the distressed affective response to stress. As such, EFC is often conceptualized as a marker of less-optimal emotional regulation, while PFC tends to be used as

Substantial literature additionally links PFC and EFC with various positive and negative outcomes, respectively. For example, individuals with mood disorders are more likely to demonstrate an EFC style, and less likely to employ a PFC approach (Griffiths, 1999). In addition, EFC strategies have been correlated with lower levels of self-esteem and higher rates of drug use in homeless women, as compared to a PFC style (Nyamathi et al., 2000).

Categorizing coping strategies as EFC and PFC is arguably the most pervasive and influential conceptualization of coping (Coyne & Racioppo, 2000), however, this distinction has also received notable criticism for adhering to a simplistic, possibly static understanding of coping (Skinner, Edge, Altman, and Sherwood, 2003). Other criticism points to the possible erroneous conflation of Emotion-Focused Coping with emotional maladjustment (Stanton, 2011). Despite such criticism about this dichotomy, a parallel distinction is found in the emotion regulation literature which discusses self-regulatory strategies with a similar distinction, discussing antecedent-focused (AF) regulation and response-focused (RF) regulation. AF revolves around proactively shaping the precursors of an emotional response to better control the eventual emotional reaction, while RF is about responding to emotions once they have emerged (Gross & Thomas, 2007; Urry, 2009). The literatures on coping and emotion regulation have remained somewhat separate, and yet there is a clear alignment between these theoretical views, and in particular between AF and PFC, and RF and EFC. As such, some scholars have encouraged improved integration of these two fields, offering a new definition of coping as self-regulation under moments of stress (Cimpas, 2009; Skinner & Zimmer-Gembeck, 2009).
Cross-Generation Transmission of Emotion Regulation

Coping is often examined in relation to the self, with various studies touting the impact of effective coping on an individual's relationships, job satisfaction, physical health, and overall quality of life (Rim, 1993). However, to consider the intersection of coping and parenting is to expand this dialogue past the self, revealing the possible intergenerational impact of a mother's coping on her child. It is long understood that higher levels of perceived stress in mothers can predict lower social and intellectual competence in children (Masten, Garmezy, Larkin, & Tellegen, 1985).

Given coping is an offshoot of emotion regulation, it is relevant to pull from the parental emotion regulation literature, which emphasizes the connection between parental emotion regulation capacity and child self-regulatory outcomes (Morris, Silk, Steinberg, Myers, & Robinson, 2007). For example, poor affective regulation in mothers has been correlated with aggressive parenting behavior and non-optimal outcomes in children (Hien & Honeyman, 2000). As such, one aspect of optimal caregiving involves modeling emotional expression and regulatory skills to children so that they can eventually cultivate their own internal regulatory resources (Eisenberg et al., 1998). Adults do this both through automatic and conscious efforts: naming a child's emotion, connecting physiological arousal to affective response, making sense of emotional reaction through narrative, empathetically validating the emotion through facial cues to help a child more fully realize its existence, and providing predictable environments for the child (Fonagy, 1996). Most critically, the parent ideally provides a presence that her child experiences as soothing, thereby instilling in the child an understanding of the possibility and potential for emotions to be softened or relieved. In optimal attachment, the caregiver is the foundational regulatory object.
From a theoretical lens, Bion (1962) describes the process by which a child acquires self-regulation strategies. He details the way in which an infant first learns to notice internal self-states is through parental interactions. Optimally, in these early child-caregiver moments a parent recognizes their child's emotions through attuned response or mirroring, implicitly reinforcing the realness and importance of the child's affective realm. This, in turn, equips children to gradually grasp the texture and detail of their own emotional responses, becoming familiar, too, with the experience of emotional modulation, soothing, and the transient nature of feelings. If a mother does not know her own emotions as noticeable and manageable, these early child interactions, through which her child garners information about emotional regulation, will likely suffer. Without attuned and emotionally available parental responsiveness, a child may struggle to make sense of her internal world. Such an emotional profile is disproportionately prevalent for children of trauma survivors (Yehuda et al., 2001).

In this way, the detrimental legacy of trauma can include impaired parental access to effective emotion regulation, which will likely result in maladaptive parenting behavior, and consequently manifest in negative child outcomes including a child’s poor emotion regulation (Cohen et al., 2008). Simply put, a mother's impaired emotion regulation can result in a parallel deficiency in her child (see Figure 1, Transmission Pathway Models). Inversely, parents who are typically able to regulate their emotional experience, to navigate stressful situations, and cope, tend to raise children with similar capacities (Hoffman & Levy-Shiff, 1994). These powerful parent-to-child processes can be conceptualized as the intergenerational cycle of coping. A trauma history can disrupt a parent's capacity to adequately offer her child such internal management capacities.

Clinical and empirical literature demonstrate and outline the phenomenon known as the intergenerational transmission of trauma (Danieli, 1998, 2007; Daud, Skoglund, & Rydelius,
2005; Rosenheck, 1986; Rubin & Rhodes, 2005; Scharf, 2007; Srour & Srour, 2005; Yehuda, Blair, Labinsky, & Bierer, 2007). These studies fall short, however, in establishing an empirical conceptualization for the mechanisms underlying this transmission. Further, clinical literature emphasizes the way in which transmission does not inherently occur, which leads to the question: what factors can protect some mothers who have experienced trauma from transmitting harmful impacts to their children? The current study aimed to respond to this question by investigating the possible role of coping in this equation.

A psychodynamic take on the intergenerational communication of trauma points to projection and identification as primary mechanisms at play in this transmission. Specifically, a parent who struggles to contain or manage internal distress in the aftermath of a traumatic event may externalize emotion through projection, where “emotions such as persecution, aggression, shame and guilt are split and projected onto their children” (Dekel & Goldblatt, 2008, p.284). As a result, dynamic thinking suggests that children who are particularly bonded to their parent (Rosenheck, 1986) may unconsciously come to identify with certain trauma-informed parts of a parent’s emotional experience, perhaps even adopting or experiencing elements of a parent’s projected emotion-states as a part of that child’s sense of self (Srour & Srour, 2005). Children who are identified in this way are more likely to struggle with identity formation and in turn, these children tend to develop parallel symptoms, reproducing their parent’s depression, anger, or detachment in their own presentation (Ancharoff, Munroe, & Fisher, 1998; Den Velde, 1998).

Other theories highlight the way in which trauma can dismantle attachment and intimacy across generations (Cohen, Dekel, Solomon, & Lavie, 2003) in that trauma can be linked to more limited parental involvement in family life which may be a component in how parental trauma is received by children (Ruscio et al., 2002). Some studies extend beyond a psychological and
social response, linking genetics to the intergenerational transmission of PTSD symptoms; this branch of research suggests that the maladaptive symptoms connected to trauma are not only heritable, but can be inherited multigenerationally (O’Brien, 2004, Yehuda et al., 2007).

The term “secondary traumatization” was first used to explain the manner in which proximity to someone who experienced trauma can induce certain effects of that trauma (Figley, 1983). It has since been argued that authors use this term inconsistently: sometimes in reference to vicarious trauma in which true trauma symptoms present in an individual who did not experience trauma directly but had exposure, in some capacity, to a victim of trauma, while secondary traumatization is alternatively coined as a less localized transmission of distress (Galovskia & Lyons, 2004). This study uses the latter, somewhat sweeping understanding of secondary traumatization to indicate a more inclusive transmission. Within this definition, it is thought that a child receives the impact of trauma through certain means: parental behavior (including abuse and neglect), identification with parent, as well as a broad disruption of typical functioning (Rosenheck and Fontana, 1998).

It is possible that this definition, which served as the basis for the current study, was too inclusive to adequately capture the transmission mechanisms. For example, a more detailed investigation of the pathway by which a child receives the influence of parental trauma, may include specific data on a parent’s silence pertaining a trauma, over-disclosure around the trauma, or information on a child’s identification with parent which facilitates that child’s adoption of certain trauma-related symptoms. Further, even a reenactment can serve as a mechanism for trauma transmission depending on a child’s entanglement in the overt or subtle ways in which the parent reenacts the trauma (Ancharoff, Munroe, and Fisher, 1998).
Executive Functioning as Emotional Regulation

More and more, researchers on emotion and cognition agree that treating these realms as fundamentally unique is as useless as it is an inaccurate portrait of human functioning (Damasio, 1994). Instead, scholars increasingly recognize the intertwined relationship between affect and thought: "emotion corresponds to an aspect of cognition- it's motivational aspect" (Zelazo & Cunningham, 2007, p. 136). An integrated model of emotion and cognition suggests that emotion regulation and executive functioning are both self-regulatory processes as they have overlapping, incorporated functions. In this framework, the capacity to regulate emotions is highly influenced by skills that also inform executive functioning, including inhibition, attention, observing and processing, decision making, regulating physiological response (Zelazo & Cunningham, 2007).

Executive functioning (EF) relates to higher order cognitions including strong command of attention, capacity for abstraction or cognitive flexibility, and working memory. First conceptualized by Bianchi (1922) and Luria (1966), executive functions relate to the processes of purposive behavior: planning, inhibitory control, working memory, and the capacity to hold symbolic representations of a desired goal over time (Pennington & Ozonoff, 1996). Developmentally, EF is thought to unfold through childhood, with research indicating that adolescents have EF capacity comparable to adults (Stuss & Anderson, 2004).

While emotion regulation and coping refer directly to the modulation of affective experience, skillful executive functioning relies on the capacity to formulate a goal or plan, to hold this representation in memory and consider it, and then translate such considerations into strategic behavior. The success of such reflective, intentioned, and action-orientation EF processes relies on sound emotion regulation. In fact, Zelazo & Cunningham (2007) argue that these EF “processes are recruited for the deliberate self-regulation of emotion” (p.137). EF also relates to emotional regulation in that it captures inhibitory control. Poor EF or executive
dysfunction, on the other hand, is marked by a rigidity or literalness in thinking, poor planning, and overall a lack of inhibitory control. Impairment in EF is further linked to impulsive behavior, poor reflective functioning, and attentional difficulties. While EF in children and adolescents is often discussed as it relates to the academic sphere, the capacity for insight, inhibitory control, and reflection have clear links to the emotional realm as well, suggesting a link between EF and capacity for self-regulation (Hoffman & Levy-Shiff, 1994; Zelazo & Cunningham, 2007). It has been argued, in fact, that EF can stand as a proxy for emotion regulation (Zelazo & Cunningham, 2007):

This highlights an important feature of the emotion regulation as EF model: many of the processes involved in emotion regulation are the very same processes used for emotion generation. Indeed, successful emotion regulation is deliberate, goal-directed attainment of a desired emotional state. When this state has been achieved, and the discrepancy between the goal state and the current state is reduced below some threshold, emotion regulation will cease (p. 137).

As discussed, there is a strong body of evidence demonstrating the critical and formative role parents play in their child’s development of self-regulatory capacities (Eisenberg et al., 1998; Eisenberg, Fabes, & Murphy, 1996; Gottman, Katz, & Hooven, 1997). Just as studies connect parental emotion regulation with a child's capacity to self-regulate, it can be expected that the effectiveness of maternal coping will also correspond with child executive functioning. In keeping with the expectation that maternal coping and child EF will be linked, it can be predicted that maladaptive maternal coping will yield diminished child EF. Further, if related, maternal coping and child EF together would signify important factors in the parent-child relationship: such a relationship would both strengthen the idea that a child "inherits" the capacity to self-regulate (Eisenberg et al., 1998; Morris et al., 2007) and better elucidate the mechanisms underlying this mother to child transmission.
Maternal coping to buffer trauma transmission

There is a hearty body of data that implicates maternal trauma as a risk factor for negative child outcomes, with emerging research specifically linking maternal trauma history to deficits in child inhibition, emotion regulation, and executive functioning. However, the link between maternal trauma, *coping*, and child executive functions has yet to be empirically understood. The use of adaptive coping strategies is especially relevant and important to mothers with a trauma history, as this population faces heightened vulnerability for emotional dysregulation. Further, children of mothers with a traumatic history are at risk for myriad negative psychological outcomes, which may be inherited through the transgenerational transmission of trauma (Cohen et al., 2008). For example, maternal trauma can influence a mother's emotional regulation, reflective functioning, and emotional availability, which in turn, can impact several child outcomes, including the development of strong executive functioning skills. Maternal trauma, may predict poor maternal emotional regulation, which thereby serves as a risk factor for impoverished child executive functioning.

Emerging literature points to maternal emotion regulation and coping as possible buffers against the deteriorating effects of trauma. As such, maternal coping, may hold the capacity to moderate the relationship between maternal trauma and negative executive functioning skills in children. The present study examined the role of maternal trauma on coping style, and further investigate whether maternal coping moderates the transgenerational transmission of trauma as measured by child executive functioning. The following questions will be explored: do mothers with a trauma history have a different approach to coping as compared to mothers without a trauma history, and what impact does maternal coping have on the executive functioning of pre-adolescent and adolescent children? A major goal behind examining these relationships is to better understand how to discontinue the intergenerational transmission of trauma. A stronger
command of the factors that may disrupt this transmission can better inform preventative programs designed to strengthen emotional regulatory strategies in trauma survivors, improving their sense of agency, and likely enhancing adjustment in their children.

**Statement of Hypotheses**

The theoretical and empirical research previously reviewed provided the context for the proposed study, which examined the relationships between maternal trauma, coping style, and child executive functioning. As discussed, effective emotion regulation strategies offer internal organization, with coping serving as an offshoot of such regulation, capturing one’s ability to access and implement effective regulatory strategies in times of stress. These concepts are captured in the theoretical models depicted in Figure 1, which provide the rationale guiding this study's hypotheses.

Figure 1. Transmission Pathway Models

**Model 1:** *The intergenerational dysregulation pathway:*

**Model 2:** *The executive functioning pathway*

The current study examined the ways in which a mother’s coping style may be associated with her child’s planning, inhibition, and attention profile (EF). A better understanding of the role and importance of effective coping may facilitate more effective treatment planning for
individuals with a history of trauma. As such, this study hopes to build upon the findings of Hien & Miele (2003) which demonstrated a link between EFC and negative mental health outcomes. In the present study, an association was predicted between maternal coping styles and child executive function performance. Additionally, it was predicted that coping would moderate the relationship between maternal trauma history and poor child executive functioning. Based on previous research, it was also expected that mothers with a trauma history would differ in their approach to coping, when compared to mothers without exposure to trauma.

*Hypothesis 1:* Maternal trauma history will be significantly related to coping style, such that:

When compared to mothers who have not experienced lifetime trauma, mothers with a lifetime trauma history were predicted to have less adaptive emotion regulation capacities, as captured by EFC.

*Hypothesis 2:* It was further hypothesized that maternal coping style will be linked to pre-adolescent’s executive functioning skills, regardless of trauma history, such that:

Maternal EFC will be associated with poorer child executive functioning, when compared to children with PFC mothers.

*Hypothesis 3:* Finally, it was predicted that maternal coping will moderate the relationship between maternal trauma and child executive functioning, such that:

Within the group of mothers with trauma exposure, those who use Problem-Focused Coping are more likely to have adolescents with superior executive functioning skills when compared to the adolescents of emotion-focused mothers.

If supported, these hypotheses highlight the intergenerational value of emotion regulation models in treatment of trauma surviving mothers.
CHAPTER THREE

Methods

Participants and Setting

The present study was a secondary analysis, using data collected for a larger cross-sectional and cross-generational study of maternal difficulties and child outcomes. This original data set is a part of research led by Denise Hien, Ph.D, studying mothers with a history of trauma, substance use, and/or psychopathology. This study also gathered information on mothers' child-rearing patterns including child neglect and child physical/sexual abuse, as well as various child outcomes including self-regulation, aggressive behavior, and substance use.

Mother-child dyads participated in this study at St. Luke's-Roosevelt Hospital Center (SLRHC) as a part of the Women's Health Project, an initiative aimed to support a primarily impoverished, minority population in New York City. SLRHC is a large-scale, urban hospital serving Morningside Heights and West Harlem, New York.

Recruitment and Eligibility

Participation recruitment centered around the SLRHC OB-GYN clinic which was identified, through prior research (Leite, 2000; Leite & Hien, 2000), as a setting serving a population with a high-risk for negative life events, violence, and psychopathology, while also achieving sound variability and generalizability (Hien and Honeyman, 2000). At the clinic, flyers were available for prospective participants and staff members mentioned the study during bi-weekly in-person patient visits. In addition, advertisements were placed in a New York metro-area newspapers periodically.

Eligibility criteria required mothers to be between the ages of 18 and 55 years old with at least one child ranging from age 9-15 years old who had been living with their mother for at least 6 months prior to data collection. For mothers with more than one child in the 9-15 year old age
range, a clinic staff member randomly selected one child to participate. Participants with a presentation of psychotic or Bipolar symptomatology, active AIDS, or a history of mother or child head trauma were excluded. Finally, participants with any chronic disease or serious physical ailment that may prohibit interview participation were also deemed ineligible.

Subjects received $100 for their participation ($30 after the first interview and the remaining $70 after completion of the study). Roundtrip public transportation expenses for mother and child were also covered.

Sample

506 women were initially screened; based on eligibility criteria, 314 (62%) dyads were then invited to participate in the study. From this group, 254 (81%) were scheduled for an interview, with 190 mothers (75%) attending the first interview session. Fourteen (7.4%) of the 190 mother-child dyads were then excluded from the research on account of varying reasons (3 mothers missed the second interview, 1 had a conflicting self-report and urine test, 3 met criteria for Bipolar disorder during the diagnostic clinical interview, and 7 mothers did not meet lifetime diagnostic criteria for depression or Substance Use Disorder). 2 additional dyads were excluded from the present study because of missing data. The data from 188 dyads were used in the present analysis.

Procedure

Involvement in the study required participation from both a mother and her 8-15 year old child: after completing a brief screening to confirm eligibility, each mother completed an initial three-hour interview, returning on a separate visit with her child, for a second, 90-minute interview while her child completed a separate interview and set of assessments during the same timeframe.
During their first non-screening interview, mothers were administered measures of executive function, emotion regulation, crystallized intelligence, psychiatric functioning, substance abuse and other aspects of functioning. The second visit included the administration of various parenting measures, as well as an interview about the child's behavior at home, in school, and overall functioning. During this time, each child met with a different interviewer who conducted several measures of neurocognitive ability and psychiatric functioning. All interviews and assessments were administered by clinically experienced psychology doctoral students.

Measures

Measurement of Maternal Coping:

*The Coping Orientations to Problems Experienced Scale (COPE)* is a 40-item self-report scale that was developed to capture and categorize a broad range of possible responses to stress (Carver, Scheier, & Weintraub, 1989). The COPE was designed to be administered in three possible formats: 1) time-limited, for which raters reflect on coping during a certain, specified time frame, 2) situational, for which participants are asked to respond with a singular and particular stressful episode, and 3) dispositional, for which participants are asked to report what they usually do when under stress (Carver et al., 1989). This study was consistent in its use of the latter method: the COPE Scale was not administered in reference to a specific stressful episode or a designated time period, but rather, it served as a more global measure of each mother’s general approach to coping or her coping style disposition.

The current investigation used the full COPE scale (not the abbreviated version), which measures 15 coping strategies (Carver et al., 1989). The COPE asks its subjects about their typical response style to events that are experienced as stressful. Each item is scored on a four-point Likert-type scale, ranging from “I don't do this at all” (1) to “I do this a lot” (4). The items
for each subscale are then summed: the higher the score, the greater one’s tendency towards that subset of coping.

Internal consistency (Cronbach's alpha) varies from 0.62 to 0.92 and test-retest reliability is in the 0.51 to 0.86 range. Statistically significant correlations were found between COPE subscales and conceptually similar personality measures, thereby demonstrating adequate convergent variability. Although COPE is extensively used, reliable, and valid measure, it should be noted that this scale has not been widely used with a lower income population. This will be discussed in detail below.

**Neurocognitive Measures of Child Executive Functioning**

The EF measures in this study mirror those used in previous research on high-risk adolescents (Giancola et al. 2002). In selecting the specific collection of EF measures, additional consideration was given to Diamond's (1991) functional and neuroanatomical guidelines: tests were chosen for their proven sensitivity and specificity to assess cognitive abilities subsumed within the construct of EF (e.g., attention, planning, working memory, abstract reasoning), which are thought to reflect skills related to the prefrontal cortex and its subcortical circuits (Luria, 2012; Milner & Petrides, 1984).

*The Wisconsin Card Sorting Task* is a popular card-sorting task made up of 128 response cards which vary in regard to color, number, and shape (four iterations of each) and four stimulus cards: one red triangle, two green stars, three yellow crosses, and four blue circles (Heaton, et. al, 1993). The four stimulus cards were shown to the subject and then response cards were displayed. The subject was asked to match each response card to one stimulus card, thereby sorting the response cards into one of four distinct piles. In this way, the participant was asked to determine the guiding rule by which the cards have been sorted. The examiner provided feedback—“correct” or “incorrect”—and then displayed a new response card, asking the
participant to generate a modified sorting rule given the new information. Participants must revise their sorting rule—a process which demands mental flexibility and cognitive switching. A new sorting principle (color, number, form) was introduced after every set of 10 response cards. There are a variety of scores that can be obtained from the WCST (measures of success, perseverative, non-perseverative errors, and measures of conceptual ability and learning effect) but the current study used the perseverative errors score. This score captures the participant’s erroneous propensity to employ previous sorting principles in spite of new, contradictory information. This score is thought to be the most informative diagnostic sub-score of the WCST (Spreen & Strauss, 1991).

*The Stroop Color and Word Test* is a measure of inhibition as it requires participants to inhibit an overlearned response and privilege a more cognitively demanding, unusual one. In the standard version of the Stroop, subjects read aloud a list of 112 color names in which each color name was printed in a contradictory color (i.e. the word *green* printed in red ink). Subjects were asked to quickly name the color, and not attend to the printed word. In the second phase of this test, the color word task, participants name the ink color and do not attend to the written word. In addition to inhibition, the Stroop is thought to capture information on simple attention capacity, gross reading speed and divided attentional abilities in individuals ranging from grade 2 to adulthood. For the current study, Stroop Interference Scores were used—the interference score relates to the color-word part of the task and is derived from the difference between the time it takes to name the printed ink color of an incongruent color word versus the time it takes to name the color of a congruent color word. Test retest reliability for the Stroop is .90 (Golden, 1978).

**Measurements of Maternal Trauma**

*The Life Events Checklist of the Clinician Administered PTSD Scale (LEC;*
Blake, Weathers, Nagy, Kaloupek, Gusman, Charney, & Keane, 1995) is a questionnaire that asks for lifetime history of homelessness, adulthood interpersonal violence, child and adult loss, sexual abuse, rape, sex for drug exchange, serious physical accidents and witness to murder and mutilation). For this study, a trauma composite checklist was created and modeled after the Banyard et al. (2003) index which captures certain domains of lifetime interpersonal trauma. The LEC accounts for childhood traumas including sexual abuse, physical abuse, and witnessing violence, as well as adult experiences of trauma including partner violence and sexual assault. These five types of interpersonal trauma were coded as present or absent, and then the number of trauma types experienced was summed, resulting in a trauma composite score with a possible range of 0 to 5.

**Data Analytic Plan**

Data for participants was analyzed using SPSS version 21. First, descriptive statistics were conducted to assess the relationship of the central variables to demographic variables. To measure internal consistency, Cronbach’s Alpha was computed for the Coping Orientations to Problems Experienced Scale (COPE; Carver, Scheier, & Weintraub, 1989), as well as for the Emotion-Focused and Problem-Focused Coping subscales discretely. In addition, a two-tailed Pearson correlation was conducted among the coping subscales to examine any possible associations between PFC and EFC.

To assess normality, skewness and kurtosis was examined for all variables. Further, bivariate analyses of potential associations among demographic and dependent variables were conducted in an attempt to identify any possible covariates. Two-tailed Pearson correlations were conducted to determine whether dependent variables are associated with either mother or child age, independent t-tests will be performed to examine any possible differences between child sex, and one-way analyses of variance were performed to determine whether there were
differences on dependent measures based on mother’s ethnicity, education, and marital status.

To test Hypothesis 1 and understand the relationship between maternal trauma history and coping, Spearman rho correlations were computed between the trauma composite (ordinal) and coping styles (EFC, PFC). An independent samples t-test also examined the difference between the trauma and no trauma groups in regard to coping style.

Then, to test Hypotheses 2 and determine the relationship between maternal coping and child executive functioning, Pearson correlations will be performed between each coping style and both EF measures (WCST-PE and Stroop-I). Linear regressions will also be conducted to assess whether maternal coping style accounts for variability in child EF.

Finally, to test Hypothesis 3, multiple regressions will be conducted using the PROCESS macros (Hayes & Preacher, 2014) to investigate maternal coping style’s possible moderating effect on the relationship between maternal trauma and child executive functioning.
CHAPTER FOUR

Results

The aim of the present study was to examine associations among maternal trauma, coping and child executive functioning. Results of the preliminary analyses, descriptive statistics, and the findings related to the hypotheses are presented below. The results section first summarizes demographic and background characteristics of the study participants, then outlines the descriptive analyses: means, standard deviations, and frequencies are reported for all variables to highlight the sample’s demographic profile as well as to examine the range of scores for the independent variable (trauma history) and dependent variables (coping and executive functioning). Skewness and kurtosis were also examined to check for normality of each variable. Multiple linear regressions were performed to understand the relationships between these variables.

Demographic Results

The sample’s demographic characteristics are presented in Table 1.

The sample consisted of 188 women between the ages of 23 and 52, with a mean age of 37.4 years old (SD = 6.35). Over half of the mothers indicated they were African-American (68%), representing a racial majority of the group, while 4.7% identified as Caucasian and 24.7% of mothers identified as Other. In terms of educational background, nearly one third of the mother sample did not finish high school (31.6%) while 21.6% of mothers earned a high school diploma or a GED. Forty percent of mothers reported attending some college, and 5.8% earned a Bachelor’s degree or higher. In terms of marital status, just about half of the mothers indicated they were single (51.6%), 21.1% were divorced or separated, 2.1% were widowed, and roughly one quarter of mothers (24.2%) identified as married or living with a romantic partner.

Diagnostically, the maternal sample was split in regards to depression and substance use
disorders. 47.4% of mothers reported never experiencing depression across their lifetime, while 47.4% of mother endorsed depression, either current or past (5.3% of data was missing).

Similarly, 46.8% of mothers indicated no history or current substance use disorder, while 47.9% of mothers reported a past or current diagnosis of substance use disorder (5.3% of data was missing).

Each mother in the sample had a child participant between the ages of 8 and 15, with a mean age of 11.5 years old (SD = 1.89). The child sample (also 188) was fairly even, consisting of 91 girls (47.9%) and 97 boys (51.1%). Ethnically, the child sample identified predominately as African American (64%) and Hispanic (34%), with 4.2% of the child sample identifying as White, and 5.3% as Other. Child demographic data is presented in Table 2.

**Missing Data**

The original data were checked for missing information in order to arrive at the sample size for the current study. Subjects who did not have all variables used in the present analysis were excluded: 5 mothers did not complete the COPE, 3 mothers had missing data on the Life Events Checklist so their trauma composite was unknown. Within the child sample, 10 children were without WCST results, and 1 child was missing Stroop data. The initial participant pool (N=190) was reduced to account for missing data, resulting in the current sample size (N=188).

**Reliability & Within Scale Relationships**

Cronbach’s Alpha was computed for the COPE. Internal consistency analysis was conducted for the Emotion-Focused and Problem-Focused Coping subscales discretely (each 20-item), as well as together (40-item). Similar to Carver et al., alpha coefficients ranged from .7 to .8. Specifically, the Cronbach’s Alpha reliability coefficient was good for the Problem-Focused Coping Scale (PFC) at .80 and acceptable for the Emotion-Focused Scale (EFC) at .75. When analyzed together for inter-item correlation, PFC and EFC subscale data were also internally
consistent with an alpha of .85. Table 3 provides a summary of all Cronbach Alpha coefficients for Coping.

To further examine the bivariate association between PFC and EFC, a two-tailed Pearson correlation was conducted among the coping subscales, revealing a large positive association between Emotion and Problem-Focused Coping, $r (185) = .56, p = .01$, with EFC explaining 31% of the variability in PFC. Given the strength of this correlation, a test of multicollinearity was performed to determine if EFC could linearly predict PFC with a substantial degree of accuracy, or vice versa. To quantify the severity of multicollinearity, a variance inflation factor (VIF) was computed for each coping subscale: VIF = 1.48 for PFC and VIF=1.60 EFC. These VIF values confirm that a problematic linear dependence did not exist between EFC and PFC; therefore, collinearity was not a problem for this dataset (Bowerman & O'Connell, 1990).

**Descriptive Statistics of Study Measures:**

The following section presents results of the preliminary analysis: first, means and standard deviations are reported for all variables. To assess normality, skewness and kurtosis were also examined. Finally, bivariate analyses of potential associations among demographic and dependent variables were performed. Table 4 displays a full summary of the skewness (the symmetry of the distribution) and kurtosis (over or under population of the tails of the distribution) for each variable; overall, the data from both mothers and children were normally distributed with no significant outliers.

**EF Scores**

Executive functioning was measured in children by the WCST perseverative errors (PE) score and Stroop Interference (I) scores. For the WCST, higher scores reflect less perseverative errors and on the Stroop, higher scores reflect less interference effect, so for both EF measures, higher scores indicate less error and better functioning.
The mean WCST PE t-score for the child sample was 48.66 (SD = 10.43), which is considered normal based on national norms (Heaton et al., 1993). Notably, the child sample performance on this measure captured a considerable range (60 points), with a minimum score of 20 which is considered moderate-severely impaired, and maximum of 80 which is well above average. The WCST-PE data was normally distributed so such a range is an accurate reflection of the sample at large, reflecting a fairly even distribution of both low and high PE scores (not skewed by outliers).

Stroop Interference t-scores similarly reflected a wide range, with scores spanning from 32 to 76, which is beyond normal limits (35 to 65) when compared to normative standards (Golden, 1978). The mean Stroop Interference score for the child sample was 49.01 (SD = 6.70), thereby classifying this sample as having average resistance to interference (Golden, 1978). The Stroop data was normally distributed. Table 4 details the profile of both of these executive functioning measures.

**Coping Scores**

Prior to this secondary analysis, several psychometric analyses were conducted with the COPE (Hien & Honeyman, 2000). For example, given the COPE has been used less with a lower socio-economic status population, several tests were originally performed to confirm that the scale’s validity and reliability would extend to this population. Alpha coefficients were performed for each of the 15 COPE subscales, resulting in coefficients that looked quite similar to the norm (Carver, 1989), ranging from .6 to .94 (mental disengagement was .3). Per Carver’s indications on how to adopt the COPE to a specific dataset, a principal components analysis with a rotated factor matrix of the 15 subscales was also conducted, resulting in three categorical coping styles: Problem-Focused, Emotion-Focused, and Avoidant Coping. Based on non-significant findings related to the latter category, the present study used only the Emotion-
Focused and Problem-Focused scores generated by this factor analysis (Hien & Honeyman, 2000).

This factor analysis allowed for COPE scores to categorize mothers as having an Emotion-Focused or Problem-Focused Coping style based on scores from the COPE instrument. Within each category, each mother also had a specific score out of a possible score of 80. The mean PFC value was 58.95 (SD = 8.54) with sample scores ranging from 36-80, while the mean EFC score was 55.57 (SD = 8.48) with data ranging from 35-75 across the sample. For Problem-Focused Coping and Emotion-Focused Coping, skewness was -.300 and -.343 respectively, with kurtosis scores of -.086 (PFC) and -.433 (EFC). This indicates that skewness and kurtosis scores were all between 1 and -1, meaning the data was normally distributed without any significant outliers. Table 4 presents the full profile of the coping data.

While clinical norms have not been published for the COPE, this questionnaire was originally used with a large, non-clinical university sample (n=1030; Carver, Scheier, & Weintraub, 1989). To further evaluate the current data set, one sample t-tests were used, comparing the current data with the original data on each COPE subscale (see Table 5). There were statistically significant differences between the current sample and the original sample on a number of EFC subscales (Emotional Social Support $p=.003$, Religious Coping $p<.001$, and Venting Emotions $p<.001$), as well as PFC subscales (Acceptance $p=.05$, Active Coping $p<.001$, Planning $p<.001$, Suppression of Competing Activities $p<.001$, and Positive Reinterpretation and Growth $p<.001$). While demographic data was not reported for the original sample, this data was collected at the University of Miami where the current student body is roughly 50% White, under 10% Black/African American, and just over one quarter Hispanic/Latino (The College Data College Profile, 2017). This assumed demographic profile of the original sample is quite different from the current sample: over half of the mothers in the
current sample were African-American (68%), while 4.7% identified as Caucasian and 24.7% of mothers identified as Other. While these racial differences are speculative, the normed university sample diverges from the current sample in terms of education (less than half of the current sample reported attending “some college”) and further, the normed sample likely included both men and women. Further considerations on use of the COPE with the current population are discussed below.

**Trauma**

The trauma composite categorized trauma as 5 discrete types: childhood sexual (1) or physical abuse (2), witnessing violence as a child (3), as well as adult experiences of trauma including partner violence (4) and sexual assault (5). While the possible range was 0-5, this composite yielded a range of scores from 0 to 4 (M = 1.37, SD = 1.2), meaning no mothers endorsed the presence of all 5 types of trauma. The majority of mothers in this sample indicated exposure to at least one category of trauma over their lifespan: 70.1% of mothers reported 1 or more traumatic experience (142 mothers) while 29.9% (56 mothers) denied exposure to any of the five categories. 6.4% of participants reported exposure to four of the traumatic event categories, 11.8% reported exposure to three, 24.6% reported exposure to two, and 27.3% reported exposure to one. Separate from this composite score, 42.9% of participants reported experiencing some sort of physical assault as an adult. The breakdown of trauma for the maternal sample can be seen in Table 6. These data were normally distributed without any significant outliers.

**Associations Among Variables**

**Demographic Variables**

Two-tailed Pearson correlations were conducted to determine whether dependent variables were associated with either mother or child age. Eight correlations were performed for
PFC, EFC, WCST, and Stroop and none were significant, meaning neither maternal age nor child age was associated with any of the dependent variables. See Table 7.

In terms of possible associations between sex of the child sample and EF performance, an independent samples t-test confirmed there were no significant differences between male and female children on either outcome measure. See Table 8.

Three distinct one-way analyses of variance (ANOVA) were conducted to determine whether there were differences on dependent measures based on mother’s ethnicity (Table 9), education (Table 10), and marital status (Table 11). While results revealed no significant effect of maternal ethnicity or marital status on the dependent measures, there were trend level associations between maternal education level and WCST perseverance errors in the child sample \( (p = .022) \).

Finally, two-tailed Pearson correlations were performed to examine the relationships between maternal IQ and the dependent variables as well as the association between child IQ and the outcome data. Results show that Emotion-Focused Coping was negatively correlated with maternal IQ, meaning a higher IQ was correlated with lower Emotion-Focused Coping scores in the mother sample \( (r = -.265, p < .001) \). Further, results indicate that Child IQ was positively associated with the Wisconsin Card Sort \( (r = .243, p = .001) \). See Table 12 for further detail.

Measures of Executive Functioning: WCST and Stroop

A correlation examining the relationship between the two measures of executive functioning — the WCST perseverative errors score and the Stroop interference score — was non-significant, \( (r = .070, p = .386) \).

Measures of Coping: EFC and PFC

There was a significant positive correlation between the subgroups within the COPE measure — the EFC and PFC scores — \( r (185) = .56, p = .01 \), with EFC explaining 31% of the
variability in PFC.

Controlling for Depression and Substance Use

The present, secondary-analysis does not theoretically bifurcate the sample into a depressed/non-depressed or substance-using/non-substance using groups. However, given this grouping does exist in the original data set, t-tests were conducted to control for substance use and depression on coping style as well as on the child executive functioning measures. Results showed that coping was not significantly different between the substance using and non-substance using groups or between the depressed and non-depressed mothers. Further, t-tests results showed that depression or substance use had no significant effects on Stroop Interference or WCST perseverance. See Table 13 (Depression) & Table 14 (Substance Use) for the full summary.

Hypothesis Testing

The following hypotheses examined the relationships between maternal trauma (IV), maternal coping style (DV), and child executive functioning (DV). It was predicted that maternal trauma would have an impact on maternal coping style, which would thereby play a role in child emotion dysregulation (Hypothesis 1). It was also predicted that maternal coping style would be associated with child Executive Functioning styles, specifically that Problem-Focused Coping would be associated with better EF performance (Hypothesis 2). Finally, maternal coping was tested as a possible moderating variable between maternal trauma (IV) and child EF (DV): it was predicted that maternal coping would moderate the relationship between maternal trauma and child executive functioning, such that mothers with a trauma history who use Problem-Focused Coping would be more likely to have children with better executive functioning skills than EFC mothers (Hypothesis 3). The following section will describe the three sets of analyses that were conducted to test these hypotheses.
Hypothesis One

The study’s first experimental hypothesis predicted that maternal trauma would be significantly associated with coping style. Specifically, it was predicted that mothers with more reported lifetime trauma would use less adaptive emotion regulation capacities, operationalized as EFC. Given the trauma composite was ordinal, Spearman rho correlations were computed to explore the connection between the trauma and coping styles (EFC, PFC). The effect size was very small, meaning no significant relationship was found: $r_3 = -.037, p = .618$ for PFC and $r_3 = -.057, p = .441$ for EFC. See Table 15.

An independent samples t-test was also conducted, dividing the mothers into two groups: those with no report of lifetime trauma (n= 54) and those who have experienced trauma over their lifetime (n= 130). Results showed no significant difference between trauma groups in regard to coping style. In terms of PFC, mothers with no trauma (M= 59.94, SD = 7.69) were not significantly different from the trauma group (M=58.80, SD =8.94), when compared using a one-tailed t-test, $t(182) = .822, p = .41$. Similarly, for EFC there were no significant differences between trauma groups: mothers with no trauma (M= 56.70 , SD= 7.93) were not significantly different from those who reported trauma (M= 55.51 , SD = 8.57 ), when compared using a one-tailed t-test, $t(182) = .881, p = .38$. Table 16 details these results.

Further, a partial correlation was performed to control for maternal IQ. Results showed no significant difference between coping styles: PFC ($r = -.064, p = .397$) and EFC ($r = -.039, p = .608$). In sum, the data showed that a mother’s history of trauma was unrelated to her use of Problem-Focused Coping or Emotion-Focused Coping. These results did not support the first hypothesis.
Hypothesis Two

The study’s second hypothesis predicted that regardless of trauma history, maternal coping style would be associated with child executive functioning skills. Specifically, it was predicted that mothers with an EFC style would have children with worse executive functioning skills as compared to the children of PFC mothers.

A Pearson correlation initially tested this hypothesis, revealing a significant relationship between EFC and both WCST perseverance errors ($r = -.153, p = .043$) and Stroop interference ($r = -.189, p = .010$), meaning that, as predicted, higher Emotion-Focused Coping scores were connected with lower child EF scores. Results also found a trend level relationship between PFC and child Stroop Interference scores ($r = -.139, p = .059$). The correlation between PFC and child WCST was not significant.

To further examine this relationship, linear regressions assessed whether the predictor variable (maternal coping style) accounted for variability in the dependent variables (child executive functioning). See Table 17.

EFC and Stroop: EFC accounted for 3.6% of the variability in the Stroop scores ($R= .189, F(1.182) = 6.741, p=.01$) with a negative coefficient ($\beta= -.154, p=.01$) indicating a negative relationship between these variables. This leads to a predictive equation: Stroop = 57.68 - .154 (EFC). In other words, as EFC decreases by .154 points, Stroop increased by 1 point.

EFC and WCST: A significant proportion of the total variation in child WCST perseverance errors was predicted by maternal EFC. EFC predicted 2.4% of the variability in the WCST ($R= .153, F(1.173) = 4.165, p=.04$) with a negative coefficient ($\beta= -.188, p=.04$) indicating a negative relationship between the two.

PFC & Stroop: PFC of mothers explained 1.9% of variability in Stroop-I. This reflects a
small effect size, with a trend-level relationship, $R = .139, F(1.182) = 3.600, p = .059$, with a negative coefficient, $\beta = -0.110, p = .059$.

**PFC & WCST:** In line with non-significant correlation between PFC and WCST, the regression between these variables further illustrated that PFC does not significantly predict WCST scores as indicated by .1% of the variability in the WCST ($R = .034, F(1.173) = .200, p = .66$) with a positive coefficient ($\beta = .041, p = .655$).

As such, it can be concluded that *hypothesis two was partially supported* in that results supported the hypothesized link between maternal EFC coping style and poorer child executive functioning skills in comparison to children of PFC mothers. While there was no significant association found between PFC and WCST, a trend-level relationship between PFC and Stroop Interference scores.

**Hypothesis Three**

Finally, it was predicted that maternal coping style would moderate the relationship between maternal trauma and child executive functioning. Specifically, it was hypothesized that the group of mothers who reported trauma history and adopted a PFC style would more likely have children with better EF skills when compared to the children of EFC mothers.

Multiple regressions were done using the PROCESS macros (Hayes & Preacher, 2014) to both examine whether the association between maternal trauma and child executive functioning depends on maternal coping style, and to identify the independent and combined effects of these two variables on the dependent variable. The two predictors and the interaction were entered into a multiple regression model: trauma, coping, and trauma by coping. Results indicated that together, the variables explained a non-significant amount of variability in the DV (2.9%). The coefficients further demonstrate that the interaction effect is not significant.
**Trauma, EFC and Stroop:** Multiple regression analysis was used to test a model predicting maternal EFC’s association with child EF as measured by Stroop Interference errors. Together, the variables accounted for 5.8% of the variability in the DV; the interaction of Trauma and EFC predicted a non-significant amount of variability in Stroop-I ($R = .24, F[3, 179] = 3.64, p = .01$) and the interaction was non-significant ($p = .32$). The increase in percent of variance explained by the interaction was less than 1% ($R^2_{\text{change}} = .01\%$). See Table 18. As reported in Hypothesis 2, Emotion-Focused Coping & Stroop had a significant relationship as independent variables ($p = .01$) but the interaction of trauma and EFC was not significant.

**Trauma, EFC and WCST:** A multiple regression analysis was used to test a model predicting maternal EFC’s association with child EF as measured by WCST- perseverance scores. Together, the variables explained 2.92% of the variability in the DV; the interaction of Trauma and EFC predicted a non-significant amount of variability in WCST-PI ($R = .17, F[3, 171] = 1.71, p = .166$) and the interaction was non-significant ($p = .68$). The increase in percent of variance due to the interaction was less than 1% ($R^2_{\text{change}} = .03\%$). As reported for Hypothesis 2, EFC had a significant relationship with WCST as independent variables ($p = .04$) but the interaction of trauma and EFC was not significant. See Table 18.

**Trauma, PFC & Stroop:** A multiple regression analysis was used to test a model predicting maternal PFC’s association with child EF as measured by Stroop Interference errors. Together, the variables explained 3.5% of the variability in the DV; the interaction of Trauma and PFC predicted a non-significant amount of variability in Stroop-I ($R = .19, F[3, 179] = 2.13, p = .10$) and the interaction was non-significant ($p = .87$). The increase in percent of variance explained due to interaction was less than 1% ($R^2_{\text{change}} = .00\%$). See Table 19.

**Trauma, PFC & WCST:** A multiple regression analysis was used to test the final model predicting maternal PFC’s association with child EF as measured by WCST- perseverance
scores. Together, the variables explained .61% of the variability in the DV; the interaction of Trauma and PFC predicted a non-significant amount of variability in WCST-PI ($R = .078, F[3, 171] = .347, p = .79$) and the interaction was non-significant ($p = .60$). The increase in percent of variance explained due to interaction was less than 1% ($R^2_{change} = .001 \%$). See Table 19.

As is consistent with findings reported for Hypothesis 2, EFC was a significant individual predictor of WCST and Stroop, however, there was no significant interaction effect between these variables. In other words, results show that maternal trauma is not associated with child executive functioning. As such, Hypothesis 3 was not supported.

**Post-Hoc Analyses**

*Controlling for Depression & Substance Use*

The final hypothesis (H3) was revisited post-hoc: regressions were conducted again to examine the relationship between maternal trauma and child executive functions, as moderated by maternal coping, but with the addition of controlling for the possible impact of maternal depression and substance use.

In looking at mothers with Problem-Focused Coping, a regression analysis revealed that substance use did not have a significant impact on WCST ($p = .25$), nor did maternal depression ($p = .72$). Taken together, these covariates predicted a non-significant amount of variability in WCST ($R^2_{change} = .00, F_{change}(1, 162) = .40, p = .53$). Similarly, substance use ($p = .69$) and depression ($p = .41$) were entered into a linear regression to control their impact on Stroop; both covariates predicted a non-significant amount of variability ($R^2_{change} = .00, F(1,170) = .05, p = .82$). See Table 20.

In looking at mothers with Emotion-Focused Coping, a regression analysis similarly found that substance use and maternal depression did not have a significant influence on child Executive Functions. For EFC mothers, substance use did not have a significant impact on child
WCST ($p=.27$), nor did maternal depression ($p=.80$). Taken together, these covariates predicted a non-significant amount of variability in WCST ($R^2_{\text{change}}=.00$, $F_{\text{change}(1, 162)}=.00$, $p=.99$). Similarly, substance use ($p=.52$) and depression ($p=.51$) were entered into a linear regression to control their impact on Stroop; both covariates predicted a non-significant amount of variability ($R^2_{\text{change}}=.00$, $F_{\text{change}(1, 170)}=.54$, $p=.46$). See Table 21.

As was the case with the original results, none of the interaction terms were significant when controlling for depression and substance use disorder, meaning none of the coping variables were significant moderators.

**Maternal Depression Severity & Coping**

Beyond the nominal measure of presence of depression, maternal depression severity, along with milder depressive symptoms were also examined for their possible impact on coping style. Pearson correlations were conducted between maternal coping and two unique measures of depression severity—no significant associations were found. Two-tailed Pearson correlations were conducted between PFC and severity of Major Depressive Disorder ($r = -.061, p = .410$) and severity of Dysthymia ($r = .030, p = .682$), revealing non-significant results. The same analysis was performed for EFC; the results did not reveal any statistically significant associations: Major Depressive Disorder ($r = -.032, p = .671$) and severity of Dysthymia ($r = .089, p = .230$). Taken together, these results indicate there was no significant associations or differences between Emotion-Focused mothers and Problem-Focused mothers in regard to depression or substance use. See Table 22.

**PTSD, Coping, and Executive Functioning**

Contrary to what was hypothesized (H1), results revealed that a mother’s past experience of trauma did not significantly impact her coping style. Post-hoc analyses examined the same model, replacing the trauma variable with PTSD. As such, data was analyzed to determine
whether a mother’s current diagnosis of PTSD impacted her coping style and further, whether maternal PTSD influences child executive functioning, as moderated by coping.

It was predicted that mothers with a PTSD diagnosis would use less adaptive emotion regulation capacities, operationalized as EFC. An independent samples t-test was conducted, dividing the mothers into two groups: those with a self-reported diagnosis of PTSD (n= 32) and the majority of mothers who denied a current diagnosis of PTSD (n=150). Contrary to the findings of Hypothesis 1, results showed a significant difference between PTSD groups in regard to PFC coping style, such that mothers without PTSD reported using more Problem-Focused Coping (M= 59.87, SD = 7.96) than mothers with a current PTSD diagnosis (M=55.41, SD =10.37), as compared using a one-tailed t-test, \( t(180) = 2.72, p = .007 \). Consistent with Hypothesis 1 results, there were no significant differences between the PTSD groups for EFC: mothers with no PTSD (M= 150 , SD= 8.14) were not significantly different from those who carried a current PTSD diagnosis (M= 53.69 , SD = 9.36) in regard to Emotion-Focused Coping, when compared using a one-tailed t-test, \( t(189) = 1.60, p = .112 \). Table 23 details these results.

Re-visiting Hypothesis 3, it was predicted that a PFC coping style would moderate the relationship between maternal PTSD and child executive functioning such that mothers who used a PFC coping style would more likely have children with better executive functioning skills when compared to children of EFC mothers. Multiple regressions were conducted using the PROCESS macros (Hayes & Preacher, 2014) to examine the relationship between maternal PTSD and child executive functioning, as potentially moderated by maternal coping style. Just as with Hypothesis 3 regression results, post-hoc analysis indicated that together, the variables explain a non-significant amount of variability in child outcomes and the coefficients further demonstrated that the interaction effects were not significant.
PTSD, PFC, and Child EF (Stroop & WCST)

Maternal PTSD and PFC were entered into a regression analysis, along with the interaction term between PTSD and PFC, which explained a non-significant amount of variance in child WCST ($R^2_{\text{change}} = .00, F_{\text{change}}(1, 169) = .51, p = .48$) and Stroop ($R^2_{\text{change}} = .00, F_{\text{change}} (1, 177) = .05, p = .82$). Since the increase in percent of variance explained by the interaction was less than 1% for both variables ($WCST \ R^2_{\text{change}} = .00$ Stroop $R^2_{\text{change}} = .00$), it was concluded that PFC was not a significant moderator of the relationship between maternal PTSD and child Executive Functioning. See Table 24.

PTSD, EFC, and Child EF (Stroop & WCST)

Maternal PTSD and EFC were entered into the regression analysis, along with the interaction term between PTSD and EFC, which explained a non-significant amount of variance in child WCST ($R^2_{\text{change}} = .00, F_{\text{change}} (1, 169) = .13, p = .72$) and Stroop ($R^2_{\text{change}} = .00, F_{\text{change}} (1, 177) = .15, p = .70$). Since the increase in percent of variance explained by the interaction was less than 1% for both variables ($WCST \ R^2_{\text{change}} = .00$ Stroop $R^2_{\text{change}} = .00$), it was concluded that EFC was not a significant moderator of the relationship between maternal PTSD and child Executive Functioning. See Table 25.
CHAPTER FIVE
Discussion

Overview

Maternal emotion regulation is critical to sensitive parenting as it enables caregivers to be emotionally available to their children’s experiences (Moehler, Biringen, & Poustka, 2007). Mothers with a history of trauma are especially vulnerable to developing poor or ineffective affect regulatory capacities (Cohen et al., 2008), straining their access to effective coping strategies (Patterson & Chamberlain, 1994). With limited access to helpful emotion regulation strategies, parenting likely becomes stressful and may, in turn, lead to less than optimal parenting. This strain is often exacerbated for parents living in poverty (Raver, 2004), as well as parents of adolescents (Scharf & Shulman, 2006). While studies have widely validated the special demands of parenting as a mother with a history of trauma, an emerging resilience literature reveals the ways in which maternal trauma does not necessitate poor outcomes for the children of this population (Egeland, Jacobvitz, & Sroufe, 1988; Jaffee et al., 2013)

To better understand the mechanisms that buffer the adversarial impact of trauma, the current study built on current understandings of coping, trauma, and parenting to look at the coping styles of mothers with a history of trauma. Specifically, this study examined whether a mother's approach to coping played a protective role in the life of her child. Pulling from the emotion regulation literature that suggests a mother's capacity to regulate her emotions is communicated trans-generationally, in turn effecting her child's ability to self-regulate (Eisenberg, Cumberland, & Spinrad, 1998), this study investigated whether the patterns of maternal coping impact a child’s regulation, as measured by the child's executive functioning. More broadly, this study looked at the way in which a mother’s emotion regulation may be transmitted to her child. Given the limited research on the mechanisms by which this
transmission unfolds, especially in pre-adolescent and adolescent children and among children of minority ethnic backgrounds, the present study was an effort to contribute to this knowledge gap.

Contrary to expectations, maternal trauma was not linked to coping style (H1). However, there was some significant links found between maternal emotional regulation, operationalized as coping style, and pre-adolescent's executive functioning skills (H2). It was predicted that mothers who used an Emotion-Focused Coping style would be more likely to have adolescents with poor executive functioning skills when compared to the adolescents of mothers who use a Problem-Focused Coping style; this hypothesis was partially confirmed as discussed in detail below. Finally, contrary to predictions, maternal coping style did not moderate the relationship between maternal trauma and child executive functioning (H3).

While the findings of this study add important information to the current understanding of trauma’s transmission, they also further expose the numerous questions that remain unanswered. These questions relate to the complexity of the processes involved in trauma’s intergenerational pathway, as well as the methodological challenges in capturing factors that may moderate the impact of maternal trauma on children. The following discussion summarizes and interprets the study’s findings: First, theoretical possibilities are explored, along with an analysis and critique of the findings. Next, results are discussed in greater detail. Issues of measurement are then considered in the Limitations section, and finally, relevant implications for future research and clinical practice are discussed.

**Hypothesis One:**

*Trauma & Coping*

In examining the association between maternal trauma history and coping style, the current study yielded unexpected findings as no association was found. In this study, trauma exposure was measured by an ordinal trauma composite which accounted for certain domains of
lifetime interpersonal trauma, a range of childhood traumas, as well as witnessing violence. While trauma theory emphasizes the way in which trauma can disrupt emotion regulation (Ehring & Quack, 2010), this study’s findings demonstrated that trauma does not inherently impact coping style. Implicit in this outcome is the idea that trauma does not dismantle one’s capacity to cope.

Given these results, it is reasonable to suggest that perhaps it is not trauma exposure that disturbs emotion regulation, as captured by coping, but rather the maladaptive response to trauma, as evidenced by PTSD symptoms, that yields negative affect-regulatory patterns. In response to this line of thinking, post-hoc analyses examined coping styles of mothers with a present diagnosis of PTSD. Results showed that mothers without a PTSD diagnosis tended to have a PFC style. While there were no significant findings regarding PTSD and EFC, the negative association between maternal PTSD and PFC suggests that it is not trauma that impacts coping, but rather a disordered response to trauma (PTSD) that may lessen a mother’s tendency to use adaptive coping skills. Future research would benefit to explore this association, investigating which aspects of post traumatic stress order may obfuscate a mother’s access to Problem-Focused coping tools.

In understanding the more general finding that trauma itself does not impact coping style, several potential explanations emerge. First, it is possible that trauma has a negative impact on maternal emotion regulation, but coping, as a construct, fails to capture this impact specifically. Second, there may be issues of measurement at play: mothers who experienced trauma or PTSD may be particularly poor at the type of self-reflection or affective awareness necessary for accurate self-reporting of coping, thereby contaminating the coping data from trauma group. Alternatively, the trauma measure accounted for type of trauma, but chronicity, age of trauma onset, or severity was not specified; a more nuanced trauma measure may be an important factor.
Finally, there is the possibility that this finding is accurate, revealing that trauma does not impact a mother’s coping style.

Given the substantial literature that provides evidence to the contrary, in considering the possibility that trauma does not in fact harm a mother’s emotion regulation, as measured by coping, the best explanation centers around resilience, which categorically includes protective factors that were not accounted for in this study. Similarly, it is possible that mothers in this sample experienced some sort of posttraumatic growth that buffered coping patterns from the possible harmful consequences of trauma (Morrill et al., 2008). These possibilities are discussed in further detail in the following section.

Coping as Emotion Regulation

This study measured trauma’s impact on maternal emotional regulation, as captured by coping style. Since no significant relationship was found between trauma and coping, issues of validity must be considered, as it is possible that coping failed to measure what it intended—perhaps coping did not serve as an adequate representation of emotion regulation. As such, it may be advantageous to further examine the underlying premise of this study—that coping and emotion regulation are related constructs. This theoretical link is based on a rich history of understanding human response to emotion as something that is capable of modification. First delineated by William James (1884), this study is aligned with the conceptualization of emotion as adaptive response tendencies, suggesting that humans have the ability to modulate said tendencies. The Gross “Antecedent and Response-Focused Emotion Regulation” model (1998) builds on this idea, positing an emotion regulation process that begins with an emotional stimuli, leading to an evaluation of this cue, thereby triggering a response tendency, a modulation, and eventually, an emotional response. This seminal model outlined three typical response domains: behavioral, experiential, and physiological. The coping tradition is very much based on the
comparable idea that humans tend to respond to stressors in similar, patterned ways (Selye, 1956). In other words, emotion regulation and coping theories stand on a shared foundation of thought—that life’s challenges may be diverse and varied, but psychophysiological reaction tendencies fall within a more truncated range (Sapolsky, 1994).

This theoretical overlap between emotion regulation and coping guided the current study design and more specifically, the extant research on trauma’s disruptive impact on emotion regulation (Hien & Miele, 2003; D. Hien & Honeyman, 2000) informed the prediction that trauma would likewise impact coping. However, the lack of finding in the present study’s first hypothesis may offer important information about the complex relationship between coping and emotion regulation, or lack thereof. If trauma disrupts emotion regulation, as the literature suggests, but does not impact coping, as evidenced by the current findings, then these two aspects of affect-response may actually represent qualitatively distinctive capacities. While the current study used coping as a proxy for emotion regulation, there is a possibility that coping is not a valid measure of emotion regulation.

In fact, there is a literature that points to some relevant differences between the two constructs: “although traditional definitions of coping overlap with contemporary conceptions of emotion regulation, coping and emotion regulation are by no means redundant” (Gross, 1998, p. 274). It can be argued that coping centers on experiences that tax an individual’s resources, while emotion regulation includes a broader range of emotional processes that may or may not be strenuous or demanding. In other words, coping refers to managing that which is challenging, while emotion regulatory processes may be employed for that which arouses pleasure or pain (Gross, 1998). This distinction is reflected in the current study which used a coping questionnaire that asked participants to indicate what they generally do and feel when they experience challenging events, prompting mothers to imagine their general tendencies when
“under a lot of stress” (Carver, Scheier, & Weintraub, 1986).

It has been further argued that emotion regulation research captures more nuanced, emotion-specific processes or "emotion dynamics" (Thompson, 1990) that are “finer grained” than the “broader rubric of stress and coping” (Gross, 1998, p. 274). This argument defines coping as a more inclusive construct than emotion regulation in that coping incorporates both emotional and non-emotional action that is taken to achieve both emotional and non-emotional objectives (Scheier, Weintraub, & Carver, 1986). This distinction is a subtle departure from the coping literature that steered the current study’s hypotheses which views coping as a form of affect regulation (Folkman, 1997).

Coping may represent a broader category in some respects, including action that is beyond the focal point of emotion regulation, but emotion regulation is thought to capture emotional processes (Ehring & Quack, 2010) that coping neglects. For example, the COPE questionnaire assumes participants possess a certain level of self-awareness regarding their functioning during stressful times, failing to account for unconscious aspects of affect regulation. While this questionnaire covers a wide range of coping styles, a self-report inquiry on behavior, emotion, and thinking is certainly limited in its ability to capture functioning that is not known or understood by the disclosing “coper.” It is difficult for research to monitor differing levels of consciousness related to emotion regulatory processes and coping alike, but important distinctions emerge across the spectrum of human awareness over whether regulation is controlled, effortful, automatic, or unconscious (Wegner & Bargh, 1998). This is to say that more subtle forms of emotion regulation were not reflected by the coping construct in the current study, which may contribute to the lack of association that was found between trauma and coping.

Disentangling emotion regulatory processes from coping represents a tremendous
challenge. It can be argued that the two constructs are not tantamount but rather coping may be a necessary precursor to what later emerged as the study of emotion regulation (Gross, 1998). In sum, to interpret the lack of association between maternal trauma and coping style, we must consider the possibility that trauma did impact emotion regulation, but this study’s measure of coping did not adequately capture emotion regulation. It may be that coping, or the current study’s measurement of coping, failed to sufficiently represent the complexity of emotion regulation difficulties that result from trauma.

Resilience

Contrary to the expectations of this study, the current finding is more consistent with an emerging literature that challenges the assumed deterministic relationship between trauma and poor emotion regulation. Resilience — the ability to cope with hardship or respond adaptively in the face of adversity — and its relationship to trauma provides a theoretical lens to understand these results: if trauma does not unavoidably disrupt emotion regulation, traumatic history may not thereby dictate an individual’s access to effective coping (Masten and Garmezy 1985).

Resilience is colloquially understood as an elasticity or capacity to rebound, but a more operational definition classifies resilience as “a complex repertoire of behavioral tendencies” (Agaibi & Wilson, 2005, p. 197) that lead to optimal functioning in response to that which demands coping resources. The semantics of the resilience literature is riddled with terms like cognitive hardiness, emotional buoyancy, and developmental adaptivity (Masten and Garmezy 1985; Beasley, Thompson, & Davidson, 2003). While these are not popular terms in psychodynamic lexicon, dynamic theory certainly outlines the processes of resilience, framing this “spring back” as a "reorganization and reintegration of inner life after major disruption” (Harms, 2015, p. 30). Just as a psychodynamic definition of trauma emphasizes its potential to disrupt ego functioning, which can be experienced as a violation of the self (Winicott, 1965) or
loss of sense of self (Ulman & Brothers, 1988), a dynamic view of resilience is more about the intrapsychic processes which create an internal space to foster “the establishment of feeling real” (Winnicott, 1965). In understanding the current study’s results, it is helpful to consult self-development trauma theory (McCann and Pearlman, 1990) which outlines how traumatic experiences can destroy an individual’s internal sense of self as well as sense of other, and more specifically that trauma can dismantle one’s “frame of reference; sense of security; self-confidence; self-assertiveness; autonomy; and intimate relationships” (Daud, Skoglund, & Rydelius, 2005 p. 25). As such, resilience is not about becoming invulnerable, but rather it can be conceptualized as an adaptive reorganization of self in the face of disorganizing event.

This idea is most relevant to the current study’s finding in its proposal that resilient individuals have some sort of protective internal resources that allow for a “spring back” to functioning in the aftermath of experienced adversity (Gerwitz, Forgatch, & Wieling, 2008) and more, such resources may actually serve to prevent the transmission of trauma across generations (Garmezy, Masten, & Tellegen, 1984; Werner, 1992). While the mechanisms of such resources remain unknown in the context of the current data, it is possible that the mothers in this sample illustrate an aspect of resilience in relation to coping: that the experience of trauma does not clearly impact coping in a particular way.

The current study was an investigation into what may enable an individual to access resilience; it was guided by the hypothesis that certain coping styles may play an important role in what allows a mother to avoid emotional dysregulation post trauma. However, in order to better understand the finding that trauma did not have clear effects on coping, it would be helpful to have a sense of each mother’s coping patterns prior to experiencing trauma, as it is often thought that a resilient response requires internal resources to be in place before the experienced trauma (Harvey, 2007). Further, these results could be better understood alongside information
about the sample’s relationship to their trauma experience because resilience centers around acceptance and productive meaning-making around a traumatic event.

Adaptive outcomes in the face of trauma or adversity is broadly explained by individual differences in response to stress (Rutter, 2007), which this study conceptualized as coping. Coping became the focal point of this study because it can be developed, revised, and improved (Folkman, 1991), which is as clinically compelling as it is distinct from more fixed variables such as personality traits, and biological and psychological vulnerabilities. However coping serves as one facet of the broad paradigm of resiliency; coping alone cannot adequately explain how a mother’s emotion regulation strategies can remain intact after experiencing significant trauma. The current study was unable to capture the complexities of such psychological mechanisms beyond coping that may contribute to a mother’s functioning despite adverse circumstances. Further, it remains unclear if coping is an appropriate proxy for the internal mechanisms that manifest as adaptation to experienced trauma.

**Hypothesis Two:**

*Executive Functioning as Emotion Regulation*

The current findings provide some support for an interdisciplinary theory that bridges executive functioning and emotion regulation, bolstering research which links lower executive functioning with poor self-regulation (Hofmann, Schmeichel, & Baddeley, 2012). This association hinges on the idea that “cool” executive functioning processes—thinking, planning, holding memory, shifting between organizing schemes—are essential to the down regulation of “hot” processes—feeling unwanted emotion, experiencing emotional intensity, sensations of internal loss of control. It was predicted that mothers who use a coping style that was not goal-directed (Emotion-Focused Coping) would be more likely to have children with poor executive functioning skills when compared to the children of mothers who are goal-oriented in their
coping approach (problem-focused coping). Further, the inverse was also hypothesized—that mothers who employed Problem-Focused Coping strategies would be more likely to have children with superior executive functioning. Results supported this first prediction, and data partially confirmed the latter, inverse prediction, meaning mothers with an EFC style had children with poorer executive functioning skills in comparison to children of PFC mothers, and there was a trend-level relationship between PFC and Stroop Interference scores. A correlation between PFC and WCST was not found. Putting the trend-level finding aside, these results reveal that it is maternal EFC, not coping style at large, that impacts child executive functioning. More theoretically, this indicates that emotion dysregulation, as captured by Emotion-Focused Coping, is a relevant force in the communication of maladjustment from mother to child, as measured by executive functioning. The present study extends the idea that executive functioning is a form of emotion regulation, demonstrating how this pathway takes form inter-generationally.

Broadly speaking, the current study is based on the idea that maternal emotion regulation impacts child emotion regulation. Just as coping was discussed for its potential to adequately measure emotion regulation, the construct of executive functioning must also be explored as a proxy for emotion-regulation. There is a growing literature linking emotion regulation to executive function abilities (Ochsner & Gross, 2007), showing how the production and application of cognitive strategies can serve to regulate emotions (Ochsner, Silvers, & Buhle, 2012; Rutherford et al., 2015; Zelazo & Cunningham, 2007) and that deficits in poor self-regulation reflect deficits in executive functions or temporary reduction in executive function skills due to myriad situational, physiological, and intrapsychic reasons (Lansbergen, Kenemans, & Van Engeland, 2007).

The finding that a mother’s EFC style is associated with her child’s executive functioning
provides general support for the idea that mother emotion regulation is linked to child emotion regulation, and more, it supports the idea that emotion regulation and executive functioning are closely connected constructs. As such, the current findings add to the widely held notion that there is an overlap in self-regulatory processes—that “the construct of self-control is theoretically related to the neurocognitive domain of executive functioning” (Franchow & Suchy, 2015 p. 78; Baumeister, Schmeichel, Vohs, Kruglanski, & Higgins, 2007). In this way, the current results can be seen as consistent with the ongoing shift in psychological and neuroscience research—“away from artificially separate[ing] faculties in favor of a constructionist view that integrates cognitive and affective activates” (Suchy, 2011, p. 85; Lindquist & Barrett, 2012).

While the current research did not include neural or biological markers, this study’s model linking executive and emotion capacities was based on brain studies that demonstrated how the processes of emotion regulation and executive functioning activate similar brain areas. In fact, there is growing neuroimaging literature detailing the way in which participants who are prompted to regulate affect actually demonstrate “stronger activation in executive-related brain regions” (Cohen, Henik, & Moyal, 2012, p. 971; Goldin, McRae, Ramel, & Gross, 2008). These data move beyond supporting the current study’s assumption that executive functioning is an adequate measure of emotion regulation, hinting that emotion regulation may, in turn, serve as an adequate measure of executive functioning.

*Inhibition & Cognitive Flexibility*

The Stroop and Wisconsin Card Sorting Task were used as executive function measures that are particularly adept at tapping into emotion regulatory processes. The Stroop score measured interference control which can be defined as “ability to control interference from alternative response tendencies that compete with the one that is adequate given the context”
(Lansbergen, Kenemans, & Van Engeland, 2007, p. 260) and the Wisconsin Card Sorting Task score was a measure of perseverance errors, meaning it tallied the number of times participants failed to shift a sorting principle—when a category for sorting changed, this score measured when a child continued to sort with the previously correct, no longer relevant sorting principle. In other words, the Stroop-Interference has to do with inhibition or the ability to stop a response, while the Wisconsin Card Sorting Perseverance Errors measured set shifting, which captures an individual’s attunement to situation and capacity to cognitively pivot. This distinction is relevant in considering explanations for PFC’s association with Stroop (trend-level) but not with WCST in that these two executive functioning measures tap into separate, specific aspects of executive functioning, as opposed to more broadly representing EF at large. This result is similar to a parenting executive functioning study, which linked lower parental inhibition, on a Stroop-like task, to negative parenting outcomes and poorer quality child interactions, but did not find correlation between parenting and a cognitive-shifting measure, on a task that is similar to the WCST (Shaffer & Obradovic, 2016). This finding, along with the results of the current study, suggest that the Stroop may capture a facet of executive functioning that is more vulnerable to the impact of coping or emotion regulation than the WCST.

Building off the idea that executive functioning is too encompassing a term to carry meaningful utility, it may be that increased specificity needs to be used with regard to executive functions because EF is really a collection of capacities that are highly “fractionable”; in other words, “there is no frontal homunculus, no unitary executive function” (Stuss and Alexander, 2000, p. 291). While other authors debate it is best to consider EF a “macroconstruct” containing numerous sub-processes that join together to form high-order functions (Zelazo et al., 1997), it seems important, in light of the current results to consider inhibition as a distinct entity.

After all, another way of framing emotion-focused coping is regulatory strategies marked
by disinhibition, which is relevant when considering previous studies that have demonstrated how the executive function of inhibition is essential in controlling affect-expression (Carlson & Wang, 2007). Several studies found a unique association with negative affect in examining the role of inhibition within emotion regulation, suggesting that individuals with poor inhibition are more likely to express negative affect (Carlson & Wang, 2007; Bridgett, Oddi, Laake, Murdock, & Bachmann, 2013). This finding is aligned with the current data which links maternal EFC, a coping style associated with the expression of negative emotion, with poor inhibition in children.

It may be that a parent’s challenges with inhibition, as captured by EFC, has especially salient intergenerational repercussions over a child’s inhibition struggles, as captured by Stroop-I. Certainly, inhibition is an important parenting skill: “the ability to self-monitor and inhibit prepotent responses is related to parenting behaviors that support child’s emerging autonomy” (Shaffer & Obradovic, 2016, p. 8). It makes sense that interacting with a pre-adolescent or adolescent is a task that demands inhibition of a range of parental reactions possibly related to irritation and frustration, as well as expressions of positive affect that may be unwelcomed by an adolescent. In the context of the parent-child relationship, parental inhibition may foster improved interactions which may lead to improved child executive functioning.

While inhibition may play a specific role in the intergenerational transmission of emotion regulation, it seems fair to assume that cognitive flexibility is also a relevant factor in the parent-child relationship with emotion regulation. Switching a thought pattern, responding to new, unpredicted information reveal a parent’s critical “ability to shift between different goals or disciplinary strategy in response to cues, or ability to keep track of both self- and child-focused goals in a specific situation” (Shaffer & Obradovic, 2016, p. 3). Although findings linking coping and WCST were trend-level or non-significant, there is not enough evidence to conclude that cognitive flexibility is a poor indicator of emotion regulation. It may be that the standard
measure of cognitive flexibility, as captured by card sorting tasks, do not tap into the aspects of this construct that are most impacted by maternal coping.

Coping as Adaptive/Maladaptive

In understanding the trans-generational aspect of the current findings, it is helpful to acknowledge the assumptions underlying this study’s predictions—that particular coping techniques yield some sort of improved parenting outcomes, which present in a specific facet of positive child functioning. As predicted, it was found that a certain style of coping was linked to negative outcomes (EFC in mothers, diminished EF in children), partially supporting the prediction that a certain style of coping would be linked to improved outcomes (PFC in mothers, improved EF in children). As such, results of this study, in part, support coping theory that argues “adaptive” coping produces myriad positive outcomes (Griffiths, 1999; Nyamathi et al., 2000).

The idea that EFC is a maladaptive coping style or one linked to negative outcomes was supported by the current data, but the underlying assumption behind this finding has earned notable criticism. For example, Compas (2001) warns that it is unsound and possibly deceptive to discuss coping in terms of effectiveness when using data from cross-sectional studies. Their argument is based on directionality, contending that the direction of the relationship between coping and adjustment is indeterminable in cross-sectional research. Further, Folkman (1991) cautions against holding the assumption of widespread benefits of coping, emphasizing the nuanced ways in which coping may impact a particular outcome variable. Additional research echoes this warning against thinking about adaptive coping as a force capable of universally generating positive outcomes across domains. Indeed, there is some controversy linked to the very idea of sorting coping into categories that carry an evaluative valence such as adaptive or maladaptive, with the argument being the more coping is considered as positive or negative, the
less it is understood as situational, dynamic, flexible, process-based, and transactional (Lazarus & Folkman, 1984; Litt, Tennen, & Affleck, 2011). While the current study followed the tradition of grouping coping into thematic, coping strategy-based groups (EFC & PFC; Coyne & Racioppo, 2000) and found evidence that each style has distinct intergenerational consequences, it is important to acknowledge the school of thought that argues against formulating interpretations of coping data that use this methodology. In light of the current findings, it must be understood that the current data is at risk of committing an oversimplification that assumes a binary impact of coping (positive or negative) while failing to consider the coping behavior within its relevant context (Skinner, Edge, Altman, and Sherwood, 2003). It can be argued that there are certain situations when a mother’s PFC was specifically adaptive, and perhaps in these moments, the child may receive some sort of benefit from maternal adaptive functioning, while in other situations this coping style may be harmful to the child. That is to say, the current study’s finding that PFC was not linked to positive or negative outcomes in child executive functioning (excluding the trend-level association) may give credence to the argument that it is unsound to classify responses to emotion as generally positive or negative (Dunn, Billotti, Murphy, & Dalgleish, 2009). The relevant context of coping choices will be discussed in the Cultural Factors section below.

**Intergenerational Transmission of Coping**

The current study is the first of its kind to specifically link maternal emotion regulation with child executive function. This original contribution is aligned with research on parental executive function (inhibitory control), which together with parental emotion regulation, link to more positive, attuned parenting behaviors (Shaffer & Obradovic, 2016). The current findings also add support to intergenerational research which has documented how the affective style of a parent who has experienced trauma is linked to the child’s affective patterns and expressions.
Further, the current findings fit nicely with infant studies that show how babies with higher levels of self-regulatory capacity tend to have parents who provided sensitive parenting (Ursache, Blair, Stifter, & Voegtline, 2013). More broadly, this line of study further connects executive functioning and emotion regulation and yet, missing from the current study is an explanation of how a mother’s self-regulation (coping) is passed along to her child (executive functioning).

The leap from a mother’s emotion regulation (EFC) to her child’s regulation (Stroop-I, WCST-P) can be explained conceptually through consideration of the parent-child relationship. According to attachment theory, the child develops a sense of self through early interactions with the mother (Mahler, 1974) and it is through such interactions and as a product of this bond that a child learns to self-regulate. The child internalizes the regulating role of the mother, thereby the mother begins to take form in the child, as represented by the child’s aptitude for self-regulation. As such, maternal capacities to regulate emotion inform a child’s capacity to the same, thereby impacting a child’s abilities to inhibit and cognitively-shift. If EFC is to be understood as a form of coping most closely linked to emotion regulation difficulty, then the data make sense that mothers with EFC are more likely to have children who struggle with the very EF mechanisms that allow for emotion regulation (see discussion of Stroop & WCST below). This finding informs a way of thinking about how hot systems of emotion regulation (coping) interface with cold systems of emotion regulation (executive functioning).

While the current study highlights poor maternal emotion regulation in the form of EFC as a potential risk factor for negative child outcomes, other studies propose a framework for the transmission of emotion regulation that is related to parenting behavior and parent-child interactions. For example, Shaffer & Obradovic (2016) link impoverished parental affect regulation with less collaborative behaviors with children along with less emotionally attuned
child-interactions. Similarly, in his research on the consequences of cumulative trauma, Khan (1963) determined that the parent who “shields” a child against instability, hostility, and traumatic experiences, serve as the ultimate protective factor against severe consequences of trauma, explaining that healthy development of the child’s inner-life and intra-psychic functioning.

Another angle on transmission speaks to the role of genetics and the possibility that regulatory capacities are heritable traits. The biological underpinnings of emotion regulatory processes is not yet well understood, but studies looking at temperament in infancy and childhood (Goldsmith, Pollak, & Davidson, 2008) as well as twin studies (Wang & Saudino, 2013) suggest that heritability is certainly a contributing factor in the emergence of emotion regulatory qualities. In reference to its impact on emotion regulation, the literature popularly refers to genetics as having a “mild to moderate” effect (Hawn, Overstreet, Stewart, & Amstadter, 2015, p. 108); reviews of the genetic etiology of emotion control tend to put heritability estimates at somewhere between 25–55% (Canli, Ferri, & Duman, 2009). While the current study did not examine heritability, the findings on regulation transmission yield further questions as to the mechanisms by which poorly regulated parents may transmit challenges with self-regulation to children—an understanding of parent-child attachment and interaction patterns, along with heritability factors, may contribute meaningful data to supplement the present results.

Adolescence

The child’s age and developmental stage is another potential consideration in understanding the observed associations and lack thereof between maternal coping and child executive functions. In considering the results of this study, it is important to place the child sample within a development context, highlighting the likelihood of variable performance on executive functioning measures. The children in this study were between the ages of 8 and 15,
with a mean age of 11.5 years old, situating this sample in the pre-adolescent and adolescent developmental phase. This 8-year span is broad and data from children who are in different developmental moments may capture a wide range of performance. Further, this phase is known to be marked by an increased need for autonomy and identity exploration which can result in less steady, more explorative, fluctuating behavior (Sartor & Youniss, 2002). Moreover, early adolescence marks the onset of the maturational and attunement of the prefrontal cortex, which means the developmental period of the current child sample may represent a time of heightened variance in terms of executive functioning (Casey, Jones, & Hare, 2008; Sowell, Thompson, Holmes, et al. 1999).

Previous research on this stage of life suggests variability in the capacity to engage in executive functioning tasks among adolescents of different ages. This reflects the general idea that a child’s set of processes used to control and manage emotional arousal varies along the developmental continuum (Posner & Rothbart, 2000). As such, future research that seeks to take development into consideration may benefit from increased data points. Comparative data on executive functioning at different developmental moments in a child’s life, while logistically quite demanding, can help distinguish between a representative performance, and any aspect that may be connected to age-specific characteristics of adolescence. This is because the ability to plan, think ahead, demonstrate impulse control, and delay of gratification are part of a set of skills that gradually develop. Steinberg (2007) has demonstrated how the cognitive-control network that is responsible for executive functions such as inhibition, self-regulation, and cognitive shifting matures slowly across adolescence and into emerging adulthood. The neural regions responsible for this cognitive-control network, which are primarily located in the prefrontal cortex, are continually shifting into adulthood—these changes are structural, functional, include synaptic pruning, and integration with other brain areas (Casey, Tottenham,
Cultural Factors

The current sample predominantly consists of racial minority mothers with low socioeconomic status—this population represents a group that has been historically ignored by the coping literature and typically overlooked in the design of coping instrumentation (Chang, 2001). The study of coping has not traditionally accounted for cultural forces; instead, coping research is more often decontextualized research, largely ignoring the social or cultural framework of any given coping response (Wong, Wong, & Scott, 2006). Criticism of this tradition emphasizes how coping behavior is unavoidably reinforced and encouraged across cultural lines: messaging about the acceptability of coping styles is overtly and covertly expressed and both forms of expression can be considered cultural communications of coping (Lam & Zane, 2004; Lazarus & Folkman, 1984; Marsella & Dash-Scheuer, 1988).

To return briefly to the theory of emotion and regulatory processes at large, whether a response process is automatic (unconscious/implicit) or deliberate (explicit/reflective/controlled), all emotional regulatory processes engage with a certain knowledge base—this knowledge base is highly culturally influenced (Kitayama, Karasawa, & Mesquita, 2004). Often referred to as a script, a schema, or a personal concept, this knowledge base plays a key role in how people think about, experience, and respond to their emotional lives (Trommsdorff & Rothbaum, 2008). For example, Ekman & Friesen (1969) first outlined how display rules—socially constructed guidelines and cultural norms about acceptable emotional expression—impact behavior and externalized emotional expression. Certainly, culture impacts the internal emotion realm as well, for even Freud’s theory of defensive inhibition can be linked to cultural knowledge—the automatic tendency to avoid thoughts or feelings related to an emotional event can be influenced by cultural knowledge on what is acceptable to think or feel (Mauss, Bunge, & Gross, 2008).
the current study, display rules might influence self-reporting patterns and internalized norms may also impact a mother’s very experience of stress.

Studies from nearly three decades ago focused on group difference in coping, but without establishing a culturally competent framework. These studies concluded that coping styles differ according to socioeconomic status (Menaghan, 1983), demonstrating variant trends, such as wealthier individuals are more prone to coping strategies marked by flexibility, logic, and rationality (Haan, 1977). Other work extended this line of thinking with empirical claims that people with higher education use significantly lower rates of “selective ignoring” when compared to their less educated counterparts (Pearlin & Schooler, 1978). In terms more relevant to the current study, one investigation found a significant positive association between education and Problem-Focused Coping, with results suggesting that people with higher education are less likely to utilize avoidance coping strategies as compared to those with lower educational status (Billings & Moos, 1981). Taken together, these studies illustrate the problematic tendency to think across group-lines without richer context, and they simultaneously serve as a call to consider coping from a more culturally competent, integrative lens.

This idea is further emphasized by more recent work on culture and coping, much of which reveals contradictory findings. For example, one study found a link between African American ethnicity and heightened use of Emotion-Focused Coping (Knight, Silverstein, McCallum & Fox, 2000) while other research on stress and coping determined that ethnicity can serve as a protective factor in that African American caregivers tended to have less stress appraisal than White caregivers (Lawton, Rajagopal, Brody, & Kleban, 1992) and therefore reported lower depression rates (Haley et al., 1996). The latter study outlined “the protective benefits of ethnicity as culture, rather than the additive effects of disadvantaged minority group status and caregiving stress” (Knight, Silverstein, McCallum & Fox, 2000, p. 142). These
authors agree on the importance of a coping model that includes sociocultural considerations, both suggesting that cultural differences, such as ethnicity, should be expected to have a direct impact on stress as well as coping.

Such a model of coping must move past viewing race/ethnicity/education/ socioeconomic status/gender/sexuality as structural variables, and instead reinterpret such variables as constructs that are influenced by cultural variance. Empirical investigations have detailed the worth of developing a context-rich, culturally-competent model to more accurately grasp the contributing factors related to coping (Holahan, & Moos, 1987)—an idea bolstered by the finding that the strength of “psychological resources” is stronger than sociodemographic factors in determining different coping styles. More specifically, an active coping style has been strongly linked to greater internal and external supports, while avoidant strategies correlate with individuals who have less robust psychological resources. This demonstrates how “coping is tied more closely to ongoing current circumstances than to more remote and stable background factors” (Holahan, & Moos, 1987, p. 952).

From this lens, culture expands to include fears and beliefs, conscious value systems, and unconscious assumptions, each falling within a familial and historical context (Wong, Wong, & Scott, 2006). Without exception, behavior is a cultural expression, inherently shaped and influenced by cultural factors (Pedersen, 1991) and moreover, cultural forces become internalized (Ho, 1995) and contribute to intrapsychic processes as well. This broader definition of culture suggests a departure from simply dividing data across various groups and toward empirical consideration of internal and external cultural influence. Internal cultural considerations may account for beliefs about what is effective or available given one’s internal resources—this may relate to a mother’s sense of her own capacities to cope or her sense of self. External cultural knowledge speaks to levels of chronic or uncontrollable stress, such as
acculturative stress and stress related to group-status, as well as access to safety, social or community support, and general availability of conditions that foster functioning. For example, problem-focused coping or instrumental coping is conceptualized as a marker of health as it relates to finding solutions or actively tackling problems, but this type of coping is ineffective in the face of the enduring, persistent stress that all too often represents the experience of racial minorities in America (Turner & Lloyd, 2004). While PFC, designed to solve the problem or change the stressful situation, is often considered to be the most adaptive coping style, when the problem is chronic, all pervasive, overwhelming, and uncontrollable, instrumental coping is of limited value (Abi-Hashem, 2006). In other words, depending on cultural tradition or context of the stressor, “the appropriate prescription for coping may be to adapt to the environment, bring the environment into submission, rely on a deity, eliminate personal desire, or seek self-improvement” (Tweed & Conway, p. 203).

It seems clear that “coping is culture-mediated” (Pedersen, 2006, p. 575), and yet the mechanisms underlying this relationship remain widely unknown. To understand the results of the current study within a sociocultural coping framework, we need an enhanced understanding of cultural differences within coping processes. This is difficult given the coping literature’s history of cultural negligence: the vast majority of coping research fails to consider a cultural context (Folkman & Moskowitz, 2004; Snyder, 1999; Somerfield and McCrae, 2000). More specifically, coping research is a field built on attempts to measure situational and dispositional coping style, but when it comes to racial or ethnic minorities, it can be difficult to determine “whether coping strategies employed are situational or dispositional given the heavy influence of culture in enduring, resolving, and managing difficulties, particularly in handling societal realities such as subtle and overt experiences of racial discrimination” (Greer, 2007, p. 262). In other words, coping instrumentation aims to measure stress response but does not account for the
fact that members of ethnic minority groups are typically exposed to more stress and greater
discrimination which can strongly influence stress response patterns (Landrine & Klonoff, 1996;
Kessler et al., 1999). Societal racism, for example, can prevent access to the full range of
coping strategies that may be available to an individual who does not experience rampant
individualized and institutionalized prejudice (Micah & McCarthy, 2006). Like the vast majority
of coping instruments, The COPE (Carver et al., 1989) was not necessarily created to specifically
study low income, racial minority, urban women, nor was it more broadly devised to detail the
coping styles of individuals who tend to experience “extreme exposure to social stressors or
limited access to ameliorative psychosocial resources” (Aneshensel & Phelan 1999, p. 12).

That said, the COPE has actually undergone specific examination for its cultural
relevance to racial and ethnic minorities, with results suggesting that some of its subscales
maintain “modest conceptual integrity when applied to African American populations” (Greer,
2007, p. 273). This study used an Afrocentric theoretical framework to create an alternate
version of the COPE, using the same general questions, but replacing PFC, EFC, and avoidance
coping with composite scales of interconnectedness, spirituality, problem-oriented coping, and
disengagement. This was done to better account for culturally-specific behavior. As an
example, in the EFC/PFC model, venting is conceptualized as maladaptive, related to solution-
avoidance, while in certain cultural contexts venting is an aspect of interconnectedness (Locke,
1992) and therefore can be advantageous or adaptive. Greer (2007) cautions researchers who use
the COPE with racial and ethnic minority populations that the theoretical foundations may not
adequately translate across cultural groups. This author emphasizes the superiority of the
alternative, culturally-congruent framework, but also states that the COPE does “yield a
moderately acceptable fit” with her African American sample (Geer, 2007, p. 273). In thinking
of the current study, it is important to note the limited alternatives in instrumentation, and
further, the paucity of evidence to suggest the COPE cannot be generalized to racial and ethnic minority samples (beyond Geer’s one, small-scale university population study). As such, further cross-validation with individuals from different racial and ethnic groups is critically needed to improve contextual validity.

The development of culturally-competent coping measures will allow for improved understanding as to how layers of culture interact with coping patterns from an empirical standpoint. First, it must be recognized that most coping measures serve as examples of cultural encapsulation (Wrenn, 1962) in that the most popular coping instruments, including the COPE, conceptualize coping under certain, majority-dominant cultural values. While we know that race, for example, has a strong impact on group-identification, language choices, and in many ways influences an individual’s general psychological experience (Carter, 1997), research instrumentation has struggled to operationalize these complex relationships among constructs. As such, little is known on how race impacts coping patterns or how social factors may influence an individual’s meaning-making around coping. One related study focused on social norms and coping of African American women and determined that this population tended to endorse socialization processes focused on developing strength, perseverance, and overcoming hardship; help-seeking behavior was not socially encouraged (Heron, 1997). In other words, it has been demonstrated that ethnic and cultural differences play a strong role in responding to stressful life events (Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000). This draws attention to the way that “stress and coping reflect unique cultural and social circumstances of different ethnic groups” (McCreary, Cunningham, Ingram, & Fife, 2006, p. 490) while also highlighting the obstacles involved in interpreting the current data in a culturally-sensitive way.

Beyond the theoretical underpinnings of the COPE, the very phenomenon of self-report has sociocultural implications. Given the COPE is a retrospective self-report measure, it relies
on an individual’s memory. Wong and Watt (1991) suggest that memory and reporting biases vary in culturally patterned ways, as culture is known to influence self-narratives, thereby impacting recall (McFarland & Ross, 1987). This is to say, “individual reports of coping will drift toward the respondents’ culturally-influenced theories of how coping proceeds” (Wong, Reker, & Peacock, 2006, p. 228). When discussing coping instrumentation, cross-cultural coping researchers refer to defenses, implicit beliefs and unconscious processes as “experience-near concepts” (Shweder, 1993), arguing that coping research needs to include more qualitative measures to account for that which is unknown and culturally defined. This notion is heavily supported by research: a study on family response to financial difficulty demonstrated significant variance among ethnic groups (Gomel, Tinsley, Parke, & Clark, 1998), while other studies have shown that strict parenting in violent neighborhoods may be seen as effective maternal coping, the same parental behaviors are viewed negatively in wealthier, less-violent neighborhoods (Randolph, Koblinsky, and Roberts, 1996). With relevance to the present study, “turning to religion” is seen as an emotion-focused coping strategy—faith in God can be viewed as a passive approach to deal with stress in one context, but religion can also play an active role of hope, especially for groups who have been historically oppressed, persecuted, or marginalized (Cone, 1999) and may even function as a form of “seeking social support”, which is considered a problem-focused coping technique.

It can be argued that the current study is based on a model of coping that has remained theoretically static for several decades (Lazarus & Folkman, 1984). More broadly, like most other widely used coping instruments, the COPE itself is based on ideas and models that represent Euro-American supremacy as universal truth (Snyder, 1999) with a focus on gaining control and demonstrating self-efficacy on the quest to obliterate distress. It is possible that beyond oversimplifying a multi-dimensional construct, dividing coping into adaptive or
maladaptive categories may actually exclude racial minorities by ignoring the culturally-based context of coping patterns. Instead, it might be more inclusive to think of all coping behaviors as holding the potential to be adaptive, depending on alignment with cultural values and expectations. Coping with angry outbursts, for example, may be seen as maladaptive in a certain context but in another, aggression may be seen as an honorable extension of protecting the self or family against real or imagined threats (Rodriguez Mosquera, Manstead, & Fischer, 2000). Further, if socialized in a setting that devalues intensity of emotion, individuals may actually start to experience emotions less strongly (Rothbaum, Pott, Azuma, Miyake, & Weisz, 2000). As such, culturally-sensitive coping measures will benefit to account for an individual’s coping schemes or understanding of coping options and resources available given such schemas derive from culturally acquired knowledge. An exploration of such schemas can help buffer the trend to label coping as positive or negative, without consideration of beliefs about and access to coping. Additionally, a culturally-enhanced approach to coping research would integrate an individual’s coping goals, as opposed to assuming Western, individualistic goals of autonomy, control, and minimizing loss are universally desired (Chun, Moos, & Cronkite, 2006).

Unfortunately, such a nuanced approach to coping does not exist in a simple measure and becomes logistically demanding to approach empirically. This type of culturally-competent examination is desirable, but was not feasible for the current study.

It is difficult to interpret the findings of the current study given we know that “human behavior is meaningful only when viewed in the sociocultural context in which it occurs” (Segall, Lonner, and Berry, 1998). With more culturally-driven instrumentation, coping research will become more and more relevant to its chosen sample. This is especially true for populations that have been historically underrepresented in psychological research. Certainly, the current study was an attempt to better understand the coping strategies of a group that the coping
literature has generally neglected and yet, the instrument used may not adequately account for context or culture. In a way, the present study on maternal coping exemplifies the pressing issue that sits at the vanguard of the coping discourse today: the intersection of cross-cultural psychology and coping research is marked by clear acknowledgment of the importance of culture (Slavin, Rainer, McCreary, & Gowda, 1991), with a concurrent recognition of the deficiency of measure cultural variance sensitively and adequately.

**Hypothesis Three:**

*Intergenerational Transmission of Trauma*

While findings revealed that a particular maternal coping style (EFC) was associated with diminished executive functions in children, the present study found no evidence that the effects of maternal trauma are transmitted across generations. This study predicted an intergenerational transmission of trauma in which maternal trauma negatively impacts coping style, (H1: not supported), the Emotion-Focused maternal coping style harms executive functioning in children (H2: partially supported) and that the more adaptive, Problem-Focused Coping could disrupt this negative transmission, protecting children from the negative impact of trauma as evidenced by improved executive functioning. This final hypothesis addressing the relationship between trauma, coping, and executive functions yielded unexpected findings in that coping was not a moderator in the relationship between trauma and child executive functioning. While this finding was not predicted, it points to the complex nature of how the impact of trauma unfolds and the complicated mechanisms by which maladjustment is transmitted over time and across generations.

The theory of intergenerational transmission of trauma suggests that parents with a trauma history transfer the negative impact of trauma to their children. Children thereby “inherit” the negative imprint of trauma through direct exposure to parental distress or as a
consequence of receiving various non-optimal parenting practices (Schwerdtfeger & Goff, 2007). In the current study, no evidence provided support for the role of trauma, or PTSD, as a factor in child outcomes. This finding stands in contrast to a body of clinical literature documenting how children of parents who have experienced trauma have greater exposure to stress and thereby, experience a host of negative outcomes including increased psychopathology and general vulnerability (Danieli, 1998; Harkness, 1991). Given that this study found no relationship between trauma and coping style, it makes sense that trauma, as operationalized, did not have an intergenerational impact on child executive functioning and yet, the current findings contradict intergenerational theory regarding the relationship between maternal trauma and negative child outcomes. While well-established in clinical theory (Fraiberg, Adelson, & Shapiro, 1975), the intergenerational theory of trauma is not as well-documented empirically. The current findings suggest that maternal trauma and maternal PTSD is not a risk factor for poor child executive functioning.

The study’s prediction that a mother’s trauma exposure would impact her child negatively was aligned with the extant research that demonstrates how the consequences of trauma can extend beyond the person immediately affected. Dekel & Golblatt (2008) review the many ways to name this phenomenon: “Secondary traumatization” (Rosenheck & Nathan, 1985), “secondary traumatic stress” (Figley, 1995), “covicitimization” (Hartsough & Myers, 1985), “secondary survivor” (Remer & Elliott, 1988), “traumatic countertransference” (Herman, 1992), and “vicarious traumatization” (McCann & Pearlman, 1990). Previous research on the intergenerational transmission of trauma has mainly focused on the parent to child relationship (Weiss and Weiss, 2000), demonstrating that children of parents with a PTSD diagnosis exhibited increased academic, emotional, and behavioral difficulties (Davidson et. al, 1989) when compared to a control group. In considering the current findings, which contradict this
branch of research, one line of reasoning is to assume that trauma as a construct, glosses over the specific elements of maternal trauma response that may be responsible for an intergenerational effect. For example, one study examined parents with PTSD diagnoses, identifying parental numbing, detachment, and avoidance as the strongest factors in harming the parent-child relationship (Ruscio, Weathers, King, & King, 2002). This argument suggest that trauma is not negatively transmitted to children, but rather, trauma may increase avoidant parenting, which in turn damages the parent-child relationship. Unfortunately, there remains limited research on how parental avoidance, or other trauma-related symptoms, specifically impacts child functioning but it is possible that a trauma-related transmission occurred in the current sample that was related to parenting behaviors, not evidenced by coping.

**Child Outcomes & Direct Transmission**

It is also possible that maternal transmission of trauma impacts other aspects of child well-being, not represented by executive functioning. Alternatively, it may be that child executive functioning is more hard-wired than emotional functioning. Regardless, executive functioning may be a distinctive slice of emotion regulation that may not best capture the deleterious pathway of trauma. Or perhaps executive functioning and emotion regulation are not directly related, as assumed, but rather represent orthogonal variables. This study focused on the executive functioning aspect of child functioning because it represents a missing aspect of the intergenerational transmission literature—the transmission of parental trauma to a child’s symptoms of depression and anxiety is well documented (Ahmadzadeh & Malekian, 2004; Beckham et al., 1997; Dansby & Marinelli, 1999). Further, executive functioning is a clinically compelling construct in that there is tremendous possibility for executive function enhancement through intervention (Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010; Diamond & Lee, 2011). While the present study concluded that mothers did not transmit their trauma-related response to
their children in a way that impacted executive functioning, it is conceivable that other aspects of the child’s emotion regulation were disrupted.

Finally, there is some evidence that our understanding of the intergenerational transmission of trauma is best defined as a more specialized construct, divided as indirect and direct transmission (Galovsky & Lyons, 2004). While the current study examined generalized transmission of trauma through maternal coping style with no distinction made between indirect or direction transmission, it may be that the negative impact of overt PTSD related symptoms (direct transmission) is distinct from distress-sensitivity (indirect). This speaks to the challenges and difficulties involved with examining the processes by which secondary traumatization occur.

**Study Limitations**

*Measurement of Constructs*

While coping is widely understood as an explanatory construct that justifies adaptive or maladaptive response to adversity, the mechanisms by which coping generates these outcomes remains poorly understood (Compas, 2009). Inadequate empirical instrumentation is typically held responsible as the central obstacle in preventing an enhanced understanding of said mechanisms. More specifically, the major critique of coping research centers on the methodological limitations of empirical scales to encapsulate the dynamic, multimodal nature of coping. Future studies need to move away from self-report and find more active ways to measure coping that account of the complex person-context interactions. For example, interviewing and observational methodology allows for a more accurate grasp of coping in that it can capture the individual’s context-specific thoughts, feelings, and actions and in a more nuanced way (Compas et al., 2001; Litt, Tennen, & Affleck, 2011; Miller, Kliewer, & Partch, 2010).
Further, empirical measures, such as the COPE questionnaire, typically ignore an individual’s coping-related appraisals, which may play a key role in the coping process (Folkman & Moskowitz, 2004). Instead, coping is typically measured using self-report checklist-style scales that yield generalized coping categories. The current study was no exception. The weakness of standard coping instruments has been well-delineated with criticism citing overreliance on lists of coping behaviors and strategies, which focus heavily on what individuals do, but ignore the appraisals and internal working models that likely guides coping behaviors (Compas, 2009; Coyne & Racioppo, 2000). In considering the categories of the scale, it is reasonable to assume that some mothers may want to view themselves as more prone to engaging with humor, acceptance or positive reinterpretation and growth strategies, over mental disengagement, substance use, and denial. Perhaps a mother’s wish to behave in a certain way becomes reflected in her self-report. As such, coping scripts, or a mother’s capacity to engage in the processes of self-reflection about coping, may impact and skew the self-report data. A limit of this study is that maternal coping scripts were not accounted for in data collection and therefore the data do not discriminate between a mother with strong self-reflection and self-knowledge and a mother with a more reactive script who may have less ability to accurately portray her own tendencies. Future studies on maternal coping may benefit from including a measure to control for coping scripts and thereby capture a mother’s capacity for reflective functioning.

Further, this self-report method of data collection is obviously reliant on a mother’s understanding of the statements on the questionnaire, her conscious or unconscious willingness and readiness to accurately share her own tendencies related to coping, and her ability to interpret her own behavior within the context of responding to stressful situations. It is important to note that there is some evidence that mothers who have experienced trauma are especially...
vulnerable to reliable self-report: reporting a biased version of oneself is certainly a human tendency, and yet individuals who have experienced trauma may be especially likely to present a skewed iteration of self. Perhaps derived from trauma-related numbing, suppression of emotional expression, or impoverished self-reflection, researchers have identified mothers with a trauma history as especially poor reporters of their own affective experience, noting a strong lack of correlation between self-report and observed ratings of maternal emotion during parent-child interactions (Martin, Clements, & Crnic, 2002).

Another shortcoming of the coping construct in this study is that it is not domain-specific. The current study is based on the assumption that a mother’s coping tendencies associated with life’s non-specific stressors will be indicative of her coping response style to stress and distress related to her child. The COPE questionnaire asks about generalized stress, not about a stressful event relevant to parenting. It is possible that a mother’s coping is somewhat compartmentalized: she may be avoidant when it comes to her finances or physical health, for example, but resourceful and efficient in regard to responding her child’s distraught mood or poor school performance. Finally, although COPE is extensively used, reliable, and valid measure, it should be noted that this scale has not been widely used with a lower income population.

Another measurement limitation of the current study relates to using executive functioning as a measure of emotion regulation. As discussed, emotion regulation and executive functioning overlap in many ways, and yet recent research has pointed out how executive functioning related to emotional material may use distinct neural systems, tapping into a different skill set than generalized executive functioning that is related to neutral stimuli, as was used in the present study (Malooly, Genet, & Siemer, 2013). In particular, these studies tend to demonstrate how, when compared to the standard EF battery, executive functioning tasks that
incorporate emotional stimuli tend to be more accurate in predicting emotion dysregulation (Joormann, Yoon, & Siemer, 2010). Further, critics of laboratory-based measures of executive-functioning tasks pose doubt as to whether tasks like the Stroop and WCST translate into real-life situations (Toplak, West, & Stanovich, 2013).

It should also be noted that the trauma measure accounted for type of trauma, but chronicity, age of trauma onset, or severity was not specified; a more nuanced trauma measure may be an important factor in future research. Finally, issues about cultural relevance and contextual validity of the COPE measure may have influenced the data, as discussed in the preceding Cultural Factors section.

Sample & Child Data

The current study was fairly homogenous in that the mother child dyads were predominately low-income, racial or ethnic minorities from urban settings. While sample homogeneity may be a limitation of sorts, this study sought to contribute the growing literature on under-represented and minority populations. Certainly, future research may want to explore demographic trends to better understand how such factors may contribute to the transmission of trauma. Perhaps more compelling than demographic comparison, future studies can contribute to the field of coping through investigation of cultural differences among coping processes. Additionally, since most mothers in this sample were from low-income homes, it is unclear how financial stress played a role in the data.

Unlike the coping data for the sample of mothers, the child data did not rely on self-report or mother-report, but rather measured performance on executive functioning tasks directly. While this style of data gathering is a strength of the present study, it should be noted that this data only measured performance at a certain moment in time for children ranging in age from 8-15 years. One possible limitation of the study is that the model focuses on a particular
developmental stage known for variability executive functioning (Steinberg, 2007). Future research may prioritize a longitudinal model, as longitudinal data could help gain a more accurate portrait of a child’s executive functioning across the developmental span. Further, longitudinal data may also help to ascertain the temporal sequence of coping and determine possible causal relationships in that multiple data points could yield information as to the impact of coping on child outcomes over time. While longitudinal data for the maternal sample may also be informative, it may be more crucial for the child sample given the heightened growth and development during adolescence.

Scope

Another limitation of the present study relates to theoretical scope: this study was both narrow and broad—narrow in its capture of emotion regulation, focusing on coping and perhaps excluding other significant aspects of maternal regulatory processes, while broad in its theoretical model that links maternal self-regulation to child self-regulation. The narrow focus of coping overlooks other possible aspects of resilience that may serve as moderators in the relationship between trauma and next-generation executive functions. For example, in Larazus’ (1993) outline of resilience, coping is described among other variables in his model of possible protective factors against stress and adversity; these alternative factors include constructive thinking (Epstein & Meier 1989), hardiness (Kobasa, Maddi, & Kahn, 1982), hope (Snyder et al 1991), learned resourcefulness (Rosenbaum 1990), self-efficacy (Bandura 1982), and sense of coherence (Antonovsky 1987). While a more comprehensive investigation into these possible personality factors was beyond the scope of the present study, results may have been limited by equating resilience to coping and excluding these other potential components.

Finally the broad theoretical model of the present study runs the risk of overlooking possible subtleties in the generational pathway of emotion regulation. For example, the
executive function measures fail to tap into nuances that may contribute to the pathway of trauma and coping. These measures gloss over the child’s experience of maternal coping strategies: if a mother copes with an overwhelming situation by taking a moment alone to calm down, one child may experience her action as helpful, calming retreat, while another may link this coping strategy to feelings of rejection and avoidance. Similarly, the broad view of emotion regulation fails to capture possible protective factors associated with the mother-child relationship. As such, a possible limitation of this study involved both a wide theoretical model combined with a narrow measure of regulation.

**Future Directions**

While this study outlined an important pathway in the way that Emotion-Focused Coping can have negative effects across generations, the findings also highlighted the way in which trauma’s impact on mothers and their children is as complex as it is unclear. In this way, the current research can help inform the direction of future investigation. Most basically, further studies should help elucidate the way trauma or PTSD impacts maternal coping. While coping style theoretically encapsulates aspects of emotion dysregulation, it is possible the EFC and PFC fail to represent aspects of trauma’s imprint. Future research should further investigate the relationship between trauma and coping to clarify how coping fits into the larger framework of emotion dysregulation.

Future research should find creative ways to observe maternal coping—while this study asked mothers to tell about their coping behavior through a questionnaire, a more nuanced and possibly more accurate portrait of her coping style may emerge through example. As such, future studies on maternal coping may be well-served to ask mother to describe a stressful situation involving parenting, and then code the narrative for themes such as venting, avoidance, planning, seeking social support, etc. Future studies may also consider asking mothers to write a
dairy entry during a moment of emotional dysregulation. The purpose of this type of research is two-fold: it can serve to access a mother’s thinking and feeling while very close to the experience of stress, and additionally, writing about such moments may also carry regulating capacities, thereby acting as a clinical intervention (Roesch, 2010). These methods could better allow mothers to show their coping style by providing illustrative data that can be rated by experienced and reliable assessors. Having such observer ratings, along with maternal self-ratings, could also help pinpoint whether such a bias was at play in the present study. More robust findings will come from studies that include a multimethod approach that can capture what parents report, what parents do, and additionally, how they interact with their child. As such, future studies would be enhanced with the integration of supplemental measures of maternal emotion regulation, including behavioral observations methods that could even tap into parenting-specific coping strategies in vivo.

Maternal wellbeing and child executive functioning have been researched extensively as independent constructs, but the relationship between intergenerational factors remains less understood. This is true for research at large—studies rarely account for both maternal factors and child outcomes (Pears & Capaldi, 2001; Roberts, O’Connor, Dunn, & Golding, 2004). Certainly, the results of the current study demonstrate that this pathway deserves continued investigation. As such, a more nuanced examination of coping and child outcomes should employ a bidirectional model. This study was limited in its directionally, focusing on how a mother impacts her child, but future work may benefit from exploring the reciprocal relationship between a mother’s coping and child’s executive functions.

Finally, the link between maternal emotion coping and child executive function seeks to provide a model of the mechanisms by which emotion regulation is translated across generations. Future research might explore how different strategies of coping impact other aspects of
executive functioning. Future studies should aim to offer an empirical understanding of additional variables related to secondary traumatization as a better grasp of the intergenerational pathway of trauma, and the intrapsychic processes involved, is critical in considering clinical interventions that aim to disrupt transmissions that carry negative outcomes.

**Clinical Implications**

In many ways, clinical implications from this study hinge on future research that can further elucidate the process of the intergenerational transmission of trauma. However, despite the finding that maternal trauma was not associated with child executive functioning, nor was it linked to coping style, Emotion-Focused Coping strategies in mothers were associated with worse executive functioning in children. Emotion-Focused Coping is about venting and disinhibition; current findings suggest EFC leads to a child’s poor inhibition in executive functioning. It follows that parent-child clinical interventions should aim to account for maternal coping, perhaps assessing for emotion-focused strategies at intake to help inform treatment planning. Treatment would be well served to help mothers develop adaptive coping strategies so that maternal coping style does not have harmful consequences on her child’s impulsivity and disinhibition skills. Perhaps the most effective means of blocking this transmission is to target new mothers or pregnant women and provide interventions aimed at supporting a mother develop the self-reflection skills necessary to understand one’s own coping patterns, eventually developing strategies that avoid EFC qualities such as denial or seeking emotional social-support without instrumental support.

As the evidence grows for this type of parenting-intervention, more parenting work has shifted to directly focus on developing parental self-regulation (Sanders & Mazzucchelli, 2013). Given a child learns to self-regulate from early patterns of response from a parent, mentalization and mindfulness treatments coach parents on how to respond to children with attunement,
thereby teaching parents how to teach their child to regulate (Duncan, Coatsworth, & Greenberg, 2009; Rutherford et al., 2015). Alongside this type of intervention, mothers will benefit from education about how maternal coping carries consequences to her children. As such, the main clinical implication of the current study centers on emphasizing coping and executive functioning as highly relevant to emotion regulation intervention.

Assuming the present study was able to generate an accurate account of coping style, the main finding echoes the resilience literature: a mother’s experienced trauma does not necessarily impact her emotion regulation strategies as represented by coping. Stated differently, a mother’s capacity to deal with distress is not inherently dismantled by her experience of trauma. This suggests that mothers who have experienced trauma may have certain internal mechanisms or external supports that allow access to a range of coping styles, both Emotion-Focused and Problem-Focused. While myriad studies highlight the existence of maternal resilience (e.g., Garmezy, Masten, & Tellegen, 1984; Werner, 1992), more research is needed around intergenerational resilience in the face of trauma so clinical interventions can adequately support mothers, bolstering internal resources and thereby protecting children against the transmission of trauma. That being said, given the current understanding of resilience, it seems that clinical interventions will be well served to help individuals activate internal resources that were developed before trauma and also engage in meaning-making processes that focus on acceptance (Harvey, 2007). Certainly, both goals are aligned nicely with psychodynamic therapy. Clinical implications of this finding, therefore, center on supporting mothers with a trauma-history to build and develop coping mechanisms that will have the best trickle-down effects to children.

Trauma and its impact on an individual is highly documented and many therapeutic interventions have been outlined, but clinical interventions involving children and family impacted by trauma are often overlooked (Foa, Keane, Friedman, & Cohen, 2008). In other
words, there is an extensive literature on the direct impact of experiencing trauma, but the secondary impact is less understood and in greater need of clinical attention. To do this, a better grasp of the psychological context within which mothers who have experienced trauma engage in different coping strategies is needed, and more, it is important to have a sense of how her child experiences her coping. As this pathway and context is still unclear, clinical interventions should aim to foster this understanding, helping mothers understand their own relationship to distress and coping, as well as helping children make sense of their response and reactions to their mother’s parenting style. This clinical implication can be seen as a therapeutic treatment goal, along with providing psychoeducation to mothers that it is not necessarily her experience of trauma that harms her child, but rather the processes, attunements, and communications with the parent-child connection that can cause harm.

Interventions aimed to boost executive functioning is another relevant clinical aspect of this study. While research clearly demonstrates the possibility to improve EF through repeated training or mindfulness meditation (Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010), further work is needed to demonstrate whether executive functioning improvements carry consequences of improved self-regulation. Most EF-programs target children with learning issues, but the current study suggests that such school interventions should also include children with emotion-regulation and behavioral issues, building off the idea that “because EFs are trainable… such improvements may translate to better behavioral self-regulation.” (Hofmann, Schmeichel, & Baddeley, 2012, p. 177). In other words, if the findings of this study are to be translated into EF intervention, they must facilitate the link between executive function and emotion regulation.

Taken together, it seems that future parenting-interventions and research alike will be best-served to focus on developing regulatory capacities of the parent, fostering regulation of the child, and investigating further into the nuanced interplay of these processes.
Conclusions

The current study builds on the vast collection of research aimed at enhancing our understanding of the mechanisms of transmission related to intergenerational trauma. This study did not find a significant link between a mother’s trauma exposure and her coping style, but an association was found between a mother’s Emotion-Focused Coping tendencies and her child’s emotion regulation—this relationship suggests that Emotion-Focused Coping has negative outcomes for child executive functioning. Further, a post-hoc negative correlation between maternal PTSD and PFC coping style was found, suggesting it is not trauma but the disordered response to trauma that may lessen a mother’s tendency to use adaptive coping skills. Future investigations must continue to examine the variables at work in how trauma becomes communicated across generations so that we can be more equipped to abate this transmission in support of mothers who have experienced trauma and in protection of their children.

There is insufficient knowledge about the factors—maternal coping or otherwise—that may moderate or play a role in the intergenerational transmission of trauma. Research on the transmission typically focuses on proving the existence of this phenomenon and describing its features. Indeed, extant research points to trauma’s potential to invite myriad deleterious outcomes: increasing the likelihood of disruptions in maternal emotion regulation (Ehring & Quack, 2010) and heightening the risk for developing psychological, emotional, and interpersonal problems (Van der Kolk, 1996). In turn, psychopathology in parents is linked to an array of presenting problems in children, with documented issues pertaining to the child’s social, emotional, behavioral and cognitive functioning (Cummings & Davis, 1994; Leverton, 2003; Luoma et al., 2001). Future research should build on this information, not replicate it, shifting from descriptive to explanatory. This goal will be best achieved through studies that privilege providing an empirical understanding of the mechanisms at play. It was beyond the
scope of this study to investigate the full breadth of these factors, but future research should incorporate and account for parent-child relationship quality, child’s internal resources, and protective factors which may help a mother develop resilience or likewise, help a child cope with stress within their parental relationships.

If the transmission of trauma is to be understood in a way that carries meaningful clinical utility, there is a need to identify the moderating factors that might serve to mitigate the potential for maternal trauma or PTSD to harm children. This line of thinking gives nod to the growing literature on posttraumatic growth, which demonstrates how, under certain set of circumstances, experiencing trauma can actually yield life improvements, typically related to gaining new perspective, and developing feelings of life purpose (Calhoun & Tedeschi, 2014). The posttraumatic growth literature suggests that a mother’s exposure to trauma may ignite a dedication to parenting that actually acts a benefit to her child. However, there is very little evidence about the possible protective factors that would temper the risks of a child’s contact with a parent’s trauma-related symptoms.

Unfortunately, trauma has a wide reach: it is estimated that 70% of adults in the United States experience a traumatic event at least once in their lifetime, with an estimated 1 out of 10 women receiving a diagnosis of PTSD across the lifespan (“The PTSD Alliance”, 2017). In fact, trauma can be considered a universal, ongoing, even inevitable aspect of the human condition that is not limited to horrifying events or experiences, but rather is best understood as “whatever outstrips and disrupts the psyche’s capacity for representation or mentalization” (Levine, 2014, p.214). While the potential negative implications of trauma on the self are fairly well documented, its course from mother to child remains somewhat undetermined. It is therefore all the more critical to continue to investigate the intergenerational pathway of trauma through rigorous research that examines both maternal factors, such as coping, that may lessen
negative outcomes, and also aspects of the child that may make a significant contribution to this relationship. With a more comprehensive grasp of the complicated intergenerational consequences of trauma, we can better buffer mothers and their children from trauma’s negative imprint.
Appendix A: Tables for Summary Statistics and Relationships Between Variables

Table 1. Demographic Characteristics of Maternal Sample (N=188)

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Means (SD) or Percent</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Age</td>
<td>37.4 (6.35)</td>
<td>23-52</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/Living With</td>
<td>24.2</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>51.6</td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>21.1</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>68.9</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>24.7</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>31.6</td>
<td></td>
</tr>
<tr>
<td>High school grad/GED</td>
<td>21.6</td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>BA or higher</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At any time in life</td>
<td>47.4</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>47.4</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>Substance Use Disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At any time in life</td>
<td>47.9</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>46.8</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>5.3</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Child Demographic Characteristics (N=188)

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Means (SD) or Percent</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Age</td>
<td>11.5 (1.88)</td>
<td>8-15</td>
</tr>
<tr>
<td>Child Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Female</td>
<td>47.9</td>
<td></td>
</tr>
<tr>
<td>% Male</td>
<td>51.1</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% African American</td>
<td>68.4</td>
<td></td>
</tr>
<tr>
<td>% Hispanic</td>
<td>17.9</td>
<td></td>
</tr>
<tr>
<td>% White</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>% Other</td>
<td>5.3</td>
<td></td>
</tr>
</tbody>
</table>
Table 3. Reliability of Self-Report Measures

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>Chronbach's Alpha</th>
<th>N Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC</td>
<td>0.801</td>
<td>20</td>
</tr>
<tr>
<td>COPE EFC</td>
<td>0.748</td>
<td>20</td>
</tr>
</tbody>
</table>

Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping

Table 4. Frequencies, Means, Skewness, and Kurtosis for Moderating and Dependent Variables (N=174)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>Min</th>
<th>Max</th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
<th>Skew (-1 to 1)</th>
<th>SE</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC</td>
<td>36</td>
<td>80</td>
<td>44</td>
<td>58.95</td>
<td>8.64</td>
<td>-.288</td>
<td>1.14</td>
<td>.184 .065</td>
</tr>
<tr>
<td>COPE EFC</td>
<td>35</td>
<td>75</td>
<td>40</td>
<td>55.57</td>
<td>8.48</td>
<td>-.267</td>
<td>1.14</td>
<td>.184 .490</td>
</tr>
<tr>
<td>Trauma Composite</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>1.38</td>
<td>1.21</td>
<td>.525</td>
<td>1.14</td>
<td>.184 -.648</td>
</tr>
<tr>
<td>WCST-PE</td>
<td>20</td>
<td>80</td>
<td>60</td>
<td>48.66</td>
<td>10.43</td>
<td>.016</td>
<td>1.14</td>
<td>.184 .351</td>
</tr>
<tr>
<td>Stroop-I</td>
<td>32</td>
<td>76</td>
<td>44</td>
<td>49.01</td>
<td>6.70</td>
<td>.360</td>
<td>1.14</td>
<td>.184 .819</td>
</tr>
</tbody>
</table>

Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping

Perseverance Errors: Higher scores reflect less perseverative errors and better functioning; Stroop-I= Stroop Interference: Higher scores reflect less interference effect and better functioning.

Table 5. Clinical Norm Mean Comparison for COPE (T-Test)

<table>
<thead>
<tr>
<th></th>
<th>Current Mean (n=185)</th>
<th>Carver Mean (n=1030)</th>
<th>Mean Difference</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotion-Focused Coping</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional social support</td>
<td>11.78</td>
<td>11.01</td>
<td>.77</td>
<td>2.99</td>
<td>.003*</td>
</tr>
<tr>
<td>Religious Coping</td>
<td>12.83</td>
<td>8.82</td>
<td>4.0</td>
<td>12.3</td>
<td>&lt;.001**</td>
</tr>
<tr>
<td>Venting Emotions</td>
<td>11.25</td>
<td>10.17</td>
<td>1.08</td>
<td>5.1</td>
<td>&lt;.001**</td>
</tr>
<tr>
<td>Instrumental social support</td>
<td>11.76</td>
<td>11.5</td>
<td>.26</td>
<td>1.12</td>
<td>.27</td>
</tr>
<tr>
<td><strong>Problem-Focused Coping</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>11.45</td>
<td>11.84</td>
<td>-.39</td>
<td>1.94</td>
<td>.05*</td>
</tr>
<tr>
<td>Active Coping</td>
<td>12.65</td>
<td>11.89</td>
<td>.77</td>
<td>4.62</td>
<td>&lt;.001**</td>
</tr>
<tr>
<td>Planning</td>
<td>13.28</td>
<td>12.58</td>
<td>.70</td>
<td>3.89</td>
<td>&lt;.001**</td>
</tr>
<tr>
<td>Suppress Competing Activities</td>
<td>10.94</td>
<td>9.92</td>
<td>1.02</td>
<td>6.4</td>
<td>&lt;.001**</td>
</tr>
<tr>
<td>Restraint</td>
<td>10.56</td>
<td>10.28</td>
<td>.28</td>
<td>1.5</td>
<td>.13</td>
</tr>
<tr>
<td>Positive Reinterpretation</td>
<td>12.97</td>
<td>12.4</td>
<td>.57</td>
<td>3.44</td>
<td>&lt;.001**</td>
</tr>
</tbody>
</table>


*p < .05. **p < .01
Table 6. Percentage and Frequency of Exposure to Types of Trauma Across Lifetime

<table>
<thead>
<tr>
<th>Type of Trauma Experienced</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 trauma</td>
<td>56</td>
<td>29.9</td>
</tr>
<tr>
<td>1 type</td>
<td>51</td>
<td>27.3</td>
</tr>
<tr>
<td>2 types</td>
<td>46</td>
<td>24.6</td>
</tr>
<tr>
<td>3 types</td>
<td>33</td>
<td>11.8</td>
</tr>
<tr>
<td>4 types</td>
<td>12</td>
<td>6.4</td>
</tr>
<tr>
<td>5 types</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1 or more lifetime trauma</td>
<td>142</td>
<td>70.1</td>
</tr>
<tr>
<td>No Lifetime Trauma</td>
<td>56</td>
<td>29.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Trauma History</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual Abuse (Child)</td>
<td>77</td>
<td>41</td>
</tr>
<tr>
<td>Physical abuse (Child)</td>
<td>68</td>
<td>36.4</td>
</tr>
<tr>
<td>Witness Violence (Child)</td>
<td>34</td>
<td>18.2</td>
</tr>
<tr>
<td>Sexual Abuse (Adult)</td>
<td>30</td>
<td>16</td>
</tr>
<tr>
<td>Partner Violence (Adult)</td>
<td>48</td>
<td>32.7</td>
</tr>
<tr>
<td>Physical assault (Adult)</td>
<td>79</td>
<td>42.9</td>
</tr>
</tbody>
</table>

Table 7. Associations Between Mother's Age & Child's Age on Moderating and Dependent Variables (Pearson Correlation)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>N</th>
<th>Mother's Age</th>
<th>Child's Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC</td>
<td>185</td>
<td>.05(.50)</td>
<td>-.07(.33)</td>
</tr>
<tr>
<td>COPE EFC</td>
<td>185</td>
<td>.03(.74)</td>
<td>-.03(.67)</td>
</tr>
<tr>
<td>WCST-PE</td>
<td>178</td>
<td>.07(.35)</td>
<td>.09(.24)</td>
</tr>
<tr>
<td>Stroop-I</td>
<td>187</td>
<td>.126(.09)</td>
<td>.04(.58)</td>
</tr>
</tbody>
</table>

Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference

Table 8. Associations Between Dependent Variables and Child Gender (T-Test)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>WCST-PE</td>
<td>93</td>
<td>47.98</td>
</tr>
<tr>
<td>Stroop-I</td>
<td>97</td>
<td>48.45</td>
</tr>
</tbody>
</table>

Note. WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference
Table 9. Relationship Between Moderating and Dependent Variables to Maternal Race (Analysis of Variance)

<table>
<thead>
<tr>
<th>Measure/Subtest</th>
<th>Race</th>
<th>N</th>
<th>M (SD)</th>
<th>F (df, df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC</td>
<td>White</td>
<td>9</td>
<td>62.78 (13.06)</td>
<td>1.53 (2, 181)</td>
<td>.22</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>128</td>
<td>58.50 (8.82)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>47</td>
<td>60.23 (6.80)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE EFC</td>
<td>White</td>
<td>9</td>
<td>56.67 (12.35)</td>
<td>4.23 (2, 181)</td>
<td>.94</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>128</td>
<td>55.98 (8.25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>47</td>
<td>55.66 (8.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WCST-PE</td>
<td>White</td>
<td>8</td>
<td>48.50 (7.11)</td>
<td>.12 (2, 174)</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>126</td>
<td>48.33 (10.94)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>43</td>
<td>49.26 (10.35)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroop-I</td>
<td>White</td>
<td>9</td>
<td>50.89 (7.08)</td>
<td>.36 (2, 183)</td>
<td>.70</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>131</td>
<td>48.90 (6.80)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>46</td>
<td>48.96 (6.98)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping; WCST PE=Wisconsin Card Sorting Task Perseverance Errors: Higher scores reflect less perseverative errors and better functioning; Stroop-I= Stroop Interference: Higher scores reflect less interference effect and better functioning.*
Table 10. Relationship Between Moderating and Dependent Variables to Maternal Education (Analysis of Variance)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>Education</th>
<th>N</th>
<th>M (SD)</th>
<th>F (df, df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC</td>
<td>less than HS grad</td>
<td>60</td>
<td>59.68 (9.62)</td>
<td>.691 (3, 181)</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td>HS grad</td>
<td>39</td>
<td>58.90 (8.90)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>some college</td>
<td>75</td>
<td>58.53 (8.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BA or higher</td>
<td>11</td>
<td>62.27 (5.16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE EFC</td>
<td>less than HS grad</td>
<td>60</td>
<td>57.58 (8.04)</td>
<td>1.88 (3, 181)</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>HS grad</td>
<td>39</td>
<td>56.51 (8.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>some college</td>
<td>75</td>
<td>54.25 (8.32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BA or higher</td>
<td>11</td>
<td>55.63 (10.39)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WCST-PE</td>
<td>less than HS grad</td>
<td>55</td>
<td>48.84 (8.63)</td>
<td>.81 (3, 174)</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td>HS grad</td>
<td>39</td>
<td>46.41 (9.67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>some college</td>
<td>73</td>
<td>49.53 (11.21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BA or higher</td>
<td>11</td>
<td>49.63 (14.30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroop-I</td>
<td>less than HS grad</td>
<td>59</td>
<td>48.81 (6.48)</td>
<td>1.74 (3, 183)</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>HS grad</td>
<td>41</td>
<td>47.12 (6.74)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>some college</td>
<td>76</td>
<td>50.08 (6.95)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BA or higher</td>
<td>11</td>
<td>49.64 (7.20)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping; WCST PE=Wisconsin Card Sorting Task Perseverance Errors: Higher scores reflect less perseverative errors and better functioning; Stroop-I= Stroop Interference: Higher scores reflect less interference effect and better functioning.*
Table 11 Relationships Between Moderating and Dependent Variables to Maternal Marital Status (Analysis of Variance)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>N</th>
<th>M (SD)</th>
<th>F (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>96</td>
<td>59.03 (8.85)</td>
<td>.926 (3)</td>
<td>.43</td>
</tr>
<tr>
<td>Married/living w.someone</td>
<td>45</td>
<td>59.89 (7.48)</td>
<td>.430 (3)</td>
<td>.52</td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>40</td>
<td>58.25 (9.14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>65.25 (9.81)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE EFC</td>
<td></td>
<td></td>
<td>.755(3)</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>96</td>
<td>56.49 (8.25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/living w.someone</td>
<td>45</td>
<td>55.62 (7.46)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>40</td>
<td>54.45 (9.61)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>59.00 (8.52)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WCST-PE</td>
<td></td>
<td></td>
<td>1.428(3)</td>
<td>.24</td>
</tr>
<tr>
<td>Single</td>
<td>93</td>
<td>47.73 (9.43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/living w.someone</td>
<td>45</td>
<td>48.62 (10.54)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>36</td>
<td>49.97 (11.99)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>57.50 (11.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroop-I</td>
<td></td>
<td></td>
<td>14.097(3)</td>
<td>.83</td>
</tr>
<tr>
<td>Single</td>
<td>98</td>
<td>49.02 (6.73)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/living w.someone</td>
<td>45</td>
<td>48.31 (6.82)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>40</td>
<td>49.65 (6.80)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>50.00 (10.70)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference

Table 12. Associations Between Mother’s IQ & Child’s IQ on Moderating and Dependent Variables (Pearson Correlation)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>N</th>
<th>Mother’s IQ</th>
<th>Child’s IQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE-PFC</td>
<td>181</td>
<td>.05 (.55)</td>
<td>.11 (.15)</td>
</tr>
</tbody>
</table>
| COPE-EFC         | 181   | -.27 (.001***) | -.10 (.17) |*
| WCST-PE          | 174   | .08 (.29)   | .24 (.001)** |
| Stroop-I         | 183   | .13 (.29)   | .06 (.41)  |

Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference

***p<.001
Appendix B: Tables for Hypotheses Testing

Table 13. Associations Between Moderating and Dependent Variables to Maternal Depression (T-Test)

<table>
<thead>
<tr>
<th>Measure/ Subscale</th>
<th>No Depression</th>
<th>Depression</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC</td>
<td>88</td>
<td>60</td>
<td>8.92</td>
<td>89</td>
<td>58.52</td>
</tr>
<tr>
<td>COPE EFC</td>
<td>88</td>
<td>56.5</td>
<td>8.21</td>
<td>89</td>
<td>55.73</td>
</tr>
<tr>
<td>Stroop-I</td>
<td>89</td>
<td>49.5</td>
<td>7.37</td>
<td>90</td>
<td>48.67</td>
</tr>
<tr>
<td>WCST-PE</td>
<td>86</td>
<td>48.53</td>
<td>10.64</td>
<td>85</td>
<td>48.64</td>
</tr>
</tbody>
</table>

*Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference*

Table 14. Associations Between Moderating and Dependent Variables to Maternal Substance Use (T-Test)

<table>
<thead>
<tr>
<th>Measure/ Subscale</th>
<th>No SUD</th>
<th>SUD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE- PFC</td>
<td>87</td>
<td>60.38</td>
<td>7.76</td>
<td>90</td>
<td>58.17</td>
</tr>
<tr>
<td>COPE-EFC</td>
<td>87</td>
<td>55.91</td>
<td>8.49</td>
<td>90</td>
<td>56.31</td>
</tr>
<tr>
<td>Stroop-I</td>
<td>89</td>
<td>49.08</td>
<td>7.24</td>
<td>90</td>
<td>49.09</td>
</tr>
<tr>
<td>WCST-PE</td>
<td>87</td>
<td>49.63</td>
<td>10.24</td>
<td>84</td>
<td>47.5</td>
</tr>
</tbody>
</table>

*Note. PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference*

Table 15. Associations Between Moderating Variables to Trauma Composite (Spearman rho Correlation)

<table>
<thead>
<tr>
<th>Measure/ Subscale</th>
<th>N</th>
<th>Trauma</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC</td>
<td>184</td>
<td>-.037(.61)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE EFC</td>
<td>184</td>
<td>-.057(.44)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping*
Table 16. Associations Between Moderating Variables to Maternal Trauma (T-Test)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>No Trauma</th>
<th>Trauma</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M  (SD)</td>
</tr>
<tr>
<td>COPE PFC</td>
<td>54</td>
<td>59.9  7.69</td>
</tr>
<tr>
<td>COPE EFC</td>
<td>54</td>
<td>56.7  7.93</td>
</tr>
</tbody>
</table>

Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping

Table 17. Relationship between Maternal Coping Style and Child Executive Functioning (Linear Regression Analysis)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC WCST-PE</td>
<td>0.04</td>
<td>0.09</td>
<td>0.03</td>
<td>0.45</td>
<td>0.66</td>
</tr>
<tr>
<td>COPE PFC Stroop-I</td>
<td>-0.11</td>
<td>0.06</td>
<td>-0.14</td>
<td>-1.9</td>
<td>0.06</td>
</tr>
<tr>
<td>COPE EFC WCST-PE</td>
<td>-0.19</td>
<td>0.09</td>
<td>-0.15</td>
<td>-2.04</td>
<td>0.04*</td>
</tr>
<tr>
<td>COPE EFC Stroop-I</td>
<td>-0.15</td>
<td>0.06</td>
<td>-0.19</td>
<td>-2.6</td>
<td>0.01**</td>
</tr>
</tbody>
</table>

Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference; $^aR^2 = .001, F(1, 173) = .20, p = .66; ^bR^2 = .02, F(1, 182) = 3.6, p = .06; ^cR^2 = .024, F(1, 173) = 4.17, p = .04; ^dR^2 = .036, F(1, 182) = 6.74, p = .01$

$p < .05$. **$p < .01$

Table 18. Relationship between Trauma, EFC, and Child Executive Functioning (Linear Regression Analysis)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>B</th>
<th>SEB</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma x WCST-PE</td>
<td>-0.03</td>
<td>0.08</td>
<td>-0.41</td>
<td>0.68</td>
</tr>
<tr>
<td>Trauma x Stroop-I</td>
<td>0.05</td>
<td>0.05</td>
<td>0.99</td>
<td>0.32</td>
</tr>
</tbody>
</table>

Note. EFC= Emotion-Focused Coping; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference; $^aR^2 = .03, F(3, 171) = 1.72, p = .17; ^bR^2 = .00, F change (1, 171) = .17, p = .68; ^cR^2 = .06, F(3, 179) = 3.64, p = .01; R change = .01, F change (1, 179) = .99, p = .32$
### Table 19. Relationship between Trauma, PFC, and Child Executive Functioning (Linear Regression Analysis)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>B</th>
<th>SEB</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma x WCST-PE&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.03</td>
<td>.08</td>
<td>.52</td>
<td>.61</td>
</tr>
<tr>
<td>Trauma x Stroop-I&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.01</td>
<td>.05</td>
<td>.17</td>
<td>.87</td>
</tr>
</tbody>
</table>

*Note.* PFC= Problem-Focused Coping on the Coping Orientations to Problems Experienced Scale; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference; <sup>a</sup> $R^2 = .01, F(3, 171) = .35, p = .79$; R<sup>2</sup> change = .00, Fchange (1, 171) = .29, p = .61;  <sup>b</sup> $R^2 = .03 F(3, 179) = 2.13, p = .10$; R<sup>2</sup> change = .00, Fchange (1, 171) = .02, p = .87

### Table 20. Predicting the Association between Maternal Trauma, PFC, and Child Executive Functioning (Linear Regression Analysis)

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>WCST-PE&lt;sup&gt;a&lt;/sup&gt;</td>
<td>168</td>
<td>Trauma x PFC</td>
<td>.05</td>
<td>.08</td>
<td>.64</td>
<td>.53</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Substance Use</td>
<td>-2.06</td>
<td>1.78</td>
<td>-1.16</td>
<td>.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depression</td>
<td>.59</td>
<td>1.67</td>
<td>.36</td>
<td>.72</td>
</tr>
<tr>
<td>Stroop-I&lt;sup&gt;b&lt;/sup&gt;</td>
<td>176</td>
<td>Trauma x PFC</td>
<td>.01</td>
<td>.05</td>
<td>.23</td>
<td>.82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Substance Use</td>
<td>.45</td>
<td>1.11</td>
<td>.41</td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depression</td>
<td>-.88</td>
<td>1.07</td>
<td>-.82</td>
<td>.41</td>
</tr>
</tbody>
</table>

*Note.* PFC= Problem-Focused Coping on the Coping Orientations to Problems Experienced Scale; <sup>a</sup> $R^2 = .02, F(5, 162) = .56, p = .73$; R<sup>2</sup> change = .00, Fchange (1, 162) = .40, p = .53;  <sup>b</sup> $R^2 = .04 F(5, 170) = 1.38, p = .23, R^2 change = .00, Fchange(1,170)= .05, p= .82$

### Table 21. Predicting the Association between Maternal Trauma, EFC, and Child Executive Functioning (Linear Regression Analysis)

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>WCST-PE&lt;sup&gt;a&lt;/sup&gt;</td>
<td>168</td>
<td>Trauma x EFC</td>
<td>.001</td>
<td>.09</td>
<td>.001</td>
<td>.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Substance Use</td>
<td>-1.96</td>
<td>1.76</td>
<td>-1.11</td>
<td>.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depression</td>
<td>.42</td>
<td>1.67</td>
<td>.25</td>
<td>.80</td>
</tr>
<tr>
<td>Stroop-I&lt;sup&gt;b&lt;/sup&gt;</td>
<td>176</td>
<td>Trauma x EFC</td>
<td>.04</td>
<td>.06</td>
<td>.73</td>
<td>.46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Substance Use</td>
<td>.72</td>
<td>1.10</td>
<td>.65</td>
<td>.52</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depression</td>
<td>-.71</td>
<td>1.06</td>
<td>-.66</td>
<td>.51</td>
</tr>
</tbody>
</table>

*Note.* EFC= Emotion-Focused Coping on the Coping Orientations to Problems Experienced Scale; <sup>a</sup> $R^2 = .04, F(5, 162) = 1.27, p=.28, R^2 change = .00, Fchange (1,162)= .00, p=.99;  <sup>b</sup> $R^2 = .06 F(5, 170) = 2.24, p = .05; R^2 change=.00, Fchange(1, 170)=.54, p=.46
### Appendix C: Post Hoc Analyses

#### Table 22. Associations between Coping Style & Depression Severity (Pearson Correlation)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>N</th>
<th>Depression Severity</th>
<th>Dysthymia Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE PFC</td>
<td>184</td>
<td>-.06 (.41)</td>
<td>.03 (.68)</td>
</tr>
<tr>
<td>COPE EFC</td>
<td>184</td>
<td>.03 (.67)</td>
<td>.09 (.23)</td>
</tr>
</tbody>
</table>

*Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping*

#### Table 23. Associations between Coping Style and Current PTSD diagnosis (T-Test)

<table>
<thead>
<tr>
<th>Measure/Subscale</th>
<th>No PTSD</th>
<th>Current PTSD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M  (SD)</td>
</tr>
<tr>
<td>COPE PFC</td>
<td>150</td>
<td>59.87 (7.96)</td>
</tr>
<tr>
<td>COPE EFC</td>
<td>150</td>
<td>56.29 (8.14)</td>
</tr>
</tbody>
</table>

*Note. COPE= Coping Orientations to Problems Experienced Scale; PFC= Problem-Focused Coping; EFC= Emotion-Focused Coping

*p < .05

#### Table 24. Relationship between PTSD, PFC, and Child Executive Functioning (Linear Regression Analysis)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SEB</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD x WCST-PE</td>
<td>-.16</td>
<td>.22</td>
<td>-.71</td>
<td>.48</td>
</tr>
<tr>
<td>PTSD x Stroop-I</td>
<td>-.03</td>
<td>.14</td>
<td>-.23</td>
<td>.82</td>
</tr>
</tbody>
</table>

*Note. PFC= Problem-Focused Coping on the Coping Orientations to Problems Experienced Scale; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference; \( R^2 = .04, F(3, 169) = 2.43, p = .07; \) \( R^2 = .03, F(3, 177) = 1.52, p = .21; \)

#### Table 25. Relationship between PTSD, EFC, and Child Executive Functioning (Linear Regression Analysis)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SEB</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD x WCST-PE</td>
<td>-.08</td>
<td>.22</td>
<td>-.35</td>
<td>.72</td>
</tr>
<tr>
<td>PTSD x Stroop-I</td>
<td>-.06</td>
<td>.15</td>
<td>-.39</td>
<td>.70</td>
</tr>
</tbody>
</table>

*Note. EFC= Emotion-Focused Coping on the Coping Orientations to Problems Experienced Scale; WCST-PE= Wisconsin Card Sorting Task Perseverance Errors; Stroop-I= Stroop Interference; \( R^2 = .07, F(3, 169) = 4.36, p = .01; \) \( R^2 = .057, F(3, 177) = 2.55, p = .057; \)

*Note. PTSD x WCST-PE: \( R^2 = .04, F(3, 169) = 2.43, p = .07; \) \( R^2 = .03, F(3, 177) = 1.52, p = .21; \)

*Note. PTSD x Stroop-I: \( R^2 = .03, F(3, 177) = .05, p = .82; \)
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