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# Parent Education Seminar: Children's Emotional Development

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PARENT EDUCATION SEMINAR:  
CHILDREN'S EMOTIONAL DEVELOPMENT

by

Barbara E. Kase

A Research Project Presented in Partial Fulfillment  
of the Requirements for the Degree  
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PARENT EDUCATION SEMINAR:  
CHILDREN'S EMOTIONAL DEVELOPMENT

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## ABSTRACT

### Parent Education Seminar: Children's Emotional Development

The purpose of this project was to examine how attachment theory and emotional reactivity intersect in emotional regulation and to develop an educational seminar that increases parent/caregiver's awareness of behaviors that shape a child's emotional development. Attachment is an emotional connection between the parent/caregiver and child that alleviates the child's wariness and stress. Parent/caregiver and infant interactions form attachment patterns that: (a) describe the parent's response to the child's emotional reactivity, (b) result in relational styles, and (c) affect the quality of the emotional connection between them. The quality of the attachment affects the child's emotional development and influences the child's: (a) social, (b) academic, and (c) mental health.

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## Chapter 1

### INTRODUCTION

In his Foreword to the book, *Attachment* (Bowlby, 1969/1982), Schore stated that “Bowlby starts by proposing that attachment is instinctive behavior associated with self-preservation, and that it is a product of the interaction between genetic endowment and the early environment” (p. xix) and “emotional processes lie at the foundation of a model of instinctive behavior” (p. xx). However, learning to regulate this instinctive system takes a number of years because humans are altricial, meaning that they have a long period of dependency until they become fully functioning adults. It is through interactions with parents that children learn to interpret and appropriately respond to their environment, and this process of emotional regulation contributes to a mentally healthy and socially functional child (Blair, 2002; Tomlin & Viehweg, 2003).

#### Statement of the Problem

It is this author’s experience that there are few parent education programs in which parents are taught about children’s emotional development and provided with the skills to help their children regulate their emotions. Emotional regulation is a behavioral system that mediates behavior (Bowlby, 1969/1982) and a child learns emotional regulation through interactions with the mother (Ainsworth, Blehar, Waters, & Wall, 1978) and other caregivers (Weinfield, Sroufe, Egeland, & Carlson, 1999). Bowlby recognized the importance of emotional regulation in his theory of attachment, and the term, attachment, describes the relationship between the mother and child.

In other programs, parent behaviors are addressed to achieve a bond or attachment with the child. However, few parent education programs are based on empirical findings to validate their presentations. Educators, who want to bring clinical research findings to the general public for nonclinical informational programs about emotional regulation and the role that parents have in teaching emotional regulation, must understand children's emotional development and attachment theory (Bowlby, 1969/1982).

#### Purpose of the Project

The purpose of this project was to develop a parent education seminar to increase awareness of children's emotional development and to offer parents guidance to help their children regulate their emotions so they can form secure attachments (Ainsworth et al., 1978). This program is based on attachment theory and the supporting scientific evidence to educate parents about how they can shape and develop their child's emotional health. The Ainsworth et al. and Main and Solomon (1986, as cited in Lyons-Ruth & Jacobvitz, 1999) constructs of attachment classifications are used as a reference to identify aspects of the parent and child relationship

#### Chapter Summary

Humans learn to manage and regulate their emotional states through interactions with their mothers and other caregivers during early childhood. This author developed a parent education seminar to inform parents about child emotional development and how they can assist their children to learn how to regulate their emotions. The ability to regulate one's emotions contributes to mental health and social functioning. There is a review of the literature of that describes emotion and its physiological determinants, presents an overview of attachment theory, and reviews various test instruments that

support attachment theory concepts in Chapter 2. A description and goals of the applied research project are presented in Chapter 3.

## Chapter 2

### REVIEW OF LITERATURE

The purpose of this applied research project was to develop a parent education seminar to increase awareness of a child's emotional development and to offer parents guidance to help their children become emotionally secure (Ainsworth, Blehar, Waters, & Wall, 1978). Emotions developed because they have survival value for humans; therefore, there are genetic and physiological mechanisms that produce and regulate them. They warn humans if there is danger, and they facilitate affiliation and attachment. The regulation of emotion is learned through interactions with caregivers; especially with the mother (Weinfield, Sroufe, Egeland, & Carlson, 1999). Attachment theory (Bowlby, 1969/1982) provides a framework to explain the mother and child relationship. Ainsworth et al. developed the strange situation procedure to assess a 12 month old child's attachment with his or her mother with the use of observation of the child's behaviors. The ability to regulate or calm a child's wariness depends on the child's attachment or relationship with the mother. Finally, empirically identified behaviors that contribute to the mother's ability to form a secure attachment with her child are presented, and they provide the foundation for the development of a parenting skills program.

#### Emotional Development

One meaning of emotion that Bowlby (1969/1982) used within attachment theory resembles the James-Lange (James, 1884, as cited in Pollatos, Kirsch, & Schandry, 2005)

theory of emotion; however, there is no standard definition of *emotion* (Bowlby; Russell, 1991). The James-Lange theory of emotion refers to those emotions that arise due to physiological changes that result from interaction with the environment (Pollatos et al.) Advances in technology have demonstrated that emotional stimuli can evoke a shift in homeostasis, such as a change in cardiac rate that can be correlated with activity within the cortex (Pollatos et al.). A change in heart rate signals that the body is alert and aware of that change.

### *Exteroception and Interoception*

Humans are born with the ability to gather information about their environment (Dunbar, 2007; Emde, Biringen, Clyman, & Oppenheim, 1991). Neurophysiology developed to register sensory stimulation. Exteroception refers to a person's perception of stimuli from outside of the body. The information enters through the different sensory systems of: (a) visual or sight; (b) olfactory or smell; (c) gustatory or taste; (d) auditory or hearing; (e) touch or pressure; (f) thermoception or relative temperature, either hot or cold; (g) homeostasis or a constant state of being; (h) nociception or physical pain; (i) equilibrioception or balance and acceleration; and (j) proprioception/vestibular or balance and conscious body awareness. The other ability to gather information is through interoception, which is an awareness of homeostasis (Craig, 2004). How one responds to the environment is due to a visceral reaction that is both epigenetic and cognitive.

### *Genetics and Emotional Reactivity*

Together, exteroception and interoception create emotional reactivity or temperament. Emotional reactivity results in states of being, and they are given various labels: (a) happiness, (b) sadness, (c) anger, (d) fear, (e) love, (f) jealousy, (g) regret, or (h) disgust. These labels represent what may be considered basic emotions, but there is a

difference between common and technical/professional usage of these labels. Hunger is a state of being which is elicited by the need for calories; however, fear is an emotion that arises from interactions with the environment when there is a perceived threat. Although physiological processes for emotions are the same in all humans, the expression is unique to each individual, and the expression is culturally bound (Russell, 1991).

Vaughn and Bost (1999) cited numerous researchers who acknowledged that there are differences in theories of temperament: (a) behavioral style (Thomas & Chess, 1977; Thomas, Chess, & Birch, 1968; Thomas, Chess, Birch, & Hertzig, & Korn, 1963); (b) emergent personality (Buss & Plomin, 1975, 1984); (c) emotional/physiological regulation (Goldman et al., 1987; Goldman & Campos, 1986, 1990; Rothbart & Derryberry, 1981); and (d) social construct (Bates, 1980; Bates & Bayles, 1984; Bates, Freeland, & Lounsbury, 1979). However, there is consensus that temperament is grounded in biology or genes, and that the genetic influence is greater in infancy and early childhood (Plomin, 1994; Plomin & Daniels, 1987; both cited in Vaughn & Bost) before the influence of the shared and nonshared environment can be measured (Bokhorst et al., 2003).

Bowlby (1969/1982) described temperament as an individual style of behavior that is consistent over a long period of time, yet it is independent of attachment classification (Sroufe, 1982, as cited in Bowlby). Bokhorst et al. (2003) concluded that genetics have an influence on infant behavior but attachment style is not heritable, and Kagen, Snidman, and Arcus (1996) reported that temperament influences interactions with others.

### *Evolution of Emotion*

Emotionality is necessary for humans to survive either in a social context or in mate selection and reproduction (Fisher & Thomson, 2007), and emotions are a part of the human repertoire. They evolved as an adaptation to environmental demands (Davidson, 1994; Panksepp, 1998; both cited in Fisher & Thomson), and human emotions are the result of specific neural activity that have origins in mammalian development. They facilitate survival by the invocation of wariness and reproduction by the development of affiliative and social emotional states. Fonagy and Target (2005) stated that affiliation or attachment may serve “as an organizer of physiological and brain regulation” (p. 334) and of attentional systems (Belsky & Fearon, 2002; Fearon & Belsky, 2004; Jacobsen et al., 1997; all cited in Fonagy & Target).

Social learning has evolutionary value because it facilitates adult affiliative interactions, which are necessary for the continuation of a genetic line. Evolutionary psychologists (Pinker, 2002; Tooby & Cosmides, 1992; both cited in Patel, Rodak, Mamikonyan, Singh, & Platek, 2007) have speculated that the brain and neural processes developed in a modular fashion to meet specific environmental demands. Barrett et al. (2003, as cited in Dunbar, 2007) hypothesized that an enlarged brain is needed for social cohesion and cooperation within dispersed groups. Baron-Cohen (2007) maintained that humans developed systems to meet the demands of a complex social world; for example, empathetic behavior is a response to several, context dependent cues (Baron-Cohen et al., 1999; Frith & Frith, 1999; Happe et al., 1994; all cited in Baron-Cohen). An enlarged brain requires a larger skull and humans have bigger skulls in proportion to other animals. One evolutionary explanation for this large skull is that it houses a brain with a

large prefrontal cortex (Semendeferi, Damasio, Frank, & van Hoesen, 1997a; as cited in Dunbar) to process the information garnered from an environment with complex social cues and organization (Curley & Keverne, 2005).

One brain structure that is important to affiliation is the amygdala. It aids in: (a) the consolidation of emotional memories (McGaugh, 2004), (b) the processing of threat or fear, and (c) reward learning (Ochsner & Phelps, 2007). Related modules are the hippocampus and the medial temporal lobe (Patel et al., 2007) which are central to declarative and episodic memory. Memory is needed for cognition, and emotional regulation depends on learning a response by the development of a memory trace, or a neural representation in the cortex through repetition of a stimulus (Purhonen, 2004). McGaugh concluded that the amygdala responds to emotionally activating material and either makes it easier to consolidate the memory or to inhibit the memory.

Humans developed neural activities that affected emotional development by the production of neurotransmitters and hormones in order to promote affiliation and social behaviors. The findings from evolutionary theory and chemosensory research show that neuropeptides play a role in individual differences in social and affiliative behaviors (Curley & Keverne, 2005; Carter et al., 1997, Lim, Murphy & Young, 2004, Lim & Young, 2004, Winslow, Hastings, Carter, Harbaugh, & Insel, 1993; all cited in Fisher & Thomson, 2007; Levine, Zagoory-Sharon, Feldman, & Weller, 2007). Prolactin and oxytocin are two examples of affiliative peptides. Prolactin is a peptide hormone that causes sex differences in hormonal reactivity. It is associated with both the male and the female parent's level of concern, or responsiveness to an infant's cries after birth (Delahunty, McKay, Noseworthy, & Storey, 2006). There is variability when the

prolactin is produced; for example, prolactin production in males begins after the birth of the first born infant and it then tapers off, but it begins again when the birth of the second child is eminent.

Mammalian evolution shows that adaptations were made for the female to facilitate birth and infant survival through the production of milk, intensive maternal care, and infant bonding, which are triggered by the production of oxytocin (OT; Curley & Keverne, 2005; Fisher & Thomson, 2007; Levine et al., 2007). The increase of OT levels released into various systems produces affiliative, warm feelings, especially during lactation (Turner, Enos, Cooper, & McGuinness, 1999). This positive, affiliative situation creates ideal conditions for the attachment process to develop between the mother and infant (Kennel & McGrath, 2005).

In addition, the release of OT stimulated the olfactory sense in the mother. This enabled mothers to identify their infants and, also, it caused them to produce an odor unique to each mother so that the infants could identify their own mothers (Polan & Hofer, 1999). Mammalian brains changed, when mate and infant identification became less dependent on chemosensory information, and visual identification became more prominent (Curley & Keverne, 2005). The role of the olfactory system decreased while the visual system grew in importance. As reliance on olfaction for maternal security decreased, the human infant was able to move away from the mother for greater distances and use vision to maintain security. The ability to identify another person from a distance, with the use of visual cues rather than olfaction, allowed for greater social interaction (Curley & Keverne; Santos, Flombaum, & Phillips, 2007); however, the need for proximity/security has not changed in proportion to the change in sensory methodology.

Genetic material carries the evolutionary history of adaptation (Goetz & Shackelford, 2007). In one example of the influence of genetic expression on behavior, Hariri et al. (2002a; as cited in Smolka et al., 2005) examined genetically determined physiological responses to environmental stimuli and concluded that some people carried a “short allele of the serotonin transporter gene (5-HTTLPR)” (p. 840) which made the amygdala hyperresponsive to angry and fearful faces. Presentation of an angry face has been associated with disorganized attachment (Main & Solomon, 1986; as cited in Lyons-Ruth & Jacobvitz, 1999). In addition, Smolka et al. reported that unpleasant stimuli activated the limbic region of the brain and the areas of the prefrontal cortex, which control emotional regulation. As the sophistication of neuroscience technology advances (Wasserman, 2007), researchers will be able to compare physiological development to cognitive and psychological development.

### Emotional Regulation

Emotional regulation is the ability to control emotional reactivity during stressful periods and to understand and act on one’s emotions; it is used to protect one from distress (Propper & Moore, 2006). The infant learns how to regulate fear as she or he watches and observes the mother’s reaction to a situation. The mother closes off her emotional response in order to attend to the child’s needs and to calm the child’s anxiety or fear. There is variability in regulation because of differences in exteroception, that is, how one’s senses register external stimuli, and interoception, how cognizant a person is to changes in internal physiological states.

Infants develop behavioral systems to monitor instinctual behavior (Bowlby, 1969/1982), and regulation abilities are developmentally dependent (Chiu, Schmithorst,

Brown, Holland, & Dunn, 2006). Infants interpret an event based on prior experience. They assign a value to the event and decide how to respond appropriately, either consciously or unconsciously, and Bowlby stated, “This leads to a consideration of feeling and emotion” (p. 103). Infants learn patterns of response through *mirroring*, that is, they copy the action of another, and the action is derived from perception or cognition of the circumstances (Schuetz-Bosbach & Prinz, 2007). *Social referencing* occurs when infants seek information about emotional responses and behaviors as they observe the expressions of the mother or caregiver (Carver & Vaccarro, 2007).

It is now possible to understand emotional regulation in terms of physiological changes in the brain in response to a stressful situation. The brain is experience dependent (Cicchetti, 2002), and brain growth is dependent upon strengthened neural pathways (Stone, 2007). To map areas of the brain’s neural processing, neuroscientists use: (a) electroencephalography (EEG); (b) event related potentials (ERP; Pollack et al., 1997); (c) functional magnetic resonance imaging (fMRI; Brown & Chiu, 2006; Wasserman, 2007); and (d) positron emission tomography (PET; Aalto et al., 2005). Event-related potentials record electrical activity in the scalp when the neurons fire as the result of a stimulus (Purhonen, 2004). Pollack et al. used EEGs and ERPs to track differences in brain waves, between *normal* functioning children and those children who had been raised in abusive households, and found that maltreated children processed emotional cues differently. Gunnar and Nelson (1994) found that ERPs measured individual differences in infants’ cognitive processing and expression of emotional behavior, and that emotional behavior correlated with hormone release. Kandler and Thiels (2005) noted that brain waves are measures of electrical, and then, chemical

activity at the synapses. Similarly, Aalto et al. correlated PET images of cerebral blood flow to an emotional experience as an indication of individual emotional response. On a more basic level, Smolka et al. (2005) examined genetic alleles for the production of Catechol-*O*-methyltransferase (COMT), which is an enzyme “associated with improved working memory” (p. 837) but, when impaired, the individual’s anxiety levels increased. This indicates that the ability to regulate one’s emotions in a stressful situation is, in part, due to the physiological functioning of a person (Pollatos, Schandry, Auer, & Kaufmann, 2007).

Smolka et al. (2005) found that use of the fMRI reveals brain reactivity to emotional stimuli. They assessed the difference in the processing of pleasant visual data and unpleasant visual data and found that individuals have different metabolic capabilities that enhance or inhibit the processing of neurochemicals that effect working memory and anxiety behaviors. In regard to learning, the greater the perceived emotional significance of an event, there is an increase in the prefrontal cortex to integrate and regulate emotional states (McGaugh, 2004; Pollatos et al., 2007; Smolka et al.).

#### Attachment Theory

Attachment theory (Bowlby, 1969/1982) is at the center of *relationship science* (Aksan, Kochanska, & Ortmann, 2006) and early socialization (Kochanska, 1993, 1997, 2002; Kochanska, Forman, Aksan, & Dunbar, 2005; all cited in Aksan et al.). In attachment theory, the relationship behaviors between a mother and a child are described (Bowlby). Emotions affect attachment behaviors, and emotional development is influenced by the quality of the parent and child attachment.

Ainsworth and Bowlby (1991) defined attachment as a study of animal behavior or an ethological approach to personality development. Bowlby (1969/1982) took an interest in human development that was distinct from the psychoanalytic training he received in medical school. He incorporated information from a wide range of scientific disciplines that included: (a) Darwin's (1859, as cited in Bowlby) evolutionary perspective on life; (b) primate research conducted by Hinde (1966, as cited in Bowlby; Hinde, Rowell, & Spencer-Booth, 1964, as cited in Suomi, 1999); (c) Harlow's (1966, as cited in Ainsworth et al., 1978) work with rhesus monkeys (Champagne & Curley, 2005; Suomi); (d) Bertalanffy's (1968, as cited in Emde et al., 1991) systems theory; and (e) the nascent science of artificial intelligence (Craig, 1943, as cited in Bretherton & Munholland, 1999). Bowlby perceived that organisms had a strong motivation to survive; therefore, because humans were animals, in human behavioral systems, there is a similar survival value.

Purhonen (2004) referred to the development of the parent/child relationship as a developmental task. Ainsworth (1982a, as cited in Cassidy, 1999) described attachment as the bond that one person has toward another who is stronger and wiser, and it occurs within a dyad. Ainsworth (1989) referred to attachment as an affectional bond; however, not all affectional bonds are attachment. According to Ainsworth (Cassidy) the perimeters for an affectional bond are: (a) persistent, (b) person specific, (c) emotionally significant, (d) a desire for closeness to the other person, and (e) the occurrence of involuntary separation causes distress. Furthermore, an attachment bond (Ainsworth; Bowlby, 1969/1982) is characterized by one person's sense of security and comfort from being with that affectional person in times of stress. From an emotional perspective, the

affectional person is able to quell the other's fear. A child may exhibit attachment behaviors toward a stranger, but this behavior does not rise to the level of an attachment bond. As the child becomes an adult, s/he forms attachments with other people, and the degree of influence of the original attachment subsides (Cassidy).

### *Maternal Sensitivity*

Sensitivity is the mother's ability to correctly and appropriately respond to the infant's cues, and the interactions influence the quality of the attachment relationship (Ainsworth et al., 1978; Bowlby, 1969/1982). Ainsworth et al. identified maternal sensitivity as critical to the quality of the attachment, and it occurs within the parent/child dyad. Maternal sensitivity to infants' variations of individual differences in emotional reactivity is evident in the strange situation classifications (Belsky, 1999; Bokhorst et al., 2003)

Originally, Ainsworth et al. (1978) developed the strange situation instrument to identify infant attachment behaviors; however, they did not evaluate the maternal influence on the behavior. However, in re-evaluation of the strange situation data, four maternal characteristics were identified: (a) sensitivity/insensitivity to an infant's signals and communications, (b) acceptance/rejection, (c) cooperation/interference, and (d) accessibility/ignoring. Main (1978, as cited in Ainsworth et al.) included two additional characteristics, the lack of emotional expressions and maternal rigidity. Other researchers (Emde, 1980; Emde & Easterbrooks, 1985; both cited in Biringen, 2000; Easterbrooks & Biringen, 2000) included emotional availability as a complement to maternal sensitivity. Emotional availability is a combination of the Ainsworth et al. description of maternal sensitivity with contributions from the infant (Biringen; Biringen, Robinson, & Emde,

1994, 2000). Main and Hesse (1990, as cited in Lyons-Ruth & Jacobvitz, 1999) and Grienberger, Kelly, and Slade (2005) refined the concept of maternal sensitivity and found that the attachment quality depended on the flow or interruption in affective communication with the infant; that is, whether the communication included the negative affects of: (a) fear, (b) hostility, and (c) anxiety.

### *Secure Base*

A basic tenet of attachment theory is the *secure base*. Main (1999) cited Ainsworth who stated, “Where family security is lacking, the individual is handicapped by the lack of a secure base from which to work (p. 45)” (p. 683). The presence of specific maternal behaviors results in the establishment of a secure base. It is a safe place in which the infant emotionally refuels (Ainsworth et al., 1978; Bowlby, 1969/1982, 1988; both cited in Cassidy, 1999). The infant returns to the secure base to control the instinctual behavioral systems (Bowlby) of fear and distress that are activated during an infant’s exploration of unfamiliar environments.

Infants have a basic instinct for exploration (Berlyne, 1960; Deci, 1975; Harlow, 1953; Hendrick, 1939; Hunt, 1968; Izard, 1977; Morgan & Harmon, 1984; White, 1963; all cited in Emde et al., 1991). When infants explore their environments, they learn that newness and novelty can cause alarm or a fear of the unknown (Grossman, Grossman, & Zimmerman, 1999). As the infant matures and turns back to the sensitive secure base, the uncertainty of the exploration is lessened, and the infant learns that the world is safe to explore. Through the expression and acceptance of the mother or other caregiver upon the child’s return, the child learns to trust the world (Biringen, 2000). Then, gradually, children learn to assess the safety of the environment by themselves. The level of

uncertainty decreases as children mature and as the mother and caregivers adapt their responses to the child to be developmentally appropriate. It is through this process of *reciprocal hierarchical bonding* (Cassidy, 1999) behaviors that children learn to emotionally regulate themselves. Depending on the infant's developmental age, the mother may move toward the infant to maintain the secure base, or the infant may initiate the return to the mother as s/he explores the environment (Bowlby, 1969/1982). Secure infants explore independently (Ainsworth et al., 1978; Biringen, 2000) and return to the secure base to regulate emotional states.

#### Attachment Theory and the Strange Situation Procedure

Ainsworth et al. (1978) developed the strange situation procedure to evaluate the infant's level of attachment to the mother. It is a series of eight regulated separations and reunions of the mother and infant dyad with the intermittent arrival and departure of a stranger into the laboratory room. The child is given the opportunity to play with new toys as the mother or stranger enters and leaves. Bretherton and Ainsworth (1974, as cited in Ainsworth & Bowlby, 1991) purposely designed the procedure to provoke distress and anxiety in the infant's behavioral systems of fear/wariness and the affiliative/social system in the presence of a stranger. The infant's approach to the mother determined the attachment quality and the behaviors were classified as: (a) insecure/avoidant, (b) secure, and (c) insecure/ambivalent. Later, Main and Solomon (1986; 1990; as cited in Main, 1999) added the classification, disorganized attachment. These terms are descriptors of relationship styles, which are artifacts of the original mother and infant relationship and of psychological functioning (Ainsworth et al.).

Ainsworth et al. (1978) reported that each episode generated four, and then upon reconsideration, added two more behavioral variables: (a) proximity and contact seeking, (b) contact maintaining, (c) resistance, (d) avoidance, (e) search, and (f) distance interaction. These behaviors are scored on a dynamic, high/low scale. Proximity and contact behavior describe how readily the infant seeks contact with the adult and approaches without hesitation of being rejected. Contact maintaining refers to an infant who seeks physical contact with the mother and who clings to her if she tries to put the infant down. An infant who displays resistance behaviors appears to be angry at the adult and pushes away or throws things at the adult to keep the adult away. Avoidant behaviors mean that the infant does not seek or would resist physical contact with the mother. Search behaviors describe the child's willingness to move to look for the mother, and distance interaction means the child is able to seek reassurance from the mother by keeping visual contact with her.

Analysis of the behavioral variable data (Ainsworth et al., 1978) demonstrated three categories of infant behaviors. The Type *A* classification indicated insecure/avoidant behaviors such as: (a) no distress when the mother left the room, (b) did not initiate contact with her, and (c) reacted to the mother no differently than to the stranger. The Type *B* secure classification was determined when the infant: (a) was not distressed when the mother left the room but was happy to have her return, (b) did not resist or cling to the mother, and (c) initiated contact with her. The Type *C* infant displayed insecure/ambivalent attachment characteristics that included: (a) great distress during separation, (b) anger and resistance to both mother and stranger, and (c) required physical contact and maintenance with the mother.

Ainsworth et al. (1978) determined that the behaviors of the infant and the mother, during a reunion episode, succinctly exposed the differences in their attachment. The mother played an integral part in the infant's behavior, and attachment behaviors resulted from the mother and child interactions. Maternal behaviors influenced the attachment, but they were not evaluated by the strange situation. The mothers of securely attached infants displayed behaviors that were different than behaviors from the mothers of the insecure/avoidant/ambivalent infants.

The strange situation procedure (Ainsworth et al., 1978) was developed to observe and define attachment classifications to be used in empirical research. The behavioral classifications from the strange situation procedure are ubiquitous. This procedure gives attachment theory credence because it generates data that can be statistically modeled (Ainsworth et al.). Koren-Karie, Oppenheim, Dolev, Sher, and Etzion-Carasso (2002) stated, "The Strange Situation is a well-known and validated procedure." (p. 538), and researchers can use the strange situation and its behavioral classifications as a way to standardize results in attachment studies. The uniformity of the data allows the research to be duplicated and compared; subsequently, the use of experimental research design is possible. Research on the development of attachment classifications has led to empirical studies on individual functioning, such as memory development, as found in the Adult Attachment Interview (AAI; Bretherton & Munholland, 1999) and the Parent Development Interview (PDI; Aber, Slade, Berger, Bresgi, & Kaplan, 1985; as cited in Grienberger et al., 2005).

### *Reflective Functioning, Emotion, and Attachment*

The mother's reflective functioning capacity affects the quality of the mother and infant attachment (Slade et al., in press, as cited in Fonagy & Target, 2005). Hofer (2004) and Sroufe (1996; both cited in Fonagy & Target) viewed attachment behaviors in a broader role in human development than Bowlby's (1968/1982) original theory of infant survival. The ability to understand other's motives and intentions supports social living that is important for human survival (Fischer & Thompson, 2007).

Premark and Woodruff (1978, as cited in Santos et al., 2007) referred to the theory of mind as the ability "to predict, interpret, and in some cases, manipulate" (p. 433) the actions and intentions of other humans. It is the human ability to think and to understand the mental states of others (Dunbar, 2007; Stone, 2007) that makes humans unique among animals. Gallup (1982, as cited in Focquaert & Platek, 2007) suggested that one must be introspective and have an awareness of oneself before one can infer others' behaviors and emotions. This is the beginnings of social behavior and attachment.

Fonagy and Target (2005) defined reflective functioning as "mentalism measured in the context of attachment" (p. 334). Mentalism is more than the ability to predict another's behaviors; it is the knowledge of another's mental state (Santos et al., 2007). Through self-reflection, humans can infer another's: (a) wants, (b) desires, (c) intentions, and (d) beliefs. Mentalism develops in stages: (a) first, behavioral expectations; (b) second, contextual clue inferences; and (c) finally, the ability to understand the mental state of another by being able to relate it to an internal representation of the situation (Focquaert & Platek, 2007).

Grienenberger et al. (2005) examined the influence of maternal reflective functioning on her ability to form an attachment with her infant. A sensitive mother is insightful about her infant's mental state (Fonagy et al., 1991; as cited in Koren-Karie et al., 2002). Reflective functioning requires the mother to remove her own affective response from a situation so she is able to fully attend to her infant's interpretation of an experience and to not judge the intentionality of a behavior. This is important in times of distress and fear. Tomkins (1990, as cited in Magai, 1999) considered facial expressions to be emotions; for example, an angry face is a disruption in affective communication. Main and Solomon (1986, as cited in Lyons-Ruth & Jacobvitz, 1999) found that a mother's angry or frightening face presentation corresponded to behaviors associated with the development of disorganized attachment, and Grienenberger et al. suggested that the mother's "unintegrated fear, hostility, and anxiety" (p. 300) could intrude on the infant's understanding of a situation and then change the quality of the attachment. When the mother understands her own attachment relationship history, she is able to view her child as a separate individual and support experiences that forge the infant's development of a *self* (Fonagy & Target).

Mirroring and social referencing underlie a mentalistic perspective on human development and theory of mind. Focquaert & Platek (2007) cited Gallese et al. and stated that the act of emotional understanding arises from either the observation of another's emotions or through the experiential mechanism of the "action mirror matching mechanism" (p. 481) located in the visceromotor area of the brain. There are correlations between social interaction, facial recognition, and brain activation of the anterior

cingulated cortex (ACC; Gallagher & Frith, 2003) when an event is mentalized.

Another theory is the reverse simulation that is based on a visual somatosensory pathway (Adolphs et al., 2000; as cited in Focquaert & Platek) which allows a person to recognize the facial expression of another person and assume that same facial expression; this, then, results in the same emotional response within the observer. Focquaert and Platek cited several studies of the relationship between mirroring or simulation and brain activation: (a) emotion (Adolphs et al., 1994, 1999, 2003; Calder, Keane, Manes, Antoun, & Young, 2000; Lawrence, Calder, McGowan, & Grasby, 2002; Sprengelmeyer et al., 1999; Wicker et al., 2003); (b) pain (Morrison et al., 2004; Singer et al., 2004); (c) touch (Blakemore et al., 2005); and (d) “on every level of social processing” (Frith & Frith, 1999, 2003; p. 481).

#### *Emotional Availability Rating Scales*

Emotional availability describes the emotional component of maternal sensitivity (Biringen, 2000). The degree to which the mother is emotionally available affects the quality of the parent and child interactions. The result from the use of the emotional availability rating scales is a global assessment of their interactions. Specific, identified behaviors are assessed for the quality of the interaction; examples would be: (a) the transition from one activity to another is smooth and without conflict, (b) the responses to each other are appropriate for the situation and for the developmental stage of the child, and (c) the emotional displays are authentic. The emotional availability rating scales are used to evaluate several factors.

Biringen et al. (1994) took the four maternal behaviors identified in the strange situation (Ainsworth et al., 1978) and added two child behavioral contributions to develop the emotional availability rating scale clinical assessment instrument. The evaluator observes interactions between the parent and child in order to assess who controls the activity. Ideally, the child should want to include the parent in the activity, and the child extends an invitation to the parent.

#### *Invitation and Inclusion*

Invitation and inclusion are the two factors in the relationship that are controlled by the child (Biringen et al., 1994; 2000). If a child feels secure, then there is a welcoming, invitational tone to the beckoning to the parent. The other, inclusion, is how the child accommodates the addition of the parent into his or her activity. In a secure relationship, the child adapts the play to include the parent. The parent correctly and appropriately follows the direction of the activity set by the child.

#### *Sensitivity*

The key to the exchanges and the behaviors is the mother's sensitivity to the child's cues (Ainsworth et al., 1978; Biringen et al., 1994). These cues can be overt, such as a spoken invitation, or the child physically moves aside and pats the space to come and sit down. Other cues are more subtle, such as the child's rigid posture or a facial expression of a set mouth. The parent should be familiar enough with the child to recognize these cues, although this is not always the case.

Of all of the factors, sensitivity or affect is the most important factor. It has four facets. These facets are the mother's ability to: (a) interpret the child's unique cues, (b) let the child determine the direction of the interaction, (c) flexibility, and

(d) unconditional acceptance of the child. The factors are not traits but dimensions that provide a whole picture of the relationship.

*Child's cues.* The first facet is how well the parent understands the cues from that particular child (Biringen et al., 1994, 2000). Each relationship is unique, and it differs between a parent and each child in the family. The parent's interpretation of the cues comes from his or her ability to emotionally step aside to see the child as a separate individual. The parent's response to the child should be directed toward the child's benefit, not for an emotional need of the parent.

*Child's rhythms.* The second facet is how well the parent follows the child's rhythms (Biringen et al., 1994, 2000). Abrupt changes in activities disrupt the child's emotional regulation.

*Parental flexibility.* The third facet is flexibility (Biringen et al., 1994; 2000). Flexibility means the ability to attempt to reach a goal by the use of a variety of means, and it is closely linked with creativity. Depending on the age and sex of the child, the parent will scaffold play activities and allow the child to take the lead, yet the parent provides creative options that continue the activity.

*Parental acceptance.* Lastly, and this refers to being able to read the child's cues, the parent accepts the child as the child is; there are no set expectations of the child's personality (Biringen et al., 1994, 2000). This facet refers to the Ainsworth et al. (1978) concept of the secure base. It is unconditional love.

#### *Nonhostility*

Another of the underlying constructs of emotional availability is the nonhostility to hostility continuum (Biringen et al., 1994, 2000). A parent's hostility can be signaled

by: (a) posture, (b) gestures that keep the child from coming close, or (c) the use of a harsh or impatient tone of voice. The parent may appear to be resentful of the child's presence or perceived demands on the parent's time. It may be manifested in irritability. Nonhostile behavior is the willingness of the parent to set aside an activity to attend to the child's request.

### *Nonintrusiveness*

Intrusiveness can be determined in two ways (Biringen et al., 1994, 2000). One way would be to observe who directs the play activity. A parent may determine the intent of the activity, turn it into an instructional session, and forget that, developmentally, play is instructional for young children. Also, intrusion can be emotional. The parent imposes feelings about a situation and overwhelms or overstimulates the child, which allows no room for the child's emotional expression. The key is the reciprocity of the interaction and whether the parent follows the direction of the child. Van IJzendoorn (1995, as cited in Biringen et al.) found different patterns of behavior based on the child's gender. Mother's and son's play function better when the son takes the lead, and the mother follows. Girls, on the other hand, do better when they are coleaders. The etiology of the difference has not been determined. Whatever the cause, the key to understanding the intrusiveness is the synchronicity of the interaction.

### *Structuring*

Structuring refers to how the parent sets the rules or expectations of behavior (Biringen et al., 1994, 2000). The rules need to be clearly stated and appropriate for the activity and the context. For example, if it is a 2 year old child, then the parent should put the expensive, breakable goblets away so the child cannot get hurt or break one.

Instead, a more developmentally appropriate context would be to have a cleared spot in a living room set up with a soft ball and bowling pins. Breaking the rules depends on the consequences, but the enforcement needs to be consistent. This becomes an issue when there are two divorced parents with two levels of expectations. A parent can be responsible only for the actions that take place within that household, and the child learns that there are two different contexts for rules.

These factors must be emotionally authentic and sincere (Biringen, 2000; Biringen et al., 1994; 2000). Authenticity is determined by the observer, and this is where the experience, training, and understanding of attachment theory are important. The observer assesses the congruity of body language and action, as well as words and the tone of voice for both the parent and child. Behaviors can be maintained for short periods of time. Biringen et al. (2005) determined that the length of observation time should be between 30-45 minutes. Shorter times are not as reliable because the parent and child may behave artificially for the observer. As time passes, they tend to relax around the observer and drop their guards. Also, length of time may result in some increased levels of stress.

#### *Internal Working Model and the Adult Attachment Interview*

In the course of the development of the strange situation procedure, Ainsworth et al. (1978) found that an infant's behavioral system was not self-generated but that the mother's behavior affected an infant's attachment behavior. Bowlby (1969/1982) proposed that an adult has an internal working model (IWM) of parental behavior. This IWM develops during an infant's first year of life and results in expectations for maternal behavior (Biringen, Matheny, Bretherton, Renouf, & Sherman, 2000; Kobak, 1999).

An IWM is a representation of the parents' behaviors and does not necessarily reflect a factual account of the behavior. In order to understand the origins of IWM, George et al. (1985, as cited in Biringen et al.) developed the Adult Attachment Interview to validate and assess the internal working model concept. The IWM is one factor that is responsible for the intergenerational transmission of parenting behavior (Grienenberger et al., 2005).

Results from the Adult Attachment Interview (Biringen et al., 2000) yield three assessments of an adult's understanding of his/her own individual childhood: (a) insecure/dismissing or type *D*, (b) insecure/preoccupied or type *E*, and (c) secure/autonomous or type *F*. The dismissing perspective is characterized by memories of parental interactions that are not specific, but idealized in a global sense. The preoccupied assessment includes memories that are angry in which the family was too intrusive. Secure/autonomous individuals present an adult's cohesive, specific account of both positive and negative childhood experiences with their parents. Finally, there is the Type *U* classification (van IJzendoorn, 1995, as cited in Biringen et al.) for individuals who had experienced loss, for example, the death of a parent during childhood, and it remained an unresolved emotional trauma.

The AAI classifications can be used to predict attachment styles with the individual's own infant (Grossman et al., 1988, as cited in Biringen et al., 2000.) regardless of the age of the parent; for example, the attachment between an adolescent and her fetus (Ward & Carlson, 1995, as cited in Biringen et al.). Bretherton, Ridgeway, and Cassidy (1990) developed the Attachment Story Completion Task for 3-6 year old children; the results from this instrument showed that young children developed an IWM that correlated with their assessed attachment style.

### *Additional Research Instruments and Techniques*

Ainsworth (1989) predicted that attachment style would continue beyond the first years of life. Social attachment relationships have been evaluated from other perspectives: (a) families (Diehl, Elnick, Bourbeau, & Labouvie-Vief, 1998); (b) social functioning in sibling and peer relationships (Hazen & Zeifman, 1999; Thompson, 1999); (c) academic performance (Jacobsen & Hofmann, 1997); (d) love interest/mate selection and other affiliative relationships (Hazen & Shaver, 1987; Klohnen & Bera, 1998); (e) psychopathology (Pollack et al., 1997; Valentino, Cicchetti, Toth, & Rogosch, 2006); and (f) nonfamilial caregiver interactions (Howes, 1999).

Empirical test instruments have been specifically designed to measure the emerging dimensions of attachment research. Different researchers have explored the maternal representations of self as caregiver with the use of different criteria. George and Solomon (1989, 1996, as cited in Koren-Karie et al., 2002) utilized several scales: (a) secure base, (b) rejection, (c) uncertainty, and (d) helplessness. Zeahah, Aviezer, Gini, Sagi, and Koren-Karie (2000; as cited in Koren-Karie et al.) developed other scales: (a) balanced, (b) disengaged, and (c) distorted. The Atypical Maternal Behavior Instrument for Assessment and Classification (AMBIENCE; Bronfman, Parsons, & Lyons-Ruth, 1999, as cited in Grienberger et al., 2005) is used to correlate maternal behaviors and reflective functioning. The Parent Development Interview (PDI; Aber, Salde, Berger, Bresgi, & Kaplan, 1985, as cited in Fonagy & Target, 2005) is a measure of the mother's ability to mentalize the parent/child relationship across different contexts. The Mutually Responsive Orientation (MRO; Kochanska, 1993, 2002; as cited in Aksan, Kochanska, & Ortmann, 2006) is used to examine: (a) coordinated routines; (b) harmonious

communication; (c) mutual cooperation; and (d) emotional ambiance of the parent/child relationship as factors in positive socialization. The Insightful Assessment (IA; Oppenheim, Koren-Karie, & Sagi, 2001; as cited in Koren-Karie et al.) is a maternal narrative of her child's play and her own explanation of the events. Observers use the Working Model of the Child Interview (Zeahah et al., 1995, as cited in Koren-Karie et al.) to assess parents' narratives of their interactions with their child according to four categories: (a) positively insightful, (b) one sided, (c), disengaged, and (d) mixed. The categories are determined by use of these scales: (a) insight into child's motives, (b) openness/flexibility of thought, (c) complexity in description of child, (d) maintenance of focus on child, (e) richness of description of the child, (f) coherence of thought, (g) acceptance/warmth, (h) anger, (i) concern, and (j) separateness from child. Research into the science of relationships will continue, and it will be valuable for the educator to be familiar with current instruments and to anticipate the development of new tools that scaffold the understanding of attachment.

### *Synthesis*

A parent and child's relationship is not based on shared behaviors; it is based on shared emotions. It is the emotional dimension that makes this relationship an attachment.

Propper and Moore (2006) cited Thompson (1994) and stated that,

It is this reliance [on the caregiver] that underlies the importance of the caregiver and helps to explain the biological drive for infants to seek proximity to this figure. Parents influence the way infants interpret a situation by alleviating negative emotions, reinforcing positive ones, and structuring the environment in which infants experience emotion. (p. 431)

Although observation is a critical research method, the use of technological advances can allow researchers to map the correlation between behaviors and

neurophysiology or emotionality. Behaviors reflect emotional states that occur due to a physiological response to a stimulus. This implies that emotionality results from an interaction with the environment. Russell (1991) identified fear as a state that occurs in response to the unfamiliar stimulus. Fear has survival value, and this researcher believes that all infant emotionality reflects the presence or absence of fear. From an evolutionary perspective, survival and fear existed long before animals developed the neocortex to regulate this emotion. A neonate exists in a similar state, aware only of sensory input. Any stimulus is unfamiliar and to be feared. Humans are altricial, meaning that they are immature for an extended period of time; therefore, they require extensive assistance from a concerned person to protect him or her from danger. Because the infant knows only fear or security, the caregiver needs to observe the child's emotional responses to understand the motivation for behaviors.

The conclusion is that, in order to understand and shape parenting behaviors, educators need to understand the role of the parent in the development and regulation of the child's emotional reactivity. The educational program that this author proposes will introduce parents to their child's emotional development. Information will be provided about how to establish and maintain a secure emotional connection with their child (Biringen, 2004). As children mature, their behaviors change; however, the emotional connection is a constant factor, and it is activated independently of behavior.

## Chapter Summary

Emotion is an evolutionary development to facilitate survival and affiliation. A child learns emotional regulation and social behavior through interactions with the parent or caregivers. Attachment theory provides a framework to explain the emotional, relational, and social development of an individual through different life markers. The foundation of attachment is the emotional connection between the mother and the child. There are maternal behaviors that contribute to their attachment: (a) sensitivity, (b) secure base, and (c) emotional regulation. The quality of the mother and child attachment is influenced by the mother's ability to create a safe environment that creates a secure base for the termination of infant distress in response to stimuli.

Parents learn to evaluate and consider their children's emotional responses to new and fearful situations through the use of reflective functioning. Components from the Emotional Availability Rating Scales can be used to guide the parent's behavior to support their children's learning about: (a) emotional regulation, (b) attachment, and (c) social behaviors. The Adult Attachment Interview and other similar assessment instruments offer parents insight into their own parenting behaviors and how they affect their ability to reflect on their child's internal states. Information from these techniques and instruments will provide the foundation for the parent education program that is presented in Chapter 3.

## Chapter 3

### METHOD

The purpose of this project was to develop a parent education seminar to increase awareness of a child's emotional development and to offer parents guidance in order to help their children regulate their emotions so they can form a secure sense of self (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1968/1972). This program will be based on attachment theory, reflective functioning, and the emotional availability rating scale factors to educate parents about how they can shape and develop their child's emotional health. The Ainsworth et al. and Main and Solomon (1986; as cited in Lyons-Ruth & Jacobvitz, 1999) constructs of attachment classifications will be used as a reference to identify aspects of a parent and child relationship. In some parent education programs, child behaviors are addressed and parents are taught the different methods of discipline. This researcher used the findings from current empirical studies in neuroscience, physiology, theory of mind, and relationship science to examine emotional reactivity and emotionality to understand their correlation to parent and child attachment.

#### Goals of the Applied Research Project

The goal of this project was to help parents understand their child's emotional reactivity, which is the motivation for a behavior, and more importantly, how parents can adapt their behaviors to scaffold the child's emotional development. This program is not intended to be used as a therapeutic intervention; however, it can be adapted to become

an evaluation tool to assess a person's parenting skills to become an adoptive parent or to determine custody of children.

#### Procedure

The seminar will be offered as a direct service. One method of presentation will be a series of parenting programs offered to parents or caregivers through newspaper or newsletter advertisements, and this would be for the general public. In addition, in some legal jurisdictions, divorcing parents are required to attend 3 hours of parenting education instruction. Referrals for this service would come through law practices.

#### Target Audience

This project was designed for parents and caregivers of young children in a nonclinical population. Divorcing parents and professionals who work closely with families, such as social workers, family doctors, law enforcement officers, and family law practitioners, would benefit from this program to evaluate the quality of the parent/child relationship so appropriate intervention can be developed.

#### Chapter Summary

In the parent education seminar this author described a child's emotional development and provided a guide for parents to acquire the skills to understand and support their children's development. Although the program is grounded in empirical scientific research on physiology and attachment, the program was designed for use with a nonclinical audience. The power point presentation is presented in Chapter 4. A discussion of the limitations and future programs is found in Chapter 5.

## Chapter 4

### RESULTS

Ainsworth and Bowlby (1989) reported that attachment theory is an ethological theory of personality development. In this presentation, there is a review of the development of human emotion and how emotional expression is shaped by the quality of the infant's attachment to his/her caregivers. The goal of this presentation is to inform parents and caregivers about behaviors and skills that promote optimal emotional connection with an infant. Their attachment affects the infant's future relationships and quality of life.

Bowlby (1969/1982) described the parent/child relationship as a behavioral system created to quell the infant's wariness. Parents/caregivers who are able to understand wariness from their infant's perspective are better able to satisfy the infant's need to feel secure (Fonagy & Target, 2005). In order to help parents/caregivers understand the infant's needs, this author developed scenarios from an infant's perspective, so the parent/caregiver may experience the environment as an infant might. Early memories are emotional experiences, not cognitive ones; therefore, the presentation is experientially focused, and the audience of participants should leave the presentation with an awareness of an emotional reaction to nonverbal expressions. As the emotional availability rating scales (Biringen, Robinson, & Emde, 1985) revealed, different expressions and parent/caregiver behaviors are correlated with different qualities of attachment. Ainsworth, Blehar, Waters, and Wall (1978) identified three attachment

styles: (a) insecure/ambivalent; (b) secure; and (c) insecure/avoidant. The disorganized attachment style (Main, 1999) was later added to attachment categories. Biringen (2000) maintained that attachment does not result from one interaction, but from global patterns of interactions that are: (a) persistent, (b) dependable, and (c) predictable. The intent is for the parent/caregiver to become the infant's secure base from which s/he is able to explore an expanding range of interest, and to be able to return to the secure base in times of stress in order to emotionally refuel and quell the wariness response to new or different things. Through reciprocal hierarchical bonding (Cassidy, 1999) behaviors with the parent/caregiver, the infant learns to regulate her/his emotional reactivity. The interaction can be overt, such as social learning, or it can be through the use of mirror neurons or other similar mechanisms, with which evolution has provided humans, to promote socialability. Humans may not be the only animals that produce emotions but they are unique and have theory of mind capability or the ability to understand another's emotional experience (Dunbar, 2007).

#### Parent Educational Seminar

This author presents an educational seminar that informs parents/caregivers about children's emotional development through emotional regulation. Emotional regulation develops when the parent/caregiver provides a child with a psychologically safe environment for him/her to express and alleviate his/her heightened awareness and to return his/her to an internal state to homeostasis. In addition, parent's behaviors that affect the child's ability to appropriately respond to a sensory stimulus are identified. This seminar is a direct service power point presentation. The parents/caregivers will be

given copies of the slides with blank spaces for them to record their own notes and reactions to the various slides.

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## **Parent Education Seminar: Children's Emotional Development**

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Barbara E. Kase  
Regis University

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**The goal of this parent education seminar is to increase awareness of the parent's ability to affect a child's emotional development.**

- Emotional development begins at birth through the process of emotional regulation. The parent/caregiver's ability to help an infant regulate his/her emotional reactivity creates an attachment style that affects the infant's future interpersonal relationships, social skills, academic achievement, and quality of life. Every infant and child deserves a secure attachment with a parent/caregiver.

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The goal of the project is to increase parents'/caregivers' awareness of their role in shaping their infant's emotional development. The point of intersection for the infant and the parent/caregiver is the regulation of the infant's emotional reactivity. How the parent/caregiver responds to the infant is demonstrated in a pattern of behaviors that represents an attachment style. This attachment style is evident in future relationships and affects other aspects of life. A secure attachment is considered optimal, and this program informs parents/caregivers about behaviors that promote a secure attachment.

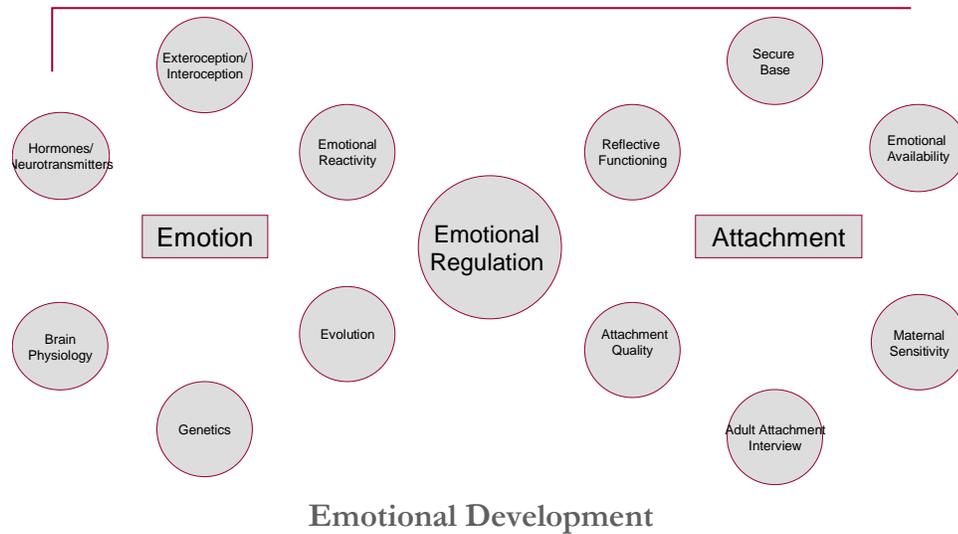
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**Attachment:**

- An emotional connection one person has with another person that relieves stress and quells wariness.

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The term, attachment, means different things to different people. The definition used by empirical researchers (Ainsworth, Blehar, Waters, & Wall, 1978; Biringen, Robinson, & Emde, 1985; Bowlby, 1969/1982) is that attachment is an emotional connection that is unilateral, and its function is to relieve stress and wariness.



This diagram illustrates the process that results in emotional development. The left side of the diagram shows the components of emotion, which represent the state of an infant when s/he enters the world. The right side of the diagram shows the components that reflect or shape a parent/caregiver's attachment style, which represent the state of readiness or awareness of the parent/caregiver to regulate the infant's reactivity. The middle of the diagram is where the two individuals' meet for emotional regulation. The infant learns how to regulate his/her emotions through the interactions with the parent/caregiver. This interaction shapes the child's emotional development.

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## Emotion Components

- Emotions developed through evolution to promote social interaction and prevent harm.
  - Emotions are epigenetic.
  - Emotions are made possible through human brain development.
  - Emotions are affected by neurotransmitters and hormones.
  - Emotions are a response to exteroception, sensory input with the environment, and interoception, awareness of internal changes in state.
  - Emotions form patterns of individual reactivity.
- 

There is no standard definition of emotion (Russell, 1991); semantics determine what an emotion is. This researcher used the James-Lange (James, 1884, as cited in Polatos, Kirsch, & Schandry, 2005) theory of emotion, similar to the definition that Bowlby (1969/1982) used, initially, and that emotions are the physiological response to an external stimulus. Physiology implies an evolutionary basis for emotion.

Emotions evolved to promote social interaction and prevent harm. This means that there is a survival value for human animals to keep together for safety reasons. Also, evolution has produced a set of genes that affect behaviors that promote socialability and that are exhibited differently in different environments, such as having an allele, a variant or alternative form of a gene related to a trait, that makes one person more anxious than another under the same circumstances. The human brain developed in modules to support different functions. One example of this development is that humans have large skulls to house larger brains. The frontal cortex is responsible for complicated processing, and one

of these processes is to navigate complex human social behaviors and be able to interpret or anticipate another's intentions based on facial expressions or behaviors. In response to external stimuli, the body produces neurotransmitters and hormones that trigger behaviors; examples are the fight or flight response to norepinephrine and the affiliative nature of oxytocin. In addition, each person experiences stimuli from the environment differently, that is exteroception; interoception is one's awareness of internal changes, such as an elevated heart rate. All of these components create opportunities for variation in how individuals experience and respond to stimuli in the world. This package of variability is called emotional reactivity, or temperament (Kagen, Snidman, & Arcus, 1996).

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## Attachment Components

- Attachment quality categories are: (a) Insecure/ambivalent, (b) insecure/avoidant, (c) secure, and (d) disorganized.
  - Attachment is learned from a person's own experiences of being parented as determined by the Adult Attachment Interview.
  - Attachment requires sensitivity to the child's behavioral and emotional cues.
  - Attachment is shaped by the parent/caregiver's behaviors as measured by the Emotional Availability Rating Scales.
  - Attachment needs a secure base for the child to emotionally recharge.
  - Attachment is facilitated by the parent/caregiver's ability to use reflective functioning.
- 

Attachment describes the quality of the parent/caregiver and the child relationship. Ainsworth, Blehar, Waters, and Wall (1978) identified three categories of attachment. The categories are based on a global assessment of interactions and each relationship may contain elements of the others at one time or another. Insecure/ambivalent behaviors are the clingy ones; the infant cannot be comforted when a mother leaves. The insecure/avoidant may or may not notice whether a parent comes and goes and may actually get angry with the parent when disturbed. The secure infant is comfortable with the parent's presence but is not unduly alarmed when the parent is out of sight, and s/he welcomes the parent into an activity. Typically, the disorganized attachment (Main & Solomon, 1986; 1990; as cited in Main, 1999) category is reserved for clinical applications; however, it is in the extremes that perimeters are determined. In this case, the effect of an angry face toward a child has been shown to be important in the

formation of a disorganized attachment (Main & Solomon, 1986, as cited in Lyons-Ruth, 1999).

The Adult Attachment Interview is an assessment instrument that reveals a correlation between a parent's memories of being parented and the way that parent interacts with his/her own child (Grossman et al., 1988, as cited in Biringen et al., 2000). Learned parent behaviors can be subtle, such as knowing the differences in an infant's cry; this one means hunger and that one means tired. Other behaviors are more overt, such as allowing a child to cry him/her self to sleep. The Emotional Availability Rating Scales (Biringen, Robinson, & Emde, 1994) evaluate many different behaviors and patterns of behaviors have been correlated with different categories of attachment.

The idea of the parent/caregiver as a secure base for the child to emotionally recharge and quell any anxiety is a key to emotional regulation (Biringen, 2000). What constitutes a secure base changes as the parent and child learn the other's behaviors and anticipate how predictable and consistent the action will be. The parent provides a physical and mental place for the child to express any feelings he/she might have in response to his/her interaction with the environment. What the parent deems silly may be of great importance to the child. The separate nature between the parent/caregiver's perception of events and that of the child's allows for the child to develop unique expression for emotional reactivity. However, in order to be empathetic, the parent reflects on his/her own experience to understand the child's emotion. Using his/her own experience as a guide, the parent determines what the appropriate response should be or how the parent can structure the environment to promote the child's ability to calm him/her self. Reflective functioning by a parent is thought to be the attribute that bridges

the transmission gap between generations and perpetuates attachment styles (Fonagy & Target, 2005).

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## Attachment Theory

- Attachment Theory incorporates several science disciplines: (a) evolutionary theory (Bowlby, 1969/1982); (b) primate research (Suomi, 1999); systems theory (Emde, Biringen, Clyman, & Oppenheimer, 1991); artificial intelligence (Bretherton & Munholland, 1999); and genetics (Ainsworth & Bowlby, 1999).
- Attachment is an emotional connection between an affectional figure and another person (Ainsworth, Blehar, Waters, & Wall, 1978; Biringen, 2000; Bowlby, 1969/1982).
- Behavioral systems mediate behavior and are activated during times of stress (Bowlby).
- Emotional regulation results from the individual's unique emotional expression in response to his or her interactions with the parent (Bowlby).
- The quality of the attachment is described as: (a) insecure/ambivalent, (b) secure, (c) insecure/avoidant, and (d) disorganized (Ainsworth et al.).
- Parenting behaviors are learned (Adult Attachment Interview, George, Kaplan, & Main, 1985, as cited in Bretherton & Munholland); Emotional Availability Rating Scales, Biringen, Robinson, & Emde, 1994;2000; Reflective Functioning, Slade et al., in press, as cited in Fonagy & Target, 2005).
- Infant attachment classification affects: (a) brain physiology (Pollack, Cicchetti, Klorman, & Brumaghim, 1997); (b) family interactions (Diehl, Elnick, Bourbeau, & Labouvie-Vief, 1998) ; (c) social functioning in sibling and peer relationships (Hazen & Zeitman, 1999; Thompson, 1999); (d) academic performance (Jacobsen & Hofmann, 1997) ; (e) love interest/mate selection and other affiliative relationships (Hazen & Shaver, 1987; Klohen & Bera, 1998); (f) psychopathology (Pollack et al., Valentino, Cicchetti, Toth, a& Rogosch, 2006); and non-familial caregiver interactions (Howes, 1999).

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Attachment theory provides the theoretical foundation for the components of attachment. It uses scientific evidence to support its tenets. Links to other branches of science make attachment theory a *living* set of ideas in regard to the development of human relationships.

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**An attachment bond is an affectional bond that has these characteristics:** (Ainsworth, 1999; Bowlby 1969/1982)

- Persistent.
- Person specific.
- Emotionally significant.
- Desire for closeness to the other person.
- Occurrence of involuntary separation causes distress.
- One person's derives a sense of security and comfort from being with that affectional person in times of stress.

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Attachment does not occur with everyone that a person encounters. A person forms an attachment with someone who has certain characteristics or acts in a certain manner. This relationship can be one-sided and does not have to be reciprocal. The first four points on the slide are self-explanatory. The fifth point, that the occurrence of involuntary separation causes distress, means that it is involuntary to the person who seeks security and comfort from being with that other person. This is because it is the person, who needs to calm his/her wariness, is the one who determines whether his/her internal state has returned to equilibrium, and s/he is no longer wary or afraid. The distinction between the parent/caregiver and child aids in the child's development of self. When a child is young, s/he does not have the experience to use reason to calm him/her self nor does s/he have the power to change the environment to create a secure base. The child relies on the parent/caregiver to create an environment that terminates the activity that prolongs the disequilibrium and allows the child to calm his/her self. In doing so, the

sense of security and comfort provided by the parent/caregiver creates a dependence or affectional bond.

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## Emotional Availability Rating Scales

(Biringen, Robinson, & Emde, 1994)

- The transition from one activity to another between the parent and child is important.
  - The responses to each other are appropriate for the situation and for the developmental stage of the child.
  - The authenticity of the emotional displays.
  - Child behaviors:
    - Invitation: Welcomes the parent into an activity.
    - Inclusion: Accommodates the addition into an activity.
  - Parent behaviors:
    - Hostility/non-hostility: (a) postures, gestures, and harsh, impatient, or sarcastic tone of voice; (b) resentfulness of child's presence or perceived demands on the parent's time; (c) irritability; or (d) non-hostility is the willingness to set aside an activity to attend to the child's request.
    - Intrusiveness/non-intrusiveness: (a) physically, who directs the activity, (b) emotionally, the parent overwhelms the child with his/her own emotions.
    - Sensitivity/affect: (a) the ability to interpret the child's cues, (b) let the child determine the direction of the interaction, (c) parental flexibility, and (d) unconditional acceptance of the child.
    - Structuring: How the parent sets rules and expectations of behavior for a particular developmental age or situation.
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### *Emotional Availability Rating Scales*

Emotional availability describes the emotional component of maternal sensitivity (Biringen, 2000). The degree to which the mother is emotionally available affects the quality of the parent and child interactions. The result from the use of the emotional availability rating scales is a global assessment of their interactions. Specific, identified behaviors are assessed for the quality of the interaction; examples would be: (a) the transition from one activity to another is smooth and without conflict, (b) the responses to each other are appropriate for the situation and for the developmental stage of the child, and (c) the emotional displays are authentic. The emotional availability rating scales are used to evaluate several factors.

Biringen et al. (1994) took the four maternal behaviors identified in the strange situation (Ainsworth et al., 1978) and added two child behavioral contributions to develop the emotional availability rating scale clinical assessment instrument. The

evaluator observes interactions between the parent and child in order to assess who controls the activity. Ideally, the child should want to include the parent in the activity, and the child extends an invitation to the parent.

### *Invitation and Inclusion*

Invitation and inclusion are the two factors in the relationship that are controlled by the child (Biringen et al., 1994; 2000). If a child feels secure, then there is a welcoming, invitational tone to the beckoning to the parent. The other, inclusion, is how the child accommodates the addition of the parent into the child's activity. In a secure relationship the child adapts the play to include the parent. The parent correctly and appropriately follows the direction of the activity set by the child.

### *Sensitivity*

The key to the exchanges and the behaviors is the mother's sensitivity to the child's cues (Ainsworth et al., 1978; Biringen et al.1994). These cues can be overt, such as a spoken invitation, or the child physically moves aside and pats the space to come and sit down. Other cues are more subtle, the child's rigid posture or a facial expression of a set mouth. The parent should be familiar enough with the child to recognize these cues, although this is not always the case.

Of all of the factors, sensitivity or affect is the most important factor. It has four facets. These facets are the ability to: (a) interpret the child's unique cues, (b) let the child determine the direction of the interaction, (c) parental flexibility, and (d) unconditional acceptance of the child. The factors are not traits but dimensions that provide a whole picture of the relationship.

### *Child's Cues*

The first facet is how well the parent understands the cues from that particular child (Biringen et al., 1994, 2000). Each relationship is unique, and it differs between a parent and each child in the family. The parent's interpretation of the cues comes from his or her ability to emotionally step aside to see the child as a separate individual. The parent's response to the child should be directed toward the child's benefit, not for an emotional need of the parent.

### *Child's Rhythms*

The second facet is how well the parent follows the child's rhythms (Biringen et al., 1994, 2000). Abrupt changes in activities disrupt the child's emotional regulation.

### *Parental Flexibility*

The third facet is flexibility (Biringen et al., 1994). Flexibility means the ability to attempt to reach a goal by the use of a variety of means and it is closely linked with creativity. Depending on the age and gender of the child, the parent will scaffold play activities and allow the child to take the lead, yet the parent provides the creative options that continue the activity.

### *Parental Acceptance*

Lastly, and this refers to being able to read the child's cues, the parent accepts the child as the child is; there are no set expectations of the child's personality (Biringen et al., 1994, 2000). This facet refers to the Ainsworth et al. (1978) concept of the parent, who acts as a secure base. It is unconditional love.

### *Nonhostility*

Another of the underlying constructs of emotional availability is the continuum of nonhostility to hostility (Biringen et al., 1994, 2000). A parent's hostility can be signaled by: (a) posture, (b) gestures that keep the child from coming close, or (c) the use of a harsh or impatient tone of voice. The parent may appear to be resentful of the child's presence or perceived demands on the parent's time. It may manifest in irritability. Nonhostile behavior is the willingness of the parent to set aside an activity to attend to the child's request.

### *Nonintrusiveness*

Intrusiveness can be determined in two ways (Biringen et al., 1994, 2000). One way would be to observe who directs the play activity. A parent may determine the intent of the activity, turn it into an instructional session, and forget that, developmentally, play is instructional for young children. Also, intrusion can be emotional. The parent imposes feelings about a situation and overwhelms or overstimulates the child, which allows no room for the child's emotional expression. The key is the reciprocity of the interaction, and whether the parent follows the direction of the child. Van IJzendoorn, (1995, as cited in Biringen et al., 2000) demonstrated different patterns of behavior based on the child's gender. Mother and son play functions better when the son takes the lead, and the mother follows. Girls, on the other hand, do better when they are coleaders. The etiology of the difference has not been determined. Whatever the cause, the key to understanding the intrusiveness is the synchronicity of the interaction.

### *Structuring*

Structuring refers to how the parent sets the rules or expectations of behavior (Biringen et al., 1994, 2000). The rules need to be clearly stated and appropriate for the activity and the context. For example, if it is a 2 year old child, then the parent should put the expensive, breakable goblets away so the child cannot be hurt or break one. Instead, a more developmentally appropriate context would be to have a cleared spot in a living room set up with a soft ball and bowling pins. Breaking the rules depends on the consequences, but the enforcement needs to be consistent. This becomes an issue when there are two parents with two levels of expectations. A parent can be responsible only for the actions that take place within that household, and the child learns that there are two different contexts for rules.

These factors must be emotionally authentic and sincere (Biringen, 2000; Biringen et al., 1994; 2000). Authenticity is determined by the observer, and this is where the experience, training, and understanding of attachment theory are important. The observer assesses the congruity of body language and action, as well as words and the tone of voice for both the parent and child. Behaviors can be maintained for short periods of time. Biringen et al. (2005) determined that the length of observation time should be between 30-45 minutes. Shorter times are not as reliable because the parent and child may behave artificially for the observer. As time passes, they tend to relax around the observer and drop their guards. Also, length of time may result in some increased levels of stress (Biringen et al., 2005).

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## Reflective Functioning: “Mentalism measured in the context of attachment”

(p. 334, Fonagy & Target, 2005).

- Mentalism is more than the ability to predict another’s behavior, it is the knowledge of another’s mental state (Santos et al., 2007) and to understand the mental states of another by being able to relate it to an internal representation of the situation (Focquaert & Platek, 2007).
- Theory of mind is the ability to, “predict, interpret, and in some cases, manipulate”, (p. 433) the actions and intentions of other humans.
- Humans are unique among animals because they are able to understand the mental states of others.
- Humans infer another’s: (a) wants, (b) desires, (c) intentions, and (d) beliefs.
- A parent and child’s relationship is based on shared emotions, not shared behaviors.
- Mirroring and social referencing are two mechanisms of transmission of shared states.

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The ability to understand the other’s motives and intentions supports social living that is important for human survival (Fischer & Thompson, 2007). The act of emotional understanding arises from the imitation of another’s emotions through the “action mirror matching mechanisms” (Gallese et al., 2004, as cited in Focquaert & Platek, 2007, p. 481), mirroring, and social referencing. A parent/caregiver who is aware of oneself is better able to mentalize the world of another, especially the world of an inexperienced child, and is able to construct an environment that facilitates the development of a secure attachment.

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## Emotional Regulation

- Emotional regulation is the ability to control emotional reactivity during stressful periods and to understand and act on one's emotions; it is used to protect one from distress (Propper & Moore, 2006).
  - Emotional regulation begins at birth.
  - Emotional regulation is the interface between the parent/caregiver and child.
  - Emotional regulation develops through global patterns of interactions with the parent/caregiver resulting in characteristic relational styles: (a) Insecure/ambivalent, (b) insecure/avoidant, (c) secure, and (d) disorganized attachment quality.
  - Emotional regulation is a learned behavior and can be supported or remediated through awareness and education.
- 

An infant comes into the world with the ability to respond to and learn from the environment. Any change in the environment draws attention toward it, and the body produces a physiological response that directs behavior to notice the change. This change in an internal state creates emotional reactivity. The first response to change is wariness until the change becomes comprehensible. Wariness is the most basic of human emotions and is what needs to be regulated and managed. Humans like familiarity because it increases the likelihood of survival so there is the desire for homeostasis. Emotional regulation is the ability to return to homeostasis. The child learns what a sense of calm feels like, and repetition of this experience trains the brain to establish norms of response. In the brain, the amygdala aids in the consolidation of emotional memories and processing of threat or fear; also, it is the module that aids in learning.

Emotional regulation is learned by having one's needs met in a consistent and predictable manner. When the child is able to calm his/her internal reactions to

environmental stimuli, such as being out of visual contact for reassurance, then the child is able to attend to learning other things. An unpredictable and unanticipated change causes a child to expend energy, first to calm his/herself and then, to assess a situation, and subsequently, is not able to focus on learning. The parent/caregiver, who is aware of a child's need to learn emotional regulation, can structure a physical and emotional environment that minimizes the impact of stressful situations.

## Project Exercises

The author of this applied research project asks the audience members to participate in an exercise to demonstrate reflective functioning and understand how it affects the quality of an attachment. This exercise uses facial expressions as communicators of emotion.

The author would like the audience members to imagine what their emotional reaction is to certain situations and to note them on their handouts.

1. You are driving down a street and have been stopped by a motorcycle police officer. You have no idea why you were pulled over. The officer comes to your car door; you open your window, and look up into the face that has mirrored sunglasses and no expression.

2. You have gone out of your house to get your morning newspaper wearing a robe; it is 25 degrees, and lightly snowing. You fall on the ice, hitting your head and momentarily blacking out, your leg is broken, and you cannot seem to move.

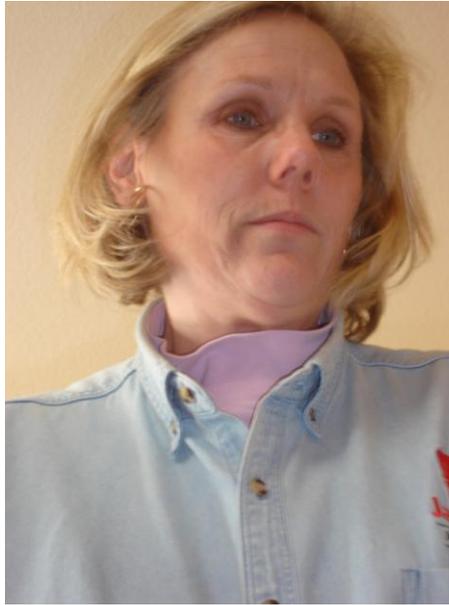
3. You are at work. Your boss comes to you, s/he gets close your face, and starts yelling at you about something that happened at a meeting. The tirade has nothing to do with you.

4. You have spent the entire day unpacking boxes because you have just moved into a new house. You have been busy and have not eaten all day, and your spouse comes in the door with a smile on his/her face and tells you how wonderful you are for working so hard to get them settled into your new home.

# An Infant's View of the World



The view pans the room to show a shelf with stuffed animals on it with 38 seconds of a child's music box playing *Talk to the Animals*. At the 35 second mark, there is a loud noise followed by a muffled argument, and then, the author moves through the next four slides, each with a 2 second presentation. The audience members are asked to imagine how each face might make an infant or young child feel.



This face is unreadable and inattentive. How effective is it in calming wariness or fear? This is an example of parenting behaviors associated with insecure/ambivalent attachment development



There is no face and the picture does not change; no one comes into the room. How effective is it in the calming of the wariness or fear? This is an example of parenting behaviors associated with insecure/avoidant attachment development.



An angry face triggers fear. How effective is it in calming wariness or fear? This is an example of parenting behaviors associated with disorganized attachment (Main & Solomon, 1986, as cited in Lyons-Ruth & Jacobvitz, 1999) development.



A smiling face is soothing. How effective is it in calming wariness or fear? This is an example of parenting behaviors associated with secure attachment development.

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## Infants as Spectators

1. Photograph of what an infant sees from a crib, lying on his/her back only able to move his/her head and without being able to move his/her arms.
    - A. Russell (1991) stated that humans are born in a state of being, no awareness of emotional responsiveness and without agency.
    - B. Parents use reflective functioning (Fonagy, 2000) to imagine what it feels like to be the infant.
  2. Wariness
    - A. Light and dark.
    - B. Loud noise.
    - C. Muffled arguing.
  3. Face presentation
    - A. Blank/distracted face: Insecure/ambivalent attachment.
    - C. Do not appear: Insecure/avoidant attachment.
    - D. Angry face: Disorganized attachment (Pollack, Cicchetti....2000).
    - E. Smiling face: Secure attachment (Biringen, 2000).
  4. How do you respond to each of the face presentations?
- 

This is a summary of the preceding slides.

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## Conclusion

- Mental health begins at birth.
- An infant's unique emotional reactivity responds to different parent/caregiver behaviors.
- The parents/caregivers can learn to adapt their behaviors to meet the emotional needs of each infant.
- Securely attached infants grow into children and adults who have a better quality of life.

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A parent/caregiver who uses reflective functioning and thinks about the impact of simple behaviors such as a facial expression can change the way that a parent/caregiver responds to a child's bid for attention and, ultimately, the quality of their attachment. The ability of the parent/caregiver to present a calm face reassures the child that the world is safe for any emotional reactivity, the parent/caregiver uses his/her shared neural mechanisms to train the child's brain to calm his/her self, and by doing so, the child learns emotional regulation. Emotional development begins with the intersection of a child's emotional reactivity and the parent's attachment style.

## Chapter Summary

Emotion and attachment intersect during emotional regulation. The infant enters the world as an emotional blank state, with the ability to gather information about the environment by the use of various senses. Any change in the infant's environment produces a state of heightened awareness and wariness. The parents/caregivers who, understand the infant's perception of the environment, are better able to construct a climate where the infant is able to regulate wariness and to return to a calm, secure homeostasis. The *Infant as Spectator* exercise demonstrates the effect that different facial presentations have on alleviating or increasing an infant's level of wariness. Parents'/caregivers' behaviors affect the quality of the emotional connection or attachment that the infant has with them.

A discussion of the purpose of the parent education applied research project, a review of its limitations, and a proposal for future applications are presented in Chapter 5.

## Chapter 5

### DISCUSSION

The purpose of the project was to help parents/caregivers become more aware of how they affect their child's emotional development. The parent/caregiver and child relationship is an opportunity to provide children with optimal mental health development. A central component of emotional development is emotional regulation, which is a skill that children need to learn and the parents/caregivers need to reinforce. Children develop emotional regulation through their interactions with the parents/caregivers. The program is educational and not therapeutic. The topic of emotional development is important to all caregivers, not just those who work with compromised families, because it affects the child's social and academic abilities.

#### Limitations to the Project

The project experienced limitations in two areas. First, the cost of including professional quality pictures and videos makes this project expensive to produce. Second, a picture or video does not carry the same emotional impact as personal interactions do. Presentation of the project with the use of live characters to create personal exchanges restricts the number of people who could participate at one time. However, the purpose of the project was to create an educational program that increases awareness of a child's emotional development, and not to intervene in the parent/caregiver and child relationship for therapeutic value. Limitations that are inherent in the use of pictures or videos do not outweigh the educational merit of the program and are not insurmountable.

## Future Programs and Applications

Future program development should include the development of a library of other *Infant as Spectator* vignettes, such as ones that demonstrate Invitation and Inclusion (Biringen, Robinson, & Emde, 1994) and the other components of the Emotional Availability Rating Scales (Biringen et al.), as well as vignettes that portray other developmental stages that are called *Child as Spectator*. When additional scientific research becomes available, program content will be enhanced or clarified as needed, especially in regard to culture specific research. In addition, individual programs can be developed for specific parent and child relationships that evaluate the quality of their attachment and offer suggestions that would improve their relationship. This is a nonclinical application of the research conducted by Koren-Karie et al. (2002).

Other considerations for this program include a change in the method of delivery to expand accessibility. Currently, the program is a direct service presentation; however, information will be distributed through a website at <http://www.instituteofparenting.org>. The Internet affords the opportunity for a wider audience to learn about practical applications of scientific research that improves the parent/caregiver and child relationship. The vignettes can be offered as a lecture series through a subscription service. One idea to promote this service would be through a brochure campaign that is distributed to: (a) hospitals, (b) pediatricians' offices, (c) children services/mental health facilities, and (d) childcare providers. The brochure would have the face of an angry adult with the caption, "If this face looks scary to you" and when the brochure is opened, there

will be the face of an infant with the caption, “How do you think it makes her feel?” The tag line is, *Mental well-being begins at birth*. A website address for further information will be posted.

### Project Summary

The author creates an applied research project that increases awareness of the parent/caregiver’s ability to affect a child’s emotional development. The first half of the presentation offers an explanation of emotion and attachment, and how the two areas intersect at emotional regulation. The second half of the program includes audience participation in the use of reflective functioning to experience the environment from a child’s perspective. Specific parent/caregiver behaviors, as demonstrated in the vignette that uses facial presentations, affects a child’s ability to develop emotional regulation. The audience members increase their own awareness of the impact of behavior on emotional development from their experience with the exercise. As parent/caregivers reflect on this presentation, they will be aware of their own behavior the next time they are in a situation with children. Attachment is an emotional connection with another person, and parents/caregivers can learn to create positive behaviors that facilitate secure relationships which will contribute to the well-being of all families.

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