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Modeling Secure Base Parenting Cognitions

A Dissertation Presented

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Abstract of the Dissertation

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Secure attachment is associated with a host of positive outcomes including higher levels of prosocial behavior and self-efficacy, better stress regulation, and a lower incidence of psychopathology. Secure base support and sensitive caregiving interactions are predictive of secure attachment. Interventions designed to promote sensitive caregiving have had success in both improving parental behaviors and in increasing levels of attachment security. These interventions are, however, too time consuming and resource intensive to be rolled out to the general population. This study sought to determine if a brief and easy to deliver intervention could be successful in enhancing secure base cognitions in participants. 136 female participants were randomly assigned to either an intervention or control condition, and placed in either a secure script or no script group based on their scores on the Attachment Script Assessment. The intervention group watched a set of videos of mothers and toddlers interacting in three situations (clean-up task, tool-use task, and free play on the playground), with accompanying audio commentary guiding participants' attention to important secure base features of the interactions. The control group watched the same interaction videos but without the commentary. Participants were then asked to comment on six different mother-child interactions of the same situations two days later. Comments made by the participants were scored for secure base knowledge on three separate scales (recognition of the need for exploration, secure base support given by the mother, and taking the child's perspective). The intervention group scored significantly higher than the control group on all three scales. The script group also scored higher than the no script group on all three scales. Furthermore, there was an interaction between the intervention/control groups and the script/no script groups indicating that, although all participants benefited from the intervention, those with secure script knowledge benefitted to a greater degree. These results demonstrate that a brief and economical parenting intervention can be successful, and also illustrate the importance of an individual's existing attachment scripts in determining how they view interactions with children as well as how easily they can apply acquired secure base concepts to new situations

Table of Contents

I. INTRODUCTION.....	1
Origins of Attachment Theory.....	2
Secure Base Concept.....	3
Maternal Sensitivity.....	4
Correlates of Attachment	5
Prosocial Development.....	6
Psychopathology.....	10
Neurobiological Correlates of Attachment	13
Attachment Theory and Intervention.....	16
Transmission Model	17
Review of Attachment Intervention Programs.....	20
Meta-analysis of Intervention Programs.....	28
A Study of Modeling Secure Base Parenting Cognitions.....	29
Study Hypotheses	34
II. METHOD.....	35
Participants and Design.....	35
III. MEASURES	37
Demographic Form.....	37
Attachment Script Assessment.....	38
Child Parenting Interactions Interview.....	39
Secure Base Cognition Scales	40
IV. RESULTS.....	42
Sample Characteristics.....	42
Attachment Script Assessment.....	46

Secure Base Cognition Scales.....	47
Relations Between Condition, Script Knowledge, and Secure Base Cognitions.....	48
V. DISCUSSION.....	51
Summary of Key Findings.....	51
Study Implications.....	55
Limitations.....	58
Future Directions.....	59
VI. REFERENCES.....	61

List of Tables

Table 1: Narrative Prompt Word Outlines for the Attachment Script Assessment.....	73
Table 2: Scriptedness Scoring System.....	74
Table 3: Mean Scale Scores by Situation for Each Group.....	75
Table 4: Mean Scale Scores for Each Group.....	77

List of Figures

Figure 1: Secure Base Script.....	78
Figure 2: Means Scale Scores for Each Group.....	79

List of Appendices

Appendix A: Commentary for Intervention Condition.....	80
Appendix B: Overview of Study Design.....	91
Appendix C: Instructions used by Research Assistants for Session I.....	93
Appendix D: Instructions used by Research Assistants for Session II.....	102
Appendix E: Abbreviated Instructions for Child-Parenting Interactions Interview.....	111
Appendix F: Demographic Questionnaire.....	112
Appendix G: Secure Base Cognition Scales.....	114

I. INTRODUCTION

Secure attachment is correlated with a host of positive outcomes throughout the life course. Furthermore, secure individuals are more likely to have secure children, thus establishing a cross-generational link (Main, Kaplan, & Cassidy, 1985; Van Ijzendoorn, 1995; Waters, Vaughn, Posada, & Kondo-Ikemura, 1995). These findings have prompted the development of intervention programs aimed at increasing the rate of secure attachment in infants and children. These interventions have taken one of two different approaches. The first is typically a long-term intervention geared towards helping parents to come to terms with their own attachment status and early childhood experiences through psychoanalysis. The second strives to teach the parent behaviors and attributions that are associated with attachment security in children. Although there has been some reasonable success in this effort, interventions are too resource and time intensive to deliver on a large scale. Determining both an effective and efficient method to deliver a successful intervention to a broad range of individuals remains a formidable challenge.

We begin with a brief introduction to attachment theory as conceptualized by John Bowlby, followed by a review of Mary Ainsworth's work in uncovering the maternal behaviors associated with attachment security in infants. Some of the social, emotional, and neurobiological correlates of secure and insecure attachment in infancy through adulthood are presented before reviewing attachment intervention programs that have demonstrated success through randomized control trials. A critique of the strengths and weaknesses of these programs sets the stage for the current investigation which is a brief intervention modeling secure base

script knowledge to young adults while they watch mother-child video-taped interactions in an effort to influence their parenting cognitions.

Origins of Attachment Theory

Over three-quarters of a century ago, John Bowlby and his colleagues (Bretherton, 1992) made an observation that would go on to spur an incredibly large volume of research in the areas of developmental, social, and clinical psychology, and dramatically alter what is known about the early needs of children. In 1929 while working at Priority Gate, a school for difficult children, staff member John Alford pointed out that the children who seemed detached frequently experienced maternal loss or deprivation during their earliest years (van der Horst, 2011). During this time, two children in particular made an impression on him. The first was described by Bowlby as “an isolated and affectionless adolescent who had never experienced a stable relationship with a mother figure” (Ainsworth & Bowlby, 1991, p. 333) and the second was “an anxious child who followed Bowlby around like a shadow” (Ainsworth et al., 1991, p. 333). This experience of working with disturbed children solidified the direction that Bowlby’s interest in medicine and psychology would take him (Ainsworth et. al., 1991).

Bowlby later compared the histories of 44 juvenile thieves with a matched control group and found that maternal separation and deprivation was much more common in the group of thieves than the control group, with a particularly strong association found in a sub-group of children who were classified as ‘affectionless’ (Bowlby, 1944). While many of the children documented experienced instability in their home lives, including separations from their mothers at an early age, some who remained with their mothers exhibited the same behaviors. In the case of children who had not experienced physical separation from their mother, extensive interviews with the mother revealed an intense dislike and rejection of the child as at least one aspect of her feelings. Thus, maternal deprivation can consist of not only the physical absence of the mother,

but the functional absence of the mother as well. These early observations point to the importance of identifying exactly what the mother's functional role is in the developmental trajectory of a child.

Bowlby emphasized an evolutionary perspective in which maintaining proximity to the mother served the function of increasing the child's chances for survival (Bowlby, 1958). As such, humans are wired to form attachments with other humans because they can't survive without them. He observed that unlike ground-dwelling mammals who run for cover when frightened, humans and other primates run to a protective adult who carries them to safety (Harlow & Zimmermann, 1959; Sroufe & Siegel, 2011). The idea of social affiliation as a biologically based need is supported by presence of oxytocin in response to stress. When met with positive social interactions, oxytocin serves to reduce the stress response and therefore increase the likelihood one will seek affiliation in subsequent stressful situations (Taylor, 2006). Attachment behaviors increase the likelihood of close mother-child proximity, which in turn increases the level of protection given to the child, and as a result the child's chances for survival. Above and beyond protection, close proximity serves to teach the child about the environment and social interactions, all which serve evolutionary adaptation (Cassidy, 2008; Bowlby, 1969/1982).

Secure Base Concept

Central to attachment theory is the concept of the secure base. A child by nature is interested in exploring, and it is through these explorations that the child moves from being a completely dependent infant to an independent adult. The attachment system makes these explorations both safe and more enriching for the child. A caregiver serves as a secure base for the child by closely monitoring the child, offering encouragement and support when it is needed, and intervening only when clearly necessary. As a result, the child is able to confidently explore,

knowing his caregiver will welcome him with comfort and reassurance when he needs it (Bowlby, 1988). These behaviors have also been seen in macaque monkeys who appeared to be seeking comfort as they showed preference to a soft, cloth-lined wire surrogate mother to a hard wire monkey, despite the hard monkey having the ability to dispense milk (Harlow & Zimmermann, 1959). Bowlby hypothesized that this early form of dependence is fundamental to later independence, and his hypothesis has been supported with longitudinal data (Sroufe, Egeland, Carlson & Collins, 2005).

Bowlby's theory can be broken down into two propositions; first, that the history of the quality of an individual's care shapes their attachment relationships and determines whether or not they are secure, and second that attachment relationships become the foundation for later personality development (Sroufe et al., 2011). Mary Ainsworth's work in developing a systematic and empirical method for measuring attachment and caregiving correlates supports the first proposition, and an abundance of research has been conducted supporting the idea of attachment playing a role in the area of personality development and psychopathology. Both will be discussed below.

Maternal Sensitivity

Key to supporting Bowlby's theory is the ability to objectively measure individual differences in attachment. Bowlby's collaborator, Mary Ainsworth, conducted extensive field investigations of mother-infant dyads and noted maternal behaviors that were associated with infant attachment outcomes. Her observations took place in Uganda (1954-55) and, later, in Baltimore (1963) while working at Johns Hopkins University. From the study of Ganda infants, Ainsworth was struck by the amount of initiative the infants took in seeking interaction (Ainsworth, 1963). Accordingly, her main finding was that sensitivity, meaning that the mother is attuned to the needs of the infant, notices and correctly interprets the infant's signals, and

responds in a prompt, appropriate, and effective manner, was the primary predictor in positive infant outcome. Further, Ainsworth's home observations showed that infants whose cries were attended to promptly and effectively cried less by the end of the first year. Securely attached infants were calmer, appearing as though they had confidence in their mother to take care of their needs (Sroufe et al., 2011), whereas insecurely attached infants seemed to lack this confidence and become distressed more easily.

Ainsworth was able to develop a reliable laboratory procedure that could capture the patterns of mother-child interaction that were related to the naturalistic observations she had made (Ainsworth & Bell, 1970). She accomplished this in her Strange Situation procedure wherein infants are brought into a room with toys and experience a series of separations and reunions with their mother. These separations are designed to evoke separation anxiety in the child so that the child's reaction to the return of the mother can be observed. Secure infants are better able to calm down when their mother returns and are then able to get back to exploring their environment. In contrast, insecure infants cannot effectively use their mother to calm down and return to exploration. They may avoid the mother altogether, or approach the mother but appear to gain no benefit from the contact with her. Notably, the mother's departure was the source of the infant's distress and thus her return would be expected to alleviate his or her distress, as it does with secure infants. The infant's continued level of distress leads to a difficulty in getting back to exploration (Ainsworth, Blehar, Waters & Wall, 1978).

Correlates of Attachment

Research has borne out strong support for Bowlby's proposition that attachment lays the foundation for personality development. Decades of research, including a 35-year longitudinal study, the Minnesota Longitudinal Study of Risk and Adaptation (MLSRA), have pointed to a model wherein attachment security places a child on a probabilistic developmental trajectory.

This trajectory has unique features for each of the attachment classifications (secure, insecure/avoidant, insecure/ambivalent, and disorganized), which will be discussed below. The trajectory is not deterministic, and events can happen anywhere along the way to alter the trajectory. However, the present is always influenced by the past, and the longer a set pathway has been followed, the more resistant it is to change (Bowlby, 1973). The probabilistic developmental trajectory is a result of a number of factors directly impacted by attachment security including the capacity for emotional regulation, social competence, and self-reliance and efficacy. These combine to shape an individual's resilience and propensity towards psychopathology. Further, the individual forms an adaptive stress response to meet their early caregiving environment, and this response has neurobiological correlates.

Prosocial Development

Emotional Regulation. Secure children are taught that emotional communication with others is important, and learn to express their emotions in appropriate ways (e. g. Cassidy, 1994). Emotional regulation begins at birth when the newborn infant's emerging capacities for attention and engagement are stimulated by the caregiver's interactions. When the infant gives cues of over-arousal, such as crying, the caregiver soothes the infant. The infant's emotions are initially regulated by the caregiver, with a gradual transfer of ownership to the child (Sroufe, 1997). In contrast, a child whose caregivers do not ameliorate distress, or even escalate distress, create a dysregulated physiology as well as the expectations that distress always leads to losing control of one's own emotions. As a result, insecure children tend to either inhibit emotional expressiveness (Bridges & Grolnick, 1995), or to express intense emotional reactions.

Securely attached children not only exhibit better emotional regulation skills than their insecure peers, but are also better able to understand the emotions of others (Laible & Thompson, 1998; Ontai & Thompson, 2002; Steele, Steele, Croft & Fonagy, 1999). This ability

to understand the emotions of others is foundational to empathic behaviors. Accordingly, secure children show more concern for their peers, and are more likely to help and share (Kestenbaum, Farber, & Sroufe, 1989).

Empathy can be thought of as an enhancement of dyadic connectedness. The other side of the continuum, a breakdown in dyadic connectedness, manifests as either anxiety or anger depending on the specific attachment history of the individual as an infant. Interpersonal anxiety is associated with having an insecure/ambivalent attachment in infancy and is believed to be the result of unpredictable caregiving causing chronic vigilance in the infant (Bowlby, 1973; Cassidy & Berlin, 1994). Anger and aggression are associated with avoidant and disorganized attachment (Ainsworth et al., 1978; Bowlby, 1973, 1980; Lyons-Ruth, Alpern, & Repacholi, 1993; Renken, Egeland, Marvinney, Mangelsdorf, & Sroufe, 1989). A normative level of anger is seen as adaptive in response to separation anxiety in order for the infant to express displeasure at separation and to prevent further separations from happening (Bowlby, 1973). However, chronic rejection from a caregiver can give rise to aggressive behavior towards the caregiver which is later brought to the child's new relationships along with the expectation of being rejected (Weinfield, Sroufe, Egeland, & Carlson, 2008).

Social Competence. Attachment contributes to a child's expectations about social interactions. These expectations influence the way a child both approaches a social situation and interprets ambiguous cues (Sroufe & Fleeson, 1986; 1988). Secure children expect that the responsiveness they have received at home will carry forward into other relationships, and have a sense that they deserve such positivity in relationships. Conversely, insecure infants expect that they will continue to receive the same inconsistent or rejecting responses that they receive at home and believe that they are not worthy of better treatment (Bowlby, 1969/1982).

Infants who are securely attached go on to have more positive peer and romantic

relationships later in life. They are more engaged in peer groups in preschool, have closer friendships in middle childhood, and are frequently placed in leadership roles by their peers (Englund, Levy, Hyson, & Sroufe, 2000). In adolescence, they can better navigate the dynamics of close friendships within groups of peers, and in adulthood have a greater capacity to form trusting and non-hostile romantic relationships (Sroufe, 2005).

Differences in social functioning can be seen as early as the toddler period (Belsky & Fearon, 2002; Pastor, 1981), with clear patterns of social competence emerging in preschool children as a function of their attachment classifications at infancy. Children with secure relationships develop warm relationships with their teachers, but are more immersed in their interactions with their peers. They display positive affect, show empathic responses to their peers, can both follow and lead, and are self-directed but can also easily be engaged in activities initiated by teacher. Their teachers rate them as warm and respectful, and have age-appropriate standards of behavior and expectations for them (Sroufe et al., 2005).

Children with insecure/avoidant attachments are described by their peers as being aggressive or even mean. Teachers have low expectations for this group of children, and treat them in a highly controlling manner, provide little nurturance, and get angry at this group the most frequently. They are described by teachers as being isolated, asocial, and emotionally insulated (Sroufe, 2005). Although competent at solitary play, play involving close physical or emotional contact with others is difficult for them. In the cases where avoidant children do form a close friendship, the relationship is characterized by exclusivity and avoidance of others (Shulman, Elicker, and Sroufe, 1994).

Children with insecure/ambivalent attachments tend to be the least socially competent, are liked the least, and are most often victimized by their peers. Although they show an interest in associating with their peers, their lack of social competence leads them to hover around as an

onlooker rather than becoming involved with the group. Insecure/ambivalent preschoolers also tend to be overly reliant on their teachers. Teachers set low expectations for them, and although they respond to them with warmth, they are also highly controlling with them (Sroufe, 2005). In adolescence these children can navigate a close friendship or a group of friends, but not the complex dynamics of having a close friend within a group of friends (Sroufe, 2005).

Pairing preschoolers by attachment classification has revealed patterns in which insecure/avoidant children victimize insecure/ambivalent children. Secure children become neither victimizer nor victim (Troy & Sroufe, 1987).

Self Reliance and Efficacy. Early caregiving experiences provide infants with information about the impact they can make on the world around them. An infant whose caregivers respond to his cries and bids for attention by appropriately and promptly responding to the child learns that he is efficacious in getting his needs met. This leads to a sense of confidence in dealing with the environment and serves as a building block for later autonomy. Infants whose bids for attention are handled sporadically, or are not handled effectively at all, do not gain this sense of efficacy and thus lack the confidence to behave autonomously (Ainsworth & Bell, 1974; Sroufe, Fox, & Pancake, 1983).

Bowlby predicted that this earliest experience with self-efficacy would have an enduring effect (Bowlby, 1973). Studies have supported this connection. The Minnesota Parent-Child Project found secure children were more independent and ego-resilient as measured at three time-points between preschool and adolescence. Independence was gauged by the level of reliance children had on teachers and camp counselors and ego-resilience was a measure of the child's flexibility in meeting the changing requirements of a situation (Sroufe, 1983; Sroufe, Carlson, & Schulman, 1993; Urban, Carlson, Egeland, & Sroufe, 1991).

Increased levels of self-efficacy in secure children have been demonstrated in studies of a

variety of measures of persistence such as a tool-use task and competitive games. In a Minnesota study of middle class mothers and two-year-olds, secure children were found to be more enthusiastic and persistent (Matas, Arend, & Sroufe, 1978). A German study found three-year-old children playing a competitive game with a stranger to have a differential response to the perception that they may be failing the game based on attachment classification, with secure children responding by increasing their efforts and insecure children responding by decreasing their efforts (Lütkenhaus, Grossmann, & Grossmann, 1985). Another study found that secure children raised in an Israeli Kibbutz were deemed to be more goal-directed and achievement-oriented than those who were insecure (Oppenheim, Sagi, & Lamb, 1988).

Taken together, these data suggest that secure children have a belief that they can achieve their goals through their own efforts. As was true in infancy, insecure children seem to feel that their efforts will not help them to meet their needs. These beliefs translate into differential levels of effort exerted, and consequentially differential levels of success (Weinfield et al., 2008). They also emerge as a buffer in times of stress, with secure children exhibiting far greater levels of resiliency (Sroufe, 2005). Secure attachment does not eliminate current and future stressful situations, but it does moderate the impact of those situations, and puts the individual in a better position to take advantage of opportunities for growth (Sroufe et al., 2011).

Psychopathology

Attachment research points to psychopathology as being a complex outcome of a series of adaptations that people have made. “Disturbance is the outgrowth of patterns of maladaptation interacting with ongoing challenging circumstances in the absence of adequate support.” (Sroufe et al., 2005, page 239). Inherent in this model are the concepts of equifinality wherein there can be multiple pathways to the same outcome (for example ADHD, discussed below), multifinality, wherein one pathway can lead to multiple outcomes (such as in physical

abuse leading to conduct problems, drug use, alcoholism, or depression) (Cicchetti & Rogosch, 1996), that change is always possible, but is constrained by prior development (Bowlby, 1973; Sroufe et al., 2005.). Insecure attachment increases the probability of psychopathology, with specific disorders related to different patterns of attachment.

Insecure/avoidant. Mothers of insecure/avoidant infants have a low level of sensitivity. Additionally, they have a low level of psychological engagement with their children, and seem to approach the tasks of mothering as a chore. Infants and children frequently respond behaviorally by minimizing the emission of signals transmitted to their rejecting caregivers, and psychologically by developing a lack of empathy and hostile anger. Combined with alienation, hostility and lack of empathy make insecure/avoidant children more vulnerable to conduct problems, personality disorders, and depression (Aguilar, Sroufe, Egeland, & Carlson, 2000; Renken, Egeland, Marvinney, Sroufe, & Mangelsdorf, 1989). In the MLSRA study, avoidant attachment had a correlation of .25 with global pathology at age 17 ½ (as measured by the Schedule for Affective Disorders and Schizophrenia for School-Age Children or K-SADS).

Insecure/ambivalent. Mothers of insecure/ambivalent infants have a low level of sensitivity in their interactions with their children as well as a low level of psychological awareness. Infants respond by chronically emitting signals of need in attempt to get an intermittent response. Their chronic vigilance is paired with constant worries that their needs will not be met. Insecure/ambivalent attachment was found to be uniquely associated with anxiety disorders at 17 ½ years (Warren, Huston, Egeland & Sroufe, 1997).

Infants in the MLSRA study who were later classified as insecure/ambivalent were more likely to have worse neurological scores on the Brazelton neonatal exams (Sroufe et al., 2005). However, other studies of middle class samples (MLSRA was a high risk sample due to poverty) did not find such a correlation (Crockenberg, 1981). Together these findings indicate an

interaction between infant characteristics and care-giving environment and suggest that such challenges can be over-ridden.

Individuals with an insecure/ambivalent attachment are also more prone to developing depression. While anxiety is unique to this group, depression is associated with all forms of attachment insecurity.

Disorganized. Infants in the face of frightening and unfathomable parental behavior are placed in the impossible position of needing to flee the source of their fear, which is the parent, and needing to seek protection from their attachment figure, which is the same parent that is causing their fear. Whereas insecure/ambivalent children respond to intermittent care-giving with hyper-activation of the attachment system, and insecure/avoidant children respond with hypo-activation, disorganized children do not have a coherent strategy available to them for handling frightening caregivers (Holmes, 2004). Since they can't escape the situation physically, they must resort to escaping psychologically.

Children who are abused and have a disorganized attachment are far more likely to dissociate than children who are abused who have had secure attachments, illustrating a mediating role of attachment (Carlson, 1998). Disorganized attachment had a correlation of .34 with global pathology at age 17 ½ as measured by the K-SADS in the MLSRA study. As with attachment avoidance, disorganized attachment is also associated with conduct disorder. There is also support for the idea that personality disorders, such as Borderline Personality Disorder (BPD), are specifically associated with disorganized attachment. Retrospective analysis show individuals with BPD as being classified as unresolved (indicating disorganized attachment) on the Adult Attachment Interview (Hobson, 2002). Mothers of infants classified as disorganized also tend to be classified as unresolved (Lyons-Ruth & Jacobvitz, 1999).

Specific Disorders. Depression is associated with all forms of insecure and disorganized

attachment. This could be explained as a phenomenon of equifinality, with insecure/avoidant attachment leading to depression through interpersonal alienation and insecure/ambivalent attachment leading to depression through helplessness and anxiety (Duggal, Carlson, Sroufe, & Egeland, 2001). This explanation would give insight to the issue of comorbidity; with depression and conduct disorder an outgrowth of attachment avoidance, depression and anxiety a product of insecure/ambivalent attachment, and depression and personality disorders a product of disorganized attachment.

Two distinct pathways have been associated with ADHD symptoms as measured by relevant items on the Child Behavior Checklist (Achenback & Edelrock, 1986) in middle childhood. One is a lower score in motor maturity as a newborn on the Brazelton Neonatal Assessment (NBAS) and the other is the experience of intrusive parenting. Of the two pathways, in the MLSRA sample, intrusive parenting had a stronger association with symptoms (Carlson, Jacobvitz, & Sroufe, 1995). Children in the MLSRA study who developed attention and activity problems were more likely to experience unpredictable and intrusive care in the first six months and have parents who provoked the child (teasing, giggling with, etc.) when they were already on the brink of over-arousal at 42-months (Jacobvitz & Sroufe, 1987).

Neurobiological Correlates of Attachment

Stress response systems are shaped by the environment that people are exposed to in early childhood. The main mechanism in place for dealing with immediate stress is the hypothalamic-Pituitary-Adrenal (HPA) axis which converts a sense of danger into a bodily state of arousal by secreting adrenocorticotrophic hormone (ACTH) into the bloodstream. When ACTH reaches the adrenal glands, it stimulates the production and distribution of cortisol, epinephrine and norepinephrine which mobilize the body for fight or flight. Once the threat has been responded to, a properly functioning stress system will return the person to homeostasis.

Under normal conditions, cortisol levels follow a diurnal pattern with levels peaking in the morning and declining throughout the day, with brief spikes in cortisol mounting to deal with stressful situations. People who have been exposed to adverse early environments, however, show a dysregulated pattern of HPA axis functioning (e.g., Buss et al., 2007; Heim & Nemeroff, 1999; Heim, Newport, Bonsall, Miller, & Nemeroff, 2001; for a review see Gunnar & Donzella, 2002) with a tendency towards having a flattened diurnal cortisol pattern as well as an exaggerated stress response (e.g., Quirin, Pruessner, & Kuhl, 2008).

Studies conducted on both children and adults have shown that morning cortisol levels, also called cortisol response to awakening (CRA), is lower in insecure individuals than in the typical population, and there is much less of a decline in cortisol level across the day (e.g. Adam & Gunnar, 2001; Quirin et al., 2008)). This disturbed pattern has been found in children from Russian and Romanian orphanages (Gunnar, 2000) and in adolescents who under the age of three had experienced higher levels of maternal insensitivity or spent a large percentage of time in day care (Roisman et al., 2009). Additionally, studies have found a trend towards an increased cortisol response to stress (CRS) in insecurely attached infants, with highest levels found in disorganized (Spangler & Grossmann, 1993), disorganized and insecure/ambivalent (but not insecure/avoidant) infants (Hertsgaard, Gunnar, Erikson, and Nachmias, 1995), and insecure infants with a higher levels of behavioral inhibition (Nachmias, Gunnar, Mangelsdorf, Parritz, and Buss, 1996). Insecure adults, too, tend towards an increased cortisol response to stress, with some studies indicating insecurity in general (Powers, Pietromonaco, Gunlicks, & Sayer, 2006) and others insecure/ambivalent (but not insecure/avoidant) adults having a greater response to stress (Quirin et al, 2008).

Attachment insecurity is also associated with reduced hippocampal volume (Quirin, Gillath, Pruessner, & Eggert, 2010). Smaller hippocampal volume, in turn, is associated with

stress-related psychiatric conditions. A study on monozygotic twins discordant for PTSD and trauma exposure found that the decreased hippocampal volume existed in the twin who was not exposed to trauma and did not have PTSD as well as in the trauma exposed twin with PTSD. This provides evidence that the smaller hippocampal volume represents a vulnerability marker rather than being an artifact of PTSD. Further, it was found that the severity of PTSD symptoms was negatively correlated with hippocampal volume (Gilbertson, et al, 2002).

Decreased hippocampal volume and a dysregulated pattern of HPA axis functioning may be a consequence of epigenetic programming. Epigenetic programming appears to be one way in which nature equips an individual to meet the challenges of the environment. By turning on and off sections of DNA, gene expression can alter the level of glucocorticoid receptor density in the hippocampus, thereby modulating the stress response. The programming of a more stressful phenotype has been well-documented in animals who experience low levels of maternal sensitivity in infancy (e.g. Weaver et al, 2004; Weaver, Szyfe, & Meaney, 2002), and has also been found in suicide victims who had experienced child abuse (McGowan et al, 2009). This programming occurs early in life and thus helps to explain the early and persistent emergence of personality characteristics.

Ordinary variations in maternal care have also been associated with differential brain activation patterns. In contrast to infants receiving high-quality maternal care, one study found that nine-month-olds receiving low-quality maternal care were significantly more likely to exhibit a pattern of right frontal EEG asymmetry in a novel situation (Hane & Fox, 2006). Right frontal asymmetry is associated with negative affect, and may indicate a bias towards withdrawal behaviors. In line with this, the same study found that infants in the low-quality maternal care condition also exhibited significantly more fearfulness to the presentation of masks of an old man and of a clown as measured by startle response (presence/absence), self-stimulation,

intensity of bodily fear, and intensity of escape (Hane et al., 2006).

These findings suggest that the quality of maternal care is a major contributor to infant outcome. Infants who have more irritable temperaments are more likely to elicit insensitive maternal behaviors (Crockenberg & Acredolo, 1983; Mangelsdorf, Gunnar, Kestenbaum, Lang, & Andreas, 1990; van den Boom & Hoeksma, 1994), and thus are at an even greater risk of developing insecure attachments than infants who are not irritable. Thus, infant characteristics are an important piece of the equation and families with such infants likely represent a population in greater need of intervention.

Attachment Theory and Intervention

The above review of some of the social, emotional, and neurobiological correlates of attachment points to the importance of establishing a secure attachment in infancy. A secure attachment serves as a protective factor against psychopathology and contributes to the resilience and well-being of an individual. Clear patterns of functioning across the lifespan have been identified by individuals as a product of their attachment classification, and the implications are far-reaching. Just as a secure attachment predicts healthy relationships, more positive affect, and greater self-efficacy, insecure attachment forecasts a host of problems including emotional dysregulation, a physiologically enhanced reaction to stress, increased anger, interpersonal alienation, decreased exploratory behavior and less persistence. Insecure and disorganized attachment also serve to increase the likelihood of pathological conditions.

In typical middle class samples, approximately 62% are secure, 15% insecure/avoidant, 9-10% insecure/ambivalent, and 15% disorganized (Siegler, DeLoache, & Eisenberg, 2006). High-risk samples show a smaller percentage as being secure. Classification in infancy has been shown to be enduring, with one study showing 72% stability between an individual's strange situation in infancy and Adult Attachment Interview classification as young adults. In this study,

almost half of the individuals who did not exhibit stability of classification across time had a significant change in their caregiving environment (i.e. loss of caregiver) that could explain the change (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). Attachment exhibits stability across generations as well, with secure parents having secure children and insecure parents having insecure children (Main, Kaplan, & Cassidy, 1985; Van IJzendoorn, 1995; Waters, Vaughn, Posada, & Kondo-Ikemura, 1995).

The intergenerational transmission of attachment points to the need to determine how attachment is transmitted as well as how maladaptive parenting styles can be improved through intervention.

The Transmission Model

The transmission model of attachment (van IJzendoorn, 1995) states that a parent's internal working model of attachment drives parenting behavior by guiding their interpretations of their child's signals and needs and thus has an impact on the child's attachment to the parent. Thus, two central foci of intervention to enhance attachment have been identified. The first, maternal sensitivity, is the overt caregiving behavior that can be observed in interactions between the mother and child. The second involves the mother's own mental state and internal working models which have an impact on her ability to initiate sensitive caregiving behavior. Both have been targeted in attachment-based interventions.

Maternal Sensitivity. Through careful and extensive home observations of mothers and children in Uganda in the early 1950s and Baltimore in the early 1960s, Mary Ainsworth was able to document a range of maternal behaviors and associated child behaviors which ultimately led her to establish scales for measuring maternal sensitivity. Although briefly referred to as maternal sensitivity, this measure is based on four dimensions: sensitivity vs. insensitivity to the baby's signals, cooperation vs. interference with baby's ongoing behavior, physical and

psychological availability vs. ignoring and neglecting, and acceptance vs. rejection of baby's needs (Ainsworth, 1969).

A mother high on maternal sensitivity is receptive to the needs to her baby, and responds promptly in a manner that effectively meets the baby's needs. Sensitive responding requires the mother to be both physically and mentally available, and to be free from making biased attributions. Mothers who operate from a mechanical perspective, allowing a schedule to direct activities without taking into account input from the baby are behaving in an insensitive manner. So are mothers who believe that the baby is trying to manipulate them, who disregard the baby's feelings and desires, and who direct and control the baby's activities.

Although Ainsworth's studies involved observations of mothers, all caregivers can be sensitive or insensitive to infants' needs, and maternal sensitivity can be thought of more generally as sensitivity.

Internal Working Models and Mental Representations. Kenneth Craik (Craik, 1943) proposed that the mind forms mental models of reality and uses them to predict similar future events. Based on Craik's work, Bowlby proposed the idea of internal working models in attachment relationships. Bowlby believed that attachment working models, or schema, were based on the summation of thousands of experiences with caregivers early in life that have become unconscious reflexive predictions of the how others will react and behave (Bowlby, 1969/1982). When caregivers are sensitive to children's needs, are not intrusive, take charge when appropriate, encourage exploration, and are available for comfort and nurturance when needed, children develop a healthy attachment schema that they carry with them in their current and future relationships. Their interactions with peers and teachers in school, colleagues at work, romantic partners, and their own children are all unconsciously guided by their schema. When working models are not secure, they can have profound effects that endure throughout the life

course.

The Adult Attachment Interview (AAI) was developed to measure mental representations of attachment in adults (George, Kaplan, & Main, 1984, 1985, 1996). The AAI guides the individual to describe attachment-related childhood experiences and then evaluates the impact these experiences on current functioning (Hesse, 2008). During the hour-long interview, individuals are instructed to give a description of their relationship with their parents during their childhood, report on experiences of separation, rejection, and threatening interactions, and on experiences of loss of significant others or abuse at any point in their life.

The primary objective of the interview is for the individual to maintain a coherent dialogue with the interviewer (Hesse, 1996), and their ability to do so is related to the level of sensitivity they bring to their relationship with their infant as well as the attachment status of their infants (Main et al., 1985; Van IJzendoorn, 1995). Mothers who are classified as secure-autonomous, meaning they can coherently discuss their past attachment relationships, whether positive or negative, are more likely to have secure infants. Mothers who are classified as dismissing, who produce short narratives about their own early attachment relationships and claim to not remember much, or to make statements that are unsubstantiated (i.e. my mom was a “good mother” but not able to say why), have infants who are classified as insecure/avoidant in the strange situation procedure. Mothers who are preoccupied, meaning they seem to not have gotten past issues from their childhood and still hold on to fear or anger from the past, have children who are insecure/ambivalent. Finally, mothers classified as unresolved-disorganized show lapses in reasoning when discussing loss or abuse and have infants who are also disorganized (George et al., 1984, 1985, 1996).

In sum, the AAI is able to tap into an individual’s internal working models, and to significantly predict how that person will behave with other people, including their children,

partners, friends, and even new acquaintances (Hesse, 2008). Bowlby's proposition of early experience having an impact on personality development is supported by these findings. The AAI also gives us some insight into the intergenerational transmission of attachment in particular, and personality in general. Both internal working models and mother-child interactions are implicated.

Review of Attachment Intervention Programs

In light of all of the positive and negative outcomes associated with secure and insecure attachment, efforts to optimize attachment are particularly important. Intervention programs developed to increase levels of attachment security are focused on one or more of three therapeutic tasks: changing the parent's representations, or internal working models, changing the parent's behaviors, and serving as a source for therapeutic change (Berlin, Zeanah, & Lieberman, 2008). These tasks are not mutually exclusive. For example, better parenting behaviors that improve the parent-child relationship may serve to rework the parent's internal working models, and vice versa.

By targeting the parent's internal working models, interventions can help them to gain insights as to how they view themselves and others, particularly in emotionally charged situations. This usually involves the parent's examination of their own childhood experiences to understand the strategies that they developed to deal with early relationships and see how those strategies may be undermining their current relationships. Another important focus is on the parent's inaccurate attributions, and part of this task involves getting the parent to look at the situation through the child's perspective.

In targeting parental behaviors, interventions teach the parent to respond sensitively by learning to accurately interpret the child's needs for comfort and exploration and to respond contingently. The parent's own emotional regulation skills may also be addressed since the child

will not be able to feel comforted by parents who are out of control.

The third task calls for the intervener to serve as the source of therapeutic change. Just as the parent is to serve as a secure base to the child, the therapist serves as a secure base to the parent. For some, this is the first experience the parent has in receiving secure base support. This support not only encourages exploration of better parenting cognitions and behaviors, but also models the behavior for the parent (Bowlby, 1988).

A number of attachment interventions have been evaluated through randomized control trials and have shown empirical support for their efficacy. These programs differ in focus, scope, and duration and are generally based on either psychotherapy or behaviorally based sensitivity training for the mother. Programs based on psychotherapy tend to be long-term, comprehensive programs that address all three therapeutic tasks. Many of these programs have been targeted to populations in critical need for social services as well as psychiatric help and are therefore very costly to administer. Child-Parent Psychotherapy, the UCLA Family Development Project, and Minding the Baby programs fall into this category.

Intervention programs that focus on increasing the mother's attunement to her child and to respond contingently predominantly use video-based feedback of the mother/infant dyad. Some of these programs include discussions of the mother's childhood and how it relates to her current parenting. Programs included in this category are Attachment and Biobehavioral Catch-Up (for foster parents), Circle of Security, Skills-Based Treatment, and Video-Feedback to Promote Positive Parenting. These programs range in duration from three – 20 sessions and are thus all relatively short-term in comparison to psychotherapeutically based programs.

Long-term Comprehensive Programs. *Child-Parent Psychotherapy (CPP)* is based on Selma Fraiberg's idea that parent-infant difficulties have their roots in unresolved conflicts from the parent's own childhood relationships. In her terms, they are "old 'ghosts' that have invaded

the nursery” (Fraiberg, 1980, p. 61). Fraiberg’s initial infant mental health program was geared towards blind infants referred to the University of Michigan’s Child Development Project in 1965, and in 1972 was expanded to a broader population of infants. Infants who participated in the program during their first two years of life showed developmental levels closer to the typical population in the areas of attachment, language, and motor capabilities. To Fraiberg, this was viewed as having implications for other disadvantaged infants and their parents. “As clinicians, we knew that emotionally impoverished infants, even though biologically intact, constituted a vast imperiled population within every community. And we also knew, as clinicians, that for the emotionally empty child, psychiatric intervention later in childhood could rarely bring him the human qualities which are normally given every baby in the first two years of life.” (Fraiberg, 1980, p. 6).

Fraiberg’s approach was later manualized by Alicia Lieberman and colleagues (Lieberman & Van Horn, 2005) and has been delivered primarily to traumatized and impoverished families with children five-years-old and younger. The modified program retains the focus of Fraiberg’s original program with an added focus on parent’s current stress and cultural values. Sessions take place in either the home or an office playroom, involve both the parent and child, and are unstructured, with the parent, and the interaction between the parent and child, guiding the focus.

Randomized trials have supported the efficacy of CPP on a variety of measures, however not all have found significant differences in the level of attachment security pre- and post-treatment. In maltreating families, attachment security was significantly increased post-treatment after receiving weekly CPP sessions for one year (Cicchetti, Rogosch, & Toth, 2006; Toth, Maughan, Manly, Spagnola, & Cicchetti, 2002). In impoverished immigrant families, attachment was not significantly increased, but specific factors such as maternal empathy and

child avoidance improved (Lieberman, Weston, & Pawl, 1991). In a population of children exposed to marital violence, the treatment group was found to be less likely to meet PTSD criteria than a community treatment-as-usual sample (Lieberman, Van Horn, & Ippen, 2005). Despite CPP not having a significant effect on changing depression status in mothers, it was successful in establishing secure attachments in toddlers of depressed mothers (Cicchetti, Toth, & Rogosch, 1999; Toth, Rogosch, Manly, & Cicchetti, 2006).

The UCLA Family Development Project, developed by Christoph Heinicke and colleagues, was administered to 64 high-risk pregnant women and their firstborn infants, and consisted of weekly home visits between the second trimester of pregnancy and the infant's first birthday, with biweekly visits during the second year as well as weekly mother-infant group meetings between three – 15 months. The focus of therapy was the mother's relationship with the intervener, her family of origin, her partner, and her child (Heinicke, et al., 2000; Heinicke, Fineman, Ponce, & Guthrie, 2001; Heinicke, Fineman, Ruth, Recchia, Guthrie, & Rodning, 1999; Heinicke, Goorsky, Levine, Ponce, Ruth, & Silverman, 2006). Infants participating in the project have been shown to be significantly more likely to be securely attached than their controls (Heinicke et al., 2001).

Finally, the *Minding the Baby (MTB)* program was designed to help very high risk first-time mothers, including those who have reported abuse. Weekly visits by a pediatric nurse-practitioner and clinical social worker (alternately) are conducted during pregnancy and the baby's first year, with visits dropping to biweekly during the baby's second year. The manualized treatment targets the mother's internal working models, parenting behaviors, and reflexive functioning (Slade, Grienenberger, Bernback, Levy, & Locker, 2005; Slade, Sadler, deDios-Kenn, Fitzpatrick, Webb, & Mayes, 2007). Reflexive functioning, a concept that was introduced by Fonagy, Steele, Steele, Moran, and Higgitt in 1991, refers to the parent's ability to

understand behavior in terms of underlying mental states and intentions (Slade, 2005). A sample of 60 families receiving the Minding the Baby intervention produced a 76% secure attachment rate in infants at 12 months of age. Although there was no matched control in the study, the rate of secure attachment in this high-risk sample resembled that of typical low-risk samples (Slade et al., 2007).

Moderate Comprehensive Interventions. *Attachment and Biobehavioral Catch-Up (ABC)* is a 10-week program developed by Mary Dozier and colleagues to specifically address the needs of foster families. ABC utilizes master's level social workers to address three main themes with foster parents. The themes are (1) foster children frequently appear to be rejecting of care, (2) the caregiver's own history can interfere with providing nurturance and (3) infants in foster care need special help with self-regulation. The program uses videotaped interactions between the foster child and foster parent to reinforce positive interactions and identify areas for improvement in terms of maternal sensitivity and the provision of secure base support (Dozier, Lindheim, & Ackerman, 2005).

Preliminary analysis has shown attachment rates in a sample of 86 foster children of parents who participated in the ABC intervention program to be comparable to that of a typical middle class sample (Dozier, Peloso, Zirkel, & Lindheim, 2007). Analyses have also been conducted on cortisol levels, with the experimental group exhibiting a more normative level of cortisol production than the control group (Dozier et al., 2006).

Circle of Security (COS) was developed by a team of clinicians that included one of Mary Ainsworth's students, Robert Marvin. It is a 20-week group-based intervention for parents of infants, toddlers, and preschoolers and is designed to improve attachment security (Marvin, Cooper, Hoffman, & Powell, 2002). Initial assessments consist of the Strange Situation to measure attachment in the child and the Circle of Security Interview (COSI) which measures

parent's internal working models of attachment. These measures are then used to create personalized treatment plans. The program utilizes video-taped footage of the parents interacting with their children to help teach about the children's needs for exploration and comfort, ways in which the child may mislead the parent, and ways to sensitively respond to the child's needs. Typically six – eight parents are in the group, which meets for 75 minute weekly sessions throughout the duration of the program. Video-clips of each dyad are showed to the group for the benefit of all of the participants. After all members of the group have been the focus of one session, parents learn that the ways in which they perceive and respond to their children's needs are distorted by what they have learned in close relationships as children with their own caregivers.

The Circle of Security has a growing body of research demonstrating its efficacy. One study of high risk families ($n = 65$) involved with an Early Head Start program showed an impressive increase in securely attached children from 20% pre-treatment to 54% post-treatment. Further, 60% of the pretest children were in the highest risk groups of disorganized or insecure-other, which are considered severe forms of attachment insecurity compared to insecure/avoidant and insecure/ambivalent, whereas only 20% fell in the category post-treatment (Hoffman, Marvin, Cooper, & Powell, 2006). The Circle of Security program was adapted for use in a sample of incarcerated mothers and resulted in attachment classifications typical for a low-risk population (Cassidy et al., 2010). Current studies examining Circle of Security and a newer, condensed version of the program are underway.

Brief, Targeted Programs. *Skills-Based Treatment* was developed by Dymphna van den Boom at Leiden University in the Netherlands to enhance outcomes for irritable infants of low-income mothers. This program consists of three home visits while infants are between six and nine months of age (van den Boom, 1994, 1995). The visits focus on increasing the

mother's sensitive response to the infant's cues. A randomized trial of 100 mother infant dyads demonstrated impressive results as initially measured at nine months and extending to a follow-up at 42 months. At 18 months, the intervention group had an insecure attachment rate of 28%, whereas the control group had an insecure rate of 74% (51% of which were insecure/avoidant). Later measures of maternal sensitivity across a variety of situations, such as free play and family dinner, revealed significantly higher levels of maternal acceptance, availability, and cooperation (van den Boom, 1995).

These findings have two very important implications. First, a very brief and targeted intervention can be effective in essentially erasing the effect of a difficult temperament in terms of both attachment security rates and levels of maternal sensitivity. Second, the stability of the gains in maternal sensitivity made by mothers undergoing the skills-based treatment suggest that the maternal sensitivity skills taught to mothers during their child's infancy were generalized and later applied to the different needs expressed by their now walking and talking children whose bids for independence lead them to require different types of support than they did as infants. Thus, the implication is that a short-term, economical treatment can have powerful long-term effects that can adapt to meet the evolving needs of a child.

Video-Feedback Intervention to Promote Positive Parenting (VIPP) was developed by Juffer, Bakermans-Kranenburg, and van IJzendoorn at Leiden University. VIPP is delivered in four – eight home visits, each lasting 90 minutes and focusing on promoting maternal sensitivity. The interveners promote change by providing feedback on video-taped interactions of the mother/infant dyad. Written information on sensitive responding in daily situations is sometimes used to supplement the video-feedback (Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2008). Two additional components have been devised to add onto the original program. VIPP-R, which also addresses representations, discusses the parent's own childhood attachment

experiences and explores their current internal working models. VIPP-SD includes a component on sensitive disciplinary practices for children showing signs of externalizing problems, and combines the attachment intervention with structure and limit setting formulated in a warm manner. These programs are primarily geared towards the parents of infants, but the VIPP and VIPP-SD have been successfully used with toddlers and preschoolers as well (Jufferet al., 2008).

All forms of the VIPP programs begin with the collection of video footage of the mother and infant during daily situations such as playing together, bathing the baby, and mealtime. During taping, the intervener remains unobtrusive and does not communicate with the dyad. Before subsequent sessions, the intervener selects representative portions of the video to illustrate the four themes that are the focus of subsequent visits. The four themes are exploration versus attachment behavior, speaking for the child, sensitivity chain, and sharing emotions.

Mothers are shown clips of a range of ineffective interactions and encouraged to take a more proactive role in encouraging the child's exploration, responding appropriately to the child's signals, and taking the child's point of view. Video clips of positive interactions are included to counterbalance the negative interactions. The video tape helps to focus on the child's signals and the mother's secure base support, thereby helping to train the mother's observational skills and sense of empathy.

A study of 81 first-time mothers who were classified as insecure on the AAI split the mothers and their four-month-olds equally between VIPP, VIPP-R, and a control group. The two intervention groups were equally effective in increasing maternal sensitivity. The intervention group had a 67% secure attachment rate at the conclusion of the study compared with a 56% rate in the control group. This difference did not achieve significance due to the small sample size, but would have if the sample was three times bigger (Klein Velderman,

Bakermans-Kranenburg, Juffer, & van IJzendoorn, 2006). Mothers with highly reactive infants benefitted the most from the intervention, showing the greatest pre-post intervention change in sensitivity (Klein Velderman et al., 2006).

Additional studies have shown that VIPP-R increased sensitivity and secure attachment (Juffer, Hoksbergen, Riksen-Walraven, & Kohnstamm, 1997) and decreased the prevalence of disorganized attachment (Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2005) in adoptive parents ($n=130$) without birth children compared to a control group. VIPP-R also had long-term positive effects on behavior problems at age seven (Stams, Juffer, van IJzendoorn, & Hoksbergen, 2001). The VIPP-SD variation has also been shown to enhance maternal attitudes towards sensitivity and sensitive discipline as well as to increase positive disciplinary behaviors in mothers of children ages one, two, and three ($n=237$), who showed early signs of externalizing problems at one year follow-up (van Zeijl et al., 2006).

Meta-analysis of Intervention Programs

In order to determine how effective attachment intervention programs are in general, and to compare the effectiveness of different types of programs, a 2003 meta-analysis (Bakermans-Kranenburg, van IJzendoorn & Juffer, 2003) of attachment programs was conducted. The meta-analysis looked at intervention duration and intervention focus (maternal sensitivity, mental representations, providing social support or a combination of these). Participants varied in a number of ways including SES and mental health. Seventy studies were selected that clearly measured outcome either by maternal sensitivity ($n = 7,636$) or attachment security ($n = 1,503$). Overall, interventions were somewhat effective in changing sensitivity ($d = .33$) and attachment insecurity ($d = .20$). In comparing the relationship of sensitivity to attachment, they were associated, but the effect was larger on sensitivity. In addition to the conclusion that it is easier to change sensitivity than attachment, the authors also suggest the idea of a sleeper effect; it

takes consistently sensitive behavior over an extended period of time to produce changes in attachment.

Interventions were placed in one of three groups: those focused exclusively on sensitivity ($d = 0.45, p < .001$), those combining sensitivity and support ($d = 0.27, p < .001$), and those focused on representation, sensitivity, and support ($d = 0.46, p < .001$). When combining the second two categories (sensitivity/support and representation/sensitivity/support), the analysis revealed that the interventions focused exclusively on maternal sensitivity were the most successful in both increasing maternal sensitivity and infant attachment security. The authors also found that interventions with fewer (less than five) sessions were as effective as those with moderate (five – 16) sessions, and more effective than those with over 16 sessions. Additionally, they found that interventions including video feedback, wherein the dyad is videotaped and the mother is shown examples of her own sensitivity and insensitivity, were more effective ($d = 0.44$) than those without ($d = 0.31$).

Interventions were found to be equally successful regardless of sample characteristics, with the exception of having a greater impact on clinical samples and those with higher levels of attachment insecurity. Thus, even in clinical and insecure samples, behaviorally based strategies for intervention have the ability to enhance outcomes without requiring intensive psychotherapy. In sum, the ideal intervention, as indicated by this meta-analysis, is one with a clear focus on changing maternal behaviors, has a modest number of sessions, and incorporates the use of video-feedback.

A Study of Modeling Secure Base Parenting Cognitions

Attachment research has revealed the importance of establishing a secure attachment in infancy. The process of developing an attachment begins at birth and is already established at twelve months of age. Once established, attachment classification remains relatively stable.

Several longitudinal studies have shown that infants' attachment classification predict individuals' attachment in adulthood (Waters, Hamilton, & Weinfield, 2000). Waters, Merrick, Treboux, Crowell, and Albersheim (2000) reported a 72% stability rate and showed that when changes in security occurred, they could usually be traced back to environmental changes that acted as barriers or facilitators for parents' responsive behavior.

Unfortunately, despite over 50 years of attachment research, the general population of parents is still not aware of empirically supported parenting practices that lead to the development of attachment security. For example, a survey conducted by Civitas found that 44% of young parents and 60% of grandparents incorrectly believed that picking up three-month-olds every time they cry will spoil them (Civitas, Zero to Three & Brio Corporation, 2002). While attachment intervention programs have achieved some success in increasing maternal sensitivity, and in some cases even changing children's attachment classifications, they were primarily geared towards populations with an intense need for help such as families living in extreme poverty, dealing with child abuse and drug issues, and struggling with mental illness. These targeted interventions are, however, not economical enough to deliver to the general population.

The 2003 meta-analysis of attachment intervention programs concluded that interventions that are brief to moderate in duration and focused on increasing sensitive maternal behaviors are the most effective. Interventions using individualized video-based feedback have demonstrated efficacy in increasing maternal sensitive behaviors and in some cases attachment security in infants and preschoolers. The sample sizes, however, in these interventions are relatively small. This is probably due to the expensive and time-intensive nature of meeting with mother/infant dyads, video-taping their interactions, and preparing feedback based on specific video-footage. The challenge then is to formulate an effective attachment intervention program that can be more

widely distributed and serve to increase the rates of secure attachment in the general population.

A promising possibility is a video-based program that uses footage of other mother-child pairs to guide individuals' attention to important aspects of these interactions. This program could help parents to generate appropriate attributions about children's intentions and behavior. This type of intervention could equip parents with a framework for guiding their interactions with their own children. By viewing a variety of positive and negative interactions between mothers and children in scenarios with inherently different goals, parents (and future parents) would have an opportunity to be exposed to the nuances of operating within an effective framework of parenting goals, behaviors, and attributions. They could then be given exercises in which they are asked to critique video-taped interactions in order to further instantiate what they have learned.

Attachment theory is based on an organization of behavior rather than on specific behaviors, and therefore makes the concept of a general framework possible. Parents balance the child's needs for exploration and support by being a secure base from which they can confidently explore and a safe haven to which they can retreat to when they are scared or in need of comfort. These functions are performed within the context of sensitivity – being attuned to a child's desires, feelings, and needs and responding contingently and appropriately. Waters and Waters (2006) proposed that this framework for guiding parenting (and other close relationship) behavior is consolidated into a script-like representation, implicitly guiding attachment relationship behavior. They termed this parsimonious way of explaining close relationship behavior “the secure base script” (see Figure 1). In the script, the child is constructively engaged, or exploring, and experiences an obstacle. The child knows that he needs help, is comfortable signaling this to his caregiver, and seeks proximity to his caregiver. The caregiver, in turn, correctly interprets the signal, offers help, and the help is effective. Additionally, the

caregiver offers comfort, and helps to return normalcy by once again constructively engaging the child.

Encouraging age-appropriate independence and offering unconditional emotional support are essentially the pillars of the secure base script. Having the ability to observe and correctly interpret the signals that the child is emitting is one of the key skills necessary to provide such support. This attunement requires the ability to see situations from the child's perspective. These simple concepts are counter to many common beliefs. For example, the goal of supporting a child's development of independence is often confused with the goal of compliance and obedience. The goal of keeping a child safe (and thereby facilitating exploration) is of course critically important, but can be practiced to the point of overprotection which serves to inhibit exploration. Situations are often seen from the adult's perspective rather than the child's perspective, so that a child who is confused or bored is seen as being rebellious, and the caregiver's subsequent response is not attuned to the child's needs but rather the caregiver's attributions.

Individuals who are secure have implicit knowledge of the secure base script, but those who are insecure do not (Waters et al., 2006). A preliminary question in using the secure base script as a framework in designing an intervention is to ask whether a person who has secure base script knowledge demonstrates that knowledge in evaluating mother-child interactions. Skinner, Gomes, and Waters (2011 – SRCD presentation) explored that possibility by asking individuals to interpret a range of video-taped mother-child interactions. In this study, college students were asked to view video-clips of mothers and their young children in a variety of interactions, including a clean-up task, tool-use task, and free play at the playground, and to make comments at specific points during the clips. Participants' comments were scored for secure base content, and these scores were compared to their scores on the Attachment Script

Assessment (Waters et al., 2006). This study found that secure base script knowledge did influence the cognitions the participants made while viewing the mother-child interactions. Thus, the study concluded that young adults who have a secure base script, even though they are not yet parents, view parenting as a secure base relationship and perceive parent-child interactions in terms of goals, standards, and evaluations, consistent with a secure base framework.

The current study was designed to build on the Skinner, Gomes, and Waters' findings to determine if a simple intervention can begin to instantiate the secure base framework. This study examined if individuals were more likely to produce secure base cognitions after being exposed to evaluations and ideas that are consistent with secure base support. To be considered successful, participants would need to have consolidated the information in such a way that they were able to recall it at a later time and to demonstrate that they have generalized the information by being able to identify both good and bad examples of secure base support across a wide range of situations. People naturally acquire implicit script knowledge over time as countless interactions are summed unconsciously. In this study we examined if script knowledge could be explicitly learned, consolidated, and generalized in a fairly brief amount of time.

The Skinner et al. findings relied on commentaries made by college students while viewing video-taped interactions. Commentaries that received high scores for secure base content were used to create a set of intervention video-clips for the current study. The same video-clips from the Skinner et al. study were also used in this study, with the intervention video-clips having an audio recording of commentaries added to their presentation. The commentaries point out important aspects of providing secure base support such as: supporting the child's exploration with a goal of cultivating independence, acknowledging the child's autonomy and sense of agency, helping the child to regulate emotions by minimizing frustration and enhancing

engagement with the task, and noticing how the situation is experienced from the child's perspective. Throughout the intervention video-clips, effective and ineffective efforts made by the mother are highlighted (see Appendix A for a transcript of commentaries).

Participants in the study were randomly assigned to one of two groups; an intervention group or a control group. The intervention group viewed video-clips while listening to the accompanying commentary and were asked to provide commentary on a different set of video-clips two days later. The results from the intervention group were compared to a control group that viewed the same video-clips without listening to any commentary in their first session, and gave commentary in the second session as did the intervention group. For both groups, the initial session consisted of three video-clips, one each of tool-use, clean-up, and playground, and one each of low, moderate, and high quality interactions. In the second session, everyone was shown and commented on six additional interactions. In total, there were nine video-clips; with a low, moderate, and high quality interaction for each of the three situations. Each participant viewed all nine video-clips (three in session I, and six in session II), although the orders were not the same for all participants since the materials were counter-balanced. See Appendix B for an overview of the study design.

In addition to evaluating the effect of secure base commentary, the present study looked at whether there was a difference in effectiveness based on secure base script knowledge. To determine this, participants in both the intervention and control conditions were split into script and no script groups based on their scores on the Attachment Script Assessment.

Study Hypotheses

The present study was a two (intervention, control) by two (script, no script) by 3 (clean-up, playground, tool-use) design that investigated the following hypotheses:

Hypothesis 1: Participants who were exposed to secure base commentaries (the

intervention group) will show greater evidence of secure base cognitions than the control group in their evaluations of the mother-child interactions shown in the second session.

Hypothesis 2: Participants in the secure script group will show greater evidence of secure base cognitions in their commentaries compared to the no script group.

Hypothesis 3: The intervention will have a differential effect on the secure script and no script groups. This is a non-directional hypothesis because on the one hand, individuals with secure base script knowledge are better able to assimilate material presented and therefore benefit more from the intervention. On the other hand, the participants without secure base script knowledge could benefit more from the intervention commentary because they start at a lower point vis-à-vis secure base parenting cognitions.

Hypothesis 4: Patterns of results will be comparable across the different types of situations represented in the three mother-child interactions portrayed in the videos indicating a significant degree of generalizability in the secure base cognitions prompted by the intervention.

II. METHOD

Participants and Design

English-speaking female college students between the ages of 19 and 28 were recruited from the psychology subject pool until there were 22 participants in each of the four cells of the two (intervention/control) by two (script/no script) between-subjects design. Individuals with intermediate or inconsistent script scores were not included in the study so that there would be a clear comparison between script and no script participants. In total, 136 participants partook in

the study with 88 of them being included in the analysis.

Prior to the study, a schedule was created randomly assigning participants to either the intervention or control condition. The schedule counterbalanced both the order of attachment narratives from the ASA and the order of mother-child interaction video-clips. See Appendix B for a summary of the study design and order of materials used.

To create a script and no script group, Attachment Script Assessment script scores on the three attachment narratives were averaged to produce a composite score. Script scores range from high to moderate secure base script content (7 to 4) to no script content or unusual content (3 to 1). Participants with a mean score of 3.5 or higher have some evidence of secure base script knowledge and thus were placed in the script group whereas those with a score of lower than 3.2 do not and were placed in the no script group. Participants whose mean script scores fell between 3.2 and 3.5 ($n = 16$) were in-between cases and therefore were not included in the study. Participants were also dropped from the study who had a mean script score of 3.2 or lower, but who had at least one individual story in the script range of 4.0 or higher ($n = 8$) and therefore were inconsistent examples of “no script” knowledge. Additionally, there were a number of participants who participated in session one, but did not return for session two and therefore needed to be excluded from the analysis ($n = 15$), and participants who did not have a complete set of data ($n = 8$). This left each cell of the two (intervention/control groups) by two (script/ no script groups) between-subjects design with 22 participants except for one cell that ended up with 23 participants. In order to make the groups equal, the participant with the highest subject number in that cell was dropped, leaving a total sample size of 88 participants.

Session I. After participants filled out a brief demographic sheet asking about cultural background, parent’s education level, and prior experience with children, they completed the Attachment Script Assessment. Participants then watched three videotaped mother-child

interactions (one each of clean-up task, playground, and tool-use task). The intervention group watched the interactions and listened to commentary modeled after effective secure base cognitions from an earlier study (Skinner, et al., 2011). A transcript of the commentaries is included in Appendix A. The commentary was delivered at a number of stopping points throughout the individual mother-child interactions. Participants were told that the commentary was an evaluation made by a child development expert and that we would like to see if it can help them recognize positive and negative aspects of parent/child interactions. They were also told that they will be asked to make similar commentary while viewing different video-clips during the second session. The control group watched the interactions but did not listen to any commentary. They were told that they will be commenting on similar interactions when they come back two days later for the second session and this session was to familiarize them with the study materials (see Appendix B for a summary of the study design, and Appendix C for full instructions). This session took approximately 60 – 90 minutes to complete.

Session II. Participants in both the intervention and control groups viewed two clips that they have not previously seen from each of the situation types (clean-up task, playground, and tool-use task) for a total of six clips. They were asked to comment at a number of pre-determined points throughout each clip (See Appendix D for full instructions and Appendix E for abbreviated instructions). This session took approximately 60 – 90 minutes to complete.

III. MEASURES

Demographic Form. Participants completed a brief self-report measure of demographic information and experience with children. This information was collected in case any secondary

analyses needed to be conducted in order to determine whether age, parents' education, family characteristics, cultural background and experience with children complicate the interpretation of any of the results. The demographic form can be completed in less than five minutes (see Appendix F).

Attachment Script Assessment (ASA). Secure attachment representations were measured by the narrative-based attachment script assessment described by Waters and Waters (2006). The ASA consists of a series of prompt word outlines that are designed to evoke secure-base script knowledge in the participant while they create a story using the word prompts as a basic outline. For example, a participant given the words, "Tommy, bike, hurt, mother, hurry, doctor, held" would be expected to say something like, "Tommy was riding his bike one day when he fell off and got hurt. His mother hurried him to the doctor, held him in her arms, and told him everything was going to be OK". The essential theme in the secure-base script is that the main character is exploring his or her environment, there is a problem, an attachment figure addresses the problem, and thus the character's ability to explore is restored. Stories range from those with rich secure base content to event-focused stories (no evidence of a secure base script) to those with atypical or unusual content. Multiple prompt word outlines organizing attachment-related storylines are given to each participant. Each attachment narrative is scored in terms of a 7-point scriptedness scale, and then the average of scores is computed for an overall composite script score. Correlations between the ASA script scores and coherence scores from the Adult Attachment Interview have been found to be highly correlated (.55 -.64, $p < .01$), indicating that a secure base script accounts for a significant amount of variance in the AAI scores (Waters and Rodrigues, 2001).

The narrative prompt word outlines that were used in this study include three mother-child secure base stories ("Baby's Morning", "The Doctor's Office," "The Party"), and one story

without secure base content (“Trip to Park”) which was used as the first story for participants to warm-up and was not scored. Stories were counter-balanced across participants in order to avoid any biases that might be introduced by the experimenter if the stories are always presented in the same order. After every three participants the order of stories changed, but each order always began with the neutral story (“Trip to Park”) as a warm-up.

The prompt word outlines are included in Table 1 and the scale used to score the script assessment is included in Table 2. Each prompt word outline is comprised of a set of 12 words grouped into three columns. Each column of words frames a story line establishing a beginning, middle, and end while allowing the participant to fill in the details of the story themselves. Participants were told to use the groups of words in each prompt-word outline in the left to right order, to add as much detail as they can in order to produce a story that, when typed, is approximately one full page, double-spaced. They were told they could omit a word if they could not fit it into their story or change the order to tell the story they wanted to produce, and also that they could start over again if necessary. All participants were given time to look at the prompt word outline in order to begin formulating a narrative prior to their story being recorded. When they were ready, they generated a story, with the word prompts remaining in front of them. Their story was recorded on a digital recorder and later transcribed, with stories typically ranging from a third to a full page in length.

Child-Parenting Interactions Interview. The Child-Parenting Interactions Interview was designed to ascertain the participant’s evaluation of the interaction between the parent-child dyad throughout a variety of situations. For this measure, nine video-clips of mother-child interactions, previously used in the Skinner et al. study, were used. The interaction clips consisted of three types of situations (clean-up task, free play on the playground, and tool-use task) and for each situation there were three different mother-child dyads which were deemed to

be clear examples of low, moderate, and high quality secure base interactions. Although not all participants viewed the same materials in the same order because of counterbalancing, each participant was shown three interactions clips, with one of each situation type and one of each level of effectiveness, in session I, and each saw the remaining six interaction clips in session II. The clips viewed in session II were used for this measure.

The videos were designed with a number of stopping points, indicated by a symbol appearing on the screen. Once paused, the participants were told “During this pause, we would like you to comment on what you are thinking about the interaction at that point.” They were told to say “nothing comes to mind” if they did not have a comment at that particular point. They were also told that at any point they have a comment they should ask the researcher to stop the tape so that they could share their comment. The complete instructions and questions that were given to the participants are included in Appendix D, with an abbreviated version of instructions in Appendix E.

Secure Base Cognition Scales. The Child-Parenting Interactions Interview was scored using the Secure Base Cognition Scales which were designed to capture three important factors associated with secure base support: recognition of the need for exploration and independence, recognition of the parent’s secure base support, and the ability to take the child’s perspective. Each scale is scored on a 4-point scale with 1 representing a negative interaction, 2 being neutral, 3 being positive, and 4 being the most positive. A summary of the scales is below. A detailed description of the scale points is in Appendix G.

Scale One-EXP. Recognition of the child’s need for independence and exploration. The secure base system includes the child’s confidence in exploration and their ability to handle obstacles and difficulties they encounter in the environment. A parent with secure base knowledge recognizes the child’s need to explore and experience some level of independence.

In a task like clean-up this is more aptly expressed as giving the child an opportunity to take charge of the activity while helping to focus the child on its ultimate goal (toys on the shelf). In the tool-use task, the parent has to balance freedom to explore possible approaches with an eye to eventual success. In free play on the playground, the parent has to balance giving the child the freedom to explore while being at hand to preempt any explorations that might be dangerous.

Scale 2-SBS. Recognition of the parent's secure base support. The secure base system also reflects the parent's ability to monitor and maintain the child's exploration and engagement. Relevant online commentary that focuses on the parent's behavior rather on the child's need to explore is captured by Scale 2. A parent with secure base knowledge will intervene in a timely manner with support and comfort to maintain the child's engagement with the task or activity. This would include the parent's quick and effective response to signals from the child. In a task like clean-up this is expressed by attention-getting movements and verbalizations that help focus the child on the task at hand. In the tool-use task, timely hints and suggestions are invaluable in moving the child forward and avoiding frustration with the task. In free play on the playground, there are opportunities to offer a helping hand to achieve the child's exploration goals.

Scale 3-CHD. Ability to take the child's perspective. Effective secure base support requires an ability to "read" the child's intentions and goals. This can be facilitated by reading the child's signals appropriately. Commentaries that emphasize the child's point of view, particularly those that are appropriate for the situation and the age of the child, indicate the participant recognizes that the moms in the video-clips can or should be able to effectively "read" the child's goals and intentions. To score well on this scale, the subject needs to explicitly characterize what's going on inside the child's mind – comments on what the child is actually up to, and how and why the child is communicating with mom about their goals.

IV. RESULTS

The results are presented in four sections. The first provides information on the sample characteristics of the participants, the second section provides descriptive information on the scoring of the Attachment Script Assessment, the third presents descriptive information on the secure base cognition scales, and the fourth addresses the hypotheses of the study, presenting the key analysis of the interrelationships between the intervention, secure base script knowledge, and parenting-related secure base cognitions.

Sample Characteristics

Eighty-eight participants were divided equally into intervention and control conditions through randomization. Ages of participants ranged from 19 to 26 years old ($M = 20.5$, $SD = 1.5$). We did not have the age of one participant. A two by two Analysis of Variance indicated that the mean age of intervention group ($M = 20.14$) differed significantly from that of the control group ($M = 20.93$), $F(1, 82) = 6.32$, $p < .02$. Although this difference was statistically significant, it is not anticipated that the approximately 10 months of age difference between the two groups will interfere with the results of the study. The script group ($M = 20.27$) did not differ significantly from the no script group ($M = 20.81$), and there was no interaction.

Ethnicity. The intervention group consisted of 18 White participants, 15 Asian participants, 8 Hispanic participants, and 3 Black participants. The control group consisted of 19 White participants, 14 Asian participants, 7 Hispanic participants, 3 Black participants, and 1 who self-identified as “other” with no further descriptive information given. While the randomization across the intervention and control conditions resulted in a very even distribution

of ethnicities, the split between the script and no script group looked quite different. The script group consisted of 25 White, 10 Asian, 5 Hispanic, and 4 Black. The no script group consisted of 12 white, 19 Asian, 10 Hispanic, and 2 Black and 1 other. A Chi-square test for association was conducted between script group and ethnicity and confirmed that there were significant differences in the distribution of ethnicity across the script and no script groups, $X^2(3) = 9.68, p < .03$.

Language. Participants were asked if English was their only language, and which language was most often spoken at home. In the script group, 24 spoke only English and 20 spoke another language as well. In the no script group, 14 spoke only English and 30 spoke an additional language. A Chi-square test of association was significant ($X^2(1) = 4.63, p < .03$). English was the language spoken most frequently at home in 31 of 43 (one declined to answer) participant's households in the script group, and in 21 of 44 participant's households in the no script group. The Chi-Square test of association was significant for this as well ($X^2(1) = 5.67, p < .02$).

In the intervention group, 22 of the 44 participants spoke only English, with 27 of the 44 living in households that speak primarily English. In the control group, 16 of 44 participants speak only English, and 25 of 44 came from households that speak primarily English. These differences were not significant as tested by a Chi-Square test of association.

Education. A Chi-Square test of association showed no significant differences in year of college in the intervention and control groups (7, 13, 15, 9, 0 in the intervention and 4, 7, 14, 18, 1 for the control group for freshman, sophomore, junior, senior, and senior+, respectively) or the script and no script groups (7, 6, 19, 12, 0 in the script group and 4, 14, 10, 15, 1 for the no script group). An analysis of variance showed no significant differences between the self-reported GPA's for the intervention and control groups ($M = 3.18, SD = .46$ and $M = 3.14, SD = .44$,

respectively) or the script and no script groups ($M = 3.15$, $SD = .45$ and $M = 3.17$, $SD = .47$, respectively).

Education of Family. We asked participants about the highest level of education their parents attained, and found no significant differences between the intervention and control groups or the script and no script groups. In the intervention group, 13 participant's fathers and 12 mothers were not educated beyond high school, 9 fathers and 8 mothers had some college or an associate's degree, 13 fathers and 12 mothers had a bachelor's degree, 4 fathers and 8 mothers had some graduate school or a master's degree, and 3 fathers and 4 mothers had a professional degree (Ph.D., MD, JD, etc) (two declined to answer about father's education). In the control group, 17 participant's fathers and 16 mothers were not educated beyond high school, 4 fathers and 5 mothers had some college or an associate's degree, 14 fathers and 14 mothers had a bachelor's degree, 4 fathers and 7 mothers had some graduate school or a master's degree, and 3 fathers and 1 mother had a professional degree (two declined to answer about father's education and one declined to answer about mother's education).

In the script group, 11 participant's fathers and 10 mothers were not educated beyond high school, 9 fathers and 10 mothers had some college or an associate's degree, 15 fathers and 15 mothers had a bachelor's degree, 5 fathers and 7 mothers had some graduate school or a master's degree, and 2 fathers and 2 mothers had a professional degree (two declined to answer about father's education). In the no script group, 19 participant's father and 18 mothers were not educated beyond high school, 4 fathers and 3 mothers had some college or an associate's degree, 12 fathers and 11 mothers had a bachelor's degree, 3 fathers and 8 mothers had some graduate school or a master's degree, and 4 fathers and 3 mothers had a professional degree (two declined to answer about father's education and one declined to answer about mother's education).

Family Configuration. We also asked a number of questions regarding the participant's

family life. Participants in the intervention/control groups and script/no script groups did not differ significantly on their parent's marital status as tested by a Chi-Square test for association. In the intervention group, 27 had parents who were married, 4 were separated, 7 were divorced, 2 were widowed, and 3 never married (one declined to answer). In the control group, 32 had parents who were married, 2 were separated, 7 were divorced, 1 was widowed, and 2 never married. In the script group, 28 had parents who were married, 2 were separated, 9 were divorced, 1 was widowed, and 3 never married (one participant declined to answer). In the no script group, 31 had parents who were married, 4 were separated, 5 were divorced, 2 were widowed, and 2 never married.

With regard to siblings, 77 of the 88 participants had siblings, with 43 of them having younger siblings. An analysis of variance showed there were no significant differences in the number of siblings for the different groups (intervention group $M = 1.66$, $SD = 1.26$, control group $M = 1.39$, $SD = .97$, script group $M = 1.52$, $SD = 1.23$, no script group $M = 1.52$, $SD = 1.02$).

We also asked participants to tell us if they have taken care of any siblings as a parent, or if they have been taken care of by a sibling as a parent. A Chi-square test for association did not find any significant differences between the groups. The intervention group had 30 participants in which there was no sibling in a parental role, 7 participants who had a sibling that took care of them like a parent, 7 participants who took care of a sibling like a parent, and none who were both taken care of by a sibling as a parent and took care of a sibling as a parent. The control group had 33 participants in which there was no sibling in a parental role, 2 participants who had a sibling that took care of them like a parent, 8 participants who took care of a sibling like a parent, and 1 who was both taken care of by a sibling as a parent and took care of a sibling as a parent.

The script group had 30 participants in which there was no sibling in a parental role, 4 participants who had a sibling that took care of them like a parent, 9 participants who took care of a sibling like a parent, and 1 who was both taken care of by a sibling as a parent and took care of a sibling as a parent. The no script group had 33 participants in which there was no sibling in a parental role, 5 participants who had a sibling that took care of them like a parent, 6 participants who took care of a sibling like a parent, and none who were both taken care of by a sibling as a parent and took care of a sibling as a parent.

Experience with children. None of the participants in this study had children of their own. Participants were however asked whether or not they had experience with children in other contexts. A Chi-square test found no significant association between group (intervention/control and script/no script) on reported experience with children. In the intervention group, 38 had experience with children and 5 did not (one declined to answer). In the control group, 34 had experience with children and 8 did not (two declined to answer). In the script group, 36 had experience with children and 8 did not. In the no script group, 36 had experience with children, and 5 did not (3 declined to answer). Experience with children could consist of watching younger siblings, babysitting, or working with children in a setting such as a daycare center or camp.

Attachment Script Assessment

Three attachment narratives based on prompt word outlines reflecting different stages of childhood (Baby's Morning for infancy, Doctor's Office for early childhood, and The Party for adolescence) were rated for secure base script content by two independent scorers on a seven point scriptedness scale (see Table 2 for a description of the individual scale points). Intraclass correlations before dropping any participants ($n = 125$) were .70 for Baby's Morning, .70 for Doctor's Office, and .78 for The Party. Scores from the different attachment narratives were then averaged to produce an overall script score, alpha reliability for the composite score = .90.

Participants were then placed into script (mean score of 3.5 or higher) or no script (mean score less than 3.2) groups ($M = 4.2$, $SD = .61$, and $M = 2.6$, $SD = .4$, respectively) with intermediate participants dropped. Participants had also been randomly assigned into intervention ($M = 3.47$, $SD = 1.02$) and control ($M = 3.38$, $SD = .90$) groups as the study was underway allowing a fairly even distribution of participants across the different cells of the design. Once participants were assigned to the script and no script groups, a two-way analysis of variance was conducted that examined mean script scores across the script or no script group and the intervention or control groups. The purpose was to double check that the random assignment of participants into the intervention and control groups did not inadvertently create a difference in mean script scores. The analysis not surprisingly produced a significant main effect of script group, $F(1, 84) = 212.05$; $p < .01$, but there was no main effect of intervention vs. control group ($p = .4$) or an interaction between the two variables ($p = .35$).

Secure Base Cognition Scales

The secure base cognition scales were used to score commentary from participants in session two. All participants watched six video-clips of mother/child interactions that they had not previously seen. There were two of each situation type (clean-up, playground, tool-use), and the participants commented about the mother-child interaction at several stopping points throughout each clip. These comments were then scored for secure base content on three separate scales by two coders. Participants had a score between 1 and 4 on each of these clips for each scale. The scale scores for the two of each situation type were summed to create a score reflective of the participant's ability to evaluate the interaction across different levels of caregiving effectiveness. This resulted in a total score for each situation type (clean-up, playground and tool-use) for each scale (one, two, and three) that could range from 2 to 8. Intraclass correlation coefficients for two raters were .78, .81, and .85 for scale one, .88, .86, and

.84 for scale two, .85, .91, and .85 for scale three for clean-up, playground, and tool-use, respectively.

Correlations between the three scales were conducted to test the degree to which the scales are capturing different aspects of the interaction. There was a moderate correlation (scale one and scale two .58, scale one and scale three .64, and scale two and scale three .62) between all scales, indicating that although the scales are related they are still capturing unique aspects of the quality of the interaction. Correlations were additionally calculated among scales for each situation type. For clean-up, correlations among scales ranged from .52 - .64, for playground ranged from .49 - .59, and for tool-use ranged from .36 - .55.

Skinner et al. (2011) reported significant correlations among the three situation types for each secure base cognition scale indicating that all three showed consistency across different mother-child interactions. Although there are some differences in methodology in the current study, and different experimental groups, correlations among the three situation types for each scale were examined here as well. For Scale 1-EXP, correlations between the three situation types ranged from .26 - .44 ($p < .02$). For Scale 2-SBS, correlations between the three situation types ranged from .30 - .44 ($p < .01$), and for Scale 3-CHD the correlations across situations ranged from .43 - .49 ($p < .01$). The presence of significant correlations across different situation types indicate that these scales pick up reliable individual differences in the way participants view parent-child interactions across a wide range of situations with varied demand characteristics.

Relations Between Condition, Script Knowledge and Secure Base Cognitions Scale Scores.

In order to test the key hypotheses, a mixed design analysis of variance was conducted using a two (intervention/control) by two (script/no script) by three (types of situations: clean-up, playground, tool-use) design. The intervention/control and script/no script variables are the

between subjects variable. The situation type is the within subjects variables.

The first and primary hypothesis was that participants who were exposed to secure base commentaries (the intervention group) will show greater evidence of secure base cognitions than the control group in their evaluations of the mother-child interactions shown in the second session. The results of the analysis of variance supported this hypothesis, producing a main effect of intervention/control group (scale one $F(1,84) = 30.65, p < .01$, scale two $F(1,84) = 17.23, p < .01$, and scale three $F(1,84) = 21.15, p < .01$).

There was also a significant interaction between the intervention/control and script/no script groups for scale one $F(1,84) = 4.11, p < .05$ and scale three $F(1,84) = 6.06, p < .02$. The ANOVA was followed up with a Tukey HSD post-hoc test on the interaction term. The Intervention Script Group differed significantly from the Intervention No Script Group ($p < .01$), as well as the Control/Script ($p < .00$) and Control/No Script ($p < .00$). The presence of an interaction demonstrates a differential impact of the intervention, with the Script Group benefitting more from the secure base knowledge commentary more than the No Script Group for Scale 1-EXP and Scale 3-CHD.

Although there was not a significant interaction between the groups for Scale 2-SBS, the means still followed the same pattern $F(1,84) = 1.84, p = .18$. Means for each of the groups for the three scales and situation types are presented in Table 3, and means for each cell in the design (intervention/script, control/script, intervention/no script, and control/no script) are presented in Table 4. Figure 2 presents the means in a bar graph form.

The second hypothesis was that participants in the secure script group will show greater evidence of secure base cognitions in their commentaries compared to the no script group. This too was supported, with the analysis showing a main effect of script/no script group (scale one $F(1,84) = 5.56, p < .03$, scale two $F(1,84) = 6.7, p < .02$, and scale three group $F(1,84) = 9.04, p$

<.01). These results support the idea that the internal working models, or scripts, guide the way people interpret interactions.

The third hypothesis was that the intervention will have a differential effect on the secure script and no script groups. This was a non-directional hypothesis because it was not clear which group would benefit more – the script group because they already have a framework to build upon, and do not have scripts counter to a secure base script that would interfere with the assimilation of the new information, or the no script group because they have less secure base script knowledge and are therefore being exposed to more new ideas. This hypothesis was supported by the presence of an interaction for Scale 1-EXP and Scale 3-CHD, favoring the idea that it is important to have a secure base framework to build upon in order to be able to instantiate what is learned through modeling.

Finally, there was main effect of situation for Scale 1-EXP $F(2,84) = 12.39, p < .01$ and for Scale 3-CHD $F(2,84) = 11.15, p < .01$. Tool-use for Scale 1-EXP was higher ($M = 4.99$) versus clean-up ($M = 4.6$) and playground ($M = 4.53$) for playground, and playground was lower for Scale 3-CHD ($M = 4.66$, versus $M = 5.06$ for clean-up and $M = 5.06$ for tool use). This indicates that it was easier for all participants to see exploration (Scale 1-EXP) as a goal in tool-use more so than in the clean-up task and free play on the playground. Participants were more likely to comment about the need for children to complete the tool-use task independently to help them gain skills, whereas they were more likely to view the clean-up task in terms of the child obeying the mother's directions, for example to put the toy away that the mother was pointing to rather than the toy that the child was headed towards. For free play on the playground, many participants were focused on safety over the need to explore or achieve goals. Interestingly, the one situation that was not structured and in which the child would typically take the lead in, free play at the playground, participants were less likely to take the child's perspective (Scale 3-

CHD).

There was no interaction between the situation and the script/no script groups, or the intervention/control groups, indicating that the effectiveness of the intervention was not influenced by the characteristics of the situation. This supports the fourth hypothesis, that the patterns of results will be comparable across the different situations as well as one of the goals of the intervention, which was for the participant to generalize secure base script cognitions learned in one situation across other situations.

V. DISCUSSION

Summary of Key Findings

The data from this study supported all of the hypotheses, giving promise that a short-term economical intervention that is easy to deliver to a broad audience can be effective in modeling secure base behaviors in a way that can be assimilated. This intervention, however, was significantly more effective for those who already had secure base script knowledge. This supports the idea that internal working models guide our interpretation of interactions with others, further illustrating the need to help caregivers with alternative scripts to identify their own sources of inaccurate attributions and replace them with more objective knowledge about children's needs and developmental capabilities as well as how to best support them through sensitive secure base support. The differential effectiveness of the intervention based on prior attachment script knowledge also indicates that without a secure base script it is more difficult to assimilate secure base cognitions into a coherent representation that can be remembered and later recalled and applied while watching new video-taped interactions.

The first hypothesis was that participants who were exposed to secure base commentaries (the intervention group) would show greater evidence of secure base cognitions than the control group in their evaluations of the mother-child interactions shown in the second session. This hypothesis was supported, with the intervention group achieving significantly higher scores on all three scales than the control group. This result met the main goal of the study which was to see if an economical intervention could be effective in changing parenting cognitions. This goal, however, is not without qualification. Although all benefitted from the intervention, those with secure base script knowledge clearly had an advantage, indicating that those without knowledge would need some preliminary training on in order to establish a framework from which to build upon before viewing the clips modeling secure base behavior.

The second hypothesis, that participants in the script group will show greater evidence of secure base cognitions in their commentaries compared to the no script group, was also met. This is in agreement with the prior study (Skinner et. al., 2011), and gives support for the idea that internal working models guide the way we view interactions.

The third hypothesis was that the intervention would have a differential effect on the script and no script groups. This was a non-directional hypothesis because a case could be made to support either direction. On the one hand, the no script group has less secure base knowledge and therefore was exposed to more new information than the script group and should therefore be expected to experience greater gains. On the other hand, it could also be the case that participants in the no script group have scripts counter to a secure base script that interferes with their consolidation and generalization of the concepts presented. The latter ended up being the case. Participants with secure base script knowledge ended up benefiting more from the intervention than did those without script knowledge.

The areas that there were interactions between script knowledge and the intervention

were in the areas of exploration (Scale 1-EXP) for the clean-up task (approaching significance, $p < .06$) and free play on the playground ($p < .05$), and in taking the child's perspective (Scale 3-CHD) for clean-up ($p < .04$) and playground ($p < .02$). Whereas many participants clearly saw the goal of the tool-use task to help children to gain a sense of mastery in solving the puzzle, it was more difficult for them to see the same goal in the clean-up task and in free play on the playground. For many, clean-up was more about obeying the command to put the toys away and not an opportunity to learn how to clean-up. A good example was in the moderate clean-up interaction which showed a young and distractible child who made efforts to put toys away. The mother was not paying attention to what the child was doing and kept asking her to put a certain toy away. Some participants saw this as being disobedient. In the poor example of clean-up, the mother was not effective in communicating with the child. While many participants did comment that the mother was not being effective, and that child did not understand what she needed to do, some saw this child as being defiant.

In free play on the playground, where no goal was explicitly stated, participants were less likely to see a goal for the child, and more likely to comment on safety and restricting the child's activities. In the video-clip of the good example of secure base support, the child is determined to climb up a slide even though she seems to have some difficulty. It was harder for some participants to acknowledge this as a goal for the child because they couldn't get past the idea that slides are for going down. It is almost as though there is a hierarchy of beliefs, and that although the participants learned that exploration is important, their belief that slides are for going down was the more salient belief while viewing the interaction. This illustrates the idea that the introduction of the concept of secure base support is less effective when there is noise from prior experience. In this study, the themes of disobedience and safety appeared to limit the effectiveness in participants without secure base script knowledge.

There was a significant interaction for two of the three situations for Scale 3-CHD which measures the participant's ability to take the child's perspective. For the tool-use task, participants were able to notice when the child got frustrated, or felt proud, or needed their mother's support. But for free play on the playground they weren't as likely to view things as the child was experiencing them. This was an interesting finding since caregivers typically bring children to the playground to have fun, so it would make sense that understanding how the child perceives things would help the caregiver to enhance the experience for them. For clean-up, once again the focus is more on getting the task done and not how the child is thinking, feeling, or learning.

There was no interaction between the intervention and script knowledge for the tool-use task for any of the scales, or for Scale 2-SBS for any of the situations. This indicates that it is easier for participants without secure base script knowledge to learn in unambiguous situations that are clearly geared towards the child accomplishing something. This task was also more of an artificial laboratory procedure and likely not something participants have had experience with. This could mean that they do not have negative attributions about this type of a situation. For Scale 2-SBS, participants received credit both for noticing the positive and negative ways the mother supported the child, and for also noticing when a mother and child did and did not work well together.

Participants in the script group and no script groups in this study varied significantly by ethnicity. Studies on ethnicity and attachment have been congruent with the split we found here. A number of studies have found higher rates of attachment avoidance in African-Americans than European-Americans (e.g. Lopez, Melendez & Rice, 2000; Magai, Cohen, Milburn, Thorpe, McPherson, and Peralta, 2001; Wei, Russell, Malinckrodt & Zakalick, 2004). Similar to our sample distribution, studies of Asian populations have found greater levels of attachment anxiety

and avoidance (Wei et al. 2004), whereas studies of Hispanics have been mixed with some indicating higher levels of attachment anxiety (Wei et al. 2004) and some higher levels of attachment avoidance (Lopez et al. 2000). Some explanations have been posited to account for these differences. In the case of African-Americans, parents tend to respond more punitively to their children's display of emotions, leading to attachment avoidance (Montague, Magai, & Consedine, 2003). Another factor that may help to explain differences is the association between low-income and low maternal sensitivity in African-Americans (Bakermans-Kranenburg, van IJzendoorn, and Kroonenberg, 2004). Differences in individualist vs. collectivist cultures also support the finding of higher rates of attachment insecurity in many Asian cultures. Collectivist cultures require higher rates of psychological dependence, which can lead to anxious attachment (Sorensen & Oyserman, 2010) and valuing social harmony over the individualistic expression of strong emotion may lead to attachment avoidance (You and Malley-Morrison, 2000).

Another area that there were significant differences between the script and no script groups was in language. More participants who spoke more than one language, and whose families spoke a language other than English as their primary language at home, were in the no script group. Since all participants were required to be fluent in English, this significant result is likely a reflection of the effect of ethnicity rather than a product of the actual language spoken at home. In addition to English fluency being listed as a pre-requisite for participating in the study, participants who produced Attachment Script Assessment narratives indicating they were not fluent in English were dropped from the study in order to eliminate the possibility that language limited their ability to express their thoughts clearly.

Study Implications

Brief and Economical Intervention is beneficial. Results from this study give promise that a brief and focused intervention can be beneficial to all parents. The beauty of this type of

intervention is in its simplicity. Parents can simply watch video-clips to gain some knowledge about how to be an effective source of secure base support for their child. This program could be made available free of charge on the internet. DVDs could be distributed to hospital maternity wards and aired on televisions in the mother's room while they are staying with their newborns. DVDs could also be distributed to obstetric offices and given to mothers during their pre-natal check-ups, and to pediatric offices and given to mothers during their children's well visits. The clips are short enough to be aired on public television as public service announcements between children's shows. An intervention based on these methods could also be given to middle and high school students. This would not only help them in their interactions with family members and in jobs where they work with children such as babysitting and coaching, but would also help them to firmly consolidate the information by the time they are parents themselves.

Internal Working Models Impact the Efficacy of Interventions. The main effect of the script/no script group and the interaction of the intervention/control groups with the script/no script groups support the idea that internal working models guide the way caregivers view interactions with children, and that these views can interfere with the effectiveness of an intervention. In the Circle of Security intervention, parents are taught about their internal working models through an exercise. They are shown a video of walking on the beach with piano music playing in the background. They are then asked how they feel, and most say "relaxed". The same video is shown again, this time with the theme music from the movie *Jaws* playing. When asked how they feel this time, they mostly report feelings of "tension and dread". Parents are told they all carry their own version of "shark music" around with them – their internal working models that are counter to the secure base script (Page & Cain, 2009). When a parent hears shark music, their child's intentions and needs are obscured and they act out scripts from their childhood rather than seeing what is really there in the moment (Powell, Cooper,

Hoffman, and Marvin, 2014). Adults with an insecure state of mind as measured by the Adult Attachment Interview have been shown to exhibit greater amygdala activation when hearing an infant cry (Riem, Bakermans-Kranenburg, van IJzendoor, Out, & Rombouts, 2012). This heightened state of uncomfortable arousal interferes with a parent's ability to think clearly, and therefore to respond appropriately.

In the Circle of Security Intervention, they help parents to understand what their own shark music is, and how it impacts the way they view their children. The negative arousal that parents feel when their shark music begins playing becomes a signal to stop and think rather than a catalyst for reacting.

While this intervention does not delve into identifying and working on a caregiver's own version of shark music, it does offer a concrete approach to understanding a child's needs and the way that they can be fulfilled. This information should help a caregiver to feel a greater sense of efficacy. A lack of efficacy has been implicated in parents making misattributions which lead to anger and harsher parenting practices (Grusec & Ungerer, 2003). Mothers who report a low sense of self-efficacy are less sensitive to their infants, responding less appropriately to their signals, being less warm and engaged, and expressing more hostility than those who report a high level of self-efficacy (Teti & Gelfand, 1991; Teti, Gelfand, & Pompa, 1990). Parents of insecure children have less confidence in their caregiving abilities than parents of secure children (George & Solomon, 1996).

Multi-Tiered Intervention Program. Results from this study suggest that all people will benefit from an intervention based on modeling secure base behaviors, but that it will work best with those who already have secure base script knowledge. This type of modeling could be part of a multi-faceted program, with this being the first step. Such an intervention could be delivered broadly, giving the general population of parents and caregivers exposure to the type of support

that children thrive with. Caregivers in need of working more on their negative attributions could go on to participate in the Circle of Security Program (Powell et al., 2014). Finally, severely troubled populations will likely need even more support than a parenting intervention program and would likely benefit from some of the more intensive, multi-faceted programs including social services and psychotherapy such as such as Minding the Baby or other intensive programs reviewed earlier in this paper.

Limitations

This study utilized college students as participants. In order to establish ecological validity, parents as well as clinical, at risk, and low SES populations should be participants as well. It is possible that the student population is better able to focus on the video-clips with commentary than others, such as low SES samples, since this type of learning is a typical activity they engage in. A more interactive method of learning, such as viewing interactions and then being asked to identify who offered secure base support in the interaction, may be more effective.

An additional limitation was in scoring the comments made by participants. All three scales were scored by the same coders. Ideally, each scale would be scored by an independent coder. Other constructs, such as self-efficacy, could be added for discriminant validity.

Finally, the materials used in this treatment were limited to interactions with preschool-aged children. It therefore does not address the need to instantiate the secure base script for different ages. It is not realistic to think that participants who learned how to provide secure base support for preschoolers in this study will be able to apply this knowledge to infants, elementary school children, and adolescents since the nature of supporting exploration and serving as a safe haven to return to changes across childhood.

Future Directions

This study looked at the impact of the intervention after two days. It is important to know what the differences look like after a greater amount of time has lapsed. A future study could bring participants back after six to twelve months and measure parenting cognitions again at that point in time.

The intervention program tested in this study utilized video clips of mothers with their toddler and pre-school aged children. While the results of this study support the idea that participants were able to take principles from video-clips of some mother/child dyads and apply them to different clips of other mother/child dyads, and that they were able to learn how to apply the principles to different situations (in this study, in a clean-up task, a tool-use task, and in free play on the playground), we did not vary the ages of the children. It would be helpful to create an array of materials to illustrate what secure base support looks like throughout the range of childhood, including infancy, early childhood, and adolescence. While the concept of secure base support is the same, the situations and types of support are very different and may not be generalizable from learning about one time point in childhood. Bowlby saw the caregiver's role as a dynamic process, beginning with teaching secure base support through sensitivity and cooperation in infancy, and shifting into a supervisory partnership in early childhood. In adolescence, the role of the caregiver evolves to that of an experienced listener to support the child's emerging beliefs about himself and his relationship with others (Waters, Posada, Crowell, & Lay, 1994). These changing roles are all based on providing support that is sensitive to the child's needs at that particular point in life.

Another future direction for this intervention is to re-analyze the negative comments offered by participants to develop more in-depth comments designed to specifically re-cast negative attributions associated with the no script group. This could be expanded by having

similar studies for different age groups to determine what types of negative attributions are common when interacting with infants, young children, and adolescents.

Finally, this treatment was more effective on the script Group than the no script group. This indicates that people without a secure base script would benefit from training on the secure base concept to establish at least a rudimentary framework for the secure base modeling to hang on to. Just as a person who is not familiar with baseball is not likely to remember specific information about what happened in a game, a person who is not familiar with the concept of secure base support may not know what to do with information about providing such support in a specific situation. Materials to introduce the concepts could be developed and delivered prior to people viewing the modeling video-clips and commentaries.

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Table 1*Narrative Prompt Word Outlines from the Attachment Script Assessment*

Baby's Morning			
mother	hug	teddy bear	
baby	smile	lost	
play	story	found	
blanket	pretend	nap	

Doctor's Office			
Tommy	hurry	mother	
bike	doctor	toy	
hurt	cry	stop	
mother	shot	hold	

The Party			
Friday night	sulk	TV	
party	couch	movie	
Ann uninvited	Mom	popcorn	
miserable	talk	smile	

Trip to Park			
Susie	swings	tired	
bike	sandbox	bench	
park	game	comics	
friend	run	coke	

Table 2
Scriptedness Scoring System

Score	Description
7	These are the very best examples of secure base content in narrative. There is a rich interplay between the two principle characters. There is a great deal of attention to the psychological state of the other, and the “secure base” is very responsive to that psychological state. Important to the secure base script is the resolution of the problem/distress with a return to normalcy.
6	These narratives fall short of the richness of secure base content that is evidenced in stories ranked “7”. Nonetheless, these stories do contain a reasonable amount of secure base content.
5	These narratives have a medium amount of secure base content, but not as much elaboration as those that are ranked “7” or “6”.
4	These narratives have some secure base content, but not very much. Thus, they are weak on secure base content, but there is no odd content contained in the story either.
3	These narratives are mostly event-related stories, in which what is happening is presented, with very little commentary on the give and take between the characters, or on the psychological content of the story.
2	These are event related as well, but so brief as to seem disjointed. Also included in this category are narratives that contain some unusual or atypical content that is inconsistent with a secure base script. The intrusion of this content however is not as consistent or pervasive as the narratives that are scored “1”.
1	These narratives are theme-based variations that come across as quite peculiar interpretations of the implied story line. Not only is the secure base script not recognized, but a quite different script is in its place. The narratives can be quite detailed, with content generated consistent with the peculiar interpretation of the implied story line. These are not that common. Narratives that have significant unusual or atypical content, but fall short of a complete theme-based variation also receive a “1”.

Table 3*Mean scale scores by situation for group (with standard deviations in parenthesis).*

	Intervention/Script Group		
	Clean-Up	Playground	Tool-Use
Scale 1 Recognize Need For Exploration	5.02 (.82)	5.07 (.85)	5.58 (.85)
Scale 2 Parent Secure Base Support	5.97 (.94)	6.05 (.95)	5.97 (1.16)
Scale 3 Taking Child's Point of View	5.80 (.94)	5.30 (.68)	5.58 (.96)

Note: N = 88

	Intervention/No Script Group		
	Clean-Up	Playground	Tool-Use
Scale 1 Recognize Need For Exploration	4.61 (.51)	4.55 (.67)	5.15 (.77)
Scale 2 Parent Secure Base Support	5.60 (.74)	5.34 (.82)	5.40 (.87)
Scale 3 Taking Child's Point of View	5.03 (.96)	4.57 (.50)	5.02 (.86)

Note: N = 88

Control/Script Group

	Clean-Up	Playground	Tool-Use
Scale 1 Recognize Need For Exploration	4.35 (.58)	4.23 (.54)	4.74(.69)
Scale 2 Parent Secure Base Support	5.23 (.96)	5.10 (.97)	5.36 (.93)
Scale 3 Taking Child's Point of View	4.70 (.76)	4.43 (.59)	4.89 (.85)

Note: N = 88

Control/No Script Group

	Clean-Up	Playground	Tool-Use
Scale 1 Recognize Need For Exploration	4.44 (.53)	4.30 (.74)	4.48 (.92)
Scale 2 Parent Secure Base Support	5.30 (.73)	4.88 (.79)	5.01 (.93)
Scale 3 Taking Child's Point of View	4.69 (.69)	4.34 (.72)	4.76 (.86)

Note: N = 88

Table 4

Means scale scores for each group (standard deviation in parenthesis).

	Group 1 Intervention Script	Group 2 Intervention No Script	Group 3 Control Script	Group 4 Control No Script
Scale 1 Recognize need for Exploration	5.22 (.57)	4.77 (.42)	4.44 (.41)	4.41 (.52)
Scale 2 Parent Secure Base Support	5.99 (.70)	5.45 (.64)	5.23 (.67)	5.06 (.58)
Scale 3 Taking Child's Point of View	5.56 (.62)	4.88 (.61)	4.67 (.53)	4.60 (.60)

Note: N = 88

Content of A Generalized (Dyadic) Secure Base Script

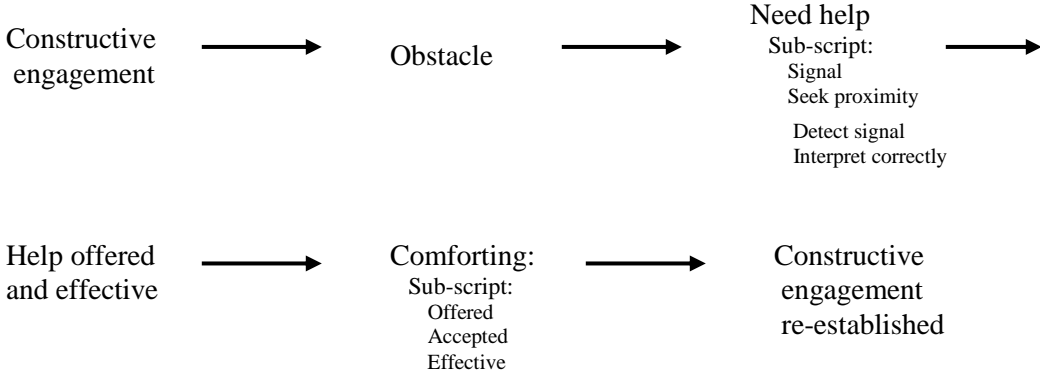


Figure 1. Secure Base Script Content.

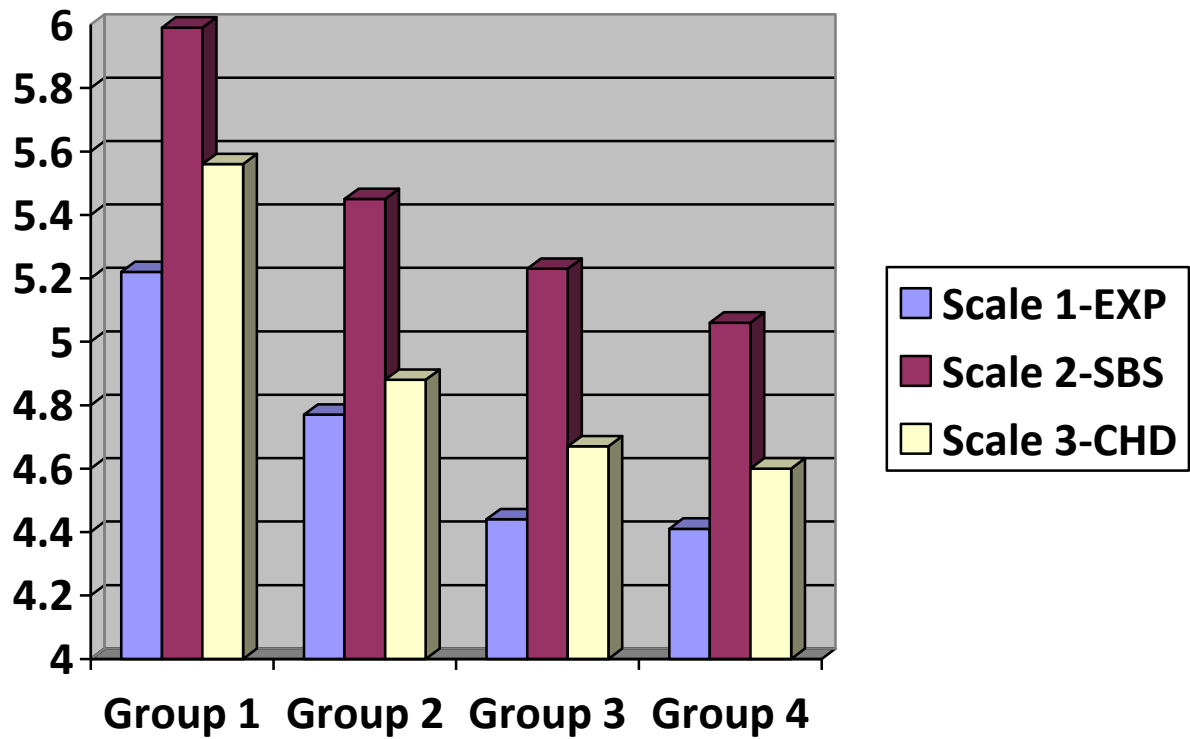


Figure 2. Mean Scale Scores for Each Group. Group 1 is Intervention/Script, Group 2 is Intervention/No Script, Group 3 is Control/Script, Group 4 is Control/No Script. Scale 1-EXP is the first column, Scale 2-SBS the second column, and Scale 3-CHD the third column.

Appendix A. *Commentary for Intervention Condition*

Order One

Clean-Up - High Quality Example

This mom did a good job of supporting her child in putting the toys away. She was always watching and participating in the task with him, but only stepped in to help when she anticipated a problem. By doing this, she was able to prevent him from becoming frustrated. She seems to be providing just the right level of support to assist him in learning how to clean up independently in the future.

One	<p>After the mother asked, “should we put the toys away” she realized that he may not know if they go in the basket or on the shelf, so she said “put them all in the bookcase” and tapped on it. This made the task clear for him and he was able to begin cleaning up right away.</p> <p>She also got up from her seat and kneeled down by the bookcase so that she would be available to help him if he needed it.</p>
Two	<p>She helped him put the first toy on the bookcase. The toy was big, and there was another one on the floor in his way, so she was able to anticipate that he needed help. The next toy was smaller and he was able to put it away himself, so she let him put it away without interfering.</p> <p>He is pressing the buttons on the toy, so he must be interested in playing right now. It is probably difficult to engage such a small child in cleaning up when they are tempted to play.</p>
Three	<p>They work well together. The mother anticipated that he was going to put the toy on a shelf that it didn’t fit on, so instead of waiting for him to get frustrated, she suggested to him that he put the toy on the top shelf, and he followed her advice. This is important because if the task becomes too difficult and he gets frustrated, he may lose interest in cleaning up.</p>
Four	<p>When he picked up the toy it fell apart and the pieces went flying in different directions. Instead of making it a problem, the mother said, “ut oh” in a playful way and the boy smiled as he went to chase after it.</p> <p>Because the mother reacted positively, her son was able to stay focused on the task at hand rather than get distracted or become upset.</p>
Five	<p>He made a little racing game to go get the other piece that broke off and he is</p>

	laughing and having a good time with his mom. Despite being playful, he is still focused on the task and gives the pieces to his mother after he gets them. They seem to have a nice relationship where he both listens to her and enjoys playing with her.
Six	He either got bored or distracted, or forgot that he is cleaning up and not playing anymore, because he is taking the toys out again. The mother needs to gently remind him that it is clean up time.
Seven	He started to clean up again after a reminder from his mother. He is doing a great job and just needs a little help in staying focused.
Eight	<p>He is finishing up, putting the last few toys away, and his mother is sitting right next to him, handing the toys to him. She probably realized that she needed to help to move the task along so that he wouldn't lose focus.</p> <p>The boy did a great job cleaning up and the mother provided just enough support to help him be successful while still allowing him to work independently. They worked well together.</p>

Playground – Moderate Quality Example

This mother is staying with her child as she explores the different parts of the playground. She seems to want to help her to have fun, but also appears to be somewhat disconnected at times, almost as if she is thinking of something else. She does a good job of allowing her child to explore at her own pace and in her own way. However, if she was more attentive, she could have avoided her daughter getting dizzy and tripping as she got off of the spinning ride.

One	<p>She probably isn't enjoying this ride. She said she wants to get down and sounds like she is not having fun.</p> <p>The mother was still spinning the ride after the daughter asked to get down. She needs to stop it quickly because her daughter may be feeling dizzy and sick.</p>
Two	<p>The mother walked away from the ride too early. She should have realized that the ride would spin while her daughter was getting off, and that she would lose her balance.</p> <p>It's the mother's job to anticipate things like that, because the little girl probably didn't know that was going to happen.</p> <p>She said, "ow" but it doesn't sound like she is really hurt. The mother showed she cared by asking if she was alright and rubbing the spot that got hurt. A little bit of comforting was all that she needed to make her feel better. Now she is ready to find what she'd like to do next.</p>
Three	This toy doesn't look like it's much fun because it doesn't bounce a lot. Maybe the mother

	should try to get it to move more for her.
Four	She didn't like that ride so she's off to the next one. It's good that she wants to try everything, and that the mother is staying near her to make sure she is safe.

Tool-Use – Poor Low Quality Example

The goal of the task is for the child to solve the problem with just enough support from the mother that he feels a sense of accomplishment. He should never get to the point of feeling frustrated or incompetent. In the beginning, the mother seemed disconnected; almost as if she was ignoring him. Meanwhile, the child seemed anxious. It looked like he was worried about how he was going to get the candy out and did not in any way enjoy the idea of the challenge. After letting her son get upset for a while, the mother finally moved closer to him. But, at that point she pretty much just gave away the solution instead of helping him to figure it out. It doesn't seem like he learned anything from this experience.

One	<p>The mother is not giving him any direction.</p> <p>Once he sees that hole where the candy is, he sticks his hand in but it doesn't reach the candy and he makes noises indicating that he is starting to get frustrated...so the mother needs to step in and help him.</p>
Two	<p>It's good that she got off the chair and got closer to him.</p> <p>He still isn't making the connection between the brick and the candy, though. He is just focused on the candy.</p> <p>Maybe she could explain to him that it is like a see-saw that he may have seen at the playground – it's the same aspect of weight – when one side goes up, the other goes down. He would probably understand it better that way.</p> <p>It would be good for him to learn from this experiment, but it is not worth having him get overly upset about.</p>
Three	<p>He's really struggling at this point, so the mother should help him to figure out how he can get the candy out. He isn't understanding the concept and is too upset to be able to try to figure it out on his own.</p>
Four	<p>The mother basically told him how to get the candy out. Although he was the one to put the block in the right spot, between him being so upset and his mother telling him the solution to the problem, he probably didn't learn anything.</p> <p>It would have been better if the mother could have somehow kept his frustration level down while at the same time supporting his own exploration of the task. He really needed her help from the very beginning, and without that got off to a bad start.</p>

Order 2

Playground – High Quality Example

The girl is having fun exploring the playground in her own way. The mother is attentive and there to support her and make sure she is safe, but does not interfere with the child's initiative in deciding how she would like to play. Many parents would probably tell their child that slides are for sliding down, not for climbing up. If this mother were to do that, the child would have missed this opportunity to feel a sense of accomplishment in achieving her goal.

One	<p>She wants to try something that she can't really achieve by herself, so that's why she is calling her mother to help her. There is a big gap between the thing she is climbing up on and the platform, and there is a boy in the way. Her mother needs to figure out how to safely get her where she wants to go without hurting the boy.</p> <p>Because she has confidence that her mother will help her, she can do more than she could on her own which is really good because children are curious and love to explore.</p>
Two	<p>The mother helped her to get over to the other side. She is happy to have accomplished something challenging! It is good that the mother is attentive, otherwise the child may have fallen and gotten hurt, or tried without succeeding and which could have made her become frustrated.</p>
Three	<p>You can tell she is really happy and excited that she made it up there because she is laughing.</p> <p>The mom doesn't want her daughter to get out of sight because she wants to keep her safe and make sure that she only has good memories associated with the playground. If she got hurt, she might be scared to play again in the future.</p>
Four	<p>The little girl said "see if I could do it", so she has learned a little bit of independence...she is trying to do things without the help from her mom. She slips a few times, but doesn't give up.</p> <p>The slide probably seems huge to her...and the idea that she can climb all the way from the bottom to the top must be exhilarating to her...like she is really conquering something.</p>
Five	<p>The mom is standing near her, but she is not helping her, she just says, "Watch your head when you are climbing up." Her daughter is listening and she says "I will" as she is climbing up the slide.</p>

	She is determined to get up there...her feet keep slipping but she is still trying to get up there. The mom is probably hoping that she makes it to the top so she can accomplish her goal and do it on her own.
Six	She is proud of herself because she made it to the top on her own. She yelled "I did it" and seems excited. Even though it may not seem like a big accomplishment to climb to the top of the slide to an adult; it's a big deal to the girl. She was sliding down a lot... it's a pretty tiring task.

Tool-Use – Moderate Quality Example

This mother watched her child more than supporting or encouraging her. She even looked like she was disconnected and bored at times. Despite that, the girl seemed happy and energetic and didn't show any signs of becoming frustrated. She just kept trying until she got the cookie out. It's hard to know if the mother didn't help because she knows her daughter doesn't get frustrated easily and enjoys doing things on her own, or if her daughter didn't ask for help because she's not used to getting help from her mother. Either way, in the end she got it out herself so she was able to feel pride in being able to accomplish something independently. If the mother had been intrusive and tried to take over, her daughter would not have had that feeling of success and pride.

One	<p>The mom didn't say anything... she just bumped the stick to kind of give a hint to the girl to use the stick to get it. It seems like she could have said something like, "Would you like to try the stick?" The girl probably doesn't know what to use the stick for yet, because she is banging it on top of the devise and sliding it under, but not putting it where it needs to go to get the cookie out.</p> <p>The mother isn't really being helpful, she is more observing than supporting her. The girl said, "it's hard" and the mother just repeated her instead of offering some help.</p>
Two	<p>The mother is really not doing too much to help her, she is letting her do it on her own, which could be a good thing or a bad thing. It's good for kids to figure things out on their own to teach them independence and give them confidence; but sometimes kids need a little guidance; and she seems like she could use a little more guidance than what her mother is giving her.</p> <p>She did finally figure out where the stick is supposed to go.</p>
Three	<p>The mother seems more like a detached observer than a mother supporting her child while she works on a task. The child doesn't seem to realize that she just has to push a little further to get the cookie out. The mother should let her figure it out, but could offer some gentle suggestions.</p>

	The child does seem happy though, so at least she is enjoying the task.
Four	<p>She probably thinks it's a game. Because as soon as she got it out, she was happy that she got it out, but then she picked it up and put it back inside the tube...maybe she is thought it was fun and wants to do it again.</p> <p>Although it looked like the mother could have supported her better, the child never got frustrated so maybe she knows her child can explore and problem-solve on her own.</p> <p>The mother said "good job" when she got it out – so it's good that she acknowledged her daughter's accomplishment.</p>

Clean-Up - Low Quality Example

This mother could have been much more helpful. She never got off of her chair, or connected with her child in any way. She kept repeating "put the toys away", but did not try to help her. If they worked together, this task could have taught Zamira a valuable skill in cleaning up after herself as well as giving her a sense of accomplishment. But it seems as though the mother did not see the value in the task, and that Zamira probably didn't benefit much from it. Doing the task completely on her own, without any structure or guidance, is beyond an appropriate expectation for her at her age.

One	<p>The mother is sitting on the chair, and when the researcher indicates it's time to start the task, she says, "can you put the toys away so we can go bye-bye?" The mother is sending the message that she doesn't care much about the task – that it is just something that needs to be done before they can leave.</p> <p>Zamira is putting eggs in the egg carton – it is not clear if she is doing that to clean up or play; but she did not appear to respond in any way to what her mother said. She may not have understood what her mother wants her to do, or may not have been paying attention to her, or may be cleaning up but not making it obvious that she is.</p>
Two	<p>Again, it's not clear if she is putting the eggs away to clean up or if she is playing. But, her mother does move the egg pieces closer to her indicating that she knows what Zamira is doing. She says "put the toys over there" and points to the shelf while the child is facing the other direction and can't see her. It would be better if her words matched what was happening, like, "when you are done putting the eggs in the container, put the container on the shelf" and actually got up and showed her where the shelf is.</p> <p>Although Zamira should learn to put the toys away herself, she seems to need some clear directions, and maybe some motivation, to help her get started.</p>

Three	<p>Zamira finished putting the eggs in the carton and she is going to put the carton somewhere. The mother says to put the toys “up there” and points, but does not make any eye contact with Zamira because she is sitting behind her and Zamira is facing the other direction. When Zamira gets up most of the eggs that she spent so much time putting in the container end up falling out. She could have used some help from her mother in learning how to carry the container flat so that they wouldn’t fall out. She also started heading towards the bin rather than the shelf, again indicating she either isn’t paying attention to her mother or doesn’t understand what her mother wants.</p>
Four	<p>Zamira put the toy away – but in the bin instead of on the shelf. The mother keeps telling her to put the toys away “up there”, and pointing to the shelf while the child is not looking at her. She is not getting Zamira’s attention. The mother says, “Hellooooo” in sort of a frustrated and impatient manner. But really, she needs to interact with Zamira - to go over to her and physically help her - rather than talking from the chair in the corner - so that she can get her attention. Although it would be good for Zamira to be able to clean up by herself, she isn’t going to be able to without some more support from her mother.</p> <p>Zamira seems like she is in her own little world; she seems almost oblivious to her mother.</p>
Five	<p>Again the mother is still sitting and would be more effective if she got off the chair and interacted with the child. She seems to want the child to get the toys from the floor and put them on the shelf, but Zamira is going to the toys on the shelf and in the bin. Again, if the mother’s request was more specific, by saying “the toys on the floor” rather than “these toys”, and got up and showed her which ones she meant instead of pointing, it would be easier for Zamira to understand. Zamira reaches for a toy from the bin and her mother says, “no, these toys” while pointing.</p> <p>She keeps repeating herself, saying “hello, hello” indicating that she knows that the child is obviously not getting anything from what she is doing, so she should try a different approach.</p>
Six	<p>Zamira finally put one thing on the shelf and her mother praised her, she said “big girl”. Now that her daughter knows what she is doing the rest might come a little bit easier. It took a long time, because she didn’t have much guidance, but it was good that she praised her. If she continues to be successful in cleaning up, this will be a good experience for Zamira, because it seems like she hasn’t cleaned up before, and cleaning up after herself is a valuable thing for her to learn to do; it teaches her responsibility.</p>

Order 3

Tool-Use – High Quality Example

This mother did a great job in balancing the need for the child to complete the task independently with providing enough support to prevent her from becoming frustrated. She was completely tuned into how her daughter was feeling, and gave her some gentle help whenever she seemed to need it. In the end, the child was able to do it herself, and was proud of that.

One	She keeps looking to her mother for help, but it is important for her to try to figure it out by herself so that she learns that she is capable of doing things on her own.
Two	<p>She needs her mother's support to finish the task. As soon she noticed that her mother went back to sit down and was not behind her she seemed to feel unsure of what she was doing.</p> <p>The mom is doing a good job so far, she just needs to keep being encouraging so that her daughter doesn't give up.</p>
Three	That's the support of the mother. You can see that she feels more confident that she can get the cookie now, with her mother by her side. Her mother realized that she just needed some encouragement and doesn't need to get the cookie out for her. The mother is confident that she can do it, and it seems like that makes the child feel more confident too.
Four	It's good that the mother isn't doing it for her and that she just keeps encouraging her and giving her different ideas to try. Lots of parents tend to do things for their kids instead of helping them to do it themselves, and then the kids aren't able to feel that sense of pride that comes with accomplishing something.
Five	They interact really well. The mother is still helping her without taking over. She is trying to direct the child's attention by moving to the other side of the device.
Six	<p>After she kept trying she finally got it out and said to her mom, "I did it!" in a proud voice. She is learning that she can accomplish things on her own...and she was able to do this because her mom was completely focused on her the whole time.</p> <p>The mother participated in the task just as much as the child did, but in a subtle way in order to ensure her child succeeded.</p>

Clean-Up - Moderate Quality Example

This mother and child work OK together, but not great. The child seems very interested in the little details of cleaning up, such as putting the animals on the bus in their correct seats before putting them on the shelf. The mother seems more concerned with getting the task done than in supporting her child to get it done in her own way. She is somewhat disconnected from her

child, and sometimes asks her to put one thing away when her daughter was already putting another thing away. In the end, however, she does figure out a way to engage her child and to support her to complete the task.

One	<p>As soon as her mother asked her if she wanted to clean up the toys, Kaylie said “Yeah” and walked over towards the shelf. Her mother told her to put all the toys on the shelf and then patted it so she would know where to put the toys.</p>
Two	<p>When Kaylie put the toy on the shelf she tried to get the little animal in the bus, but she couldn’t do it, so she brought it to her mom and said, “Can you help me?” and then she ran off to get another one of the animals that goes in the bus.</p> <p>Her mother said, “sure, but can you put all these in the box?” without even noticing that the child was getting more pieces for the bus. The mother seems disconnected from the child. It seems like it is important to the child to have all of the animals put away on the bus before it is put on the shelf.</p> <p>It would probably be easier if the mom followed the child’s lead. Plus, letting the child take the lead helps to teach independence.</p>
Three	<p>Kaylie handed an animal for the bus to her mother to put away, and then said, “I want animals here”. Her mother then held her hand up to Kaylie in a way that made it seem like she is getting aggravated with her.</p> <p>Again, the mother needs to work better with the child. It may take longer to do things the way Kaylie wants to do them, but it will also help to keep her interested in cleaning up.</p> <p>The mother should also make this a little more enjoyable for Kaylie because she is young and easily distracted, and she seems to like to sing and play. To get her to just strictly listen to clean up the toys.... it doesn’t seem like that is going to work.</p>
Four	<p>Once the mother finished putting the animals where they belong in the bus, she put the bus on the top of the shelf, probably hoping that it will be out of Kaylie’s view so that she won’t be distracted by the toy anymore.</p>
Five	<p>It looks like Kaylie was only getting the bus down because she wanted it put away on the middle shelf, which is where she originally tried to put it. As soon as she moved it, she got another toy and started bringing it over to the shelf.</p> <p>The mom seemed disconnected from the child’s activities, though, because she asked her to put the blocks in the box when in fact the child was already cleaning up a different toy. The mom should pay attention to the child and follow her lead.</p>

Six	<p>The mom put the box on the shelf to show Kaylie where to put the toys, in hopes that she would imitate her.</p> <p>Somehow the mother needs to change the focus from stopping Kaylie from doing what she doesn't want her to do to motivating her to clean because Kaylie doesn't seem to have the mindset that they are cleaning up right now so it will be difficult to finish the task.</p>
Seven	<p>The mother asked Kaylie to put the toys on the shelf and Kaylie said, "OK", and put something on the shelf, but then got distracted once again with the bus. It looks like she really does want to help, but gets too easily distracted by the toys.</p> <p>Meanwhile, the mom put a bunch of toys on the shelf, which isn't really helping Kaylie to learn to clean up.</p>
Eight	<p>Kaylie obviously needs more direction because she keeps going back to the same toy and playing with it. It is clear that the approach the mom is taking so far hasn't worked so she should be thinking about another way to help her learn.</p>
Nine	<p>The mom was finally able to get Kaylie to focus on her. Before, Kaylie didn't really make eye contact with her mom, and now they are directly interacting with each other. Now that she has Kaylie's attention by showing her the toys before she asks her to put them away, Kaylie is doing a better job of putting them away. The mother has found a way to work with Kaylie.</p> <p>When Kaylie went to put a toy on a shelf that was already full, the mother patted the top shelf to show Kaylie where it would fit in order to prevent her from becoming frustrated. Kaylie put it there and quickly got back to looking at the next thing that the mother took out. Now that the task is more fun it seems like it is easier for Kaylie to help clean up and to follow her mother's directions.</p>
Ten	<p>This seems like a good way to incorporate what Kaylie wants to do, which is to play, with cleaning up. She is kind of playing with a toy, and after she is done playing with it, putting it on the shelf. The pattern imitates the goal of the task – learning to clean up toys after you are done playing with them, so it's a way that she can learn. Plus it's a way to grab Kaylie's attention.</p>

Playground – Low Quality Example

This mother seemed to have the right idea at first to point the duck out to the children, but from then on did not do a good job. Children are naturally curious, and spending time with them at a park is a great way for them to explore their environment and have fun. Instead of

supporting their explorations by staying with them and keeping them safe, this mother yelled at and punished her children when they wanted to investigate something that she pointed out to them. This sends the message that they should not explore, and could serve to inhibit their playing in the future. She was also completely disconnected from them and unaware of their thoughts and feelings. She didn't seem to have any awareness of the impact of her harshness on them.

One	<p>It's nice that they are exploring and finding out how cool nature is, but it is dangerous to be so close to the water. The mother should go with the kids so they don't accidentally fall into the water. It's always a good idea for the mother to stay close to her children when they are exploring outside. This way they can safely see the duck and enjoy their time outdoors.</p> <p>They don't seem to be scaring the duck away, and the mother should not have yelled at them.</p>
Two	<p>The mom was too harsh. The children were simply going to look at the duck that she pointed out to them. Instead of staying on the bench and yelling at them, she should have walked over there and held their hands. They certainly did not do anything to deserve a time out. The way the mother handled the situation will spoil the children's fun and may make them overly cautious in the future.</p>

Session I

Intervention Group

Participants complete the attachment script assessment. They then view one interaction each of a mother and her preschool child putting toys on a shelf (clean-up), solving a puzzle (tool-use) and playing outside (playground). The video-clips contain commentary directing their attention to secure base aspects of the interaction. Participants are told that while they view the video-clips they will hear an evaluation of the interaction that was made by a child development expert, and that we would like to see if these materials can help them to recognize positive and negative aspects of parent/child interactions when they come back in two days to comment on similar video-clips. Participants were asked to try to understand the general concepts rather than to try to memorize what was being said.

Control Group

Participants complete the attachment script assessment. They then view the same three video clips (one each of clean-up, tool-use, and playground) but without the secure base commentary. They are told that they are viewing the video-clips today in order to familiarize themselves with the materials and procedures for the second session, at which time they will see new clips and will have a chance to comment on them.

Materials

In order to reduce bias, all materials were counterbalanced as follows:

Session I Script Assessments – 3 orders – note Trip to Park is a neutral story to warm up with and was not coded.

Order 1: Trip to Park, Baby’s Morning, Doctor’s Office, The Party

Order 2: Trip to Park, Doctor’s Office, The Party, Baby’s Morning

Order 3: Trip to Park, The Party, Baby’s Morning, Doctor’s Office

Session I Video Clips – 3 orders

Order 1: clean-up (high example), playground (moderate example), tool-use (low example)

Order 2: playground (high example), tool-use (moderate example), clean-up (low example)

Order 3: tool-use (high example), clean-up (moderate example), playground (low example)

Session II

Intervention and Control Groups (same for both)

Participants view two clips of each of the three different situations (the ones they didn't view during the first session). They are asked to comment on what they are thinking about the interaction at predetermined stopping points.

Materials

Session II Video-Clips – 3 orders

- Order 1: clean-up (moderate example), clean-up (low example), playground (high example), playground (low example), tool-use (high example), tool-use (moderate example)
- Order 2: playground (moderate example), playground (low example), tool-use (high example), tool-use (low example), clean-up (high example), clean-up (moderate example)
- Order 3: tool-use (moderate example), tool-use (low example), clean-up (high example), clean-up (low example), playground (high example), playground (moderate example)

Appendix C: *Instructions used by research assistants for Session I*

Instructions for Intervention Group Session I

Prepare

Collect all of the materials you will need

Test equipment

Greet

- ***Are you here for the Parenting Cognitions study?***
- ***Great, thanks so much for participating in our study.***
- ***This is a 2-part study. You will be here for up to an hour and a half today, and then come back at the same time in two days. After you complete the second session, you'll receive 3 credits on SONA.***

Step 1 – Consent Forms

Step 2 –Demographic Form

Step 3 – Story Telling Portion

- ***We're now ready to begin the study. There will be 2 parts to the study today. In the first part, you'll be asked to tell stories using word prompts. In the second part, you will watch a DVD of mothers and children interacting with each other.***
- ***We'll start with the storytelling portion first.***
- ***We are interested in seeing how different people tell stories.***
- ***This procedure has been used previously with children and we are trying it out to see if we can get the same results with adults too.***
- ***Since we are going to record the stories as you tell them, please clip this microphone to your shirt (give microphone to subject)***

Show subject the first prompt word outline in the set. Tell them

- ***We have four story outlines in total to help you make up stories.***
- ***For each story you will be given the title of the story and then these lists of words to help you make up a story. When you look at the words, you start by going down the first column, then move from the first column to the middle column, and then to the last column. The words give you a general outline or guide of what the story is supposed to be about. So, for example in this case, “Trip to Park”, the basic outline is that “Susie rode her bike to the park to meet a friend.”***

Once they seem to understand the procedure, tell them:

- ***What we have here is meant to give you a brief outline of the story. So, what I would like you to do is to use this as a starting point to try and come up with the best possible story you can tell me about a “Trip to the Park”. You don’t have to use all the words if it’s too difficult to incorporate them in your story. Also, if it makes it easier, you can change the order of the words. The main thing is that you make up the best story you think you can tell. In terms of length, I’d like it to be about a page long if it were written down, so you should put in as much information and as many details as you can. You can take a few minutes to look at the words so that you can put together your story, and whenever you feel that you’re ready to tell the story, let me know and I will start the tape. One thing to remember is that once you are done, the stories will be transcribed, so if you need to stop in the middle of a story to think about it, or if you would like to start again, that’s no problem.***

When subject indicates they are ready to begin, press ‘record’ and state the subject number and session 1 (i.e. “Subject 1, Session 1). Let the recorder remain in record mode until the subject has completed all 4 stories.

With each every set of words, go through the basic procedure again [Note – if participant is doing well and it seems like reiterating how to do subsequent stories is redundant, you can skip the below and simply say the name of the next story and tell them to do it exactly the same way as before]:

The next story is...

- ***“Baby’s Morning”. It is exactly the same procedure as before. If you look down the column it gives you the basic outline. So, “The mother and baby are playing on the blanket.” Again, I’d like you to come up with what you think is the best possible story you can tell about the “Baby’s Morning”. So, have a look at the words, and let me know when you have come up with a story.***

- ***“Doctor’s Office”.*** Again, it is exactly the same procedure as before. The words give you the basic outline. So, ***“Tommy is riding his bike outside and he falls and gets hurt.”*** Again, I’d like you to come up with what you think is the best possible story you can tell about the ***“the Doctor’s Office”***. So, have a look at the words, and let me know when you have come up with a story.
- ***“The Party”.*** Once again, the words give an outline of the story. In this case ***“It was Friday night. Ann had just been uninvited to a party and felt miserable...”*** Please once again come up with what you think is the best possible story about ***“The Party.”***

- ***That’s all for the first portion of the study. Now we will move over to the TV to do the second portion of the study.***

Step 4 – Video Portion

- ***You are going to be shown three video clips of mothers and their preschool children putting toys on a shelf, solving a puzzle, and playing outside.***
- ***You will see the complete interaction first***
- ***Next, you will then hear an evaluation of the interaction that was made by a child development expert. This comment should help to guide your attention as you view the interaction for a second time.***
- ***The second time you see the interaction, we will pause the tape periodically when a green or yellow dot appears on the screen and you will hear comments made by child development experts.***
- ***We would like to see if these materials can help you to recognize positive and negative aspects of parent/child interactions. When you come back in two days, you will be asked to make similar comments on a different set of video clips.***
- ***We are not asking you to memorize the comments that you will hear today, but rather to try to understand the general concepts that the comments represent.***
- ***When you come back in two days, you will be shown a different set of video clips. Just as today, there will also be pauses at certain points during the interaction.***
- ***When you watch them next time, you will be asked to make comments about the interaction between the mother and child during the pauses. But for today, you will just be listening.***
- ***Do you have any questions?***

Order 1

Clean-Up Introductory Comment

You are about to watch an interaction between a mother and child in which the mother was told to have the child clean-up the toys in the room. The mother was instructed to support the child in whatever way she felt was appropriate.

The goal of this task is to help the child to learn how to clean up independently in the future. This is best accomplished by allowing the child to take some initiative in cleaning up in his own way. We are looking for the mother to provide enough support for the child to be successful while also preventing him from becoming frustrated. To do this, the mother will need to make the experience positive for the child by keeping him interested in cleaning up and making the directions clear.

- Show first clip

Playground Introductory Comment

You are about to watch an interaction between a mother and child exploring the outdoors together. The mother was not given any instructions for this interaction.

The mother's goal is to allow her child to play and explore in her own way while always ensuring that the child is safe. This requires the mother to be nearby the child and focused on her at all times. In some cases, the child will explore completely independently and in some cases the child may benefit from the mother helping to make the explorations more enjoyable.

- Show second clip

Tool-Use Introductory Comment

You are about to watch an interaction between a mother and child completing a tool-use task together. The mother was told to have the child get the candy out of the box and to support him in whatever way she feels is appropriate.

The goal of the tool-use task is for the mother to support the child in solving the puzzle as independently as possible. However, the mother should offer enough support to prevent the child from becoming frustrated. Some children will only need a little emotional support to complete this task, while others will need more guidance. Regardless of how much support the mother needed to give the child to complete the task, in the end the mother should have helped in such a way that the child feels a sense of accomplishment in achieving the goal by himself.

- Show third clip

Order 2

Playground Introductory Comment

You are about to watch an interaction between a mother and child exploring the outdoors together. The mother was not given any instructions for this interaction.

The mother's goal is to allow her child to play and explore in her own way while always ensuring that the child is safe. This requires the mother to be nearby the child and focused on her at all times. In some cases, the child will explore completely independently and in some cases the child may benefit from the mother helping to make the explorations more enjoyable.

- Show first clip

Tool-Use Introductory Comment

You are about to watch an interaction between a mother and child completing a tool-use task together. The mother was told to have the child get the cookie out of the box and to support her in whatever way she feels is appropriate.

The goal of the tool-use task is for the mother to support the child in solving the puzzle as independently as possible. However, the mother should offer enough support to prevent the child from becoming frustrated. Some children will only need a little emotional support to complete this task, while others will need more guidance. Regardless of how much support the mother needed to give the child to complete the task, in the end the mother should have helped in such a way that the child feels a sense of accomplishment in achieving the goal by herself.

- Show second clip

Clean-Up Introductory Comment

You are about to watch an interaction between a mother and child in which the mother was told to have the child clean-up the toys in the room. The mother was instructed to support the child in whatever way she felt was appropriate.

The goal of this task is to help the child to learn how to clean up independently in the future. This is best accomplished by allowing the child to take some initiative in cleaning up in her own way. We are looking for the mother to provide enough support for the child to be successful while also preventing her from becoming frustrated. To do this, the mother will need to make the experience positive for the child by keeping her interested in cleaning up and making the directions clear.

- Show third clip

Order 3

Tool-Use Introductory Comment

You are about to watch an interaction between a mother and child completing a tool-use task together. The mother was told to have the child get the cracker out of the box and to support her in whatever way she feels is appropriate.

The goal of the tool-use task is for the mother to support the child in solving the puzzle as independently as possible. However, the mother should offer enough support to prevent the child from becoming frustrated. Some children will only need a little emotional support to complete this task, while others will need more guidance. Regardless of how much support the mother needed to give the child to complete the task, in the end the mother should have helped in such a way that the child feels a sense of accomplishment in achieving the goal by herself.

- Show 1st clip

Clean-Up Introductory Comment

You are about to watch an interaction between a mother and child in which the mother was told to have the child clean-up the toys in the room. The mother was instructed to support the child in whatever way she felt was appropriate.

The goal of this task is to help the child to learn how to clean up independently in the future. This is best accomplished by allowing the child to take some initiative in cleaning up in her own way. We are looking for the mother to provide enough support for the child to be successful while also preventing her from becoming frustrated. To do this, the mother will need to make the experience positive for the child by keeping her interested in cleaning up and making the directions clear.

- Show 2nd clip

Playground Introductory Comment

You are about to watch an interaction between a mother and her children exploring the outdoors together. The mother was not given any instructions for this interaction.

The mother's goal is to allow her children to play and explore in their own way while always ensuring that they are safe. This requires the mother to be nearby the children and focused on them at all times. In some cases, the children will explore completely independently and in some cases they may benefit from the mother helping to make the explorations more enjoyable.

- Show 3rd clip

Part 1 of this study is over. Thank you so much for participating, and I'll see you in two days.

Instructions for Control Group Session I

Prepare

Collect all of the materials you will need

Test equipment

Greet

- ***Are you here for the Parenting Cognitions study?***
- ***Great, thanks so much for participating in our study.***

- ***This is a 2-part study. You will be here for up to an hour and a half today, and then come back at the same time in two days. After you complete the second session, you'll receive 3 credits on SONA.***

Step 1 – Consent Forms

Step 2 –Demographic Form

Step 3 – Story Telling Portion

- ***We're now ready to begin the study. There will be 2 parts to the study today. In the first part, you'll be asked to tell stories using word prompts. In the second part, you will watch a DVD of mothers and children interacting with each other.***
- ***We'll start with the storytelling portion first.***
- ***We are interested in seeing how different people tell stories.***
- ***This procedure has been used previously with children and we are trying it out to see if we can get the same results with adults too.***
- ***Since we are going to record the stories as you tell them, please clip this microphone to your shirt (give microphone to subject)***

Show subject the first prompt word outline in the set. Tell them

- ***We have four story outlines in total to help you make up stories.***
- ***For each story you will be given the title of the story and then these lists of words to help you make up a story. When you look at the words, you start by going down the first column, then move from the first column to the middle column, and then to the last column. The words give you a general outline or guide of what the story is supposed to be about. So, for example in this case, "Trip to Park", the basic outline is that "Susie rode her bike to the park to meet a friend."***

Once they seem to understand the procedure, tell them:

- ***What we have here is meant to give you a brief outline of the story. So, what I would like you to do is to use this as a starting point to try and come up with the best possible story you can tell me about a "Trip to the Park". You don't have to use all the words if it's too difficult to incorporate them in your story. Also, if it makes it easier, you can change the order of the words. The main thing is that you make up the best story you think you can tell. In terms of length, I'd like it to be about a page long if it were written down, so you should put in as much information and as many details as you can. You can take a few minutes to look at the words so that you can put together your story, and whenever you feel that you're ready to tell the story, let me know and I will start the tape. One thing to remember is that once you are done, the stories will be transcribed, so if you need to stop in the middle of a story to think about it, or if you would like to start again, that's no problem.***

When subject indicates they are ready to begin, press 'record' and state the subject number and session 1 (i.e. "Subject 1, Session 1). Let the recorder remain in record mode until the subject has completed all 4 stories.

With each every set of words, go through the basic procedure again [Note – if participant is doing well and it seems like reiterating how to do subsequent stories is redundant, you can skip the below and simply say the name of the next story and tell them to do it exactly the same way as before]:

The next story is...

- ***"Baby's Morning". It is exactly the same procedure as before. If you look down the column it gives you the basic outline. So, "The mother and baby are playing on the blanket." Again, I'd like you to come up with what you think is the best possible story you can tell about the "Baby's Morning". So, have a look at the words, and let me know when you have come up with a story.***
- ***"Doctor's Office". Again, it is exactly the same procedure as before. The words give you the basic outline. So, "Tommy is riding his bike outside and he falls and gets hurt." Again, I'd like you to come up with what you think is the best possible story you can tell about the "the Doctor's Office". So, have a look at the words, and let me know when you have come up with a story.***
- ***"The Party". Once again, the words give an outline of the story. In this case "It was Friday night. Ann had just been uninvited to a party and felt miserable..." Please once again come up with what you think is the best possible story about "The Party."***

- ***That's all for the first portion of the study. Now we will move over to the TV to do the second portion of the study.***

Step 4 – Video Portion

- ***You are going to be shown three video clips of mothers and their preschool children putting toys on a shelf, solving a puzzle, and playing outside. This is to familiarize you with our materials and procedures for the second part of the experiment that we'll conduct next time.***
- ***You will see the complete interaction first***
- ***Then you will see the interaction a second time, and we will pause at a number of points where a green or yellow dot appears on the screen***
- ***When you come back in two days, you will be shown a different set of video clips. Just as today, there will also be pauses at certain points during the interaction***
- ***When you watch them next time, you will be asked to make comments about the interaction between the mother and child during the pauses.***
- ***Do you have any questions?***

Order 1 (Clean-up, Playground, Tool-use)

The first interaction that you will see is a clean-up task. In this task, the mother was instructed to have the child clean-up the toys in the room and to support the child in whatever way she feels is appropriate.

- Show first clip

The next interaction that you will see is of a mother and child exploring the outdoors together. The mother was not given any instructions for this interaction.

- Show second clip

The next interaction that you will see is a tool-use task. In this task, the mother was told to have the child get a cookie or piece of candy out of a device and to support her child in whatever way she feels is appropriate.

- Show third clip

Order 2 (Playground, Tool-use, Clean-up)

The first interaction that you will see is of a mother and child exploring the outdoors together. The mother was not given any instructions for this interaction.

- Show first clip

The next interaction that you will see is a tool-use task. In this task, the mother was told to have the child get a cookie or piece of candy out of a device and to support her child in whatever way she feels is appropriate.

- Show second clip

The next interaction that you will see is a clean-up task. In this task, the mother was instructed to have the child clean-up the toys in the room and to support the child in whatever way she feels is appropriate.

- Show third clip

Order 3 (Tool-use, Clean-up, Playground)

The first interaction that you will see is a tool-use task. In this task, the mother was told to have the child get a cookie or piece of candy out of a device and to support her child in whatever way she feels is appropriate.

- Show first clip

The next interaction that you will see is a clean-up task. In this task, the mother was instructed to have the child clean-up the toys in the room and to support the child in whatever way she feels is appropriate.

- Show second clip

The next interaction that you will see is of a mother and child exploring the outdoors together. The mother was not given any instructions for this interaction.

- Show third clip

Part 1 of this study is over. Thank you so much for participating, and I'll see you in two days.

Instructions for Intervention Group Session II

Prepare

Collect all of the materials you will need

Test equipment

Greet

- ***Welcome back!***
- ***Today there is only one part to the study – watching interactions and commenting on them. You can have a seat over here (seat by the TV)***
- ***Since we'll be recording your comments, please clip the microphone to your shirt [give microphone, press record]***

Parenting Cognitions Interview

Note: The introduction to the interview is different for the intervention and control groups. All other instructions are the same.

Instructions Given to Intervention Group

Two days ago, you saw one video clip of a mother and child in three different scenarios: putting toys on a shelf, solving a puzzle, and playing outside. While you watched those video clips you also heard commentary to guide your attentions to important aspects of the interaction. Today, you will see two more video clips of each scenario.

Instructions Given to Control Group

Two days ago, you saw one video clip of a mother and child in three different scenarios: putting toys on a shelf, solving a puzzle, and playing outside. Today, you will see two more video clips of each scenario.

- ***Like last time, you will first view the whole video clip.***
- ***You will then view the video clip a second time, and the video will be paused periodically when green or yellow dots appear on the screen.***
- ***During the pause, we would like you to comment on what you are thinking about the interaction at that point.***

- *If you have a thought about the interaction that comes to mind when the tape is not paused, please ask me to stop the tape so that you can make the comment*
- *There may also be a time when you don't have a comment, if so you can say that as well*
- *After you have finished watching the same video clip for the second time, you will be asked to comment overall on how well you feel the mother did at supporting the child and how you feel the mother and child interacted together.*
- *Do you have any questions before we get started?*

Order 1

Clean-Up Introductory Comment

- *The first two clips are of a clean-up task. In this interaction, the mother was told to have the child clean-up the toys in the room. The mother was instructed to support the child in whatever way she felt was appropriate.*
- *Remember, like last time you'll see the entire clip first, and then we'll show it a second time with pauses for you to make comments.*
- Show Clean-up 1
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as "great", "excellent"; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When first clean-up clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***
- Show Clean-up 2
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as "great", "excellent"; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.

- When 2nd clean-up clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***

Playground Introductory Comment

- ***The next two clips are of a mother and child exploring the outdoors together. The mother was not given any instructions.***
- Show Playground 1
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When first playground clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***
- Show Playground 2
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When 2nd playground clip or the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***

Tool-Use Introductory Comment

- ***The next two clips of are a tool-use task. In this interaction, the researcher told the mother to have the child get the candy or cookie out of the box and to support him in whatever way she feels is appropriate.***
- Show Tool-use 1
 - When dot appears on screen, pause DVD.

- **What are your thoughts about the interaction at this point?**
- Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
- When subject makes comments, make sure they are finished before pressing play again.
- Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
- When first tool-use clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***
- **Show Tool-use 2**
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When 2nd tool-use clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***

Order 2

Playground Introductory Comment

- ***The first two clips are of a mother and child exploring the outdoors together. The mother was not given any instructions.***
- **Show Playground 1**
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”,

“excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.

- When first playground clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***
- Show Playground 2
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When 2nd playground clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***

Tool-Use Introductory Comment

- ***The next two clips of are a tool-use task. In this interaction, the researcher told the mother to have the child get the candy or cookie out of the box and to support him in whatever way she feels is appropriate.***
- Show Tool-use 1
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When first tool-use clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***
- Show Tool-use 2
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not,

- remind them of the instructions.
- When subject makes comments, make sure they are finished before pressing play again.
- Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
- When 2nd tool-use clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***

Clean-Up Introductory Comment

- ***The next two clips are of a clean-up task. In this interaction, the mother was told to have the child clean-up the toys in the room. The mother was instructed to support the child in whatever way she felt was appropriate.***
- ***Remember, like last time you’ll see the entire clip first, and then we’ll show it a second time with pauses for you to make comments.***
- Show Clean-up 1
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When first clean-up clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***
- Show Clean-up 2
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When 2nd clean-up clip is finished playing for the 2nd time, ask:

- ***What is your overall impression of that interaction?***
- ***What do you feel the mother did particularly well?***
- ***What do you feel the mother could have done better?***

Order 3

Tool-Use Introductory Comment

- ***The first two clips of are a tool-use task. In this interaction, the researcher told the mother to have the child get the candy or cookie out of the box and to support him in whatever way she feels is appropriate.***
- Show Tool-use 1
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When first tool-use clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***
- Show Tool-use 2
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When 2nd tool-use clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***

Clean-Up Introductory Comment

- ***The next two clips are of a clean-up task. In this interaction, the mother was told to have the child clean-up the toys in the room. The mother was instructed to support***

the child in whatever way she felt was appropriate.

- **Remember, like last time you'll see the entire clip first, and then we'll show it a second time with pauses for you to make comments.**
- Show Clean-up 1
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When first clean-up clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***
- Show Clean-up 2
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When 2nd clean-up clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***

Playground Introductory Comment

- ***The next two clips are of a mother and child exploring the outdoors together. The mother was not given any instructions.***
- Show Playground 1
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or

- make specific remarks in response to comments.
- When first playground clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***
- Show Playground 2
 - When dot appears on screen, pause DVD.
 - **What are your thoughts about the interaction at this point?**
 - Continue to pause at dots. Subject will probably just make comments. If not, remind them of the instructions.
 - When subject makes comments, make sure they are finished before pressing play again.
 - Encourage by smiling, making eye contact, and saying things such as “great”, “excellent”; while being careful not to seem to pull for certain comments, or make specific remarks in response to comments.
 - When 2nd playground clip is finished playing for the 2nd time, ask:
 - ***What is your overall impression of that interaction?***
 - ***What do you feel the mother did particularly well?***
 - ***What do you feel the mother could have done better?***

That's it. You're all done with the study! You will be getting 3 credits on SONA. Thanks so much for participating in our study.

Appendix E. Abbreviated Instructions for Child-Parenting Interactions Interview

Intervention Group

Two days ago, you saw one video clip of a mother and child in three different scenarios: putting toys on a shelf, solving a puzzle, and playing outside. While you watched those video clips you also heard commentary to guide your attentions to important aspects of the interaction. Today, you will see two more video clips of each scenario.

- Like last time, you will first view the whole video clip.
- You will then view the video clip a second time, and the video will be paused periodically when green or yellow dots appear on the screen.
- During the pause, we would like you to comment on what you are thinking about the interaction at that point.
 - If you have a thought about the interaction that comes to mind when the tape is not paused, please ask me to stop the tape so that you can make the comment
 - There may also be a time when you don't have a comment, if so you can say that as well
- After you have finished watching the same video clip for the second time, you will be asked to comment overall on how well you feel the mother did at supporting the child and how you feel the mother and child interacted together.
- Do you have any questions before we get started?

At each pause, participant was asked:

- What are your thoughts about the interaction at this point?

After each interaction, participant was asked:

- What is your overall impression of that interaction?
- What do you feel the mother did particularly well?
- What do you feel the mother could have done better?

Control Group

Same except for the first paragraph:

Two days ago, you saw one video clip of a mother and child in three different scenarios: putting toys on a shelf, solving a puzzle, and playing outside. Today, you will see two more video clips of each scenario.

Appendix F. *Demographic Questionnaire*

Today's Date: _____

Birth Date: _____

Sex: M F

BACKGROUND INFORMATION

Ethnic Background (Please Check)

_____ Black _____ White
_____ Hispanic _____ Asian American
_____ American Indian _____ Other (Please Specify) _____

1. Parts of our study may be affected by your family configuration.

Are your parents living?

Mother: **Yes** **No** If no, how old were you when your mother died? _____

Father: **Yes** **No** If no, how old were you when your father died? _____

Are your parents (Please check one):

Married: _____

Separated: _____ If yes, how old were you when they separated? _____

Divorced: _____ If yes, how old were you when they separated? _____

Widowed: _____

Never Married: _____

Other: _____

Who were you mainly raised by:

_____ Mother & Father _____ Mother & Stepfather _____ Father & Stepmother

_____ Mother Only _____ Father Only _____ Grandparent(s)

_____ Other Family (Please specify): _____

How many brothers and sisters do you have?

Brothers: _____ Sisters: _____

Brother's Ages: #1: _____ #2: _____ #3: _____ #4: _____ #5: _____

Sister's Ages: #1: _____ #2: _____ #3: _____ #4: _____ #5: _____

If any of these siblings took care of you almost like a parent, put a **CIRCLE** around their age.

If you took care of any of your siblings almost like as a parent, put a **SQUARE** around their age.

Do you have children? _____ If so, what are their ages? _____

2. Parts of our study may be affected by your (or your parent's) educational background.

What class are you in college?

_____ Freshman _____ Sophomore _____ Junior _____ Senior _____ Senior +1

What is your major? _____

What (as best as you know it) was your GPA last year? _____

What was your father's highest level of education? _____

What was your mother's highest level of education? _____

3. Parts of our study may be affected by the language(s) you have learned.

Is English your only language? _____ Yes _____ No

If you are fluent in any other language and use it regularly, at what age did you begin to learn it? _____

What language is spoken most often at home? _____

Identify any language other than English that you are currently studying: _____

4. Parts of our study may be affected by your experience with children.

Do you have experience with children? _____ Yes _____ No

If so, could you briefly describe your experience? _____

Have you ever baby-sat? _____ Yes _____ No

If you have baby-sat, how long did you baby-sit for (months or years)? _____

How frequently did you baby-sit (i.e. number of times per week)? _____

Do you have younger siblings? _____ Yes _____ No

Did you take care of them? _____

Thank you!

Appendix G. Secure Base Cognition Scales

Introduction

The Child-Parenting Interactions Interview is an opportunity to tap into an individual's general parenting related cognitions including goals, expectations, and interpretations of both parent and child behaviors. The interview presents a range of video-clips of everyday parent-child interactions (cleaning up toys, problem solving with simple tools, and exploring in an outdoor park). Each type of interaction is represented by three different video clips of mothers with their 3-4 year old children. Mothers on the clips vary in their engagement and effectiveness giving subjects the opportunity to express their views of what constitutes effective secure base support in these situations.

The on-line commentary of the subjects are scored on three different secure base cognition scales. They include: 1) recognition of the child's need for independence and exploration, 2) recognition of the parent's secure base support, and 3) the ability to take the child's perspective. Each of these 4 point scales are described below, both in general terms and with respect to each of the three different types of parent-child interactions.

Description of scales

I. Recognition of the child's need for independence and exploration

The secure base system includes the child's confidence in exploration and their ability to handle obstacles and difficulties they encounter in the environment. A parent with secure base knowledge recognizes the child's need to explore and experience some level of independence. In a task like "cleaning up toys" this is more aptly expressed as giving the child an opportunity to take charge of the activity while helping to focus the child on its ultimate goal (toys on the shelf). In the tool-use task, the parent has to balance freedom to explore possible approaches with an eye to eventual success. In exploring the outdoor park, the parent has to balance giving the child the freedom to explore while being at hand to preempt any explorations that might be dangerous.

For the clean-up task, it is especially important to ascertain the participant's understanding of the goal of the task. Comments regarding the need to keep the child focused on the task are positive in the backdrop of teaching the child important skills for the future, but are negative when framed in the backdrop of compliance and obedience. It is also important to keep the specific clip in mind. Clips where the child is completely unengaged in the task call for a different approach than ones in which the child is engaged in the task.

For the playground clips, safety is an important aspect of the secure base system when balanced with exploration. When safety is emphasized to the point of seriously inhibiting exploration, it is negative.

For the tool use clips, children should be encouraged to master the activity themselves. However, clips where the child is obviously frustrated call for more guidance than those

where the child is asking for help but not really needing it.

Scale Scores for Scale 1:

4. In describing the mother-child interaction on the video clip, the participant clearly articulates the importance of giving the child an opportunity to explore, to be in charge of their own behavior. They recognize the importance of the child walking away from the activity with a sense of competence, and may explicitly mention how the experience will benefit the child in the future. In the online commentary where we see clear evidence of the recognition of the child's need to explore and be the "master" of their activities, the participant receives a "4" on this scale.

Participants who communicate evidence of the natural curiosity of a child as being valid and important receive a "4", even if not stated as the mom's goal.

For those video clips where the child is ignoring the mother's input (e.g., cleaning up task), a participant who recognizes that the goal of mastering the task is not being met can still receive a "4" if there is clear evidence of the correct goal of mastery (if there is not clear evidence of the goal of mastery, they receive a "3" for noticing the clean-up task is not being met. If the goal seems to focus on something other than mastery, such as obedience, they would receive a "1" even when noticing that clean-up isn't working.

3. In online commentaries where we have some explicit recognition of the child's needs to explore and experience independence, but which is not as elaborate as those that receive a "4," a score of "3" is assigned.
2. Online commentaries that lack information about how the child should be encouraged to explore, do things by him/herself, or how the child should be given an opportunity to take charge receive a "2." This score reflects the lack of relevant information on the child's need to explore and show some independence. Commentary that is in fact contrary to that goal would receive a "1."
1. As indicated above, commentary that is contrary to the goal that the child should explore or be given the opportunity to take charge of the task would receive a "0" score. Comments about how the mom should just show the child what to do (as opposed to offering assistance in response to signals from the child such as frustration or distraction), or not let the child explore, would fall into this category. In the clean-up task, participants who show evidence of having an alternative goal than exploration and mastery, such as obedience, expediency, and performing well for the experimenter would receive a "1" Also, comments that assess the mom's in the clips inaccurately would receive a "1"

Positive examples (4 to 3) for Scale 1:

Clean-up:

"OK time to clean up and get the child involved in the cleaning up so that they could learn that after you have fun in playing you have to clean up, whatever mess you have done and why? Because it's good for the future...you know how to clean up your room and you just don't leave

everything after you're done...you clean up whatever you play with." (57)

Playground:

"She is taking advantage of all the different park rides and she is trying everything and that is really good."

"Now the mom is thinking that like this is good that she is climbing up the slide, because it's like challenging for her and...it could make her stronger and she is like using the slide in a creative way, instead of just sliding down. Because I climbed the slides when I was younger and I know how exhilarating it can be, when you are little and the slide seems huge to be able to climb from the bottom to the top. It makes you feel like you can conquer something."

"I should have anticipated that she is going to be very dizzy and be closer to her, or like said something to her to warn her to be careful...or like hold on to the merry-go-round to keep it still, while she was getting off...cause when she was getting off it turned a little bit, which made her go off balance. Cause I'm the adult, you are the one who has to have the responsibilities to like anticipate things like that, cause the little girl didn't know that was going to happen."

Tool Use:

"...Because all you had to do was say "use the stick" and she thought of process. She was like "I could put the stick in the hole or space and try to push the cracker out." she didn't rely on the mother to show her how to do it."

Negative examples (2 to 1) for Scale 1:

Clean-up:

"I'd just be trying to show her how to do it. ... Maybe if I show her like actually do it."

"I'd be thinking I hope he is like a good boy and helps me, instead of not listening to me. Because I want him to be well behaved and...I don't know."

Playground:

"I'd be relieved that they didn't fall in or anything so...giving them a time out would be my way of keeping them away from danger so they wouldn't do it again, because I wouldn't want them to get hurt."

"I hope that she doesn't want to do this a lot, because you'd have to basically do it for her every single time."

"I'd probably be yelling at the child telling them to use the stairs because they could fall backwards and hurt themselves. I wouldn't want my child to roll backwards down the slide and crack their head open."

“It’s kind of weird for me that the mom is up on the jungle gym with the kid. Usually I don’t know...you just let them at the place where they sort of run wild, just that from personal experience I guess.”

Tool Use:

“I’d be thinking that I don’t want to give anything away. ... I want her to figure everything out for herself.” (if mom is completely out of the picture – failure likely to follow)

“One I think this is a stupid experiment...no offense...because a cookies out of a glass? Box? Stick? I don’t just see what is the point, just to see who is smarter than other kids? Some kids develop longer than others. I just think it’s bad, what if you didn’t get the cookies out of the container?”

II. Recognition of the parent’s secure base support

The secure base system also reflects the parent’s ability to monitor and maintain the child’s exploration and engagement. Relevant online commentary that focuses on the parent’s behavior rather on the child’s need to explore is captured by Scale 2. A parent with secure base knowledge will intervene in a timely manner with support and comfort to maintain the child’s engagement with the task or activity. This would include the parent’s quick and effective response to signals from the child. In a task like “cleaning up toys” this is expressed by attention-getting movements and verbalizations that help focus the child on the task at hand. In the tool use task, timely hints and suggestions are invaluable in moving the child forward and avoiding frustration with the task. In exploring an outdoor park, there are opportunities to offer a helping hand to achieve the child’s exploration goals.

Scale Scores for Scale 2:

4. In describing the mother-child interaction on the video clip, the participant notices how the mother reacts quickly and effectively to signals from child. They note whether the mother is tracking the child’s activities so they can provide the right type of support when it’s needed. Online commentary where the subject notices the coordination of the timing between child’s signals and mother’s response, and elaborates upon the importance of such coordination receives a “4” on this scale.
For video clips where the mother on the video is not effective in providing secure base support, the participant who receives a “4” may also note that the coordination between mother-child behavior is faulty (e.g., mother just points, but the child doesn’t understand). However, if the subject notices that the coordination is faulty but assigns an inaccurate attribution to the interaction, or explicitly states the wrong goal, they would receive a “1”
3. In the online commentaries where there is some explicit recognition of the mother guiding the child’s progress, noticing that mom responds to child signals, but is not as elaborate as those that receive a “4,” a score of “3” is assigned. A participant who receives a “3” may also to some degree comment on how some mothers on the video clips fail to effectively

- guide the child's behavior.
2. These commentaries do not have information about how the mothers respond to the child's signals, nor do they note how the mother has aptly inserted a comment or helping hand to keep the child engaged. The subject doesn't seem sensitive to the dyadic, back-and-forth quality of the interaction.
 1. Online commentaries that suggest that the child is responsible for the clean-up, the tool use task, or exploring the outdoors, in effect, failing to see the role of the parent in facilitating these activities – would receive a "1." The theory behind these types of online commentaries seems to be - it's a good thing to offer as little help as possible.

Positive Examples (4 to 3) for Scale 2:

Clean-Up:

"...and then the mother has to keep drawing her back, you know? Like "mommy needs help to put the toys back on the shelf" cause she keeps getting distracted and playing then going over and playing with those toys on the shelf and then her mom has to draw her attention again."

"I think she did that to get Kylie to focus on her because, Kylie doesn't really make eye contact with her mom a lot and right now they are having eye contact. They are actually having a direct interaction, cause normally the mom would say something and Kylie would keep playing and do what the mom says only after she repeats it 5 times you know. I think she is trying to get Kylie to focus on her and to listen to her. She's like actually playing with the toy to get her attention."

"I think that she doesn't understand what is being said to her at all cause she is just staring around and not really following any of the commands that were said to her."

"She is treating her sort of like she is older than she is, she is probably like 3 or 4, I don't know, 2, and she is treating her like she was like probably 10 or older it's weird...the way she raised her voice, the way she said "hello", being very sarcastic, the kid probably doesn't even understand what she is saying..."

"It's good that he encourages her by giving her applaud, but there is no interaction between the two..."

Exploring the Outdoor Park:

"I would be thinking that I should stop it probably where she was just in case she might slip off in the process of stopping it, because she wants to get off, she is done playing with it."

"I'd be thinking that I made the mistake in forgetting to help her off of it, when I know it's a moving toy...I should have held it and I would have been thinking that, because she fell off of it and I was a little careless with it."

Tool- Use:

"I noticed the mom didn't say anything like...she just like...bumped the stick to like...kind of

give a hint to the girl to kind of use the stick to get it out. It seems like the other mom would have said something like “Would you like to try the stick?” She just seems to have a different communication style than the first mom. Like more subtle...she seems less patient than the other mom too. It worked though, cause right after she bumped the girl like took the stick and started using it. I guess maybe they’ve worked out this way of communicating, like more with actions than words or something. I thought that was interesting.”

“He really needs my help and he wants me to do it for him, but I am just going to help him out a little bit, because he thinks that the only way to get the candy out is from putting his hands inside the hole, but I am going to try to help him realize that he could move the see saw to get it out.”

“That’s the support of the mother. You can see that she is, she feels more confident that maybe she can get the cookie now, with her mother by her side. Because of the way she was acting. She went and grabbed her mother to come and sit next to her, to stay next to her.”

Negative Examples (2 to 1) for Scale 2

Clean-Up:

“She is being spoiled right now and she is not listening to me and she is being a little brat, because she just wants to play with the toys and she has to understand that it’s time to clean.”

“I am getting mad that I am doing all of the cleaning...”

III. Ability to take the child’s perspective

Effective secure base support requires an ability to “read” the child’s intentions and goals. This can be facilitated by reading the child’s signals appropriately, but commentaries that emphasize the child’s point of view, particularly those that are appropriate for the situation and the age of the child, indicates the subject recognizes that the moms in the video clips can or should be able to effectively “read” the child’s goals and intentions. To score well on this scale, the subject needs to explicitly characterize what’s going on inside the child’s mind – comments on what is the child actually up to, and how and why the child is communicating with mom about their goals.

Scale Scores for Scale 3:

4. In describing the mother-child interaction on the video clip, the subject provides online commentary about what the child is thinking about, where her/his attention is focused. It reflects an understanding of the child’s inner life and that the child has her/his own perspective on what is occurring. Comments include a recognition that the child might be easily distracted, confused (about the task), frustrated (because they are not making progress), that they need a note of encouragement, approval. Online commentaries where we see clear evidence of the subject’s appreciation of the child’s point of view receives a

“4” on this scale.

3. In the online commentaries where there is awareness of child’s perspective, noticing when the child’s attention wanders, when he/she needs some explanation or encouragement, etc., but is not as elaborate as those that receive a “4,” a score of “3” is assigned.
2. These commentaries do not have information about the child’s thinking or feelings about what is happening. There might be information about what the child is doing, but the commentary is more of a narrative run-down of what is the child is doing.
1. Commentaries that reflect unusual interpretations of the child’s intentions and goals receive a “1.” The subject’s views of what is going on in the video clip seems off base, the attributions of the child’s thoughts/intentions/goals are in effect incorrect. For example, the child is successful in placing the toys on the shelf (cleaning up task), but the commentary suggests the child is not and the mother is struggling with child to get them to comply. Or, the child accidentally drops the stick in the problem solving task and the subject infers the child doesn’t want to use the stick to solve the task.

Positive Examples (4 to 3) for Scale 3

Clean-Up:

“She is distracted cause I asked her to do something an she went for the other toy.”

“Again the attention span. She is playing with the toys again, she forgot what we were doing, but that’s not abnormal...most children they don’t have a good attention span. So they have to work on it, because again after she put the toy on the shelf she goes back to playing with the other toys before the task is completely finished.”

Exploring the Outdoor Park:

“That she is a mover and she doesn’t stick to one thing too long, nothing amuses her too long because when she was on the other toy, she wanted to get off right after she got on, she got on this toy and she wanted to get off right after she got on.”

“If she didn’t want them to see the duck, she shouldn’t have said “Oh do you see those ducks in the water?” obviously the child is going to go running to the ducks...”

Tool-Use:

“I think he just wants the candy and he is starting to get upset because he can’t find a way to basically get in there and get the candy.”