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**INDIVIDUAL DIFFERENCES IN TODDLER EMOTION COPING:
THE IMPACT OF TEMPERAMENT AND SOCIALIZATION
EXPERIENCES ON REGULATION DEVELOPMENT**

BY

ELENA MIRSKY

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN
PSYCHOLOGY**

UNIVERSITY OF RHODE ISLAND

2002

ABSTRACT

The current study explores the expression of emotion coping behaviors in the developmental context of temperamental and socialization experiences. 45 30-month-olds, whose families were involved in a larger longitudinal study, participated in a laboratory assessment including 4 contexts designed to provide an experience of stress for the child. Child coping behaviors were coded according to a system by Grolnick (1996) which rates behaviors along a continuum of adaptiveness from focusing on the cause of frustration, to self-comforting and other-directed behaviors, to behavior that is re-oriented toward the environment. Correlations were run between coping data and data on child temperament and parenting styles, which was collected from videotaped home visits at 8 and 14 months as well as from parent report measures collected at 4, 8, 14 and 30 months. Findings from the study suggest that children who demonstrated coping strategies conceptualized as low to moderately adaptive tended to display greater amounts of negative affect. Individual differences in child temperament were found to be significantly associated with child use of adaptive coping strategies while differences in parenting style were not. Suggestions are discussed for increased sensitivity of child assessment measures and further exploration of specific strategy selection and success across varying contexts.

ACKNOWLEDGEMENTS

It is a wonderful thing to be provided with a moment of perspective, not only for a monumental effort achieved after several years of work, but also for an evolving area of theoretical inquiry. It is not until now, when I find myself in the final chapter of my psychology training experience, that I can appreciate the fairly logical progression my research interests have taken over the course of the past 12 or so years. What began as a peaked curiosity into religious faith as one of many coping strategies employed by adults has evolved into a focused examination of the early building blocks of emotion regulation in young children and the various internal and external influences which may be involved. As I embark on the next phase of my career, I hope that I may be able to find creative ways of interweaving my curiosity in and evolving understanding of coping processes into my work with parents and children, whether it be through direct clinical work with individuals or prevention models designed to bolster healthy functioning in particular populations.

I have more people to thank than can be included, for many shared a conversation or posed a challenge along the way which helped shape or inform my thinking in this area. I would specifically like to acknowledge those individuals in the present who made the completion of this particular work possible. My thanks goes out to the members of my dissertation committee, including Allan Berman, Ronald Seifer, Margaret McGrath and Kat Quina, for helping to steer this project and make sure it ended up where it needed to be. Additional thanks goes to

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Emotion regulation research has explored those factors influencing the development of regulatory responses, individual differences in the experience and demonstration of regulating emotion, and patterns of both emotional and behavioral regulation responses in children. As defined by Thompson (1994) and others, emotion regulation is understood as the ongoing process by which an individual monitors and adjusts his or her emotional experience in response to constant internal and external stimuli. This particularly broad definition avoids focusing on the dimensional aspects of regulation, as to whether an individual might display particular strength or weakness at regulating her emotions. Similarly, it does not directly address the issue of whether regulatory processes are under conscious volitional control, as in one individual displaying better regulation because they were devoting more effort to the process. Instead the regulation process is presented as more of a biological reality much like the regulatory processes of maintaining respiration or heart rate. The primary distinction between such parasympathetic homeostatic functions and the regulation of emotion may stem from the more complex interaction of environmental and organismic factors that influence particular regulatory styles, yet both homeostatic processes may be regarded as equally vital components of human functioning.

In the current study, the development and demonstration of emotion regulation behaviors were examined in association with the contextual influences of temperament and parental socialization experiences. By examining a group of toddlers across an array of challenging laboratory situations, the study hoped to

explore which particular behavioral strategies and what degree of available strategies correspond with more successful modulation of negative emotion. With the addition of longitudinal temperament and parenting data, the study also examined whether there are particular innate or contextual factors that either in isolation or in combination serve to influence the child's range of or preference for various regulatory responses.

While the study of emotional responsivity and regulation can take place under numerous rubrics, there is an emphasis here on defining and operationalizing the constructs in use as fully as possible before progressing forward with their implementation. This process is especially crucial within the current body of emotion regulation literature, where an effort to hone in on more precise descriptors of behavioral or emotional phenomena may significantly facilitate future work in this area. This process of clarifying definitions is particularly useful in elucidating which components of emotional control or expression are being examined across studies to limit the unnecessary replication of identical research questions under alternative names. The distinction most pertinent to the present study lies between the construct of emotion regulation and emotion coping, which at times have been used interchangeably in the literature.

The emotion coping construct

Emotion coping may be held under the emotion regulation rubric in that it addresses the changing of emotion from one state to another, yet this particular construct suggests considerably more specific processes involved in the

modification of emotional experience and expression. Based on the traditional definition of coping 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 the person”(Lazarus & Folkman, 1984), this construct pertains more specifically to the way in which an individual modifies their emotional response to a particularly stressful or taxing stimulus and can be considered more broadly as regulation of emotion in the face of a challenge. While this construct is more context specific than emotion regulation per se, it also carries a somewhat more functionalist perspective. Although all regulation may be serving the role of assisting individuals to better adjust to their environments, emotion coping suggests an additional emphasis on the potential for a qualitatively more intense response to a challenging stimulus, with more serious and lasting implications for the adjustment of the individual (Bridges & Grolnick, 1995; Calkins, 1994; Losoya et al, 1998; Shields, 1999).

An important component of the coping construct that emerges from the classic research with adults emphasizes different coping styles employed by individuals. The first style is categorized as emotion focused coping, in which one's perspective of or beliefs about the stressor are modified as a means of enduring the challenging situation with reduced negative affect. Contrary to this style is problem-focused coping, where active engagement with the stressor is employed in an attempt to modify the challenging situation and thus avoid the subsequent negative repercussions. While there is considerable research suggesting

that certain types of stressors, particularly those that are unforeseen and over which the individual has little control, are more likely to elicit an emotion-focused response, it has also been suggested that problem-focused strategies are generally indicative of better functioning overall as well as an increased sense of competence and more internally based locus of control (Lazarus & Folkman, 1984).

Emotion coping in childhood

Research on young children's coping styles has evolved out of this early work to explore the extent to which emotional re-evaluation and active problem-solving are incorporated into child strategies, and to assess the relative adaptive success of particular responses and their lingering influence on personality development. The primary challenge inherent in characterizing and measuring child coping involves the difficulty in assessing how threatening the proposed challenge may be perceived as by the child. While adult coping styles, particularly emotion focused coping, involves the process of evaluating the controllability of the threat or challenge as a means of choosing the appropriate strategy, it is theorized that toddlers do not yet possess either the cognitive complexity involved in such causal and means-end thinking or the ability to fully assess their own agency (Bridges & Grolnick, 1995; Compas, 1987). At the same time, the contextual variability of the meaning of behaviors for individual children combined with limitations in verbal expressiveness of infants and young children make child perceptions of threat or experiences of frustration very difficult to assess (Kramer & Rosenblum, 1970; Parritz, 1996; Mangelsdorf, 1995). Although many researchers have employed

physiological measures of changes in cortisol levels, heartrate etc. to assess increased arousal in the child (Calkins & Johnson, 1998; Stansbury & Gunnar, 1994), these measures fail to provide insight into the child's conscious awareness of her level of arousal and how this relates to her perception of external challenge and internal emotional response or distress. Just as the limitations involved in measurement of successful regulation suggest that the researcher may only explore the range of children's regulatory behaviors possible under various conditions in which some demand is being placed on the child (Parritz, 1996), the implications of findings from the current study are correspondingly limited.

Based on the difficulty in applying adult coping models to young children, researchers have adapted these constructs to examine the developmentally appropriate range of responses available to infants and toddlers (Kramer & Rosenblum, 1970). In infancy, the relative immaturity of both motor and cognitive systems greatly reduces the number and variety of strategies available in the face of a challenge. However, through an examination of early emotional expression and allocation of attention, researchers have demonstrated that early patterns of response to challenging situations can be tied to later manifestations of self-control or regulation (Thompson, 1994). The basic categories of arousal modulation responses theorized to be available to young infants include approach-withdrawal, attentional and self-soothing or self-comforting behaviors, with communicative behaviors emerging somewhat later in infancy (Rothbart & Derryberry, 1981, Stifter & Braungart, 1995). Approach and withdrawal represent the most primitive

of the responses and provide a direct means of controlling the level of perceived arousal by moving towards or away from the stimulus. Attentional strategies, which develop by the age of three months, are demonstrated through the ability of the infant to selectively orient or focus attention towards or away from a stimulus. The level of distractibility of the infant can significantly mediate this attentional process in terms of assisting in reorienting towards less arousing stimuli or alternatively preventing a maintained focus on a pleasurable stimulus.

By toddlerhood, there is an array of attentional and behavioral regulatory strategies available to the child, which come to more closely resemble those employed throughout life. While these strategies have been grouped or labeled differently across studies (Braungart-Rieker & Stifter, 1996; Calkins & Johnson, 1998; Grolnick et al, 1998; Shapiro, 1998; Paritz, 1996; Rothbart & Derryberry, 1981; Stifter & Braungart, 1995), they typically include attention-reorienting strategies, comforting behaviors, and attention focused on the distressing stimulus. In their study of children's regulatory behaviors in the context of several challenging situations, Grolnick et al (1996, 1998) present a continuum of strategies from most stimulus bound to most actively reorienting, along which emotional distress is theorized to progressively diminish. Specifically, they suggest that maintaining focus on the frustrating stimulus is positively associated with distress, with self-comforting and comfort-seeking behaviors showing moderate associations with distress and actively reorienting attention away from the stimulus demonstrating the least association with distress. The relative adaptiveness of

coping strategies that more actively orient away from the frustrating stimulus and towards the environment is supported by other studies which demonstrate developmental increases in the frequency and success of more active problem-solving strategies for reducing distress (Parritz, 1996; Stifter & Braungart, 1995). More importantly, these and other studies (Calkins & Johnson, 1998) suggest that the variability in coping strategies demonstrated across children reflects individual differences in responses to the environment that influence the availability of particular responses to particular children. The current study hoped to replicate the findings of Grolnick et al (1996) as well as exploring whether it is particular behavioral strategies or rather a significant range of available strategies that more closely dictates the child's success with modulating negative emotion.

The influence of temperament on child coping

Temperament is an important characterization of the development of individual differences in emotional responses and demonstration of emotion regulation strategies. Based on the early work of Thomas and Chess (1996), the dynamic qualities of these response systems include response threshold, latency, amplitude, rise time to peak intensity and recovery time. A crucial distinction discussed by Rothbart and Derryberry (1981) proposes temperament as a structure of "underlying physiological systems of reactivity and regulation." According to this model, reactivity refers to the somatic, endocrine and autonomic nervous system responses that are characteristic to an individual's response to changes in the environment, and describes the "excitability, responsivity or arousability of the

behavioral and physiological systems of the organism”(p.40). Self-regulation is characterized in this model as the attentional or behavioral patterns of approach and avoidance that serve to modulate the individual’s degree of underlying reactivity.

Unique individual patterns of reactivity that affect each infant’s ability to attend to the environment and influence behavioral attempts to modulate arousal and negative affect have been classified according to dimensions and clusters of temperament traits. These dimensions serve as a means of describing the infant’s particular style as well as signifying the way in which the infant may both fit into the environment and be responded to by individuals in the environment. The clustering of particular temperament traits has facilitated the comparison of groups of children with similar temperament constellations and has subsequently supported research demonstrating the association between particular traits and long-standing effects of these differing dispositional styles on later personality development and psychological functioning. Infants characterized as active and demonstrating more negative affect were found to be more inhibited as toddlers, keep closer proximity to the parent, take longer to approach a novel object, and demonstrate more distress in response to novelty (Calkins et al, 1996). Similarly, infants rated as temperamentally wary or fearful by mothers have been found as toddlers to seek more proximity to the parent and demonstrate greater distress to novelty and challenge, and to demonstrate greater sadness, less activity and less approach as children (Derryberry & Rothbart, 1997; Mangelsdorf et al, 1995). Those infants characterized as temperamentally difficult, including low adaptability, proneness to

withdraw from new stimuli, low persistence, intense emotional reactivity, general negative mood and low distractibility, have been associated with increased referral for psychological services and increased risk for the development of both internalized and externalized disorders in later childhood (Maziade et al, 1990; Prior et al, 1999).

Probably the most prominent component of the reactivity/regulation model is the overarching functioning of emotional response. Closely tied to the experienced level of arousal, emotional response at the most basic level is theorized to be highly motivational for influencing the individual's response to environmental stimuli and can be understood to have a two-fold effect on regulatory behaviors. Depending on the positive or negative quality of emotion experienced, this response will dictate to a large degree the approach or avoidance nature of the behavioral response, particularly in the early stages of development before cognitive regulation or suppression of emotion has matured (Stifter & Grant, 1993). The rewarding experience of reducing negative emotion serves to motivate future attempts to reduce distress and to encourage the development of regulatory strategies which will maintain arousal and emotional experience within an optimal range (Braungart-Rieker & Stifter, 1996). From the perspective of cognitive processing, however, emotional response can significantly impact on multiple areas of functioning by interfering with attentional processes and other higher order processes of planning and execution of behavior. Thus, the experience of emotion, particularly that of a negative nature, emerges with a dual influence of motivating behavioral attempts at

regulation while at the same time impairing those cognitive processes responsible for determining such behavior.

Within the regulation/reactivity model, there are components of the individual's innate dispositional style that interact with other internal and external factors to modify the regulatory system. While individual levels of threshold or sensitivity to environmental changes may be temperamentally based, reactivity will inevitably be partially dependent on the nature and degree of stimulation present in the environment. Similarly, while regulatory behaviors are thought to develop from dispositional styles of approach or avoidance towards the environment, they are also strongly influenced by such factors as level of cognitive functioning and maturity, and by regulatory strategies that are both modeled and reinforced by individuals in their environment. Thus, as children may differ in their repertoire of and reliance on an array of available regulatory strategies and their ability to employ strategies which successfully regulate their emotional state, they will simultaneously differ in the degree to which they react to distress and require the assistance of such regulatory strategies (Braungart-Rieker & Stifter, 1996). The current study examined the impact of temperamental sensitivity on the development of emotion-regulation strategies and explored whether such sensitivity to the environment inhibits and/or interferes with the formation and demonstration of more varied and successful behavioral coping strategies.

The influence of parental style on child coping

In addition to the child's internally derived regulatory responses, considerable attention has also been devoted to the influence of the child's social environment and socialization experiences on the development of emotion regulation and the manifestation of individual differences in regulatory responses. Thompson (1994) describes this process in infancy where "caregivers devote considerable effort to monitoring, interpreting, and modulating the arousal states of young offspring – in other words, regulating their emotions" (p.28). As a means of managing emotions, parents may limit or expand on the opportunities for young children's emotional arousal by controlling the frequency or quality of common caregiving routines and experiences such as parent-child separations and responsiveness to distress. Through this process, the parent creates an emotionally balanced environment, which incorporates the emotional demands of the culture with their child's temperamental vulnerabilities and emotional tolerance, and is continuously adjusted according to developmentally appropriate expectations of the child's increasing capacity for self-control and the internalization of dyadic self-regulation strategies (Gianino & Tronick, 1988; Sroufe, 1996). The caregiver similarly influences the emotional climate of the infant's environment through their openness to a wide range of infant emotion as well as the quality and variability of their own emotional responses to others. Environments in which emotional expression is encouraged in the context of self-control send a strong message to the child about the acceptability of their own emotional expression in addition to

providing powerful models of various regulatory strategies (Stifter & Grant, 1993; Calkins, 1994; Fabes et al, 1994)

Recent research into the development of self-regulation has demonstrated several areas in which caregiver styles and strategies potentially influence the child's development and subsequent demonstration of regulatory strategies. As mentioned above, the importance of maternal sensitivity to infant distress and emotional expression and responsiveness to infant interactive behaviors have been emphasized in the development of positive emotions and successful strategies for emotion regulation (Bridges & Grolnick, 1995; Gianino & Tronick, 1988; Sroufe, 1996; Thompson, 1994; Tronick, 1989). Maternal sensitivity has similarly been explored in terms of the flexibility of the mother in adjusting her caregiving style to the particular temperamental patterns of the infant, and the various pathways which may result from this goodness of fit (Calkins, 1994; Fox & Calkins, 1993; Rothbart & Derryberry, 1980). Similarly, substantial research has demonstrated the association between authoritarian parenting styles, increased use of physical punishment and lower maternal warmth to more negative child outcomes (Henry et al, 1996; Prior et al, 1999). While some studies have indicated that mothers of young infants engage in more soothing and more often attempt to eliminate the stressor than for older infants (Karraker et al, 1994; Parritz, 1996), one theory suggested early on by Kramer & Rosenblum (1970) posited that those caregivers who protect their children from frustrating situations early on actually make future experiences of frustration more distressing for the child. Subsequent work in this

area (Calkins & Johnson, 1998; Grolnick et al, 1998) has demonstrated that mothers who were more intrusive and interfering had toddlers who became more distressed in response to frustration. It was suggested that this finding might be attributed to parental attempts to anticipate their child's emotionality as well as to children developing low frustration tolerance through their consistently unsuccessful efforts to be independent. Similarly, the use of positive feedback and guidance by mothers, as well as certain types of control, have been found to be associated with toddlers' use of distraction and constructive coping behaviors and less demonstration of distress. By observing maternal interactions with their children, the current study explored the influence of certain parental caretaking behaviors on the development and manifestation of a varied and successful range of child coping strategies and also allowed for an examination of the complex bi-directional influence of parental style and child characteristics on the demonstration of child self-regulation.

While researchers continue to explore the bases of individual differences in both the development and manifestation of emotion regulation, there is typically an implicit or explicit reference made towards the assumption that particular developmental trajectories lead towards varying degrees of success for the child. There remains, however, a lack of consensus in the field around the categorization of regulation strategies as successful or adaptive, and the question emerges of whether there are universally effective behaviors for modulating arousal or whether such strategies are individual and/or context specific. Similarly, the process of

determining the adaptiveness or functionality of particular strategies runs the risk of attaching value judgments onto the behavior of others and requires taking into account the changing definition of adaptability in varying contexts. Some studies have suggested relatively more successful areas of regulatory behavior based on demonstrated associations between particular strategies and diminished emotional distress (Calkins & Johnson, 1998; Grolnick et al, 1996; Stifter & Braungart, 1995). At the same time, others argue that success must be defined by the demands of the situation and the individual's goals, with optimal regulation expressed primarily through a range of degree of responses, a flexibility of response and a greater repertoire of strategies (Thompson, 1994). Within this perspective, successful coping is facilitated by the child's ability to generate a variety of alternative responses based on a wider repertoire of available response (Bridges & Grolnick, 1995; Hardy et al, 1993), with success based less on the specific strategy used and more on the appropriateness of the strategy for the given context.

Summary of Study Goals

Context, temperament and socialization experiences together help to determine the level of arousal perceived in a particular situation, the meaning of that arousal for the child, the quality and intensity of emotion associated with the experience and the strategies which are thus available and subsequently chosen for adjusting the level of arousal and the experience of emotion to a comfortable state. This study sought to explore the contextual supports and temperamental characteristics that influence the development and demonstration of emotion

regulation behaviors. The emphasis was those coping strategies used in the face of a specific stressor or challenge, and particularly on those factors that increase the frequency of use of more active, attentional reorienting coping strategies. Although several studies have begun to explore the association of emotion regulation acquisition with innate biological characteristics and early socialization experiences (Calkins & Johnson, 1998; Stifter, 1996), the present study sought to explore the range of and preference for various regulatory responses across an array of contexts, as well as more fully examining the developmental influence of temperament and parenting on emotion regulation through cross-contextual and longitudinal research.

1. Based on the work of Grolnick et al (1996), toddler regulation strategies in response to challenge or threat have been conceptualized according to a continuum from stimulus bound behaviors to comforting behaviors to active reorientation of behavior to the environment. The first goal of the proposed study sought to replicate the association between behaviors involving reorientation of attention and less demonstrated emotional distress by the toddler as established by Grolnick and others. The adaptive significance of a wider repertoire of available strategies on demonstrated distress was similarly explored. This examination involved using the measures of child emotion coping strategies from the strange situation, frustration task and prohibition task at 30 months of age to relate to the child's demonstrated affect during these tasks.

2. The second goal of the study involved exploring the influence of temperament on regulation strategies by examining whether increased arousal facilitates more successful coping for inhibited children by providing motivation and opportunities for practice, or whether increased arousal creates an impediment to employing and developing those strategies which are more successful at reducing distress. It was hypothesized that those toddlers characterized with greater temperamental sensitivity or more “difficult” traits, including low adaptability, proneness to withdraw from new stimuli, low persistence, intense emotional reactivity, general negative mood and low distractibility may experience greater distress in the face of an arousing stimulus, and thus demonstrate less success and flexibility with coping strategies. It was not anticipated that such temperamentally reactive children would demonstrate the use of more successful coping strategies or a greater repertoire of available strategies based purely on an increased motivation and subsequent opportunity for these children to employ regulation strategies. This association was explored using child temperament measures from parental report of the child at 4, 8, 14 and 30 months of age and from videotaped home visits of the child at 8 and 14 months of age to compare to child regulation strategies and demonstrated affect from the strange situation, frustration task and prohibition task at 30 months.

3. The third goal of the study sought to explore the influence of maternal caretaking and sensitivity in providing control of the child’s negative emotions and fostering the development of effective emotion coping strategies. It was

hypothesized that both increased maternal sensitivity and decreased levels of maternal involvement and intrusiveness would be associated with the demonstration of emotion coping strategies by the child which more successfully diminish distress and with a wider repertoire of available strategies. This relationship was examined using the measures of maternal caretaking from home visits at 8 and 14 months to compare to child regulation strategies and demonstrated affect from the strange situation, frustration task and prohibition task at 30 months.

4. Based on the understanding that maternal responses to their child's particular style may have considerable influence over modifying the child's responses to their environment, this study sought to explore the interactive effects of mothers' socialization practices and child temperament on the development and demonstration of child coping strategies. It was hypothesized that those mothers who more successfully adapt their own caretaking style to fit with the style of their child would be associated with children who are more successful in their attempts to cope with challenging situations. Temperamentally sensitive or reactive children whose mothers are more intrusive and controlling in challenging situations as a means of moderating the child's level of arousal were hypothesized to have children who demonstrate less successful coping strategies, more distress and a more restricted range of available strategies as opposed to mothers who are less protective and encourage the child to cope on his or her own. This relationship was explored using maternal style and child temperament measures from home

visits at 8 and 14 months and coping strategies from the strange situation, frustration and prohibition tasks at 30 months of age.

METHODS

Subjects

The study sample included 50 families from a larger sample who were initially recruited to participate in a longitudinal study examining Goodness of Fit between parents and children during the first three years of life. Families were recruited from birthing classes at the university obstetrics hospital in Rhode Island.

Procedure

The present study is part of a larger longitudinal project which involved a prenatal assessment, and assessments at 4 months, 14 months, 24 months and 30 months (see Appendix One). Procedures that were examined in the present study include child temperament ratings by the mother and an outside rater, mother caregiving ratings by self-report and by an outside rater, and laboratory measures for the child including a Strange Situation measure of attachment, two frustration tasks, and a prohibition task.

Frustration As a means of assessing child coping strategies, researchers have been required to identify situations which tax the child's response systems and these have included contexts ranging from daily tasks and challenges within the child's normal repertoire to traumatic situations which are rarely experienced by the

average individual. While much of the research on resiliency and protective factors in children has focused on a more naturalistic exploration of children's reactions to such rarely occurring disasters and traumas (Compas, 1987; Masten & Garmezy, 1985), others exploring children's frustration responses and coping behaviors have designed laboratory procedures which attempt to create stressful situations within a controlled setting so that the child's response may be somewhat more systematically measured (Bridges & Grolnick, 1995; Calkins & Johnson, 1998; Kramer & Rosenblum, 1970). Such controlled settings provide opportunities to control parental or other assistance for the child, to explore background variables of each child that may contribute to individual differences in coping and to regulate to some degree the amount of stress experienced by the child. Yet researchers in this area have recognized the inherent difficulty in assuring that child coping responses, particularly of those with limited or no verbal ability, are truly the result of experienced stress or perceived challenge. Although some working in this area choose to incorporate more precise physiological monitors to indicate the child's fluctuating level of arousal throughout the frustration procedure, most researchers rely on a combination of basic developmental awareness and the previous work of others to assume that certain tasks will produce an adequate degree of challenge for most children.

In the present study, the child participated in the frustration task at 30 months. The experimenter asks the child to choose a most desired toy from a collection of prizes, and the toy is placed in a large box. The box is placed in the

child's view, and the child is told he will receive his toy after completing two problems. The mother remains seated in a chair in the corner of the room during the task, and is provided with the following instructions; "The next two things are for (Child) to do alone. Please do not assist him/her and try not to interact with him/her. If he/she approaches you for help say that you cannot help him/her." The first task involves a large cloth covered spring "snake" which jumps out of a metal can, and the child is asked to put the snake in the can and close the lid. The second task involves a large plastic tube with a bell inside which can only be opened using a plastic "wrench". The child is asked to remove the bell and told he can use the wrench. The experimenter demonstrates both tasks to the child and allows 3 minutes for each task. It is assumed that neither task can be completed by the child without assistance, and that the anticipation of a prize while combined with the inability to complete the task will lead to an experience of frustration for the child.

Prohibition Research exploring such areas as the child's ability to demonstrate behavioral self-control and compliance with stated commands or prohibitions has developed largely from early work around the ability to delay gratification (Mischel, 1974; Vaughn et al, 1984). By placing children in situations where they must resist tempting items in order to gain a subsequent reward, Mischel and others have been able to demonstrate a developmental progression in strategies used by children to more effectively delay gratification. While this work has provided significant implications for research around the multiple contextual and cognitive factors influencing child compliance to parental demands, it has also

revealed important information around which behavioral strategies best assist the child in managing frustration and regulating negative affect to be able to achieve the goal.

Within the current study, the child completed the prohibition task at 30 months. The mother is seated in a chair in the corner of the room and given the following instructions; "The next task is for (Child) to do alone. Please do not interact with or talk to your child. If your child approaches you say you are busy." The child is seated at a table and presented with a box containing a desired prize chosen by the child during a previous lab task. The child is told not to open the box until the examiner returns to the room and is given a small plastic cup to play with while waiting. The examiner returns to the room after 3 minutes and permits the child to open the box if he has not done so already.

Strange Situation Research on the development of attachment relationships between the child and significant others has provided a wealth of information on multiple components of the child's social, emotional and cognitive development. A central tool in exploring the child's attachment pattern has been Ainsworth's Strange Situation (1978), which involves temporarily separating the parent and child during the age range when the child is theorized to be most strongly connected to the parent. Apart from revealing an understanding of the quality of the parent-child relationship based on the nature of their reunion, this measure also provides a context in which the typical child is significantly stressed. The affect and behavioral strategies subsequently demonstrated by the child while alone in this

setting provide useful insight into the range and success of behavioral strategies for coping with a taxing situation.

In the present study the strange situation was examined when the child is 30 months of age. The mother and child enter the laboratory room and the mother is instructed to interest the child with the toys while remaining seated on the sofa. After ten minutes a stranger enters the room and is seated without communicating with the mother or child. Following a series of knocks, the stranger makes conversation with the mother, gets on the floor to play with the child and remains with the child when the mother is notified to give the child a typical goodbye and leave the room. The stranger remains in the room with the child for 3 minutes and then leaves upon the mother's return. After 3 minutes of playing together the mother leaves the child in the room alone. After 3 minutes pass the stranger returns and remains in the room with the child for 3 more minutes until the mother's return. The mother is able observe the child through a one-way mirror when she is out of the room, and the length of separations can be reduced whenever the child demonstrates excessive distress or the mother indicates a desire to do so.

Coding Systems for Child Behavior.

Child Coping Strategies. A coding system has been developed to assess the coping behaviors demonstrated by the child in the strange situation, the frustration task and the prohibition task (see Appendix Two). The regulatory behaviors coded within this system are based on the continuum of behaviors suggested by Grolnick et al (1996) which include behaviors that focus on the desired object, self-

comforting behaviors, other directed behaviors and behaviors in which attention is re-oriented toward the environment. Behaviors will be coded every 10 seconds throughout the session based on whether they are present, and up to 3 strategies may be coded per segment.

Developmental Conceptualization of Emotion Coping		
<u>Most Adaptive/ Mature</u>	<u>Moderately Adaptive/ Intermediate</u>	<u>Least Adaptive/ Immature</u>
~ Active Engagement In Environment	~ Self-Soothing (Physical)	~ Passive Engagement in Environment
~ Distraction	~ Self-Soothing (Symbolic)	~ Focus on Frustration Object
~ Problem-Solving	~ Other-Directed Behavior	~ Search for Parent
		~ Aggression

Child Affect Coding. The coding of child affect was incorporated into the coping strategies protocol so that affect and behavior could be coded simultaneously. Affect was coded along a continuum from positive affect to neutral to negative affect. Negative affect was distinguished according to the demonstration of sadness/anger, frustration or anxiety. Negative affect was also rated for intensity based on the duration, frequency and strength of the display. Affect was coded for every 10 second segment based on whether the affect is present, and up to 3 affect ratings may be coded per segment.

Child Temperament. Child temperament ratings were scored from videotaped observations at the child's home using the Observer Temperament Adjective Traits Assessment (Seifer et al, 1994), and these ratings were collected at 8 and 12 months of age. Parental ratings of child temperament were measured

using the Infant Behavior Questionnaire (Rothbart, 1981) at 4, 8 and 12 months of age, the Infant Characteristics Questionnaire (Bates, 1980) at 4 and 12 months of age, the Infant Temperament Questionnaire (Carey, 1978) at 8 and 30 months of age, the Toddler Behavior Questionnaire (Goldsmith, 1987) at 30 months of age and the Emotionality, Activity and Sociability Temperament Survey for Children (Buss & Plomin, 1984) at 4, 8 and 12 months of age.

Coding Systems for Adult Behavior

Parent/Caregiver Involvement Scale (PCIS). This system is based on one designed by Farran et al (1986) to provide a global assessment of the quality of maternal involvement in mother-child interactions. Ratings are made based on videotaped mother-child play interactions taken during home visits at 8 and 12 months of age, as well as interactions during family meals at 12 months of age. The categories from this scale that were analyzed for the present study include maternal sensitivity, maternal intrusiveness and maternal structure and control.

List of Measures		
<i>Measure</i>		<i>Assessment</i>
<i>Time</i>		
Child Regulation Strategies	Strange Situation	30 Months
	Frustration 1	30 Months
	Frustration 2	30 Months
	Prohibition	30 Months
Child Affect	Strange Situation	30 Months
	Frustration 1	30 Months
	Frustration 2	30 Months
	Prohibition	30 Months
Child Temperament	Observer Temperament Adjective	8 & 14 Months
	Triads Assessment	
	*Infant Behavior Questionnaire	4, 8, 14 & 30
	*Infant Characteristics Questionnaire	4 & 14 Months
	*Infant Temperament Questionnaire	8 & 30 Months
	*Toddler Behavior Questionnaire	30 Months
	*Emotionality, Activity and Sociability	4, 8, 14 & 30
Parenting Styles	Temperament Survey for Children	
Parenting Styles	Parent/Caregiver Involvement Scale (Play)	8 & 14 Months
	Parent/Caregiver Involvement Scale (Meal)	8 & 14 Months
	*Parenting Questionnaire	30 Months
<i>* Parent Report Measures</i>		

Development of Summary Variables

Longitudinal data was collected on 45 subjects starting from birth until 30 months of age. This sample size satisfied the requirement of 44 subjects to achieve a large effect size with a power of 0.80. Although subjects were chosen for whom

all assessments had been completed, there was a minimal amount of missing data from missing questionnaires and home observations. Based on the collection of multiple temperament measures, home observations and emotion coping observations for each subject, all analyses, including means and composites, were able to be computed with the available data without losing significant information or dropping any subjects.

Reliability

Interrater reliability for the two individuals coding emotion coping behaviors and concurrent affect ratings was computed using Cohen's kappas. Reliability was based on intraclass correlations using a sample of 10 subjects coded prior to discussion, and produced kappas above 0.80. Interrater reliability was similarly established for those individuals coding the observations of child temperament and parenting style and both produced kappas above 0.80.

Emotion Coping

Emotion coping data was compiled from six episodes within the laboratory assessment. Behaviors were coded from 10 second segments within each episode, and individual coping scores for each coping category were compiled into proportions to provide an overall coping score for each category. There were several children who demonstrated confusion or difficulty with the directions given during one or both episodes of the laboratory frustration task. For these children,

emotion coping data was removed for the episode in question and overall coping scores were computed from the remaining episodes.

Prior to analyses, emotion coping behaviors were conceptualized as falling into three categories representing the continuum of more mature to less mature coping behaviors. In order from most to least mature, these three categories were comprised of: 1) active engagement in the environment, problem-solving and distraction, 2) physical self-soothing, symbolic self-soothing, passive engagement in the environment and other directed behavior, and 3) focus on the frustration object, search for parent, aggression and disorganization.

Analyses were also conducted to determine a total number of coping behaviors comprising each child's coping repertoire. Coping variables were recoded and dichotomized according to whether they had been demonstrated at a proportion higher than .10 or 10% of the time. Based on the possibility of up to three strategies being coded per segment, this ratio of .10 was actually equivalent to approximately 6-8% of the total amount of coping behaviors assessed for each child. Although this cut-off score was somewhat artificial, it was theorized that behaviors demonstrated at a rate less frequent than this were not primary strategies and would thus not be included as part of the child's typical coping repertoire. This procedure produced a score of 1 for behaviors demonstrated at a rate higher than 0.10 and 0 for behaviors demonstrated at a rate of 0.09 or below. These scores were then summed to provide a total number of coping behaviors for each subject.

Affect

Like the emotion coping data, affect was analyzed by examining the proportion of time it occurred over the period of time observed. Observed affect was divided into five categories including: positive affect, negative affect, frustration, anxiety and neutral affect.

Creation of Primary Temperament Composites

In order to facilitate the examination of temperament data and retain fewer variables for later regression analyses, composite variables were created from multiple assessments for the variables of Mood, Activity, Approach and Intensity. Prior to analyses, these temperament constructs were theorized to relate most strongly to components of the difficult temperament constellation as well as to affect regulation and frustration tolerance. To create the composite variables, intercorrelations were first run among assessments of each temperament variable. Those variables that were significantly correlated were transferred into standardized scores (z scores). An average of the standardized scores was then computed to provide a single composite score for the included values. To maintain consistency for later analyses, it was decided to create composite variables from all temperament data regardless of whether intercorrelations were demonstrated or not. Despite the lack of statistical support for these unrelated composites, there was theoretical support for their aggregation as well as anticipation that the use of composites would greatly facilitate later analyses of temperament data.

Based on the lack of consensus in the field as to the continuity of temperament across time (McDevitt, 1986), intercorrelations were computed separately for 4, 8, 14 and 30 month assessments. It was determined that data from the 14 month assessment would be used to run the primary analyses mainly because there was the greatest amount of information collected at this time point. There was also speculation that this age might provide more interesting and diverse information about temperament based on significant developmental advances in locomotion, coordination and social-emotional interactions occurring around this time.

Initial correlations were computed between the temperament constructs of Mood, Activity, Approach and Intensity from the multiple measures including the ICQ, EAS, IBQ, ITQ and TATA. Previous work has demonstrated moderate average correlations among the four parent report measures, including an average correlation of .22 for Mood, an average correlation of .39 for Approach and an average correlation of .40 for Activity. A correlation was not provided for Intensity because only the ITQ measure includes this construct.

Correlations among the various assessments of mood at 14 months revealed several significant relationships (see Table 1). There were significant positive correlations between the ICQ (Difficult Mood), EAS (Emotionality) and IBQ (Distress to Limits) measures. It was interesting to note that none of these questionnaires correlated with the TATA measure of negative mood. This supports findings from Seifer et al (1994), indicating that parent report of child temperament

and observations of temperament made by independent raters may not provide the same information. Based on those significant correlations found, a composite Mood variable was created using data from the ICQ, EAS and IBQ questionnaires. It was also determined that based on the lack of demonstrated association between parent report and observational ratings, the mood score obtained from the TATA would be retained as a measure of 14 month child mood separate from the composite mood score.

An analysis of child activity at 14 months revealed no significant correlations (see Table 2). The EAS (Activity) and IBQ (Activity) measures demonstrated no relation to each other or to the observational rating of low Activity. It may be that the high degree of variability among child locomotor ability at this age makes assessment of activity less stable. An analysis of the individual items of both questionnaires suggests that parents have some leeway in how they respond to items based on whether their child is walking or not, and this in turn may provide a challenge to the validity of the activity scales on these measures. Despite the lack of intercorrelation among measures, a composite variable was created for the 14 month activity from the questionnaire data.

An examination of measures assessing child approach at 14 months revealed no significant correlations (see Table 3). The EAS (Low Approach) and IBQ (Distress to Novelty) measures were not related to each other or to the observational measure of low Approach. As mentioned above, it is possible that the broad range of ability demonstrated by children at this age in terms of

locomotion may influence how actively they are perceived to move towards or away from novel stimulus. This variability among parent responses to individual questionnaire items may in turn affect the validity of the approach scales at this age. Despite the lack of association among measures, a composite variable was created for 14 month approach from the questionnaire data.

At 14 months, the TATA was the only measure providing a rating of child intensity so no parent report data was available for that age. This measure was used independently in analyses exploring 14 month child intensity and child coping strategies.

Creation of Secondary Temperament Composites

After completing primary analyses with the 14 month assessment data, secondary analyses were run using temperament data from 4, 8 and 30 months. Like the 14 month data, it was determined that later analyses would be facilitated by including all temperament data in composites rather than creating composite variables only from those parent report measures demonstrating adequate intercorrelations. Despite the lack of statistical support for these unrelated composites, there was theoretical support for their aggregation as well as anticipation that use of composites would maintain greater consistency in later analyses of temperament data. Like the 14 month data, TATA observational data from 8 months was also examined separately. An analysis of 4 month mood data revealed significant positive associations between scores from the ICQ (Difficult

Mood), EAS (Emotionality) and IBQ (Distress to Limits) measures (See Table 1). A composite 4 month mood variable was created from these parent report measures. Mood data from 8 months also produced significant positive associations between scores from the EAS (Emotionality), ITQ (Negative Mood) and IBQ (Distress to Limits) questionnaires. A composite 8 month mood variable was constructed from these measures. Like the data from 14 months, no association was found between the parent report questionnaires and the TATA observational data from 8 months so observations were analyzed separately. There were only two measures (EAS & TBAQ) assessing mood at 30 months, and although these did not demonstrate a significant correlation they were transformed into a composite variable to maintain consistency across assessment times.

An analysis of approach at 4 months produced no significant relationship between the EAS (Shyness) and IBQ (Latency to Novelty), however a composite variable was created from these scores to maintain consistency. An examination of the 8 month data revealed significant positive associations between the EAS (Shyness), ITQ (Low Adaptability), ITQ (Low Approach) and IBQ (Latency to Novelty) measures (See Table 3). A composite 8 month approach variable was created from these measures. Again, no association was found between any of these questionnaire measures and the observational TATA data from 8 months. Approach data from 30 months revealed a significant positive correlation between the EAS (Shyness) and the TBAQ (Fear) measures, and these scores were used to create a composite 30 month approach variable.

There were only two measures assessing activity at 4 months (EAS & IBQ), and although these were not found to correlate significantly they were transformed into a composite variable. An analysis of 8 month activity data revealed significant positive associations between the EAS (Activity), ITQ (Activity) and IBQ (Activity) measures (See Table 2). A composite 8 month activity variable was created using these measures. A significant relation was found between the TATA (Activity) and the EAS (Activity) measures, however the TATA data was not included in the composite variable because of its lack of association with the other measures.

Intensity data was provided through observational data (TATA) and a parent report measure (ITQ) at 8 months and a parent report measure at 30 months (TBAQ). Based on the lack of consensus of assessment style and timing among these measures, they were each analyzed separately in later analyses (See Table 4).

Emotion Coping and Parental Style

Parenting style was analyzed using the PCIS observation scores of sensitivity, hostility, scaffolding and intrusiveness. A parent report questionnaire examining authoritative/child-focused parenting was also used.

RESULTS

Demographics

Initial analyses were completed to examine whether any significant associations existed between the child temperament, coping strategies and affect scores and the child demographic data. This demographic data included child gender, family socioeconomic status, parent marital relationship and mother and father race. Family SES was presented on a scale from 1 to 5 (high to low) and was treated as a continuous variable to allow for analyses using correlational methods. The three other categories of gender, marital relationship and race were recoded into dichotomous variables: male/female, married and living together/other, and white/non-white. Child race was created as a dichotomous variable from the parental race variables and was labeled as non-white if one or both parents were non-white. Only the race of the child was used in the current analyses. The dichotomous demographic variables were then analyzed using one-way ANOVAS with the child coping and temperament data as the dependent variables and the demographic items as the independent variables.

No significant differences in coping were found on the three dichotomous variables of child gender, parent marital relationship and child race. A significant positive relationship was revealed between the less adaptive strategy of focusing on the object and lower SES of the family (.410, $p < .01$). A significant negative association was demonstrated between aggressive/frustrated problem-solving and lower family SES (-.306, $p < .05$). Analyses of affect observed during coping

revealed that lower family SES was significantly negatively related to demonstrations of negative child affect ($-.303, p < .05$) and positively related to demonstrations of neutral affect ($.348, p < .05$).

Analyses exploring the association between temperament and the child demographic data revealed no significant associations with child gender or race. Families with lower SES were more likely to have children with difficult mood as observed at 8 months ($.314, p < .05$) as well as at 14 months ($.304, p < .05$). In addition, families with lower SES were significantly less likely to have children with high approach as reported by parents at 8 months ($-.331, p < .05$).

Analyses exploring the relation between parental style data and demographic data produced no significant associations with the variables of child gender, parent marital relationship or child race. Lower family SES was found to relate with maternal hostility observed at 8 months ($.472, p < .01$) and negatively with maternal sensitivity observed at 8 months ($-.562, p < .01$). Similarly, lower family SES was positively associated with maternal hostility observed at 12 months ($.415, p < .01$) and negatively associated with maternal sensitivity observed at 14 months ($-.565, p < .01$).

Components of Coping and Affect

The first goal of the current study was to explore the conceptualization of toddler emotion coping strategies as least to most adaptive along a continuum from stimulus bound behaviors to comfort-seeking behaviors to behaviors demonstrating

active reorientation to the environment. It was hypothesized that those strategies regarded as most adaptive or developmentally advanced would correspond with fewer demonstrations of negative child affect based on the successful reduction of perceived stress or frustration. Similarly, it was hypothesized that access to a greater repertoire of emotion coping strategies would be associated with less child distress.

In order to examine the association between demonstrated emotion coping strategies and accompanying demonstrations of affect, correlations were computed between ratings of child coping strategies at 30 months and concurrent ratings of child emotion. The results of the study produced a number of significant correlations between type of coping strategy employed by the child and type of affect displayed, with most of these in the expected direction (See Table 6). Children who employed physical self-soothing behaviors were more likely to demonstrate positive affect (.309, $p < .05$) while children who demonstrated symbolic self-soothing strategies were significantly less likely to demonstrate neutral affect (-.364, $p < .05$). Distress or negative affect was demonstrated more often by children who tended to search for the parent (.398, $p < .01$) and by children showing greater involvement with others (.374, $p < .05$). Those children who demonstrated prolonged focus on the frustration task were significantly more likely to display negative affect (.782, $p < .01$) and frustration (.514, $p < .01$) and were significantly less likely to demonstrate neutral affect (-.480, $p < .01$). Also, children who demonstrated successful problem-solving were significantly more likely to

show neutral affect (.334, $p < .05$). There was no significant association found between the number of strategies employed by a child and the type of affect displayed.

It is worth noting that results of the study revealed few significant associations among the different coping strategies (See Table 5). Although the two correlations that were found supported the study's theoretical distinction between different strategies, this number of significant correlations would be within the range expected by chance. Children who demonstrated active engagement in the environment were significantly less likely to search for the parent ($-.426$, $p < .01$). Also, children who demonstrated a passive engagement in the environment were significantly less likely to focus on the frustrating object ($-.370$, $p < .05$).

Components of Coping and Temperament

The second goal of the study was to examine the influence of infant temperament on later demonstrations of child emotion coping strategies. It was hypothesized that those temperamental characteristics associated with a more difficult constellation of infant traits - including negative mood, high activity, low approach and high intensity - would correspond to later demonstrations of less adaptive child emotion coping strategies. These difficult temperament traits were also hypothesized to relate to a more restricted repertoire of child coping strategies.

To examine the association between infant temperament and later demonstrations of child emotion coping strategies, correlations were computed

between those composite parent report and single observation scores taken at 14 months and ratings of child coping from 30 months (See Tables 7-10).

Temperament scores were adjusted so that high scores on both observation and parent report measures were equivalent to high negative mood, high approach, high activity and high intensity. There was only one significant association between the 14 month temperament data and the individual coping scores at 30 months (See Table 10). Children observed to be more intense at 14 months were less likely to use physical self-soothing as a coping strategy ($-.307, p < .05$). While this correlation supported the association between difficult temperament and later demonstrations of less adaptive coping, it is important to note that the single significant correlation produced could be attributed to chance, given the number of correlations examined. There were no significant associations demonstrated between 14 month temperament and the total number of strategies used.

Secondary analyses included an examination of the relation between 4, 8 and 30 month child temperament ratings and child emotion coping strategies employed at 30 months. Overall, results of the study demonstrated numerous significant associations between child temperament traits of negative mood, low approach, high activity and high intensity and child coping strategies, with most of these in the expected direction (See Tables 7-10).

A significant association was demonstrated between difficult child mood as observed at 8 months and disorganized coping (See Table 7), although not in the

expected direction ($-.362, p < .05$). Child mood ratings from 4 and 30 months were not significantly associated with either individual or total scores of child coping.

Children with high approach as reported at 8 months (See Table 8) were significantly more likely to use distraction as a coping strategy ($.381, p < .01$). These high approach children were also significantly less likely to demonstrate a focus on others ($-.351, p < .05$). Children with high approach as reported at 30 months were significantly more likely to employ distraction ($.335, p < .05$) and were also significantly less likely to become overly focused on the frustration tasks ($-.373, p < .05$).

High child activity as reported at 4 months (See Table 9) was significantly related to less child focus on the frustration object at 30 months ($-.307, p < .05$). Those children observed to have high activity at 8 months were significantly more likely to search for the parent ($.382, p < .01$) and were also more likely to demonstrate disorganized coping at 30 months ($.305, p < .05$). Those children observed to have high activity at 14 months were significantly more likely to use symbolic self-soothing to cope at 30 months ($.329, p < .05$). Children demonstrating high activity as reported at 30 months were found to be significantly more likely to use symbolic self-soothing to cope ($.380, p < .01$).

High child intensity as observed at 8 months (See Table 10) was found to significantly relate to a more restricted coping repertoire for children at 30 months ($-.356, p < .05$). Children reported as more intense at 30 months were significantly less likely to demonstrate passive engagement in the environment ($-.294, p < .05$).

and were more likely to employ symbolic self-soothing as a coping strategy at 30 months (.443, $p < .05$).

Components of Coping and Maternal Style

The third goal of the study was to explore the influence of maternal caretaking styles on the development and later demonstration of child emotion coping strategies. It was hypothesized that maternal styles involving greater sensitivity and less hostility would be associated with children who demonstrated more adaptive coping strategies. Also, it was hypothesized that more sensitive, less hostile parenting would be related to the development of a larger coping repertoire for the child.

In order to explore the association between maternal style and child emotion coping, correlations were computed between both observational and parent-report measures of maternal style from 8, 14 and 30 months and ratings of child coping from 30 months (See Table 11). Analyses revealed that mothers who were observed to be more sensitive at 8 months were significantly related to less child focus on the frustrating object ($-.321$, $p < .05$). The same association was also found for mothers observed to be more sensitive at 14 months ($-.310$, $p < .05$). Mothers who were observed to use more scaffolding with the child at 8 months and at 14 months were significantly associated with less child focus on the frustrating object at 30 months ($-.372$, $p < .05$ and $-.298$, $p < .05$). Mothers observed to be more intrusive at 8 months were significantly related to less child physical self-soothing at

30 months ($-.298, p<.05$). Mothers who reported a more authoritative style at 30 months were significantly associated with children who employed less distraction to cope ($-.312, p<.05$). No significant associations were demonstrated between parenting style scores and the total number of child strategies used.

Partial correlations were then completed to explore whether the associations between maternal style and child coping would remain with family SES removed (See Table 12). Most of the findings supporting an association between maternal style and child coping disappeared when the influence of SES was taken into account. The associations between maternal sensitivity as observed at 8 and 14 months and child focus on the object were no longer significant when the influence of SES was removed ($-.183, p>.05$ and $-.115, p<.05$). Similarly, the associations between maternal scaffolding as observed at 8 and 14 months and child focus on the object disappeared when the influence of SES was removed ($-.224, p<.05$ and $-.078, p<.05$). The significant association between an authoritative parenting style reported at 30 months and less child use of distraction at 30 months remained with SES partialled ($-.319, p<.05$). The other association that remained significant was between maternal intrusiveness as observed at 8 months and less physical self-soothing by the child at 30 months ($-.311, p<.05$). While the remaining significant findings provide mixed support for the original hypothesis, it should also be noted that these could have been equally attributable to chance.

Influence of Parent and Child Factors on Coping

The fourth goal of the study was to explore the way in which parenting style, infant temperament and the environment jointly influence the development of child emotion coping strategies. It was hypothesized that both mother and child factors would contribute to influencing child coping, and that mothers who were less hostile and more sensitive in adapting their style to match that of their child would increase the likelihood of the child demonstrating more successful coping. Results revealed that while less difficult temperament had a significant influence on child demonstrations of adaptive coping, the added influence of more child-focused parenting was not meaningful.

Based on the small number of significant correlations that emerged from the previous analyses, there were only two regression analyses that could be performed exploring the interaction of parent and child factors on child coping. The first hierarchical regression was completed with the coping strategy of distraction entered as the dependent variable. The child temperament composites of high approach from 8 months and 30 months were entered as the first predictor and the parenting variable of authoritative style from 30 months was entered as the second predictor. The results revealed that individually the temperament variables were not significant, but that when combined they significantly predicted 17% of the variance in the coping variable. Specifically, higher child approach predicted the use of distraction as a coping strategy at 30 months. The second predictor of

authoritative parenting was not found to contribute significant variance beyond that of the temperament variables.

The second hierarchical regression was completed with the coping strategy of physical self-soothing entered as the dependent variable. The child temperament composite of intensity from 14 months was entered as the first predictor and the parenting variable of intrusiveness from 8 months was entered as the second predictor. The results revealed that child intensity significantly predicted 9% of the variance in the coping variable, but maternal intrusiveness was not found to contribute significant additional variance. Child intensity was thus found to significantly predict less child use of physical self-soothing as a coping strategy at 30 months.

DISCUSSION

The results of the current study provide important insight into the understanding of the young child's response to stress and behavioral attempts to regulate her own affective response. The categorization of certain behavioral coping strategies as more or less adaptive for the child is for the most part supported by the association of more adaptive strategy use with child demonstrations of more successful regulation of negative affect. Infant temperament is shown to have a significant influence on the development and later use of certain coping strategies by young children, with temperament traits conceptualized as more difficult to manage being associated with the demonstration

of less adaptive strategies by children later in life. On the other hand, the presence of sensitive or hostile parenting styles during infancy is not shown to significantly influence the young child's later choice of behavioral coping strategy. In addition to these findings about child coping behavior, the study highlights some equally crucial issues about the difficulties involved in assessing such constructs as child coping and temperament, as will be discussed later.

Conceptualizing Child Emotion Coping

The conceptualization of child coping strategies along a continuum of adaptiveness, as presented by Grolnick et al (1996), receives mixed support in the current study. The demonstrated association of child use of more adaptive coping strategies with less displays of negative affect by children supports the theory that those behavioral strategies regarded as adaptive are more successful at regulating affect by reducing the child's distress in the face of stress or frustration. The only finding which does not support this association presents a positive relationship between the moderately adaptive strategy of physical self-soothing and the demonstration of positive affect. Although physical self-soothing is conceptualized by Grolnick as developmentally immature and only moderately adaptive because it does not redirect the child's attention towards the environment, it may be that this strategy remains extremely effective at 30 months for reducing a child's perceived stress. This finding suggests the potential importance of recognizing the actual

success of a particular strategy, regardless of whether we might prefer more cognitively advanced alternatives for the child.

The lack of association demonstrated in this study among the different coping strategies comes as a surprise and suggests several possible interpretations. In order to support Grolnick's distinction between most and least adaptive coping behaviors, one might expect to find significant correlations among strategies grouped as highly adaptive or negative correlations between most and least adaptive strategies. Indeed, Grolnick demonstrated numerous such intercorrelations in her work supporting the categorization of strategies into low, moderate and highly adaptive. While those few significant intercorrelations found in the present study reveal negative associations between strategies falling at opposite ends of the continuum, they lend only weak support in that their occurrence is comparable to what would be expected purely by chance. It may be that although certain strategies appear to be more or less successful in regulating affect and thus seem to cluster together on a theoretical level, as discussed above, they are not necessarily meaningfully associated in their actual use. In other words, the current results suggest that even if a child is able to employ a more adaptive strategy that successfully reduces his perceived level of stress, he will not necessarily rely on similarly adaptive strategies in other contexts or even hold comparably adaptive strategies within his coping repertoire. While Parritz (1996) discusses the development of cross-situational consistency of coping behaviors after 18 months based on the child practicing and learning which behaviors are more

successful, it may be that those strategies that are successful for a particular child are determined more by the child's individual temperamental make-up or the specific context as opposed to their classification as more or less developmentally adaptive.

An alternative issue concerning this lack of association among coping behaviors involves the difficulty that was presented when attempting to construct a coding system covering varied challenging contexts. Comprised within the six laboratory episodes designed to elicit coping responses from the child were the three distinct contexts of separation from mother, a frustration task, and a prohibition task, each of which involved quite variable demands on the child. While some researchers have suggested that the meaning of different child coping behaviors varies by context and by the individual child (Thompson, 1994), others suggest that distinct emotions may be elicited through different contexts and that the regulation of these emotions may require different coping strategies (Grolnick, 1996). One weakness of the current coding system may have involved the inability to effectively capture these differences by attributing similar meaning to comparable behaviors demonstrated across different contexts. Similarly, what was captured by the coding system as coping behaviors designed to regulate emotion and reduce stress may have in actuality been behaviors emitted for some other purpose. This potential flaw reflects a fundamental difficulty in the study of emotion coping in young children, in that the lack of access to self-report requires inferring meaning from demonstrated behaviors.

A related weakness of the protocol around eliciting comparable emotions in all children represents a second fundamental challenge to the study of emotion coping in children. Just as those behaviors demonstrated by children in the laboratory may have differed in meaning or purpose, they may similarly have reflected varying levels of perceived stress by the child as motivation for such behaviors. While the current coding system would not have been sensitive enough to detect such subtle differences in each child's experience of stress, it was hoped that the inclusion of multiple tasks within the protocol would provide sufficient opportunity for each child to experience and demonstrate a range of emotions which in turn would balance out individual differences in subsequent analyses.

When considering Grolnick's categorization of behaviors along a developmental continuum, there is some question about the placement of Symbolic Self-Soothing. In Grolnick's work, this strategy is conceptualized as a comforting behavior and moderately adaptive in that it focuses on neither the environment nor the source of stress. Based on past studies exploring prohibition-type tasks (Mischel & Mischel, 1983), the child's process of verbally reminding himself of the desired outcome might be regarded as relatively more stress-inducing in that it maintains the child's attention on the source of distress. On the other hand, this rehearsal process could be understood as relating to the more developmentally advanced problem-focused coping style which is conceptualized by coping theorists (Folkman & Lazarus, 1984) as more successful at reducing stress by providing a goal towards which to focus one's attention. In order to explore this distinction in

the current study, the nature of children's self-statements would have needed to be more carefully delineated in the coding system to allow for a more detailed examination of how a particular type of statement succeeded at modulating distress.

Part of the challenge of developing the current coding system involved creating contexts that would provide sufficient challenge to elicit a stress response in every child. In addition to the traditional strange situation and prohibition task paradigms, two frustration tasks were designed to require skills beyond those held by the typical 30-month-old and to invariably evoke frustration. A choice of prizes was also included with the task to provide additional motivation for task completion and to increase the child's level of frustration at not being able to complete the task. Several prizes were chosen to be attractive to children of that age and children were given a choice of their preferred prize, however it is possible these may not have been desirable enough to all children to produce a comparable or adequate incentive. Although the sequence of laboratory episodes was carefully planned with the prize being chosen first, and reminders being given about the prize before the presentation of each frustration task, it was not apparent that children were able to hold onto their desire for the prize throughout the subsequent tasks. Based on the variability of cognitive functioning at this age, children might have either had difficulty understanding that they would receive the prize when they had completed all of the tasks or might have been unable to retain an image of the desired prize in the midst of engaging in the challenging tasks. It is also possible that some children may have been exhausted by this point in the lab which may have

impacted on both their perseverance with the tasks and with their sustained desire for the prize.

An additional issue which emerged through the laboratory assessment and which may have presented a potential source of error variance in the measurement of child coping related to the variable degree of adherence to laboratory directions demonstrated by mothers. Grolnick and others (Grolnick, 1996; Thompson, 1994) have demonstrated variations in child affect and coping strategies when varying levels of external support are provided and when more or less familiar individuals provide the requests. In order to avoid the potential confound introduced by both the examiner and the mother providing directions to the child, and effort was made in the current study to explore child behavior and affect derived solely from examiner directives. While mothers remained out of the room for the strange situation episodes, they were encouraged during the frustration and prohibition tasks to avoid interacting with their child as much as possible. The mothers were presented a card stating "These tasks are for your child to complete alone. Please do not assist your child during this procedure. Also, try not to interact or talk with your child. If your child approaches you, say you are busy." Although the majority of mothers remained uninvolved with the frustration and prohibition tasks, there were some who became involved by reminding their child one or more times of the goal of the task or by encouraging the child to keep working. It is possible that those children who received both examiner requests and maternal reminders may have experienced increased arousal and demonstrated greater task persistence than

the other children based on differential expectations of praise or disapproval. As a result, these children may have been more likely to remain focused on the stressful task or object despite their increasing distress, while other children might have had more opportunity to self-regulate by choosing to re-direct their attention sooner.

Apart from the potential error variance introduced through aspects of the assessment's design and implementation, a comparable confound may have been presented by the way in which child behavior and affect was coded. By employing the same individual to provide observational ratings of demonstrations of both child coping behavior and affect from each segment of the assessment, there may have been bias introduced into the rating of one construct based on the other. More specifically, ratings of child affect may have been influenced by a preceding focus by the rater on the theoretical maturity of the coping strategy in use. To avoid such bias, alternative strategies might have involved using separate raters to code each of these two sources of data or even more preferably to employ a completely distinct measure of child affect which could be assessed at another point in time by a separate rater.

The Importance of a Coping Repertoire

As part of an examination of child emotion coping strategies, the current study also seeks to explore an alternative conceptualization of what constitutes "successful" coping by focusing on the impact of the child demonstrating a greater repertoire of available coping strategies. Unlike Grolnick's continuum of adaptive

environmentally-focused behaviors to less adaptive stimulus-bound behaviors, Thompson (1994) has suggested that the success of different strategies is context specific and depends more on the child's ability to strategically draw the appropriate strategy from a rich repertoire of behaviors. Overall, the importance of utilizing a greater number of strategies to regulate negative emotion is not supported by the results. The only supportive finding is that demonstrating a relation between the more difficult child temperament trait of high intensity and a more restricted range of coping options.

One possible implication from these results is that the possession of multiple coping strategies may not necessarily determine the success with which they are employed. It may be that having access to too many different strategies provides an additional challenge to the child who in the face of stress has to also be able to choose the appropriate strategy by anticipating which behavior will lead to the desired result. Similarly, in order to flexibly modify their strategy use within a particular situation, the child must be able to both effectively perceive internal and external feedback cues about their ongoing success and maintain their attention to these feedback cues long enough to contemplate adjusting to a alternate strategy. In light of these requirements it is worth noting that Grolnick's concept of the optimally adaptive strategy is similarly of little benefit to the child who lacks the ability to choose their most adaptive strategy and then stick with it long enough to achieve success.

Apart from the issue of successful strategy utilization is the implication that the laboratory-based stressor does not provide an adequate opportunity to assess the situational-specific use of strategies also discussed by Thompson. As discussed previously, the laboratory context employed in the current study offers a range of scenarios that might elicit arousal in the child, but does not truly provide different contexts within which the child will likely perceive varying levels and types of stress. As a result, it may be that Thompson's focus on flexibility in employing multiple strategies over varying contexts is less useful within a short period of observation than that of Grolnick's "optimal" strategy. At the same time, his conceptualization may provide a greater depth of insight into individual differences in child strategy use and success as demonstrated in the natural environment over time. Overall, the most useful focus may be on whether the child can effectively utilize a variety of strategies under different demands rather than assessing the number of strategies in use or focusing on the demonstration of a single, theoretically advanced strategy.

The Influence of Early Temperament on Coping

In a second area of focus, child temperament characteristics were explored in their association with the demonstration of distinct emotion coping strategies by employing Rothbart and Derryberry's (1981) conceptualization of temperament as individual characteristics of physiological reactivity which are in turn regulated through behavioral or attentional means. By narrowing the focus to a constellation

of traits suggesting a more arousable and “difficult” temperamental presentation, the results of this study provide moderate support for the hypothesis that increased child negativity, inhibition, activity and intensity of response in some way interfere with the use of more advanced coping strategies. Additionally, there is small support for the related concept that these temperamental traits impede the development of a broad repertoire of coping strategies which would subsequently lead to greater flexibility in their use. The one exception to these results included a negative association between negative child mood at 8 months and disorganized child coping at 30 months (low adaptive). While this finding is admittedly difficult to explain, it may best be attributed to the low frequency with which this category of coping behavior was demonstrated which in turn might also have led to a conceptual flaw in the creation of the “disorganized” category.

Despite the modest findings from this study supporting an association between a difficult constellation of temperamental traits and later child coping, there are some notable areas of exception. The virtual lack of association between both parental and observer ratings of negative child mood and later demonstrations of child coping behavior comes as a surprise. This is particularly the case with parental ratings of child negativity, which have been proposed to largely reflect parental perceptions of child difficulty (Bates, 1980) and would be theorized to predict at least to some extent the child’s degree of success with regulation of emotion. Although high intercorrelations have been demonstrated between the ITQ, ICQ and IBQ on the constructs of distress to limits and irritable distress

(Rothbart & Bates, 1998), it may be that they did not cluster together conceptually with the construct of negative mood to the degree that they could have predictive utility. Alternatively, it may be that temperamental ratings of child mood were reflected in child demonstrated affect during the coping procedures (not assessed in the current study), which might have provided additional insight into the influence of negative mood on the child's success in modifying their own distress. It is also worth noting that the findings for child mood, as well as the other temperament constructs, may have been limited by the availability of observational data in the current study. While Seifer et al (1994) recommend that between six and eight observations per child are necessary to reliably assess different temperament dimensions, only four observations were available at the time of analysis. Furthermore, a sample size of 45 leads to the inability to infer associations from smaller effect sizes with correlations between 0.2 to 0.3.

In considering the temperament findings, it is also of interest that while high child activity at 4 months was related to decreased use of a less adaptive coping strategy at 30 months, ratings of high activity in children from 8 months on were associated with moderate to low adaptive coping. This apparent change in direction may be attributed to the relatively poor stability that has been demonstrated in ratings of infant activity level through the first year of life. One speculation is that parental ratings of early infant activity may also include perceptions of reactivity, intensity and alertness which become more differentiated by parents as the child ages. Similarly, it has been suggested that early activity may

be associated with both positive and negative affectivity, implying that the construct of infant activity may be less useful for prediction from 4 months than from a later developmental stage (Rothbart & Bates, 1998).

It is interesting to note that the primary set of temperament analyses, comprised of temperament ratings from 14 months of age, reveal only one significant association with the 30 month coping data. Although 14 month data was chosen as primary because of the greatest number of measures assessing temperament at this age and because of the hypothesis that this age might provide a more diverse and interesting range of potential child behaviors, the final results suggest that this theory may have been misguided. In actuality, the potential for a more heterogeneous display of behaviors by 14 months of age based on greater variability in developmental trajectories may have added significant error to the results by requiring some degree of interpretation by both parents and raters of temperamental ratings. For example, the parents of a 14 month old who was not yet walking might rate their child lower on an item assessing activity than parents of a 14 month old who had been walking (and running) for several months. It may have therefore been preferable to run the primary temperament analyses with a data point which provided a somewhat smaller amount of data but greater overall consistency among child behaviors and abilities so that subtle differences in temperamental characteristics could be more easily distinguished.

Another interesting finding among the temperament results is the complete lack of association demonstrated between parental report of child temperament

characteristics and observations of temperament by independent raters. These results illustrate a distinction that has emerged continuously in the temperament literature (Seifer et al, 1994; Rothbart, 1999; Stevenson-Hinde & Hinde, 1986), and which raises the question not only of which is a more accurate measure of child temperament, but also of precisely what each measure is actually assessing. One suggestion posits that parental report of child temperament may be more reflective of parental expectations about child behavior and perceptions of child difficulty, rather than an objective measure of child characteristics. Along these lines, the distinction between parental report and independent ratings may also reflect existing discrepancies between parental style and their respective child's temperament, with more significant differences leading to parental perceptions of greater difficulty. Some researchers also suggest that manifestations of child temperament may differ widely depending on the setting and who they are with, thus indicating that in the case of the present study where temperament was coded from videotaped home visits, differences in rater observations may reflect true differences based on the presence of a stranger in the room.

While some researchers contend that the likelihood of parental bias in ratings of child temperament leaves parental report completely without worth (Kagan, 1999), others suggest that the relative stability of parental perceptions of child "difficultness" across time as well as the potential utility in examining how such perceptions may influence developing parent-child relationships indicate the method remains worthy of consideration (Bates, 1986). Rothbart and Bates (1999)

suggest that it is crucial to employ multiple types of measures in the study of temperament, and that parent report provides one unique perspective on child behavior and characteristics because they observe both more of the child's behavior than anyone else, and are more likely to observe rarely occurring behaviors. They also argue that observational methods of assessment, including the TATA, do not have strongly enough established validity to replace all other measures. In the end, they summarize that while both methods of assessment provide distinct and useful information, both can also stand considerable focus around improvement.

The Influence of Parenting on Coping

The third area of focus in the current study explores the influence of parental socialization practices such as sensitivity, scaffolding and lack of intrusiveness on the emergence of child emotion-regulation strategies. Despite previous work which suggests that parenting style may significantly impact on the emergence of later coping behaviors demonstrated by the child by shaping the opportunities for self-regulation (Calkins & Johnson, 1998; Thompson, 1994), this theory receives surprisingly little support in the current study. Although initial analyses provide numerous associations between the parent and child constructs, the majority of these significant associations disappear when demographic data around family socioeconomic status is taken into account. With the influence of SES partialled out of the effects of parenting style, the only two remaining associations provide virtually no additional support to the original hypothesis. The

association between authoritative parenting and less child use of distraction is completely contrary to what would be expected, and the relation demonstrated between intrusive parenting and less child use of physical self-soothing is equally attributable to chance.

In attempting to understand these findings, one question involves whether the common focus on maternal sensitivity as a primary parenting construct is the most accurate way to explore the relation between parenting style and child development. It has been suggested that the construct of sensitivity is not only exceedingly broad in the number of different dimensions it includes, but at this stage may also be too poorly defined to successfully assist in the prediction of child outcomes (Seifer et al, 1996; Thompson, 1999). Despite this relative ambiguity, it may also be that the influence of parental sensitivity and the other parenting constructs on child outcomes such as coping behavior are too subtle to be successfully identified at 30 months of age. Apart from more blatant interactions between the dyad where a particular child behavior is directly elicited, prohibited or otherwise shaped by the parent, the child's more internalized aspects of parental influence most likely become solidified and thus more easily identified at a later stage of development.

The parenting results are also notable for the degree to which family SES appears to contribute to the influence of parental socialization practices on child development. This finding suggests that significant cultural differences based on socioeconomic status may influence the caretaking style employed by parents.

Alternatively, these results could be evidence of some degree of cultural bias that may have been involved in the coding of observational data (Miller & Sperry, 1987). While differences in SES may be less readily apparent to the observer than racial or ethnic differences, there may have been subtle aspects of dress, speech or manner that unintentionally influenced the ratings of both parent and child behavior by observers.

Interaction of Parent and Child Characteristics

The fourth area of focus within the current study explores the potentially complex interplay of parenting factors and child temperament characteristics as they influence the emergence of child emotion regulation strategies. The examination of this interaction was clearly limited by the small number of significant associations demonstrated between the temperament and parenting data and the child coping measures. While it was theorized that the parent's response to his child's particular temperamental style might significantly shape the child's experience of and response to stress, this hypothesis was not supported by the results. Of the two interactions explored in the current study, both indicate that while less difficult child temperament significantly influences the demonstration of more adaptive coping, the added influence of more child-focused parenting is not meaningful.

Implications for Future Study

The issue of effectively capturing the young child's perception and experience of stress is recognized as one of the primary challenges in studying early coping strategies (Parritz, 1996). The greatest difficulty facing researchers involves assessing young children's perceptions of stress and exploring both qualitative and quantitative differences in arousal or distress without relying on verbal communication of the child's inner experience. An increasingly popular assessment method which provides substantial additional precision to the detection of the child's inner experience involves the physical examination of the child's stress hormones taken after exposure to the stressor (Gunnar et al, 1995; Nachmias et al, 1996). Admittedly, such methods lack absolute precision because of the possibility that the child's experience may be mediated by their temperament and the subsequent behavioral or affective manifestations of increased arousal might not precisely correspond to the amount of hormones found. Nevertheless, the potential benefits of such an assessment tool for advancing the study of child development suggests that more work should be done to forge relationships with physicians and simplify the methods used so that this sophisticated tool can be more available to researchers.

In contending with the challenge of interpreting young children's experience of stress, future work may also be required to seek novel means of monitoring and assessing children's regulation strategies. As discussed by Grolnick et al (1996), it may be that different contexts elicit different emotions which in turn require

different strategies to address them. They posit that delay situations may elicit anger while separations from the parent might elicit sadness, thus requiring particular regulation strategies for both. Due to the limitations posed by laboratory assessments in exploring children's behaviors across contexts, it may be useful to combine information from behaviors demonstrated in controlled settings with that recorded by caretakers within more naturalistic settings. This might involve asking parents to maintain logs of their child's behavior and affect in response to particular daily stressors so that behavioral strategies can be more closely matched with specific situational contexts and the corresponding emotions that may be elicited. Similarly, parents might be provided with video equipment so that recorded segments of the child's behavioral and emotional responses to daily stressors at home could be examined for patterns of response across contexts or could be compared to behaviors elicited within comparable laboratory scenarios. These techniques would not only provide a greater amount of data with which to explore patterns of child behavior and affect, but might also facilitate greater insight into the context-specific nature of regulation strategies for young children.

In addition to exploring and refining our conceptualization of these child behaviors, it is similarly important that future research focus on further clarifying our characterization of parenting constructs. As discussed earlier, the construct of maternal or parental sensitivity is one which is commonly employed throughout the child development literature as a powerful predictor of multiple child outcomes. Despite its frequent use, however, this construct remains overly broad and poorly

defined and requires further operationalization in order to truly be useful in providing real predictive information. In addition, the need for greater clarification of the behaviors and other qualities that comprise parental sensitivity is also reflected in the potential application of such concepts to intervention models designed to facilitate child coping and a host of other positive child outcomes.

One of the inherent challenges facing any type of longitudinal study, particularly those involving children, has remained that of maintaining an adequately large sample. As in the current study, a small sample size both limits the nature of statistical analysis available for use and also limits the statistical power of the resulting findings. It would undoubtedly be beneficial for the field to continue brainstorming novel methods of assessment and ways to incorporate existing populations of potential subjects into study. By employing paraprofessionals, physicians, teachers and others in the process of observation and data collection, researchers might not only significantly supplement their sample size, but also move towards bridging the gap between laboratory research and real-world applications. As the call continues to be made for researchers to incorporate their findings into models for intervention, it seems likely that utilizing the assistance of increasingly diverse participants and settings will provide an important step towards extending the insights from the laboratory to those who stand to benefit most.

Related to this is the need for alternative assessments of child behavior that move beyond the confines of the laboratory room. In order to truly explore such questions as how child regulation strategies are influenced by contextual

differences, researchers must find ways to extend the scope of their assessments into naturalistic settings whenever possible. The use of videotaped home visits in the current study is one such example of a valuable means of capturing more naturally occurring child behavior within a context that is more familiar. While the subsequent potential loss of experimental control involved with employing less controlled environments or less trained observers requires significant consideration, it seems crucial that continued effort be directed towards balancing the need for experimental rigor with increased insight into child behavior.

As in many areas of the child development literature, there is virtually no research exploring the influence of culture and ethnicity on the demonstration of child emotion-coping behaviors. It would be fascinating to consider the impact of culture, both as a factor influencing parental socialization practices and the emergence of child temperament characteristics and as a societal phenomenon, in the shaping of child regulation strategies. As greater insight is gained into the significance of more or less developmentally adaptive child coping strategies for successful reduction of distress, it will be important to consider whether such concepts as optimal adaptability and coping success are universal in their characterization or more culture-specific. Similarly, as increased focus is placed on the context-specific use and success of various child coping strategies, it will be important to consider the degree to which successful strategy use varies by culture as well as whether distinct cultural differences exist around the types of contexts experienced. As the diversity of our own society continues to expand, this

increased focus on cultural influences in the development of child coping is vital, particularly if research in this area is ever to be successfully translated into practical models for intervention.

APPENDIX ONE

All of the subjects in this sample participated in the Goodness of Fit study. Some of the subjects participating in the Goodness of Fit study were also participants in the Family Relationships Study. The Family Relationship Study explored the marital relationship, family functioning and maternal depression as they impacted on infant development. The sample included only intact couples and involved assessments beginning prenatally and ending at 12 months. After the 12 month assessment, some families participated in the remaining Goodness of Fit assessments. Although the procedures involved in both studies are almost identical, any differences are noted below.

The first component of the study began prenatally. The mother completed a Goodness of Fit Interview (GOF), Adult Attachment Interview (AAI), the Information, Vocabulary and Similarities subtests from the Wechsler Adult Intelligence Scales (WAIS), the Structured Clinical Interview for the DSM-IV (SCID) and the Hamilton Depression Rating. The mother was also asked to complete a series of self-reports. Mothers' partners who were interested in participating completed a GOF Interview, AAI and the WAIS subtests, as well as self-reports. For FRS families, both the mother and father also completed a Marital Attachment Interview (MAI).

At four months the mother completed a GOF interview, a brief diagnostic follow-up interview including a HARP and Hamilton, a McMaster Structured Interview for Families (McSiff) and several self-report measures about

herself and her child. Involved partners were asked to participate in the McSiff. For FRS families, the father was required to be involved in the McSiff.

At eight months the mother and child were involved in a series of eight videotaped home visits by the experimenter which captured 10 minutes of mother and baby playing together, 10 minutes of caretaking by the mother, and 10 minutes of the baby playing alone. If the mother's partner was the primary caretaker, they were videotaped for 4 of the 8 visits. The mother completed a Home Observation Interview (HOME) and a GOF interview, as well as a series of self-reports about herself and her child. The child wore an actigraph to measure activity level for a minimum of 7 days. The 8 month assessments were completed within the span of a month.

At 14 months the mother and child participated in another series of 8 home visits, as well as a family meal which was videotaped at the home. The mother completed a diagnostic follow-up interview, a GOF interview, a HOME interview and a series of self-reports about herself and her child. The child wore an actigraph for a minimum of 7 days. The mother and child were invited into the laboratory for a one hour play session. The lab assessment involved a free play, a strange situation (Cassidy & Marvin, 1989) to assess attachment, three items from the smile and laugh procedure (Cicchetti & Sroufe, 1976), a task assessing empathetic response, a mastery motivation procedure (Messer & Yarrow, 1983) and an inhibition task. Involved partners completed a GOF interview and a play session at

least one month apart from the mother's, a series of self reports and participated in the meal. For FRS families, the mother also completed a MAI interview.

At 24 months the mother completed a diagnostic follow-up interview.

At 30 months the mother and child participated in another series of 8 home visits and there was a meal videotaped at the home. The mother completed a GOF interview and HOME interview and a series of self-reports about herself and her child. The child wore an actigraph and the mother and child were invited back to the lab for a two hour session. The lab assessment involved a free play, a strange situation, a clean-up task, ten items from the smile and laugh procedure, a task assessing empathetic response, a mastery motivation procedure, maternal and examiner prohibition tasks, a behavioral inhibition task, a problem-solving procedure (Matas, 1978), a disappointment task and a frustration task. Following the lab the mother completed a perceptions interview.

APPENDIX TWO

Child Emotion Regulation Behaviors Coding Manual

May 2000

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Child Emotion Regulation Behaviors

- 1. Active engagement with substitute toy**
 - 1.5 Active play, alone
 - 1.6 Active play, with stranger
 - 1.7 Active play, with specified toy
- 2. Passive use of objects and exploration**
 - 2.5 Passive play, non-stranger related
 - 2.6 Passive play, stranger-related
 - 2.7 Passive play with specified toy
- 3. Self-soothing, physical**
 - 3.1 Self-soothing using own body
 - 3.2 Self-soothing using other objects
- 4. Self-soothing, symbolic**
 - 4.1 Self-directed statements
 - 4.2 Talking about the parent
 - 4.3 Talking about the task
- 5. Search**
 - 5.1 Active search
 - 5.2 Passive search
- 6. Other-directed**
 - 6.1 Comfort-seeking, proximal
 - 6.2 Comfort-seeking, distal
 - 6.3 Assistance-seeking, proximal
 - 6.4 Assistance-seeking, distal
 - 6.5 "I Can't" sharing, proximal
 - 6.6 "I Can't" sharing, distal
 - 6.7 General other-directed, proximal
 - 6.8 General other-directed, distal
- 7. Focus on prohibition object**
 - 7.1 Look at box
 - 7.2 Touch box
 - 7.3 Open box
 - 7.4 Touch/play with prohibition toy
- 8. Involvement with frustration object**
 - 8.1 Involvement with problem solving
 - 8.2 Involvement with play (no problem solving)
 - 8.3 Involvement with distress
 - 8.4 Involvement with aggression
- 9. Involvement with disappointment object**
 - 9.1 Tentative look and touch
 - 9.2 Active involvement/play
 - 9.3 Close box
- 10. Passive**
- 11. Disorganized**
- 12. Missing**

1. ACTIVE ENGAGEMENT WITH SUBSTITUTE TOY

The child is engaging in play or exploratory activities that involve an active engagement with some aspect of the environment.

1.5 Active engagement, alone

This code is used when the child is:

- Actively physically manipulating a toy in a play-like manner
- Going to a toy (if and only if the next segment shows engagement with the toy)
- Visual examination of an object, if it is very clear that the interest on the part of the child is sustained and intense (*However, see 2.5 and 2.6*)
- Talking to self with reference to objects present in the room, or other play-like, animated talking (*However, see 2, 4, 5.2, 6.4, and 6.8*)
- Playing with the can or the wrench with no problem-solving behaviors (frustration task), although involvement with the snake or the tube should be coded as 8 only

This code should *not* be used when the child is:

- Using a toy for a task-directed activity (*see 9*)
- Using a toy specified by the experimenter in the prohibition task (*use 1.7*)
- Involved with the frustration, prohibition, or disappointment objects (*use 8*)

1.6 Active engagement, with stranger (strange situation)

This code is used when the child is:

- Engaging in any of the above-mentioned activities when performed with the stranger, as long as child does something *behaviorally* to show the interaction (*However, see 2.6*)
- Presenting a toy to the stranger, either from far away or bringing it to her
- Attempting to get the stranger to play, and ongoing *reciprocal* activity.
- Making a physical movement toward a toy pointed out by the stranger
- Enticing the mom to engage in play, *only* if mom disregards examiner directions and plays with child (this would be coded in conjunction with a 6 code)

This code should *not* be used when the child is:

- Simply engaging in social or conversational interaction with the stranger (ex. "I have a car at home") (*see 6.7 and 6.8*)
- Making brief social referencing to stranger (*see 6.8*)
- Making comfort-seeking attempts (*see 6.1 and 6.2*)
- Talking softly to self without engaging stranger, especially if the child is oriented away from the stranger and not making eye contact with the stranger (*use 1.5 or 2.5*)
- *Independently* engaged with toys that were originally suggested by the stranger or in a manner that seems to have been suggested by the stranger (*code 1.5*)
- Attempting to engage others with the frustration, prohibition, or disappointment objects

Note:

- Any time the child initiates interaction with the stranger, a code of 6 should be given. If the child's interaction involves making a bid with a toy, a code of 1.6 should be used in conjunction with a 6 code.

1.7 Active engagement, with specified object (prohibition task)

This code is used when the child is:

- Actively engaged **ONLY** with the toy suggested by the experimenter in the prohibition task

Note:

- This code includes any active behaviors, such as banging the toy against the table or turning it all around; merely fingering or looking at the toy would receive a code of 2.7.

THIS CATEGORY DOES NOT INCLUDE:

- Comfort-seeking attempts (*see category 6*)
- Mere fingering of items, simple looking, or mouthing (*see 2.1, 2.2, and 3*)
- Attempts to leave the room or other search attempts (*see 5*)
- Attempts to regain the parent with shouts or comments about the parent's return (*see 4 and 5*)

NOTE:

- Often in the course of an ongoing play interaction, the child may appear for one or two intervals to be merely watching the stranger. If the child returns to the interaction by the third segment a code of 1.6 should be given during these intervals. If not, all segments should be coded as 2.6, not 1.6. (Only codes of 2.6, and not 2.5, can be replaced by a code of 1.6 according to this rule.)
- Often in the course of an ongoing play interaction, the child may appear for one interval to be playing without the stranger. A code of 1.6 should be given during this one interval *only* if the child returns to the interaction in the next interval.
- If 1.5 and 1.6 can be coded in the same segment, assign a code of 1.6 alone.
- The level of the child's play or activity should be the determining factor when giving codes of 1 or 2. Within those codes, 1.5 or 2.5 should be given when the child has no interaction with the stranger, and 1.6 or 2.6 should be given when the child is at all engaged with the stranger. If the child initiates the interaction give a 6 code as well, but do not use a 6 code for child responses to the stranger in the context of play.

2. PASSIVE USE OF OBJECTS AND EXPLORATION

Use this category if it is the only codable behavior in the episode.

The child is engaged in fairly passive use of the environment, and activity is not clearly play or goal directed.

2.5 Passive engagement, alone

This code is used when the child is:

- Looking (usually aimlessly) at toys or objects in the room, or pointing randomly and briefly at toys and objects (including video camera)
- Shifting between toys without sustained focus on any toy
- Fingering toys or carrying them around (*however, see 3.2*)
- Fingering furniture or own clothing (*however, see 3.1*)
- Kicking or putting away toys
- Wandering around the room
- Humming, singing, and babbling (while not engaged in anything else and the content is not codable elsewhere)

This code should *not* be used when the child is:

- Looking at or pointing to door as an indication of wanting mom back (*see 5.2*)
- Seeking physical comfort with toys (*see 3*)

2.6 Passive engagement, with stranger (strange situation)

This code is used when the child is:

- Looking and/or pointing at toys or objects held or pointed out by the stranger
- Fingering toys given to the child by the stranger
- Kicking or putting away toys recently given to the child by the stranger
- Responding briefly (simple response or a shake of the head) to questions asked by the stranger, without further engaging the stranger in conversation (if the child's response is more than a minimal response, give a code of 1.6)
- Listening to the stranger talk (but only if it is very clear that this is what is happening, rather than a temporary lull in an ongoing conversation or play interaction (*see 1.6*))
- Looking at stranger's activities (*see 6*)
- Listening to the mother (if the mother is off-task and talking to the child)

This code should *not* be used when the child is:

- Involved in active, task-oriented activities pointed out by the stranger (*see 1.6*)
- Initiating communication or interaction with the stranger (*see 6*)

Note:

- If rater sees a code of 2.5 and 2.6 in the same segment, give a code of 2.6 only.

2.7 Passive engagement, with specified object (prohibition task)

This code is used when the child is:

- Fingering or passively manipulating **ONLY** the toy designated by the experimenter in the prohibition task
- Looking at the object designated by the experimenter

Note:

- If rater sees a code of 2.5 and 2.7 in the same segment, give a code of 2.7 only.

3. SELF-SOOTHING, PHYSICAL

The child is engaged in behaviors commonly considered to be anxiety symptoms, as well as using soft and/or familiar objects for comfort or security.

3.1 Self-soothing using own body

This code should be used when the child is:

- Mouthing hands, fingers, or clothing
- Lying on furniture (couch or table)
- Lying on the floor with head down on arm or on floor (not in play)
- Placing or rubbing hands over face
- Rocking
- Rubbing a part of body (ex. wringing hands, rubbing head, pulling ear, twisting hair)

This code should *not* be used when the child is:

- Engaged in behavior that is clearly self-grooming (ex. pulling hair out of eyes, adjusting shirt or pants)
- Fidgeting
- Putting hands over his or her face while crying loudly and with great distress (*see 11*)

3.2 Self-soothing using other objects

This code should be used when the child is:

- Hugging or holding a squishy toy or other soft object (ex. couch)
- Lying on a squishy toy
- Covering face with a soft toy
- Mouthing any object
- Eating

This code should *not* be used when the child is:

- Playing with mother's purse or other objects belonging to the mother (*see 1 and 4*)
- Play-like behavior such as bouncing on furniture, reading a book, or "eating" pretend food (*see 1*)

4. SELF-SOOTHING, SYMBOLIC

The child is engaged in self-directed types of behavior that suggest that he or she is using symbolic ways of dealing with distress.

4.1 Self-directed statements

This code should be used when the child is:

- Making statements such as "I'm a good boy," "I'm a big girl," "I'm tired," or "I want to go home"

Note:

- Object-directed statements, such as "I like this toy," would be coded as 1.5.
- Self-directed statements may be negative, such as "I'm stupid."

4.2 Talking about the parent

This code should be used when the child is:

- Speaking about the parent's return, but not asking for it (ex. "Mommy will be right back")
- Saying comforting things about the parent (ex. "I love my Mommy")
- Asking to or pretending to speak to mom on a toy telephone (this is asking for her voice, not her presence or return)
- Speaking the word "mommy" or "daddy" in a normal tone (*however, see 5.2*)
- Playing with the parent's belongings (unless, for example, the child has removed a toy from the mother's purse and is purely playing with it, in which case code 1.5)

This code should *not* be used when the child is:

- Making spoken or shouted attempts to regain the parent (*see 5.2*)
- Negotiating with the stranger to get the parent back, even in a tone of voice that seems self-soothing (*see 5.2*)
- Making small talk with the stranger about the missing parent that doesn't express wanting them to return (*see 6.4 or 6.8*)

4.3 Talking about the task (frustration or prohibition task)

This code should be used when the child is:

- Making statements about the goal of the task (ex. "I need to put this snake in the can" or "I need to wait for her to come back")
- Making statements about the reward (ex. "If I get this out, I get my toy," or "I'm going to get my toy soon")
- Making statements about the prohibition (ex. "I can't open the box" or "I have to wait for my playdough")

NOTE:

- Comments about the task that are preceded by the word "mom" should not be given a code of 6 unless the child is clearly trying to initiate conversation and/or is oriented toward the mom.

NOTE:

- Statements that sound self-soothing but seem to be directed toward a parent should only be coded with a 6 code.

5. SEARCH

The child is engaging in behaviors that appear to be directed toward bringing the parent (or the experimenter) back, or is attempting to get out of the room.

5.1 Passive search

This code should be used when the child is:

- Looking at the door from a distance
- Pointing at the door
- Moving toward the door, but not actually getting there

This code should *not* be used when the child is:

- Moving toward the door if the child eventually gets there (*see 5.2*)

5.2 Active search

This code should be used when the child is:

- Going to the door (as long as he or she eventually gets there), banging on the door, or remaining in front of the door and oriented to it or touching it
- Switching lights by the door on and off in the context of search
- Calling for the parent—calling “Mommy!” or “Daddy!” and/or other statements intended to bring the parent back (usually these verbalizations are loud)
- Engaging the stranger: asking the stranger when the parent will return, where the parent went, to go and get the parent, requests for the stranger to open the door, telling the stranger “I want my mom”
- Aggressing against the stranger or getting in a physical struggle with the stranger in an effort to leave the room

This code should *not* be used when the child is:

- Crying out of control, even if yelling for parent (*see 11*)

NOTE:

- If the child negotiates with the stranger to get the parent back, even in a tone of voice that seems self-soothing, code 5.2, not 4.2.
- No search code should be given when the stranger first enters the room, unless the child actively tries to get out of the room or calls for the absent mother.

6. OTHER-DIRECTED

These are behaviors in which the child initiates interaction with another person in the room in the hope of obtaining comfort or assistance, sharing information, or engaging in social exchange. These behaviors may be proximal (directly approaching the other person) or distal (getting the other person's attention from across the room).

6.1 Comfort-seeking, proximal

This code should be used when the child is:

- Approaching the other person to be held
- Touching the other person's hair, clothing, etc.
- Climbing in other person's lap or nuzzling up to the person
- Vocalizing his or her desire for comfort, only if he or she is right next to the person

This code should *not* be used when the child is:

- Approaching or seeking proximity in the interest of active toy-mediated or game-like play (*see 1.6*)

6.2 Comfort-seeking, distal

This code should be used when the child is:

- Requesting to be held, picked up, or making other contact without approach (i.e. holding up arms)

6.3 Assistance-seeking, proximal

This code should be used when the child is:

- Approaching other person with the frustration object and handing it to her to elicit assistance
- Vocalizing his or her desire for assistance, only if he or she is next to the person (ex. "Mama you do this")
- Asking the mother (during the prohibition task) if or when he or she can open the box (while next to mother)
- Asking the mom when the experimenter will return, or when she'll be back (frustration and prohibition tasks), only if the child is next to the mother

This code should *not* be used when the child is:

- Attempting to convince the stranger to get the mother (strange situation) (*see 5*)

Note:

- If a request for help is preceded or followed by an "I Can't" statement, only code as 6.3.

6.4 Assistance-seeking, distal

This code should be used when the child is:

- Vocalizing requests for help without approach (ex. "How do you do this?")
- Asking the mom (during the prohibition task) if or when he or she can open the box
- Asking the mom when the experimenter will return, when she'll be back, or to go get her (frustration and prohibition tasks)

This code should *not* be used when the child is:

- Attempting to convince the stranger to get the mother (strange situation)

6.5 “I Can’t” sharing, proximal

This code should be used when the child is:

- Giving the parent or experimenter information about a current problem (ex. “I can’t do this,” or “I got the wrong toy”), without requesting help or comfort, only if this is voiced when right next to the parent

Note:

- If a request for help is preceded or followed by an “I Can’t” statement, only code as assistance seeking (6.3 or 6.4).

6.6 “I Can’t” sharing, distal

This code should be used when the child is:

- Giving the parent or experimenter information about a current problem (ex. “I can’t do this,” or “I got the wrong toy”) without requesting help or comfort

Note:

- If a request for help is preceded or followed by an “I Can’t” statement, only code as assistance seeking (6.3 or 6.4).

6.7 General other-directed, proximal

This code should be used when the child is:

- Bringing the parent the disappointment item, frustration task, or prohibition box and showing or giving it to her in a social context
- Approaching the other person in a friendly manner simply for the sake of engaging in social interaction
- Making social conversation, only if he or she is right next to the other person
- Making vocal attempts (such as crying) to gain attention
- Making clear attempts using conversation to engage the other person in active reciprocal toy play (*see 1.6*)

This code should *not* be used when the child is:

- Participating in ongoing conversation or responding

Note:

- This code (along with 6.8) should be used for interactions that are not codable elsewhere.

6.8 General other-directed, distal

This code should be used when the child is:

- Initiating conversation with social interaction as the goal unto itself. This would include talking about prior events or experiences (ex. “My daddy takes me to Chuck E. Cheese,” or “We have this toy at home.”)
- Attempting to gain shared focus on an object (ex. holding up an object for the other to see, pointing to the video camera and saying “Look mom,” or exclaiming “Mama, snake!”)
- Other-focused chatter about what he or she is currently doing outside of ongoing interaction if this chatter is clearly meant to be heard by the mother (*otherwise code 4.3*)
- Looking at the other person outside of the context of an ongoing play interaction, attempting to make eye contact with the other person, peeking

shyly at the other person, or smiling at the other person; this must be a *significant* look, and not merely a passing glance

- Making vocal or behavioral attempts to get the other person's attention

This code should *not* be used when the child is:

- Talking to herself, without focus on others in the room (*see 1.5 or 4*)
- Participating in an ongoing conversation or interaction
- Looking at or listening to the other person while that person is trying to engage the child's attention or is actively doing something that the child finds interesting (*see 1.6 or 2.6*)
- Giving a fleeting glance toward the parent or stranger, or looking while turning in that direction anyway (don't code)
- Looking at the experimenter when the mother is also in the room (don't code)

Note:

- If the child's talk about the toy sounds like symbolic self-soothing but is preceded by the word "mom," it should be coded as 6.8 only if the child is clearly trying to communicate with the mother. If the chatter seems more directed toward the self, a code of 4.3 should be given.
- This code (along with 6.7) should be used for social initiation that is not codable elsewhere.

NOTE:

- If a child is approaching the parent or stranger during a segment, a proximal code should be given only if the child eventually gets to the person in a subsequent segment. If the child stops before reaching the parent or stranger, the behavior should be classified as distal.

7. FOCUS ON THE PROHIBITION OBJECT

The child's attention is focused on the box containing a desired toy.

7.1 Look at box

This code should be used when the child is:

- Staring fixedly at the box
- Doing something else during the episode but glancing periodically at the box (this glance must be a minimum of one second)

7.2 Touch box

This code should be used when the child is:

- Fingering the box, running hands along sides
- Holding or carrying the box
- Touching the box with any part of the body
- Opening the box very slightly without looking inside

7.3 Open box

This code should be used when the child is:

- Opening the lid slightly and peeking inside
- Removing the lid from the box completely
- Knocking the lid off with any part of the body

This code should *not* be used when the child is:

- Opening the lid without looking inside the box

7.4 Touch/play with the prohibition toy

This code should be used when the child is:

- Reaching into the box and touching the toy with his/her hand or any other part of the body
- Removing the toy from the box
- Playing with the prohibition toy

NOTE:

- The child may open the box and play with the toy and then return it to the box. If he or she does this and then continues to look at or finger the box, the appropriate codes (7.1, 7.2) should still be given.
- If the child brings the box or toy to the mother or engages with her in any way while involved with the prohibition object, then the appropriate 6 code should be used simultaneously.
- If the child asks the mom if or when he or she can open the box, it should be coded as assistance seeking (6.3 or 6.4).
- If the child is talking to him or herself about the goal or reward of the prohibition, a code of 4.3 should be given in conjunction with the appropriate 7 code.
- If the toy has been removed from the box and the child continues to play with the box as if it were a toy, give the appropriate codes of 1.5 or 2.5 instead of 7 codes.
- If more than one 7 code occurs in a segment, code only the highest one.

8. INVOLVEMENT WITH THE FRUSTRATION OBJECT

The child is giving his or her attention (in any of a variety of ways) to the frustration task assigned by the experimenter.

8.1 Involvement with problem solving

This code is used when the child is:

- Engaging in goal-directed behaviors (trying to put snake in can or get bell out of tube)
- Examining the object intently
- Using other objects in an attempt to solve the problem

This code should *not* be used when the child is:

- Distressed or acting aggressively

8.2 Involvement with play (no problem solving)

This code is used when the child is:

- Actively engaged with the toy without any goal-directed behaviors (ex. swinging snake around, pretending to drink out of can)
- Carrying object around with no apparent assistance-seeking or problem solving behavior
- Using object in conjunction with other toys in a non-goal directed manner
- Holding or looking at the object in a way that is not related to problem solving

This code should *not* be used when the child is:

- Distressed or acting aggressively
- Playing with the wrench or the can separately from the rest of the task (*code 1.5 or 2.5*)

8.3 Involvement with distress

This code is used when the child is:

- Whining, complaining, or controlled crying about the difficulty of the task while still using or holding the object
- Becoming agitated about his or her inability to do the task while still using or holding the object

This code should *not* be used when the child is:

- Fussing about the task while not actually engaged with the object (*see 6 and 4.3*)

Note:

- If the child is no longer engaged in the task but is still talking about it, a 6 code should be used if the child is talking to the mom, and a code of 4.3 should be used if the child is talking to him or herself.
- This code is strictly affect based.

8.4 Involvement with aggression

This code is used when the child is:

- Hitting, throwing, or stomping on the frustration object
- Using excessive force in an attempt to open the tube or push down the snake
- Hitting other objects with the frustration object

This code should *not* be used when the child is:

- Behaving in a way that appears out of control or tantrum-like (*see 11*)

NOTE:

- Codes of 8.3 and 8.4 can occur simultaneously.
- When the child brings the toy to the mother for assistance, *only* the appropriate 6 code should be used (NOT 8.2). All other instances of simultaneous involvement with the frustration object and other-directed interactions (ex. the child talks to mom about the task while seated at the table) should receive both a 6 and an 8 code.
- If the child is talking to him or herself about the goal or reward in reference to the frustration object, a code of 4.3 should be given in conjunction with the appropriate 8 code.

9. INVOLVEMENT WITH THE DISAPPOINTMENT OBJECT

The child's attention is directed toward the disappointment toy.

9.1 Tentative look and touch

This code should be used when the child is:

- Peering into the box
- Fingering, examining, or carrying the toy
- Removing the toy from the box, or returning the toy to the box
- Passively “playing” with the toy

9.2 Active involvement/play

This code should be used when the child is:

- Using the toy in its intended manner
- Enthusiastically engaged with the toy
- Attempting to engage others in play with the toy (also code 6.7 or 6.8)

Note:

- The child may have either positive or negative affect while playing with the toy—both should be coded as 9.2.

9.3 Close box

This code should be used when the child is:

- Returning the cover to the box, only if the toy is in the box

This code should *not* be used when the child is:

- Returning the cover to the box after removing the toy (although if the child removed the toy, played with it, and returned it to the box, closing the box would be coded 9.3)

NOTE:

- Most behaviors involving others should only receive 6 codes unless the interaction is clearly in the context of play (then a code of 9.2 should be given simultaneously).
- If the child gives the toy to the mom or the experimenter without saying anything, a code of 6.7 should be given.
- If the child asks the parent or experimenter about where the other toy is, a code of 6.3 or 6.4 should be given.
- If the child is talking to him or herself about the disappointment object, a code of 4.3 should be given in conjunction with the appropriate 9 code.
- If the child looks around to parent or examiner without saying anything there is no need to use a 6 code.
- A generic verbalization to get attention (ex. “Hey!”) should receive a code of 6.8.

10. PASSIVE

Use this category if it is the only codable behavior in the episode.

The child is not focused on any particular objects and is not engaged in any particular behavior.

This code should be used when the child is:

- Sitting or standing passively—visual focus, if any, is only momentary
- Holding objects without focusing on them

This code should *not* be used when the child is:

- Looking at the lab mirror or camera (*see 2.1*)

Note:

- If a child is holding an object, he or she must not be giving it any attention in order to receive a code of 10. It must be as though he or she is not aware of the object

11. DISORGANIZED

The child is not engaging in any emotion regulation strategies and has lost control of his or her coping abilities.

This code should be used when the child is:

- Excessive crying, venting or tantruming
- Stomping, punching furniture, or other aggressive behaviors outside the context of play or problem-solving

Note:

- This code must be used only in the absence of any other codable behaviors
- This code may be used when the child is holding the frustration, prohibition, or disappointment object as long as the behavior does not appear to be goal-directed in any way.

12. MISSING

This code is used when there is no codable behavior for the entire segment.

This code should be used when:

- The child is off screen for the entire segment
- The child's body is blocking what his or her hands are doing, making it impossible to identify the behavior
- The child is responding to mother-directed behaviors during the prohibition, frustration, or disappointment tasks and is engaging in no obvious regulation strategies
- There is no tape timer on the bottom of the screen
- The child is picked up or carried by the mother or examiner and is engaging in no obvious regulation strategies.

AFFECT CODING

0 Neutral Affect

This code should be used for all displays of affect which are not clearly positive or negative.

1 Positive Affect

This code should be used for all obvious displays of positive affect including:

- Smiling that is unambiguously positive
- Laughing/giggling

2 Negative Affect/Distress

This code should be used for all obvious displays of sad, angry, or frustrated negative affect including:

- Crying, whining, fussing, whimpering, or sniffing (one sniffle in a segment should get a code of 2.1, while more than one should be coded as 2.2, unless there are two very close together)
- Facial expressions (i.e. frowns or grimaces)
- Angry yelling, cursing, stomping, or tantruming
- Throwing, hitting, banging objects, or hitting others
- Hostility or defiance to requests (ex.. "No, I don't want to")

2.1: short duration (not longer than 3 seconds)

2.2: long duration or demonstration of high intensity or multi-modal

3 Frustrated

This code should be used in addition to a distress code for all obvious displays of frustration including:

- Throwing, hitting, or banging objects in response to a blocked goal
- Whining or yelling about the inability to achieve the goal
- Frustrated or negative response to goal blockage (ex. "I can't do it" in context)

3.1: short duration (not longer than 3 seconds)

3.2: long duration or demonstration of high intensity or multi-modal

4 Anxious

This code should be used for behaviors demonstrating anxiety including:

- Repetitive movements such as wringing hands, rocking, or rubbing
- Nervous movements such as picking at clothes, fingers, hair, etc.
- Facial indicators such as wide eyes, raised eyebrows, creased forehead, or darting glances
- Rigid posture, hunched or huddled posture, or awkward posture (ex. leaning against couch with feet/legs strangely balanced)
- Avoidance behaviors such as hesitation, play interruption, running away and hiding, or visual or postural avoidance
- Chopped or forced utterances, or crying in response to being startled

NOTE:

- This code should not be confused with displays of boredom which include a lack of attention, a limp body, or sighing and yawning

- Context is critical
- 4.1: short duration (not longer than 3 seconds)
- 4.2: long duration or demonstration of high intensity or multi-modal

9 **Off Camera/Cannot Code**

This code should be used when the affect cannot be coded due to an inability to see the child's face and/or a lack of information.

- This code should only be used when there is an obstructed view or lack of information, or when less than half of the child's face can be seen, for more than 3 seconds; otherwise only another affect code should be used.
- This code may be used in the same segment as other affect codes.

TABLE 1
Intercorrelations of Child Mood

	Mood 4mo ICQ	Mood 4mo EAS	Mood 4mo IBQ	Mood 8mo EAS	Mood 8mo IBQ	Mood 8mo ITQ	Mood 8mo TATA	Mood 14mo ICQ	Mood 14mo EAS	Mood 14mo IBQ	Mood 14mo TATA	Mood 30mo EAS	Mood 30mo TBAQ
Mood 4mo ICQ	1.00	.811**	.682**	.669**	.535**	.506**	.153	.660**	.513**	.355*	-.052	.530**	-.298*
Mood 4mo EAS	.811**	1.00	.659**	.717**	.458**	.387**	.077	.683**	.618**	.342*	-.108	.607**	-.225
Mood 4mo IBQ	.682**	.659**	1.00	.555**	.681**	.344*	.186	.513**	.443**	.273	.531**	.356*	.046
Mood 8mo EAS	.669**	.717**	.555**	1.00	.677**	.560**	-.061	.685**	.766**	.442**	-.099	.607**	-.298*
Mood 8mo IBQ	.535**	.458**	.681**	.677**	1.00	.575**	-.071	.528**	.618**	.342*	-.108	.607**	-.225
Mood 8mo ITQ	.506**	.387**	.344*	.560**	.575**	1.00	-.006	.477**	.443**	.273	.531**	.356*	.046
Mood 8mo TA	.153	.077	.186	-.061	-.071	-.006	1.00	.083	.040	.046	.535**	.378*	.115
Mood 14mo ICQ	.660**	.683**	.513**	.685**	.528**	.513**	.083	1.00	.645**	.389**	.189	.378*	.115
Mood 14mo EAS	.513**	.618**	.443**	.766**	.477**	.332*	.040	.645**	1.00	.389**	.203	.669**	-.238
Mood 14mo IBQ	.355*	.342*	.493**	.442**	.709**	.330*	.046	.414**	.389**	1.00	.189	.378*	.115
Mood 14mo TA	-.052	-.108	-.075	-.099	-.040	-.157	.535**	.096	.203	.189	1.00	.013	.018
Mood 30mo EAS	.530**	.607**	.449**	.273	.531**	.356*	-.057	.542**	.669**	.378*	.013	1.00	-.244
Mood 30mo TB	-.298*	-.225	.046	-.520**	-.085	-.295*	.113	-.409**	-.238	.115	.018	-.244	1.00

NOTE. TA = Temperament Adjectives Triad Assessment; ITQ = Infant Temperament Questionnaire; TB = Toddler Behavior Questionnaire; EAS = Emotionality, Activity and Sociability Temperament Survey for Children; IBQ = Infant Behavior Questionnaire; ITQ = Infant Temperament Questionnaire.
*p < .05, **p < .01

TABLE 2
Intercorrelations of Child Activity

	Active 4mo EAS	Active 4mo IBQ	Active 8mo EAS	Active 8mo ITQ	Active 8mo IBQ	Active 8mo TAT4	Active 14mo EAS	Active 14mo IBQ	Active 14mo TAT4	Active 30mo EAS	Active 30mo IBQ
Active 4mo EAS	1.00	.163	.487**	.301*	.220	.193	.307*	.045	.011	.246	-.078
Active 4mo IBQ	.163	1.00	-.072	.316*	.367*	-.088	.114	.382*	.139	-.048	.104
Active 8mo EAS	.487**	-.072	1.00	.373*	.132	.321*	.759**	.058	.166	.606**	.246
Active 8mo ITQ	.301*	.316*	.373*	1.00	.671**	.244	.327*	.527**	.239	.318*	.374*
Active 8mo IBQ	.220	.367*	.132	.671**	1.00	.121	.322*	.645**	.161	.191	.333*
Active 8mo TA	.193	-.088	.321*	.244	.121	1.00	-.035	-.066	.072	1.00	.333*
Active 14mo EAS	.307*	.114	.759**	.327*	.322*	-.035	1.00	.246	.094	.625**	.328*
Active 14mo IBQ	.045	.382*	.058	.527**	.645**	-.066	.246	1.00	.080	.101	.374*
Active 14mo TA	.011	.139	.166	.293	.161	.393**	-.094	.072	1.00	.161	.333*
Active 30mo EAS	.246	-.048	.606**	.239	.191	.099	.625**	.080	.161	1.00	.333*
Active 30mo IBQ	-.078	.104	.170	.318*	.149	.115	.328*	.101	.374*	.333*	1.00

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*p < .05, **p < .01

TABLE 3
Intercorrelations of Child Approach

	App 4mo EAS	App 4mo IBQ	App 8mo EAS	App 8mo IBQ	App 8mo ITQ1	App 8mo ITQ2	App 8mo TA	App 14mo EAS	App 14mo IBQ	App 14mo IBQ	App 14mo TA	App 30mo EAS	App 30mo EAS	App 30mo TB
App 4mo EAS	1.00	.374*	.497**	.236	.302*	.355*	-.029	.486**	.376*	.376*	.376*	.376*	.376*	.411**
App 4mo IBQ	.374*	1.00	.101	.260	.255	.214	-.044	.088	.449**	.449**	.449**	.449**	.449**	.203
App 8mo EAS	.497**	.101	1.00	.545**	.421**	.437**	-.072	.700**	.340*	.340*	.340*	.340*	.340*	.350**
App 8mo IBQ	.236	.260	.545**	1.00	.712**	.593**	-.043	.341*	.583**	.583**	.583**	.583**	.583**	.339*
App 8mo ITQ1	.302*	.255	.421**	.712**	1.00	.659**	.027	.424**	.446**	.446**	.446**	.446**	.446**	.328*
App 8mo ITQ2	.355*	.214	.437**	.593**	.659**	1.00	.137	.366*	.470**	.470**	.470**	.470**	.470**	.198
App 8mo TA	-.029	-.029	-.072	-.043	.027	.137	1.00	.079	.202	.202	.202	.202	.202	-.026
App 14mo EAS	.486**	.088	.700**	.341*	.424**	.366*	.079	1.00	.296	.296	.296	.296	.296	.378*
App 14mo IBQ	.376*	.449**	.340*	.583**	.446**	.470**	.202	.296	1.00	1.00	1.00	1.00	1.00	.295
App 14mo TA	-.019	-.011	-.261	-.169	-.162	-.120	.339*	-.153	.007	.007	.007	.007	.007	-.054
App 30mo EAS	.291	.020	.505**	.385*	.314*	.395**	.066	.519**	.332*	.332*	.332*	.332*	.332*	.615**
App 30mo TB	.411**	.203	.350*	.339*	.328*	.198	-.054	.378*	.295	.295	.295	.295	.295	1.00

NOTE. TA = Temperament Adjectives Toddler Assessment; ITQ = Infant Temperament Questionnaire; TB = Toddler Behavior Questionnaire; EAS = Emotionality, Activity and Sociability Temperament Survey for Children; IBQ = Infant Behavior Questionnaire; ITQ = Infant Temperament Questionnaire.
*p < .05, **p < .01

TABLE 4
Intercorrelations of Child Intensity

	<i>Int</i> <i>8mo TA</i>	<i>Int</i> <i>8mo ITQ</i>	<i>Int</i> <i>14mo TA</i>	<i>Int</i> <i>30mo TB</i>
<i>Int</i>	1.00	.140	.451**	.006
<i>8mo TA</i>				
<i>Int</i>	.140	1.00	.248	-.047
<i>8mo ITQ</i>				
<i>Int</i>	.451**	.248	1.00	-.406**
<i>14mo TA</i>				
<i>Int</i>	-.006	-.047	-.406**	1.00
<i>30mo TB</i>				

NOTE. TA = Temperament Adjectives Triad Assessment; ITQ = Infant Temperament Questionnaire; TB = Toddler Behavior Questionnaire.
* $p < .05$, ** $p < .01$

TABLE 5
Intercorrelations of Coping Strategies

	<i>Distract</i>	<i>Problem-Solve</i>	<i>Passive Engage</i>	<i>Phys. Self-S</i>	<i>Symb. Self-S</i>	<i>Other Focus</i>	<i>Search Parent</i>	<i>Object Focus</i>	<i>Task Focus</i>	<i>Disorg.</i>	<i>Total Coping</i>
Distract	1.000										
Problem-Solve	-.185	1.000									
Passive Engage	-.272	-.116	1.000								
Phys. Self-S	-.076	-.244	-.147	1.000							
Symb. Self-S	-.114	-.125	-.176	-.012	1.000						
Other Focus	-.211	-.120	-.192	-.148	.146	1.000					
Search Parent	-.426**	-.153	.004	-.100	-.132	.046	1.000				
Object Focus	-.207	.099	-.370*	-.252	.146	.032	.159	1.000			
Task Focus	-.199	-.188	-.035	-.025	.042	.224	.254	-.157	1.000		
Disorg.	-.086	-.018	-.037	.103	.198	-.071	.155	-.170	.256	1.000	
Total Coping	-.403**	-.347*	.096	.262	.109	.046	.590**	.101	.290	.207	1.000

*p < .05, **p < .01

TABLE 6
Coping Strategies and Affect

	<i>Distract</i>	<i>Problem-Solve</i>	<i>Passive Engage</i>	<i>Phys. Self-Soothe</i>	<i>Symb. Self-Soothe</i>	<i>Other Focus</i>	<i>Search Parent</i>	<i>Object Focus</i>	<i>Task Focus</i>	<i>Disorg.</i>	<i>Total Coping</i>
Positive	.087	.006	-.119	.309*	.220	-.176	-.142	-.133	-.159	.484**	.182
Distress	-.268	-.273	-.140	.008	.100	.374*	.398**	-.091	.782**	.128	.218
Frustrate	.083	-.237	-.192	.011	.071	.287	.027	-.097	.514**	-.110	-.054
Anxious	-.290	-.110	.279	.269	.048	-.103	.098	-.211	-.082	.065	.111
Neutral	.248	.334*	.106	-.196	-.364*	-.218	-.205	.191	-.480**	-.283	-.181

*p < .05, **p < .01

TABLE 7
Coping Strategies and Child Mood

	<i>Distract</i>	<i>Problem-Solve</i>	<i>Passive Engage</i>	<i>Phys. Self-Soothe</i>	<i>Symb. Self-Soothe</i>	<i>Other Focus</i>	<i>Search Parent</i>	<i>Object Focus</i>	<i>Task Focus</i>	<i>Disorg.</i>	<i>Total Coping</i>
Negative 4mo [Q]	-.013	-.268	.073	-.016	.085	.083	.115	-.171	-.001	-.088	.177
Negative 8mo [Q]	-.165	-.246	-.094	.200	.171	.269	.150	-.211	.122	-.072	.177
Negative 8mo [O]	-.157	.032	.262	-.091	.111	.259	-.171	.111	-.101	-.362*	.060
Negative 14mo [Q]	-.123	-.224	.067	.043	.193	.108	.090	-.021	.052	-.082	.160
Negative 14mo [O]	.097	.039	.066	-.098	-.095	.166	-.183	.143	-.112	-.265	-.209
Negative 30mo [Q]	.057	-.171	-.084	.078	.231	-.001	-.043	-.204	.026	.017	-.065

NOTE: O = Observed Data; Q = Questionnaire Data Composite.

*p < .05, **p < .01

TABLE 8
Coping Strategies and Child Approach

	<i>Distract</i>	<i>Problem-Solve</i>	<i>Passive Engage</i>	<i>Phys. Self-Sothe</i>	<i>Symb. Self-Sothe</i>	<i>Other Focus</i>	<i>Search Parent</i>	<i>Object Focus</i>	<i>Task Focus</i>	<i>Disorg.</i>	<i>Total Coping</i>
Approach 4mo [Q]	.047	.110	-.112	-.009	-.099	-.077	.132	-.052	.189	-.053	.011
Approach 8mo [Q]	.381	.049	.049	-.244	-.072	-.351*	-.135	-.006	-.164	-.034	-.134
Approach 8mo [Q]	.246	-.047	-.017	.242	-.068	.048	-.217	-.155	-.055	-.138	-.165
Approach 8mo [O]	.254	.033	.019	-.041	-.179	-.069	-.012	-.276	-.034	.017	-.021
Approach 14mo [Q]	.013	-.026	.125	.166	-.279	.282	-.046	-.289	-.096	-.007	-.072
Approach 14mo [O]	.335*	.131	-.143	-.051	-.066	-.263	-.228	.119	-.373*	-.150	-.141
Approach 30mo [Q]											

NOTE. O = Observed Data; Q = Questionnaire Data Composite. Child approach data was reverse scored.
*p < .05, **p < .01

TABLE 9
Coping Strategies and Child Activity

	<i>Distract</i>	<i>Problem-Solve</i>	<i>Passive Engage</i>	<i>Phys. Self-Soothe</i>	<i>Symb. Self-Soothe</i>	<i>Other Focus</i>	<i>Search Parent</i>	<i>Object Focus</i>	<i>Task Focus</i>	<i>Disorg.</i>	<i>Total Coping</i>
Active	-.104	-.142	.119	-.126	.046	.282	.199	-.307*	.166	-.088	.132
4mo [Q]											
Active	.002	-.073	-.097	-.036	.165	-.024	.130	-.144	-.016	-.133	.111
8mo [Q]											
Active	-.053	-.091	-.159	-.072	-.081	-.194	.382**	.053	.116	.305*	.211
8mo [O]											
Active	-.053	-.086	-.016	-.048	.265	.069	.061	-.124	.078	-.101	.025
14mo [Q]											
Active	.041	-.058	-.234	-.117	.329*	-.264	.123	.145	.157	.148	.140
14mo [O]											
Active	-.136	-.009	-.033	-.206	.380**	.147	-.018	-.018	.053	.052	.013
30mo [Q]											

NOTE. O = Observed Data; Q = Questionnaire Data Composite.
*p < .05, **p < .01

TABLE 10
Coping Strategies and Child Intensity

	<i>Distract</i>	<i>Problem-Solve</i>	<i>Passive Engage</i>	<i>Phys. Self-Soothe</i>	<i>Symb. Self-Soothe</i>	<i>Other Focus</i>	<i>Search Parent</i>	<i>Object Focus</i>	<i>Task Focus</i>	<i>Disorg.</i>	<i>Total Coping</i>
Intense	.022	.017	-.163	-.159	.045	-.207	.055	-.003	.087	.134	-.012
8mo [O]											
Intense	-.048	.012	-.134	-.057	-.010	-.004	.262	-.061	.253	.035	-.356*
8mo [Q]											
Intense	.083	.072	-.224	-.307*	.194	-.089	.049	.189	.087	.053	-.001
14mo [O]											
Intense	-.168	-.137	-.294*	.056	.443**	.158	-.056	.166	.013	.061	.118
30mo [O]											

NOTE. O = Observed Data; Q = Questionnaire Data Composite.

*p < .05, **p < .01

TABLE 11
Coping Strategies and Parenting Style

	<i>Distract</i>	<i>Problem-Solve</i>	<i>Passive Engage</i>	<i>Phys. Self-Soothe</i>	<i>Symb. Self-Soothe</i>	<i>Other Focus</i>	<i>Search Parent</i>	<i>Object Focus</i>	<i>Task Focus</i>	<i>Disorg.</i>	<i>Total Coping</i>
Hostile 8mo.	.162	.005	.229	-.208	-.061	-.123	-.120	.092	-.155	-.212	-.092
Intrusive 8mo.	-.033	-.027	.121	-.298*	.028	.204	-.079	.152	.059	-.062	-.035
Sensitive 8mo.	-.134	.101	-.031	.254	.080	.082	.074	-.321*	.157	.221	.041
Scaffold 8mo.	-.070	.115	.000	.222	-.010	.032	.069	-.372*	.262	.217	-.017
Hostile 14mo.	.011	.252	.265	-.235	.129	-.203	-.179	.065	-.051	-.138	-.092
Intrusive 14mo.	-.021	.126	.187	-.180	-.016	.157	-.240	.078	-.002	.016	-.161
Sensitive 14mo.	-.016	.075	-.144	.186	-.003	.109	.021	-.310*	.160	.222	-.090
Scaffold 14mo.	-.075	.099	-.005	.102	.005	.074	.005	-.298*	.207	.238	-.119
Child Focus	-.312*	-.111	.155	.046	-.145	.218	.046	-.039	.104	-.031	.091

*p < .05, **p < .01

TABLE 12
Partial Correlations of Coping Strategies and Parenting Style Removing SES

	<i>Distract</i>	<i>Problem-Solve</i>	<i>Passive Engage</i>	<i>Phys. Self-Soothe</i>	<i>Symb. Self-Soothe</i>	<i>Other Focus</i>	<i>Search Parent</i>	<i>Object Focus</i>	<i>Task Focus</i>	<i>Disorg.</i>	<i>Total Coping</i>
Hostile 8mo.	.071	.030	.271	-.163	-.068	-.129	-.152	-.024	-.021	-.173	-.131
Intrusive 8mo.	-.124	.016	.128	-.311*	-.062	.226	-.085	.215	.144	-.098	-.047
Sensitive 8mo.	-.026	.114	-.060	.196	.028	.088	.122	-.183	-.030	.126	.092
Scaffold 8mo.	.038	.142	-.024	.150	-.122	.026	.117	-.224	.110	.101	.020
Hostile 14mo.	-.083	.290	.307	-.186	.197	-.215	-.217	-.087	.093	-.061	-.128
Intrusive 14mo.	-.058	.123	.202	-.143	.039	.166	-.260	-.025	.073	.091	-.180
Sensitive 14mo.	.123	.098	-.212	.098	-.129	.124	.064	-.115	-.043	.094	-.067
Scaffold 14mo.	.015	.140	-.035	-.006	-.151	.077	.043	-.078	.043	.097	-.103
Child Focus	-.319*	-.097	.149	.017	-.225	.220	.057	.050	.073	-.096	.101

*p < .05, **p < .01

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