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Exploring Maternal Emotion Masking
as a Contribution to Kindergartener's Emotion Regulation

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Exploring Maternal Emotion Masking
as a Contribution to Kindergartener's Emotion Regulation

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Abstract

Parents socialize their child's emotion regulation and expression through reactions and responses to, as well as discussion of, emotions during early childhood, around the same time children begin to express their thoughts and feelings verbally. The study of maternal emotion masking, or purposefully hiding an emotional expression, has produced mixed results regarding children's emotion regulation. The current study examines maternal reports of children's emotion regulation and mother's use of monitoring and masking of emotions in relation to children's expressive vocabulary during a story-telling task. Twenty-six mother-child dyads were recruited to engage in a story-telling task to examine children's use of internal state language; mothers also completed questionnaires including the Emotion Regulation Checklist, Emotion Regulation Questionnaire, and the Parent Interview on Caregiving Infants. Children's expressive vocabulary was additionally assessed using the Expressive Vocabulary Test, 2nd Edition. Results suggest that mothers' emotion monitoring relates to children's greater use of emotion regulation and use of more positive words during story-telling. Mothers also differed in their use of emotion masking and monitoring by annual income and education level, which could be related to differences in high- versus low-income stressors including more rigorous job demands. Future interventions should explore the effects of maternal emotion masking for parents who experience high stress levels.

Exploring Maternal Emotion Masking as a Contribution to Kindergartener's Emotion Regulation

Emotions allow individuals to organize their actions after an event and provide a means of relaying the individuals' needs or intentions to others (Cole et al., 2006). Through guidance from parents, by age 4 or 5 children understand that their environment changes their emotional experiences and subsequent behavior (e.g. children may cry when getting dropped off for their first day of school, or children may become frustrated when told to stand in the corner of a room for time-out; Lazarus, 2005). Additionally, children learn from experiences with their parents and other family members (e.g. siblings) to exhibit different emotional expressions based on gender stereotypes (Brody, 2000; Chaplin, Cole, & Zahn-Waxler, 2005; Chaplin, Casey, Sinha, & Mayes, 2010; McIntyre & Edwards, 2009). Children at this age also realize that expectations and beliefs play a role in how emotions are expressed, and recognize and appreciate that expression of emotions can be controlled (Lazarus, 2005; Gosselin, Warren, & Diotte, 2002). The focus of this study was to examine how parents support young children's developing effortful control, or their ability to manage attention and adapt to a situation by inhibiting or activating their behavior accordingly (Rothbart & Bates, 2006). One way that children learn about effortful control is through observing parents' use of emotion regulation, or their ability to manage their expression of emotions (Eisenberg, Spinrad, & Eggum, 2010). This study approaches this topic by exploring mothers' intentional use of emotion regulation strategies, specifically focusing on one explicit strategy: emotion masking.

Introduction

Emotion regulation involves the ways an individual is able to manage if, when, and how they feel, along with their ability to then successfully express their emotions in culturally

acceptable ways (Eisenberg et al., 2010). It is important to note the distinction between emotion regulation and emotion recognition, or the ability to correctly perceive and decipher one's emotional state (Banziger, Grandjean, & Scherer, 2009). While related in that both concepts involve the interpretation of emotions, these concepts are distinctly different, as children able to successfully recognize the expression of emotions will be better able to regulate their emotions (Saarni, 1999). Emotion regulation occurs as both intrinsic and extrinsic processes; intrinsic meaning that emotion-regulation occurs within the self (e.g. self-regulation through taking deep breaths) and extrinsic meaning that parents and other close relationships help and teach children how to regulate their emotions (e.g. mutual regulation between parent and child or between siblings through giving a child a hug; Eisenberg et al., 2010). Caregiver-child relationships are essential to a child's developing ability to engage in the intrinsic processes of emotion regulation.

Indeed, what sets the stage for a child's emotional development is the relationship quality between child and caregiver (e.g. attachment style; Bowlby, 1958). A secure child-caregiver bond in which the child's physiological needs (e.g. food, warmth) are met will result in a child feeling that others will be trustworthy and responsive, and they will be more confident in exploring new surroundings and their ability to self-regulate (Bowlby, 1958; Cassidy, 1994; Saarni, 1999). In comparison, insecure child-caregiver attachment due to a child's unmet needs may lead a child's to view of others as unresponsive and unpredictable, and results in a child exerting additional energy to manage their emotions and contribute to later emotional incompetence (Denham et al., 2003; Saarni, 1999). Researchers suggest that when mothers tend to be more engaged and elaborative in conversations with their children, a secure mother-child attachment is formed, resulting in a deeper understanding of emotions by children at age 5 (Ontai

& Thompson, 2002). Similarly, when mothers use more open and fluid communication, children feel secure in their relationship with their mother and have a better understanding of the coherence of emotional events (Bowlby, 1969/1982). In contrast, when a mother limits her communication with her child, as is typical in insecure mother-child attachment bonds, children's emotional and social functioning are negatively impacted (Bowlby, 1969/1982). Research suggests that children with an insecure attachment to their mother have difficulty understanding emotions, have trouble regulating anger, and tend to show a greater amount of maladaptive emotions such as anxiety and fear because of their mother's unsupportive responses (Denham et al., 2003; Pollak, Cicchetti, Hornung, & Reed, 2000). Similarly, mothers who suffer from depression may be unaware of their lack of emotional expression in front of their children, resulting in children to be less emotionally regulated and less socially competent (Maughan, Cicchetti, Toth, & Rogosch, 2007; Seiner & Gelfand, 1995). Caregiver-child attachment and a child's temperament develop in tandem, through a bidirectional relationship with important implications for a child's regulatory abilities.

An individual's emotion regulation abilities and reactivity level, or their characteristic, emotionally-driven response provoked by their environment, are visible through emotional expression and motor activity and are seen as expressions of temperament (Rothbart & Derryberry, 1981). Temperament can be defined as an individual's expression of affect, motivation, and attention that are grounded in nature (i.e., based on biology) but also shaped by nurture (e.g. interactions with family members; Derryberry & Rothbart, 1997; Rothbart & Bates, 2006). While emotion regulation reflects the processes (e.g. effortful control) that modulate an individual's level of reactivity (e.g. fear, anger, surprise), one's temperament can be described as one's unintentional predisposition to respond in a particular way (Rothbart & Derryberry, 1981).

Thomas & Chess (1977) suggest that when caregivers parent adaptively and positively when children's behavior was challenging, children are more likely to produce positive outcomes, compared caregivers who responded harshly to their children's challenging behavior. Indeed, research suggests that when parents act warmly and are more sensitive and responsive toward their child, characteristics common to a secure attachment bond, children have more positive developmental outcomes (e.g. greater behavioral control and self-regulation) and display less negative reactivity (e.g. anger; Barber, Stolz, & Olsen, 2005; Belsky, Fish, & Isabella, 1991; Braungart-Rieker, Hill-Soderlund, & Karrass, 2010; Halverson & Deal, 2001). Similarly, face-to-face interactions between mother and child provide parents with an opportunity to facilitate optimal levels of emotion regulation (Gianino & Tronick, 1988). These types of mother-child interactions also aid in a child's understanding of when to inhibit control over behavioral responses.

Children's emotion regulation strategies are improved between the ages of 3 and 4 when the prefrontal cortex changes in structure, allowing children to better control emotional responses and cognitive processes (e.g., executive functioning including inhibitory control; Cole, Dennis, Smith-Simon, Cohen, 2009; Koole, 2009). As part of children's developing executive functions, or more conscious control of their thoughts and actions, they are refining their inhibitory control, or the ability to hinder a dominant response from occurring; Wolfe & Belle, 2003; Zelazo, Carter, Reznick, & Frye, 1997). Children engaging in goal-directed tasks (e.g. games like Simon Says) or solving new problems require executive function skills, and inhibitory control is often necessary for children to succeed at these tasks so that unrelated thoughts do not intervene in the accomplishment of their goal (Casey, Tottenham, & Fossella, 2002; Roberts & Pennington, 1996; Rothbart & Posner, 1984). Additionally, inhibitory control is connected to the modulation

of emotion regulation in which children are able to outwardly display learned, context-appropriate emotional reactions as opposed to less appropriate, natural reactions (Diamond, 2013; Duncan & Owen, 2000; Hudson & Jacques, 2014). Research suggests that the inhibitory control of children between the ages of 4 and 6 was positively correlated with their ability to regulate emotions (Carlson & Wang, 2007). Kalpidou and colleagues (2004) examined groups of 3 and 5 year old children asked to complete a compliance task with toys and found that the five year old group was more likely to exercise greater emotion regulation and problem-focused coping skills in order to complete the task in comparison to the three-year-old group.

Additionally, as children reached the age of 4, parents shifted in when, where and with whom it is appropriate to display certain behaviors from more simplistic safety and interpersonal issues to more complex associations with family and children's self-care social norms (Gralinski & Kopp, 1993). This shift from simplistic to more complex rule emphasis coincides with the development of greater cognitive abilities associated with executive function, (e.g, quickly recognizing when rules are put in place, understanding reasons for rule setting), and ultimately children's ability to better regulate their emotions and behaviors (Gralinski & Kopp, 1993).

Emotion Socialization

Between the ages of 4 and 5 years old children must be prepared to enter new and increasingly demanding environments which require them to be more autonomous and independent (Graziano, Reavis, Keane & Calkins, 2006). Parental socialization and mutual regulation of children's emotion occurs when parents model culturally appropriate, socially acceptable behavior for children to adopt (Cole, Tamang & Shrestha, 2006; Havinghurst, Wilson, Harley, Prior & Kehoe, 2010). The timing of children's emotional development reveals that emotion socialization processes which occur between the ages of 3 and 5 are particularly

meaningful because of gains in executive function (e.g., planning, working memory, inhibitory control) which serve as a foundation for future socialization during this time period (Carlson & Wang, 2007; Zelazo et al., 1997). Child gender plays a role in the way in which parents socialize their children, as early childhood research has shown that females are typically raised to express more submissive emotions (e.g., sadness), while boys are typically raised to express more assertive emotions (e.g., anger; Brody, 2000; McIntyre & Edwards, 2009). Preschool-aged children's language further develops with parents' help, which allows children to better express their feelings and needs, better sustain attention and understand rules, and may help contribute to their self-regulatory abilities (Cole, Armstrong & Pemberton, 2010; Lee, 2011; Lee & Kim, 2012; Roben, Cole, & Armstrong, 2013). Gender differences in use of emotion words (e.g., happy, sad, afraid) begin to appear in early childhood, as girls typically talk more about feelings and emotions with their parents and peers than boys (Fivush, Brotman, Buckner, & Goodman, 2000; Hughes, Lecce, & Wilson, 2007; Kuebli, Butler, & Fivush, 1995). Research suggests that children have the ability to develop a greater selection of emotion regulation strategies during novel or difficult situations (e.g. using distraction during a frustrating event as opposed to throwing a tantrum), however, only some of these strategies are beneficial for future social and emotional functioning (Blandon, Calkins, & Keane, 2010). For example, research indicates that behavioral strategies such as distraction, social referencing, approach and withdrawal, and interacting with a stimulus were ineffective regulation techniques for modulating children's fear, but were effective for reducing anger (Deiner & Mangelsdorf, 1999).

Additional research further emphasizes the shift in mothers' role in emotion socialization of their children during this developmental period (Cole et al., 2009; Havinghurst et al., 2010). Research shows that mothers may begin to play a less intrusive role assisting their kindergarten-

aged children with emotion regulation strategies in comparison to the preschool years, when children may have had more difficulty expressing emotions and looked to parents for modeling of culturally appropriate behavior (Cole et al., 2006; Denham, Mason, & Couchoud, 1995; Gralinski & Kopp, 1993; Havinghurst et al., 2010). Gralinski and Kopp (1993) suggest that while children at the age of 4 may sometimes need additional supports for situations in which they need to exert control (e.g. during participation in family routines), they are less reliant on maternal intervention for situations concerning others' property and basic safety rules. When investigating children's responses and the use of adult scaffolding regarding negative emotions, Denham and colleagues (1995) found that children at age three requested more adult help identifying with negative emotions than children who were almost 5 years old. Despite these findings, developmental questions still remain. As children begin to regulate their emotions more frequently, how does the role of parental expression and modeling of positive and negative emotion change?

While many studies focus on parental response to children's behavior, parents' perception of and response to their child's emotions is a critical predictor of children's future emotional competence, or their feelings of mastery of certain emotions in differing social contexts (Cole & Dennis, 2002; Denham, Zoller, & Couchoud, 1994; Fabes, Leonard, Kupanoff, & Martin, 2001; Saarni, Campos, Camras, & Witherington, 2006; Shaffer, Suveg, Thomassin, & Bradbury, 2011). A few noted areas of parenting that are especially relevant to the emotional competence of children include which strategies parents use to express and regulate their own emotions, how parents react to children's portrayal of emotions, and how parents discuss and teach emotions with and to their children (Eisenberg et al., 2010; Havinghurst et al., 2010). Through emotion coaching, emotion labeling discussions, and explanations of consequences of

how to display emotion publicly with parents, children have a better understanding of emotions and how to properly express them (Cole et al., 2009; Eisenberg et al., 2010; Havinghurst et al., 2010; Shaffer et al., 2011). Because children at this age often learn by imitating behavior displayed by parents and others (e.g., siblings), it is important that parents react sensitively and supportively when a child expresses emotions (Havinghurst et al., 2010; Shaffer et al., 2011).

Research indicates that when parents react supportively by inviting and allowing their child to explore their feelings and encouraging their child's emotional expression, children are more likely to engage in emotion-regulated behavior (e.g., the ability to share a toy with a classmate, maintaining a calm emotional state when a parent denies a request), display less frequent externalized behavior problems (e.g., less aggression, less antisocial behavior), and show more positive youth outcomes (e.g., academic success) than parents who are not supportive (Eisenberg et al., 2010; Graziano et al., 2006; Nelson, O'Brien, Blankson, Calkins, & Keane, 2009; Shaffer et al., 2011). Research also indicates that when parents are not supportive or are disciplinary in their responses to children's emotional expression, children will be more likely to display dysregulated emotions- like greater difficulty altering their emotional expression to environmental changes- which could lead to negative outcomes for children (Davis, Suveg, & Shaffer, 2015; Fabes et al., 2001; Hooven, Gottman, & Katz, 1995; Shaffer et al., 2011). For example, findings show that when a child displays negative emotions and parents respond unsupportively or harshly with distress, children will be more likely to struggle with negative emotions when interacting with peers in the future or may be less expressive of emotions and have difficulty interpreting other's emotions overall (Fabes et al., 2001; Poulin, 1997). Similarly, Davidov and Grusec (2006) suggest that positive parental response to children's distress through modeling appropriate behavior relates to children effectively regulating negative

emotions. Additionally, mothers who responded to their child's negative emotions with minimal reaction led to poorer regulatory outcomes for the child and an increase in parental report of children's emotion dysregulation (Shaffer et al., 2011). However, maternal support was not always beneficial to children, as one study found the more emotional support the child received from their mother during a time of frustration, the more strategies for regulating anger the child recognized, but the fewer they were able to use successfully (Cole et al., 2009). While researchers are aware of children's behavioral outcomes in the presence of supportive and expressive parents, what is less understood is the outcome for children whose parents hide or do not show authentic emotional reactions during daily interactions.

Parental Emotion Masking

There is considerable research on emotion masking in middle childhood through adolescence, but there is limited literature examining the use of emotion masking in parent-child dyads with very young children (Sternglanz & DePaulo, 2004; Whitesell & Harter, 1996; Gosselin et al., 2002). In this context, emotion masking can be defined as parents' purposeful hiding or inauthentic expression of emotion with the goal in mind of protecting a child from possibly experiencing negative emotions that parents feel are unnecessary for their child to experience (e.g. stress or worry when a parent and child are late for an appointment, a parent's anxiety about a work deadline; Dunsmore, Her, Halberstadt, & Perez-Rivera, 2009; Gunzenhauser et al., 2014). Masking an emotion is comprised of processes of down-regulating, or containing or minimizing an emotion's intensity to spare another's feelings from getting hurt (e.g. not smiling after beating a child at a board game) and up-regulating, or exaggerating or amplifying an emotion's intensity to sympathize with another (e.g. showing exaggerated sadness when a child tells you that they dropped their ice cream cone; Demaree et al., 2006; Dunsmore et

al., 2009). Another process that may be used during emotion masking is the act of suppressing an emotion, or expressive suppression, defined as an effortful attempt to inhibit any visible sign of an ongoing positive or negative emotional experience (Gunzenhauser et al., 2014). For the purposes of this study, emotion masking refers to mothers' effortful and conscious process to inhibit emotional expression and is different from the lack of affect displayed by depressed mothers unintentionally (although both may impact a child's ability to regulate their emotions; Maughan et al., 2007; Seiner & Gelfand, 1995). Parents' emotion-related beliefs may determine their use of emotion masking during interactions with their children, and current findings show that the use of emotion masking as an emotion regulation strategy supports both positive and negative results regarding children's successful emotion regulation (Dunsmore et al., 2009; John & Gross, 2004).

Although evidence is sparse, there is support for the use of emotion masking by parents as a strengthening behavioral strategy. For example, during context-specific situations that may be stressful (e.g a mother and child got into a minor car accident or fender bender) a mother can use emotion masking as a strengthening behavioral strategy by remaining calm and masking any anxiety or distress so that the child knows how to compose themselves in a similar future situation. It is also noted that parents are more likely to use emotion masking as a behavioral strategy when they have a strong awareness of their own emotions as well as their children's emotions (Lagace-Seguin & Coplan, 2005). Additional evidence suggests that parental masking of emotions could be examined as a buffering technique, as well as a coping strategy (Denham et al., 1994; Dunsmore et al., 2009). For example, Denham and colleagues (1994) found significant and marginally significant negative correlations between children's understanding of emotions and mothers' expressed anger, tension, and sadness when interacting with their preschool-aged

child, and concluded that greater child exposure to negative emotions by their mother may hinder a child's progression of emotion understanding. Additionally, Dunsmore and colleagues' (2009) mixed method study asked parents to fill out self-reports regarding how dangerous they believed showing emotions was to their child, and how these beliefs guided them during the process of their child's emotion socialization. Parents then watched videos alone that were meant to elicit sadness, anger, fear, and happiness, and were told to rate the extent of their emotion masking during the videos. Children observed their parents watching the videos and were asked to describe what they thought their parents' emotional response would be to the videos. Results revealed a strong positive relationship between parents who thought revealing emotions was dangerous and their use of masking emotions in front of their children, which suggests parents might believe that masking emotions is beneficial as a coping strategy because it may spare young children from feeling intense, unnecessary negative emotions (Dunsmore et al., 2009). Dunsmore and colleagues (2009) offer an alternative interpretation, which mirrors the view of attachment theory, that it is possible that masking emotions in front of young children can be damaging because it does not allow children a chance to explore emotions they are feeling and gain deeper understanding of emotions that may not occur frequently, but only in certain contexts (Casidy, 1994).

Research suggests that some strategies used by parents to control children's negative emotions may also teach children to suppress these emotions (Fabes et al., 2001; Gross & Levenson, 1993, Gunzenhauser et al, 2014). When parents successfully suppress negative emotions, children tend to build up their negative emotions until they outburst, as opposed to releasing negative emotions after each experience (Buck, 1984; Fabes et al., 2001). As this cycle repeats over time, children learn to suppress their emotions, which can lead to greater negative

emotional arousal and anxiety for children, as well as more intense emotional expression and greater emotion regulation difficulty (Buck, 1984; Fabes et al. 2001; Gross & Levenson, 1993). Additionally, a recent study by Gunzenhauser and colleagues (2014) found that when parents modeled emotional suppression in front of their 5-year-old children, children were also more likely to engage in suppression strategies that could hinder the child's future use of emotion regulation strategies. This study also suggested that parents with non-supportive reactions to their children's negative emotions (e.g. minimalizing the child's emotional experience, punishing the child) were associated with children's higher use of suppression, whereas children's higher use of reappraisal (a regulatory strategy) was associated with supportive parental reactions (Gunzenhauser et al., 2014).

Parents' role in emotion socialization is linked to their child's social and emotional competence. However, given the mixed results from the scant emotion masking literature in early childhood, developmental outcomes for children of parents who use emotion masking strategies is less clear. One way that researchers can begin to examine developmental outcomes for children of parents who mask their emotions is through examining a child's emotional expressivity using narrative analysis. Children's narratives have been shown to be useful in helping children make sense of their emotions in regard to themselves and others, and research suggests that kindergarten-aged children tend to tell stories as modeled by their mothers (Engel, 1995; Luo, Tamis-LeMonda, Kuchirko, Ng, & Liang, 2014).

Children's Narratives

Young children's narratives can be examined in order to identify the cultural practices and specific aspects of socialization that parents use with their children (Miller, Fung, & Koven, 2004; Wang, 2013). Children initially learn how to represent their experiences by having conversations with their parents which allows children to gain an understanding of what type of

information is important and the manner in which this information should be conveyed to others (Burch, Austin, & Bauer, 2004). Parents who tend to provide their children with more details during a conversation have children who produce longer, more detailed, and more coherent (chronologically ordered) narratives in comparison to parents who produce shorter, more repetitive narratives (Burch et al., 2004). More specifically, children's narratives have received much attention regarding the incorporation of internal state language, a crucial component of children's narrative expression of emotion.

The use of internal state language in narratives can be defined as using words that indicate meaning-making, particularly words that focus on emotional as well as cognitive processing (e.g. think, understand, realize; Fivush & Baker-Ward, 2005; Fivush, Bohanek, Marin, & Sales, 2008; Fivush, McDermott Sales, & Bohanek, 2008). Through this lens, the narrator is attempting to make sense of an event by examining what has happened using a "subjective perspective" about their own thoughts and emotional reactions to what has occurred (Fivush et al., 2008, p. 580). Research also suggests that when mothers use more internal state language when talking with their preschool-aged children, by the end of preschool their children produce more internal state language in their own narratives (Fivush & Nelson, 2006; Rudek & Haden, 2005). By examining children's use of internal state language as well as emotion words while they are interpreting negative and positive events, researchers may be able to gain greater insight into children's understanding of emotions as taught by their parents.

Meaningful story-telling differences regarding event type have come to light in past decades. Children more actively used emotion words (e.g. angry, mad) during their conversations about negative events as opposed to when speaking about positive events (Burch et al., 2004; Peterson & Biggs, 2001). Additionally, when children produced narratives about

negative events they tended to use a greater number of cognition words and mental state language (e.g. thinks, feels) in comparison to when narrating positive events (Baker-Ward, Eaton, & Banks, 2005; Fivush et al., 2008). Regarding gender differences, it was also noted that for negative events in narratives, girls tend to include more emotion words than boys, particularly when stories elicit emotions of sadness or fear (Adams, Kuebli, Boyle, & Fivush, 1995; Fivush et al., 2000). Using a wordless picture book depicting both positive and negative scenes which 6-year-old children used to tell stories, Tenenbaum, Ford, and Alkhedairy (2011) also found that girls provided more emotion explanations and labels for emotion words than boys. Additionally, Hughes and Dunn (1998) examined the mental state language of 4-year-olds for one year and found that girls used more mental state language, or language relating to their internal state of mind and emotion understanding, than boys. Girls' tendency to use more emotion words than boys, particularly when talking about negative events, could be due to parents' greater elaboration of emotions in conversations with daughters rather than sons (Fivush, Berlin, McDermott-Sales, Mennuti-Washburn, & Cassidy, 2003; Zaman & Fivush, 2013).

The Present Study

A broad goal of this study was to further the discourse on the antecedents of children's emotion-regulation. More specifically, this study aimed to contribute to the literature on parental socialization of kindergarteners' emotion by examining quantitative maternal self-reports of emotion masking and monitoring in relation to maternal reports of child self-regulation as well as a qualitative observational story-telling task examining children's emotion expressivity during an emotion eliciting story. These methods were used to explore how the use of maternal reports of emotion masking and monitoring relates to how mothers perceive their kindergarteners'

emotions. For example, do parents who intentionally shield their children from negative emotions have children who are emotionally well-regulated? Further, how are emotions understood and expressed by children whose mothers use masking as an emotion regulation strategy? Do they express emotions differently when telling emotion-eliciting stories? The research hypotheses for this study are as follows:

1. Based on evidence suggesting that maternal masking of emotions can lead to negative emotion regulation outcomes for children (Buck, 1984; Fabes et al., 2001; Gross & Levenson, 1993; Gunzenhauser et al., 2014), we hypothesize that children whose mothers report being careful about how they show emotions in front of their child and have a greater use of expressive suppression (e.g. high use of emotion masking) will have children who are less emotionally-regulated.
2. Due to evidence suggesting that masking hinders children's understanding of emotions in conjunction with what researchers know about children's greater use of emotional language in negative narratives (Baker-ward et al., 2005; Burch et al., 2004; Dunsmore et al., 2009; Fabes et al., 2001; Gross & Levenson, 1993; Gunzenhauser et al., 2014) we hypothesize that mothers who report monitoring how they show emotions in front of their child and have a greater use of expressive suppression (i.e. high use of masking) will have children who tell narratives with less internal state language regarding emotions (e.g. positive and negative emotion words) when presented with picture book images that depict negative (i.e. a bird being caught and caged) and positive (i.e. a girl and bird flying into the sunset) scenes.
3. We hypothesize that gender differences will replicate previous findings that girls tend to use more mental state words (e.g. thinks, feels, wonders, understands, knows) and positive and

negative emotion words (e.g. scared, sad, happy) during story-telling than boys (Adams et al., 1995; Fivush et al., 2000), regardless of maternal use of emotion masking.

Method

Participants

Participants included 26 dyads consisting of a mother ($M=31.35$ years, $SD= 7.06$) and her 4.5-5.5 year old child ($M=58.58$ months, $SD= 4.68$). Flyer disbursement and participant recruitment took place within 15 miles of the research lab at public venues such as Head Start preschools, elementary schools with enrolled Kindergartners, and community recreational centers, as well as at public events attended by mothers and young children, such as seasonal festivals and community events. Eligible families who participated in a previous study or who were enrolled in a university-maintained database for study recruitment were also contacted to participate.

All mothers who participated in the study spoke English and were at least 18 years old (mothers' age ranged from 22 to 44 years old). The sample had slightly more male children (14; 53.8%), and the majority of children (19; 73.1%) spent 10 hours or more in childcare outside of the home. Most mothers in the sample were either married (11; 42.3%), or single and never married (8; 30.8%). Additionally, most mothers in this sample had a high school diploma/equivalent (9; 34.6%), were unemployed (12; 46.0%) and made an annual income of less than \$20,000 annually (12; 46.2%). This sample had an even split of mothers who identified as Hispanic-Latino (11; 42.3%) or Non-Hispanic-Latino (11; 42.3%), while 7 mothers (26.9%) identified as African American and 15 mothers (57.7%) identified as White. The current study sample was more diverse than that of the location's population, as census data for this study's location reported a population of 17.4% Hispanic-Latino versus 62.1% Non-Hispanic-Latino,

and 77.4% White, 13.2% African American, 1.2% American Indian and Alaskan Native, 5.4% Asian, .2% Native Hawaiian and Other Pacific Islander, and 2.5% identified as two or more races (U.S. Census Bureau, 2014). All child and mother demographics are additionally provided in Table 1.

Several demographic variables in this sample were dichotomized because groups contained 1 or fewer participants. Because mothers did not identify themselves or their children as American Indian/Alaska Native, Asian, or Native Hawaiian/Other Pacific Islander, race was dichotomized into African American and White groups – the two groups represented per reported data. Additionally, marital status was dichotomized into groups of mothers who were co-parenting their child with their husband or significant other (i.e. mothers who were married and mothers who were single and living with a partner) or mothers who were living alone with their child (i.e. mothers who were single and never married, mothers who were single and divorced, and mothers who were widowed) because there was only 1 mother in the “single, divorced” marital status group. Similarly, because there was only one mother in the “some high school” education group, education was dichotomized into those who were more highly educated (e.g. Associate’s degree, Bachelor’s degree, and Graduate degree) and those who were less educated (e.g. Some high school, High school diploma/equivalent, and Some college, no degree).

Measures

Demographics. A demographic survey was created for this study which asked mothers to identify their age, race, ethnicity, annual household income, marital status, education level, and employment status. Additionally, mothers were asked to provide their child’s gender, age, race, ethnicity, and if the child spent 10 or more hours in child care outside of the home.

two researchers independently count the number of emotion words mothers provided in their responses for 11.5% of the sample. Researchers agreed 100% on the emotion count.

Maternal emotion masking was additionally assessed using the Expressive Suppression subscale of the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003). The Expressive Suppression subscale measures the degree to which mothers inhibit the expression of emotions and emotional behavior and includes items such as “When I am feeling *positive* emotions, I am careful not to express them”. Answers for each item fall on a 7-point Likert-type scale, 1 meaning “strongly disagree” and 7 meaning “strongly agree”. The ERQ shows high internal consistency for the expressive suppression (alphas averaging .73) factor (Gross & John, 2003). In the present sample, internal consistency for the Expressive Suppression subscale was comparable to that reported by Gross and John (2003) with a Cronbach’s alpha of .70.

Children’s emotion regulation. Children’s emotion regulation was assessed via maternal reports on the Emotion Regulation subscale of the Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997). The Emotion Regulation subscale is rated by mothers using a 4 point scale ranging from 1 (Never) to 4 (Almost Always; Shields & Cicchetti, 1998). The Emotion Regulation subscale includes 8 items which assess the parental viewpoint of social appropriateness of their child’s emotions, emotion understanding, adaptive regulation, and empathy (e.g. “How often can your child say when he or she is feeling sad, angry or mad, fearful or afraid?”, “How often does your child show concerns when others are upset or distressed?”). The Emotion Regulation subscale shows high construct validity and internal consistency, with a reported Cronbach’s alpha of .83 (Shields & Cicchetti, 1997). Discriminant validity with an Ego Resilience Q-Sort and an autonomy Q-Sort is also high (Shields & Cicchetti, 1997). In the present sample, after dropping 2 poorly-worded items internal consistency for the Emotion

Regulation subscale of the ERC was low with a Cronbach's alpha of .64 (see further discussion in the limitations section).

Quantitative children's emotion expressivity. Children's emotional expressivity was assessed using the Expressive Vocabulary Test, Second Edition (EVT2; Williams, 2007). The EVT2 is an individual assessment administered to assess children's expressive vocabulary (Williams, 2007). Because no comparisons were being made, only form B was used for this study, which contains 190 examples and questions that become more difficult as the test is administered (Williams, 2007). The examiner presents a picture from the test easel and reads a stimulus question to the participant. The participant must respond using one word that either accurately labels the picture, answers a specific question about the picture, or provides a synonym for what is being shown in the picture. For example, the examiner will point to an image of a dog and ask the child: "What do you see in this picture?" The child will then respond with a one-word statement (e.g. doggy). Participants are given 2 practice examples before being scored on the test, and have 10 seconds to answer each question. If a P is next to a response on the scoring sheet, this response is considered a prompt and the question is asked to the participant again. For example, if the child responds to the picture of a dog by saying "animal", and that response has a P next to it, the researcher may ask "Can you think of another word for that?". The test is administered by the examiner until participants obtain 5 consecutive incorrect responses. The EVT2 is highly correlated with the EVT, CASL, CELF-5, GRADE, and PPVT-4 measures, providing evidence that it is a valid measure of vocabulary (Williams, 2007). EVT2 responses were scored using the instructions provided in the published manual. For this study raw scores were converted to standard scores and separate age equivalent scores. Interrater

agreement was established by having two independent scorers calculate both scores at different times for participants (15.4% of the sample). Scoring agreement on these scores were 100%.

Qualitative children's emotion expressivity. A story-telling task was used as an observational method to measure and examine children's narrative expression of emotion during both negative and positive scenarios. Select pages (12 total, numbered 1-6) used for this task were taken from the picture book *Journey* created by Aaron Becker (2013). For the purpose of this study, the 6 scenarios used show that the story begins during the day, progresses into the night, and ends during sunrise the following morning. These scenarios, sometimes comprised of just 1 scene and sometimes 2 on adjacent pages, were chosen because we estimated that they might arouse three negative and positive emotional reactions from the child.

Scenario descriptions. Scenario 1 is a single scene that spans across 2 pages and shows a young girl in a red hot air balloon floating in the sky waving to two people in a tower. The background of the scene depicts a purple bird flying in the clouds, and what looks like a flying battleship and a smaller flying ship in the distance.

Scenario 2 is a single scene that spans across 2 pages and shows the same girl leaning over the side of the red hot air balloon and looking at the flying battleship and smaller flying ship, now close enough to make out a few details: There are three soldiers and a captain/king in a smaller flying ship; one soldier has a gun and another has a net. They are trying to capture the purple bird.

Scenario 3 displays 2 separate scenes, one per page. The first page shows the purple bird trapped in a cage being carried by two soldiers into a tower. The girl in the red hot air balloon has landed and is running toward the tower, in what looks like an effort to reach the bird. The second page shows the bird being held in the cage at the top of the tower guarded by two of the soldiers. The girl is climbing the ladder to reach the bird.

Scenario 4 displays 2 separate scenes, one per page. The first page shows the girl taking the purple bird in the cage away from the soldiers, who are alarmed and surprised to see her. The second page shows the girl running to the edge of the tower and freeing the bird from the cage. The soldiers inside the tower are chasing after her, and the captain/king is at the top of the tower pointing to the girl and the bird. A photograph of the second page of Scenario 4 is displayed in Figure 1.

Scenario 5 is a single scene that spans across both pages and shows the freed purple bird flying ahead of the young girl, who is trailing behind on a magic carpet. They are flying away from the cage and the battleship.

Scenario 6 spans across both pages and shows the bird and girl again flying through the air, but they are farther away.

Prompts were provided for mothers to read to their child if the child needed additional help through the task. These prompts were used to control for mothers' interaction with their child during the story-telling task. On the pages of Scene 1 the prompt for mothers read as follows: "Can you tell me a story about what is happening in this picture? *Wait for response*. Then ask: "How are the people feeling?" For all additional scenes, the prompt for mothers read: "What's going on in these pictures? *Wait for response*. Then ask: "How are the characters feeling?"

This task was coded using an adapted scheme developed by Fivush, McDermott Sales, and Bohanek (2008) for internal, or mental, state language, which included number of words relating to mental state (e.g. thinks, knows), number of negative emotions (e.g. scared, mad, sad, frustrated), and number of positive emotion words (e.g. happy, excited, proud, hopeful). Cohen's κ was run to determine agreement between two observers' judgment regarding use of kindergarten-aged children's internal state language, including mental state words and positive and negative

emotions words. Agreement between the two observer's judgment on three participant observations was high, $\kappa = 1.000$, $p = .000$.

Procedure

For this mixed methods study, each mother-child dyad came to the research laboratory for a single visit lasting approximately 1 hour. Upon arrival to the lab, each mother-child dyad was asked to complete a ten minute story-telling task. For this task, each of 6 numbered scenarios were marked in a hard copy of the picture book *Journey* (Becker, 2013), only allowing for participants to view the aforementioned scenes by obscuring unused pages from participants' view. After handing the book to the mother, the researcher gave the following instructions:

This task requires that you sit with your child so they can tell you a story in their own words using a picture book. The goal is to have your child use the book to tell a story by themselves and describe the feelings of the characters using their own words. There may be times when they need help staying on task, so you will see prompts given in the book for you to use to encourage your child to use feeling words while describing the pictures. The pages in the book your child will use for their story are numbered 1-6.

After providing the mother with these instructions, the researcher then gave the child the following instructions:

You are going to tell mom a story using this book. You can be in charge of turning the pages, but make sure you say everything you want about your story because once you turn the page, you can't go back. Does that make sense? Are you ready to start?

All interactions were video-recorded for later coding with the adapted Fivush et al. (2008) coding scheme previously described.

After the story-telling task, a researcher entered the room again and provided the mother with the survey materials. While the mother was still completing measures, the EVT2 was administered to the child by the researcher. At the end of the visit, each mother was given a gift card in appreciation for the time and effort required to participate.

Results

Group Differences

Child Characteristics. An independent samples t-test showed a statistically significant difference by ethnicity (Hispanic-Latino v. Non-Hispanic-Latino) on a child's average age equivalent expressive vocabulary, with Non-Hispanic-Latino children averaging about 10 months ($M=63.82$ months, $SD= 12.48$) ahead of their Hispanic-Latino ($M=54.73$ months, $SD= 6.09$) counterparts, $t(20)=-2.114$, $p<.05$; $d=.901$. This result indicates that Hispanic-Latino participants on average fell about 9 months behind their Non-Hispanic-Latino peers in expressive vocabulary. For this analysis the effect size, which compares the size of the means of each group, was $d=.901$, indicating a large effect according to Cohen (1988). Similarly, an independent samples t-test showed a statistically significant difference by race dichotomized (African American or White) on a child's average age equivalent expressive vocabulary, with White children ($M=64.15$ months, $SD=10.59$) averaging about 12 months ahead of their African American ($M=51.88$ months, $SD=6.15$) counterparts $t_{(19)}=-2.968$, $p<.01$; $d=1.417$. Given this large effect size (Cohen, 1988), this indicates that Non-Hispanic-Latino and White children have a broader range of expressive vocabulary than Hispanic-Latino and African American children in this sample. Race and ethnic differences were not present for child's emotion regulation score measured on the 6-item Emotion Regulation scale of the ERC, number of positive emotion words used during narratives, number of negative emotion words used during narratives, number

of mental state words used during narratives, or child's standard score on the EVT2.

Additionally, child care (whether a child spent a minimum of 10 hours per week in child care outside of the home or not) effects were not present for any of the child variables noted above. Using dichotomizing marital status, independent sample t-tests showed no significant differences for child's expressive vocabulary, child's age equivalent expressive vocabulary, child's emotion regulation, or child's use of positive, negative, or mental state words during story-telling.

A bivariate correlation analysis examined annual income effects for child outcome variables. Results showed significant positive correlations between annual income and a child's standard EVT score ($r=.523, p<.01$) a child's age equivalent EVT score ($r=.620, p<.01$), and a child's use of positive emotion words when story-telling ($r=.504, p<.05$). These correlations indicate that a larger annual income is associated with higher vocabulary outcomes and a greater use of positive emotion words for children. Annual income was not significantly correlated with child's emotion regulation, or the number of negative emotion words or mental state words a child used when story-telling. Additionally, no significant effects were found for any child outcome variables by mothers' employment status or education level.

Maternal Characteristics. There were significant effects between multiple maternal demographic and outcome variables. Independent samples t-tests showed a statistically significant difference in mother's monitoring of their emotions in front of their child measured using the PICI Visual Analog Scale based on ethnicity (Hispanic-Latino or Non-Hispanic-Latino) as well as dichotomized race (African American or White). Hispanic-Latino mothers had a significantly lower mean on the Visual Analog Scale ($M=3.00$ out of 7, $SD= 1.73$), indicating a higher level of emotion monitoring, than Non-Hispanic-Latino mothers ($M=4.82$ out of 7, $SD= 1.33$), who were more likely on average to let all of their feelings show in front of their

child, $t_{(20)}=-2.763$, $p<.05$; $d=1.179$. Cohen (1988) notes that effect sizes this high indicate a large effect, which suggests the magnitude of difference in emotion monitoring between Hispanic-Latino and Non-Hispanic Latino mothers is a robust effect beyond its statistical significance. Likewise, mothers who identified as African American had a significantly lower PICI Visual Analog Scale mean ($M=2.86$ out of 7, $SD=1.46$), indicating a greater use of emotion monitoring, than their White ($M=4.40$ out of 7, $SD=1.404$) counterparts $t_{(20)}=-2.37$, $p<.05$; $d=1.074$. This effect size ($d=1.074$) is large (Cohen, 1988). Similarly, ethnicity had a statistically significant effect on mothers' use of expressive suppression measured using the ERQ, where mothers who identified as Hispanic-Latino ($M=16.09$, $SD=4.18$) had significantly higher expressive suppression scores, indicating that they more frequently engage in masking their emotions, than their Non-Hispanic-Latino ($M=10.18$, $SD=5.67$) counterparts $t_{(20)}=2.781$, $p<.05$; $d=1.186$. This effect size ($d=1.186$) is large, again suggesting a strong effect for ethnicity (Cohen, 1988). These results indicate that White and Non-Hispanic-Latino mothers tend to use emotion masking less frequently than African American and Hispanic-Latino mothers.

Independent samples t-tests also revealed a significant difference in mothers' use of expressive suppression measured using the ERQ by dichotomized education level, with mothers who did not have a higher level degree ($M=15.50$, $SD=5.24$) engaging in greater use of expressive suppression than mothers who did have a higher level degree ($M=10.20$, $SD=4.10$), $t_{(24)}=2.72$, $p<.05$; $d=1.260$. This effect size ($d=1.260$) is large (Cohen, 1988). This indicates that mothers who are generally less educated use emotion masking more than mothers who are well-educated. For mean differences based on dichotomized marital status in mother's monitoring of their emotions in front of their child, as well as use of expressive suppression, independent samples t-tests revealed no significant differences between mothers' score on expressive

suppression measured using the ERQ or their monitoring of emotions measured using the PICI Visual Analog Scale.

As was done for child outcome variables, a bivariate correlation analysis also examined annual income effects for mother outcome variables. Results showed a significant positive correlation between annual income and the number of emotions mothers monitor measured using the PICI open-ended question ($r=.439, p<.05$). A significant negative correlation was found between annual income and mother's use of expressive suppression measured using the ERQ ($r=-.629, p<.01$). These results suggest that mothers with a higher annual income tend to monitor a greater number of emotions and that lower annual income mothers tend to use more expressive suppression. There was no significant relationship between annual income and mother's use of emotion monitoring measured on the Visual Analog scale of the PICI. Additionally, no significant differences were found for mothers' monitoring of their emotions in front of their child measured using the PICI Visual Analog Scale or their use of expressive suppression measured using the ERQ by employment status.

Hypothesis Testing

This study investigated how self-reported variables of maternal emotion masking (reported on the ERQ) and emotion monitoring (reported on 2 PICI items: the Visual Analog Scale and open-ended question) relate to maternal reports of children's emotion regulation (reported on the ERC) and children's use of internal state language during an observational story-telling task. Results suggest partial support for our first hypothesis that children of mothers who use higher levels of emotion masking would have greater difficulty regulating their own emotions. There was no significant relationship between child's emotion regulation measured using the ERC and mother's score on expressive suppression measured using the ERQ.

However, there were significant relationships between child's emotion regulation reported on the ERC and mother's use of emotion monitoring ($r = -.421, p < .05$) and the number of emotions mothers report attending to when they monitor emotions ($r = .577, p < .01$), both reported on the PICI Visual Analog Scale and the PICI open-ended question. To examine directionality between the variables, multiple regression models were used. In the first model, maternal emotion monitoring and the number of emotions mothers monitor in front of their child, reported on the PICI Visual Analog Scale and open-ended question, were not predictive of a child's emotion regulation reported by mothers on the ERC ($F_{(4, 21)} = 2.214, p = .102$). When holding constant mother's ethnicity, race, education level, and annual income, a second multiple regression revealed significant results. This second model indicates that maternal emotion monitoring and the number of emotions mothers attend to significantly predicts children's ERC scores ($F_{(6, 19)} = 3.931, p < .05$) and explains 55.4% of the variance in child's emotion regulation. After examining the beta weights for maternal emotion monitoring ($\beta = -.263, p = .650$) and number of emotions mothers attend to ($\beta = .573, p < .01$), the more mothers let their feelings show in front of their child, the less children are emotionally regulated, and when mothers attend to a greater number of emotions in front of their child, the child is more emotionally-regulated. This provides partial support for our hypothesis in that a relationship exists between mother's awareness of their emotions and child's emotion regulation. These results indicate that the number of emotions mothers attend to as well as a mother's use of emotion monitoring predicts the emotion regulation of her child, which is the opposite result anticipated in our first hypothesis.

The second hypothesis that mothers with a greater use of emotion masking will have a child who tell narratives with less positive and negative emotion words was only partially

supported. Emotion monitoring measured using the PICI Visual Analog Scale and expressive suppression measured using the ERQ were not correlated with a child's use of positive or negative emotion words during story-telling. However, there was a significant correlation between the number of emotions mothers attend to when monitoring their emotions measured using the PICI open-ended question and their child's use of positive emotion words during story-telling ($r = .564, p < .01$). Linear regression analysis showed that maternal report of monitoring a greater number of emotions predicts children's use of positive emotion words during story-telling ($F_{(1, 20)} = 9.348, p < .01$), and explains 31.9% of the variance in children's use of positive emotion words when completing the narrative story-telling task. This may indicate that mothers are masking a greater frequency of negative emotions than positive emotions in front of their children, and therefore children have a better understanding of positive emotions and how to express them when telling a story.

Regarding the third hypothesis that girls in the sample would use more mental state, negative, and positive emotion words in their narratives than boys, there was no significant gender difference for use of negative emotion words (girls' $M = 2.80, SD = 1.40$; boys' $M = 2.92, SD = 2.19$), positive emotion words (girls' $M = 3.40, SD = 2.76$; boys' $M = 2.92, SD = 2.07$), or mental state words (girls' $M = .80, SD = 1.40$; boys' $M = .42, SD = 1.44$) when story-telling. Additionally, there were no statistically significant gender effects for child's emotion regulation score, child's standard score on the EVT2, or a child's average age equivalent in expressive vocabulary. Correlations between mother and child outcome variables are presented in Table 3.

Discussion

Results from this study indicate a relationship between the number of emotions mothers monitor in front of their child (reported using the open-ended PICI question) and children's

greater use of positive emotion words during story-telling. A potential explanation for this relationship is that when emotions are being monitored intentionally, it is common to produce positive emotion expression to prevent the authentic, typically negative, emotion from showing (Davis, 1995). Hence, mothers who are monitoring their emotions more closely are likely misleading their child by downplaying negative emotions and emphasizing positive ones (Saarni et al., 2006). Thus the child is gaining greater exposure to positive emotion expression, which comes through in their story-telling. These results support Dunsmore et al.'s (2009) idea that being selective in the way that emotions are shown serves as a buffering technique from children experiencing negative emotions.

In the current study, less maternal emotion monitoring (or letting more emotions show in front of a child) predicts less emotionally-regulated children, and mothers' report of monitoring a greater number of emotions in front of their child is predictive of a more emotionally-regulated child. Taken together, these findings suggest that the number of emotions children are exposed to could impact their ability to successfully regulate their emotions. Research shows that it is difficult for young children to conceptually understand when another person is experiencing multiple emotions at once, especially during emotionally complex situations (Larsen, McGraw & Cacioppo, 2001; Larsen, To, & Fireman, 2007). This could result in a child not knowing how to successfully regulate themselves accordingly in a similar situation. Thus a mother may choose to hide multiple emotions from her child during an emotionally complex situation and use emotion monitoring as a protective factor to buffer children from an overwhelming emotional experience (Dunsmore et al., 2009). Attachment literature suggests that more open communication between mother and child results in a secure attachment and leads to a more emotionally well-regulated child (Bowlby, 1969/1982; Cassidy, 1994; Ontai & Thompson,

2002). Results from the current study suggest the opposite, in that children in this sample had better emotion regulatory abilities when mothers engaged in emotion monitoring and monitored a greater number of emotions in the presence of their child (Denham et al., 2003; Saarni, 1999). These results could suggest that in intense social interactions it may be beneficial for mothers to monitor their emotions in front of their child, as it may help children to better regulate their emotions especially if situations are emotionally complex (e.g. situations that evoke mixed emotions). It would be beneficial for future studies to further explore the link between the quantity of emotions monitored by a mother and its impact on children's emotion regulation abilities, especially through an attachment theory framework.

The absence of significant gender differences in children's use of positive and negative emotion or mental state words during the story-telling task is reflective of the lack of statistically significant differences in expressive vocabulary or emotion regulation by gender in this sample. Girls and boys were similar in their ability to regulate their emotions. Additionally, greater emotion regulation coincides with greater emotion understanding, and both boys' and girls' averages as reported by their mother reflected fairly high levels of emotion regulation (Saarni, 1999). Girls and boys in the sample were also similar in their expressive vocabulary performance. Their scores reflect normative age-based scores according to the EVT2 manual (Williams, 2007), and girls' and boys' scores show that they are similar in their ability to use expressive vocabulary. Taken together, these similar performances could account for the lack of gender effects for internal state language use during story-telling. Another explanation could be that as children grow older, parents change their socialization practices regarding their frequency of emotion talk with their child. A study by Aznar and Tenenbaum (2014) found that during a play-related story-telling task, mothers with 4-year-old daughters mentioned more emotion

words in narratives than mothers with 4-year-old sons, but no gender differences were found with mothers of 6-year-old children. Additionally, van der Pol et al. (2015) found that parents use less emotion elaboration when children were 5 years old in comparison to when they were 4 years old. It is also possible that the small sample size did not provide enough power to generate significant gender differences (Cohen, 1988).

There were some significant effects related to child outcomes. Regarding a child's expressive vocabulary score, it is not surprising that racial and ethnic differences emerged. Research suggests that a major gap in vocabulary exists by three years of age between a typical African American and typical White child (Farkas & Beron, 2004; Qi, Kaiser, Milan, & Hancock, 2006). Some researchers suggest that this vocabulary gap may be due to differences in language use, such as family-specific patterns of speech within the home (Hart & Risley, 1999), or that even in low-income households White mothers are more likely to read to their children more than African American or Hispanic mothers (Raikes et al., 2006). It is possible that children from lower-income environments used less positive emotion words when story-telling and had poorer vocabulary scores because it is common for children from lower-class families to be read to less often than those from higher-class families (Locke, Ginsborg, & Peers, 2002).

We also found several significant effects related to mothers' outcomes. White and Non-Hispanic-Latino mothers mask considerably less than their African American and Hispanic-Latino counterparts. Racial differences among parental emotion socialization practices have shown that African American mothers are more likely to react to their children's displays of negative emotion with non-supportive responses (e.g. minimalizing emotions) and are less likely to react with supportive ones (e.g. comforting, expressive encouragement; Nelson, Leerkes, O'Brien, Calkins, & Marcovitch, 2012; Parker et al., 2012). Dunbar, Perry, Cavanaugh, and

Leerkes (2015) speculate that these differences occur because of African American parents' sensitivity to the racial biases of society, and suggest that when African American parents do not show their true negative emotions in front of their children, children will be better able to overcome racial barriers. Although not yet explored in the literature, the same rationale could be presumed for Hispanic-Latino mothers, who also may face bias.

Annual income effects and education level differences significantly impacted mothers' use of expressive suppression and monitoring of their own emotions in front of their child. While there is limited literature examining these demographic differences in the use of maternal emotion masking, it is possible that low-income mothers engaged in a greater level of emotion masking due to poverty-related stressors, which can negatively impact the quality of interaction between mother and child (McKelvey, Fitzgerald, Schiffman, & von Eye, 2002; Schiffman, Omar, & McKelvey, 2003). Mothers may not want to expose their child to their stress-related emotions, and therefore use emotion masking to shield their child from having to experience their negative emotional experience. Additionally, our results showed that mothers who were highly educated had higher scores on expressive suppression, and mothers who made higher annual incomes monitored a greater number of emotions in front of their child. It is possible that highly educated mothers with a high annual income have stress levels that are different from less educated, low-income mothers (Parkes, Sweeting, & Wight, 2015). For higher income, highly educated mothers, stress at home could be contributed to by greater job demands, work intrusion into the home life, and higher career investment (Nomaguchi & Brown, 2011; Schieman, Milkie, & Glavin, 2009). Lastly, research suggests workers with more highly-skilled jobs that require higher levels of creativity, learning, and more developed skills tend to use moderate levels of emotion suppression in certain contexts, such as in front of family members

(Jalonon, Kinnunen, Pulkinen, & Kokko, 2015). Taken together, these results suggest that mothers may be masking and monitoring their emotions due to income-related stressors or stressors related to having a job that requires a higher level of education.

Limitations and Future Directions

The current study has a few noteworthy limitations. First, the sample size is small with a total sample of only 26 mother-child dyads. Although significant results were found related to researchers' hypotheses, it is possible that with a larger sample size gender effects would have been statistically significant regarding use of emotion words during the story-telling task.

A second limitation of this study is the questionable alpha of .64 for the Emotion Regulation subscale of the ERC. The 8-item Emotion Regulation subscale had an original alpha of .55. As suggested by Tavakol and Dennick (2011), after examining the iter-item correlation table, 2 out of the 8 items were removed from the subscale due to poor correlation between items. To further confirm that these items be dropped, the "Cronbach's Alpha if Item Deleted" column indicated that the value for Cronbach's alpha would increase the most (to .584 and .574, respectively), if items 18 and 23 were individually dropped from the scale. These items were additionally the lowest when examining the "Corrected Item-Total Correction" column (.078 and .135, respectively), which indicates poor correlation between other scale items (Norusis, 2009). These items include the following double-barreled questions, "How often does your child display flat affect or is vacant of expression or emotionally absent?" and "How often does your child display appropriate negative emotions (anger, fear, frustration, distress) in response to hostile, aggressive, or intrusive acts by other children?", which may be confusing to mothers. Removing these items brought Cronbach's alpha to a more acceptable alpha of .64. Additionally, it is problematic that the only measure used to assess child's emotion regulation in the current study

was reported by the mother. While maternal reports accurately reflect a mother's perception of their child, due to bias maternal perceptions of children's emotion regulation could be different than a child's observable regulatory abilities (Najman et al., 2001). For a more objective view, future studies should additionally incorporate observational data of a situation in which a child needs to regulate their emotions and a mother is asked to mask as well as show their true emotions. For example, have mother and child play 2 board games together and set up the game so that the child loses both times. After each loss, mothers will either engage in masking of emotions or show their true emotions, and children's attempts to regulate their own distress will be observed. This would capture if children have more difficulty regulating their emotions when mothers engage in emotion masking.

An additional limitation of this study is the way in which mothers' use of emotion masking was identified. The PICI Visual Analog Scale and open-ended response question were not originally intended to capture maternal use of emotion masking and the Expressive Suppression Scale of the ERQ was used specifically to identify maternal emotion masking in this study. While emotion masking measured using the ERQ yielded significant results regarding significant differences in emotion suppression by mothers' race, annual income, and dichotomized education, it did not yield significant results regarding maternal emotion masking use when testing our hypotheses. This could be because questions on the ERQ Expressive Suppression scale are meant to capture one's general emotion talk or behavior (e.g., "I keep my emotions to myself", "I control my emotions by not expressing them"), and does not capture emotion masking as a way that mothers may protect their child during a context-specific situation, which is how maternal masking is being used in this study (Dunsmore et al., 2009; Gunzenhauser et al., 2014). It is possible that the PICI Visual Analog Scale and open-ended

question yielded significant results regarding hypotheses because both questions ask about emotions mothers monitor in the presence of their child. In order to better capture maternal use of emotion masking, future measures should provide a vignette of a situation in which the use of maternal emotion masking is appropriate followed by a series of questions to assess maternal emotion masking during a specific context. Consider the following:

Your commute was an extra 20 minutes because of traffic, but you've just arrived home from a long, stressful day at work. You need to go food shopping and are trying your best to make a meal with what you have in the refrigerator, knowing that your spouse will be home late from work and will not be able to help with dinner or watch your child(ren). Your kindergartener comes into the kitchen whining just as your pasta begins to boil over and asks if they can have some cookies before dinner.

- 1) What would your true emotional response be?
- 2) Would you show the response you provided above in front of your child (Yes or No)?
- 3) Please describe what your emotional response would look like in front of your child (e.g. I would feel frustrated but appear calm in front of my child)
- 4) Please describe what your behavioral response would look like in front of your child (e.g. I would take deep breaths and explain that dinner is almost ready and that they can have a cookie after dinner)

Providing mothers with a vignette may help them relate researcher's questions to an everyday occurrence, which may yield a more accurate response. Additionally, use of an interactive emotion masking task, like the one described above, as opposed to only mother self-report measures, may be beneficial for measuring maternal emotion masking in future studies.

Results from this study have interesting implications for future intervention practice. Findings suggest that maternal emotion masking may increase children's use of positive emotion words when telling narratives and that the quantity of emotions mothers attend to is key to their children's emotion regulation ability during kindergarten. While many interventions geared toward improving children's emotion regulation are school-based, there are few interventions that involve parents to help produce more emotionally-regulated children (Lipsett, 2011; Wyman et al., 2004). One intervention program taught parents mindfulness techniques, which led to better emotional awareness and regulation by parents, and it has been suggested that use of emotion regulation strategies during intervention programs allows parents to become more aware of their own emotions when simultaneously teaching their children about emotions (Coatsworth, Duncan, Greenberg, & Nix, 2010; Havinghurst et al., 2010). No interventions to date have emphasized the potential benefits of maternal emotion masking as a regulatory strategy, which the current results support. Based on the current results, future interventions should focus on promoting awareness of the potential benefits of maternal emotion masking as an emotion regulation strategy, especially if parents experience high levels of stress involving multiple emotions or complex situations. These interventions should also focus on teaching parents how to show and talk to their children about the range of emotions that they are not displaying so that children better understand how to express them.

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Table 1. Participant Demographics and Means

Child		Mother	
Age in months M(SD)	58.58(4.68)	Age in years M(SD)	31.35(7.06)
Gender n(%)		Ethnicity n(%) $\diamond\diamond$	
Male	14 (53.8%)	Hispanic-Latino	11(42.3%)
Female	12 (46.2%)	Not Hispanic-Latino	11 (42.3%)
Ethnicity n(%) \diamond		Race n(%) $\diamond\diamond$	
Hispanic-Latino	12 (46.2%)	African American	7(26.9%)
Not Hispanic-Latino	11 (42.3%)	White	15(57.7%)
Race n(%) $\diamond\diamond$		American Indian/Alaskan Native	0(0%)
African American	8 (30.8%)	Asian	0(0%)
White	14 (53.8%)	Native Hawaiian/Other Pacific Islander	0(0%)
American Indian/Alaskan Native	0 (0%)	Marital Status n(%)	
Asian	0(0%)	Single, Never Married	8(30.8%)
Native Hawaiian/Other Pacific Islander	0(0%)	Single, Living with Partner	4(15.4%)
10+ Hours in Care Outside Home n(%)		Single, Divorced	1(3.8%)
Yes	18 (69.2%)	Married	11(42.3%)
No	6 (23.1%)	Widowed	2(7.7%)
Child Outcome Measures M(SD)		Education n(%)	
ERC 6-item Emotion Regulation	19.58(2.66)	Some High School	1(3.8%)
EVT2 Standard Score	99.88(10.45)	High School Diploma/Equivalent	9(34.6%)
EVT2 Age Equivalency in Months	58.44(10.67)	Some College, No Degree	6(23.1%)
Mental State Words Used in Story	.59(1.4)	Associate's Degree	2(7.7%)
Negative Emotion Words Used in Story	2.86(1.83)	Bachelor's Degree	3(11.5%)
Positive Emotion Words Used in Story	3.14(2.36)	Graduate Degree	5(19.2%)
Mother Outcome Measures M(SD)		Employment n(%)	
VAS Mother's Emotion Monitoring	3.81(1.72)	Unemployed	12(46%)
VAS Number of Emotions Monitored	1.54(1.30)	Employed < 20 Hours/Week	6(23.1%)
ERQ Mother's Expressive Suppression	13.46(5.43)	Employed 20-35 Hours/Week	3(11.5%)
		Employed Full Time	5(19.2%)
		Annual Income Level n(%)	
		Less than \$20,000	12(46.2%)
		\$20,000-\$39,999	3(11.5%)
		\$40,000-\$59,999	2(7.7%)
		\$60,000-\$99,999	5(19.2%)
		Greater than \$100,000	3(11.5%)

Note: \diamond =3 missing responses; $\diamond\diamond$ =4 missing responses

Table 2: Significant t-tests for Child and Mother Characteristic Differences

Children	Mean (SD)	Mean (SD)	t	df	d
	Hispanic-Latino	Non-Hispanic-Latino			
Age Equivalent	54.73(6.09)	63.82(12.48)	-2.114*	20	0.901
Expressive	White	African American			
Vocabulary	64.15(10.59)	51.88(6.15)	-2.968**	19	1.417
Mothers					
	Hispanic-Latino	Non-Hispanic-Latino			
Visual Analog	3.00/7(1.73)	4.82/7(1.33)	-2.763*	20	1.179
Scale	White	African American			
Emotion	4.40/7(1.40)	2.86/7(1.46)	-2.370*	20	1.074
Monitoring					
	Hispanic-Latino	Non-Hispanic-Latino			
ERQ	16.09(4.18)	10.18(5.67)	2.781*	20	1.186
Expressive	Higher-level	Lower-level degree			
Suppression	degree				
	15.50(5.24)	10.20(4.10)	2.713*	24	1.260

Note: * significant $p < .05$; **significant $p < .01$

Table 3. Correlations Between Income and Mother and Child Outcome Variables

	1	2	3	4	5	6	7	8	9	10
Mother's Annual Income										
Mothers' Emotion Monitoring (VAS on PICI)	.299									
Number of Emotions Mothers Monitor (PICI)	.439*	-.202								
Mother's Suppression (ERQ)	-.629**	-.247	-.155							
Child's Emotion Regulation	.088	-.421*	.577*	.064						
Child's Expressive Vocabulary Standard Score	.523**	.235	.423*	-.231	.264					
Child's Expressive Vocabulary Age Equivalent	.620**	.323	.350	-.270	.252	.906**				
Child's Positive Emotion Words	.504*	.090	.564**	-.103	.427*	.433	.425			
Child's Negative Emotion Words	.195	-.294	.256	-.070	.271	.146	.125	-.115		
Child's Mental State Words	.015	.398	-.099	-.223	-.092	.380	.297	.176	-.018	

Note: * significant $p < .05$; **significant $p < .01$

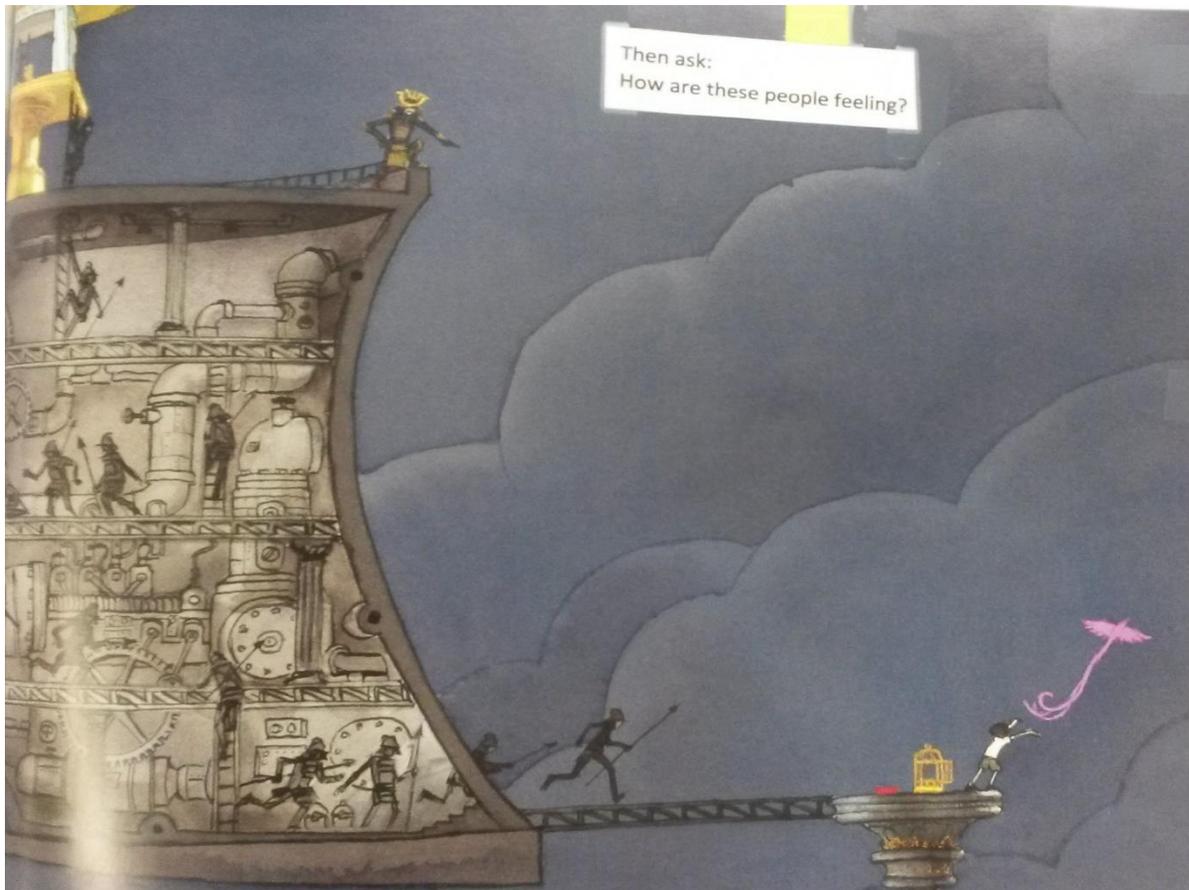


Figure 1. Page 2 from scenario 4 of *Journey* (Becker, 2013). Girl is running from guards and freeing bird from its cage.