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# Adult Attachment and Emotion Identification: A Cognitive Evaluation

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# ADULT ATTACHMENT AND EMOTION IDENTIFICATION:

## A COGNITIVE EVALUATION

by

JENNIFER FROST BARRON

(Under the direction of C. Thresa Yancey)

### ABSTRACT

Whether adult or infant, attachment bonds aid in the development of beliefs about oneself and others (Collins & Read, 1990; Hazen & Shaver, 1987). Additionally, attachment seems to play a vital role in human development, communication, emotion recognition and comprehension, and the development of appropriate mental representations of emotional experiences (Denham et al., 2002; Greg & Howe, 2001; Raikes & Thompson, 2006). Because attachment is considered a somewhat stable trait, it seems logical that the importance of emotional experiences would not be limited to childhood, and would be important in establishing and maintaining healthy adult relationships (Kerr, Melley, Travea, & Pole, 2003).

This study sought to expand upon current attachment literature by further examining the relationship between attachment and identification of emotional stimuli. Participants rapidly responded to a series of computer images of picture/emotion word pairings followed by a series of questionnaires, including: The Adult Attachment Questionnaire (AAQ; Hazan & Shaver, 1987/1990) and The Experiences in Close Relationships - Revised (ECR-R; Brennan, Clark, & Shaver, 1998; Fraley, Waller, & Brennan, 2000). Attachment styles were examined to identify the relationship between differing styles and ability to quickly and accurately identify emotion-related stimuli. Contrary to hypotheses, results reveal no main effect of attachment, however do demonstrate significance of the negative picture/word pairing. Mikulincer and Shaver's (2003)

integrative model of attachment-related strategies provides a possible explanation for these findings. More information is necessary to determine the role of adult attachment and emotion identification.

**INDEX WORDS:** Attachment, Adult Attachment, Emotion Identification, Reaction Time

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But Jesus looked at them and said, “With man this is impossible, but with God all things are possible.” – Matthew 19:26

I would first and foremost like to extend my humble appreciation to the Lord above for carrying me through this season in life; without Him none of this would be possible.

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## CHAPTER 1

### INTRODUCTION

People learn about and begin to understand emotions in a variety of ways. The fundamental comprehension of emotion begins early in infancy and continues to develop through interactions and relationships with parental figures (Thompson, 1998). These early attachments are the beginning steps in the development of emotion identification, which then works to shape social interactions and future relationships (Denham et al., 2002). It therefore becomes important to better understand attachment relationships, and how this complicates or clarifies individuals' understanding and experience of emotions.

Specifically, attachment can be defined as an emotional bond that a person forms with another individual for the purpose of gaining a sense of safety and security. Attachment bonds can exist with more than one individual; however, for the purposes of this study, the emphasis is on the individual's attachment to the primary caregiver. This bond begins in infancy, extends across the lifespan, and influences important later relationships (Ainsworth & Bell, 1970). Additionally, attachment styles can vary across individuals ranging from secure to insecure. Secure individuals can be described as maintaining healthy boundaries with others with little worry of abandonment or fears of intimacy. Individuals with an insecure attachment tend to have difficulty trusting others and appear uncomfortable with intimacy (avoidant), or become easily distressed and cultivate high levels of apprehension regarding others' ability to provide security (anxious/ambivalent). Both infants and adults share similar overall attachment patterns, with the majority of people being categorized as securely attached followed by avoidant, and anxious/ambivalent (Hazan & Shaver, 1987).

An individual's attachment style dictates their response in stressful or emotional situations. In addition, attachment and emotional intelligence (or the ability to assess, understand and utilize emotions effectively and appropriately) have implications for career and academic opportunities, future well-being, interpersonal relationships, and the enhancement of life satisfaction (Collins & Read, 1990; Leerkes & Siepak, 2006). Therefore, the manner in which caregivers meet and respond to a child's emotional needs greatly impacts how that child will perceive and respond to others in the future. For example, a parent's ability to identify the emotional state of their child can lead to better emotional experiences with that child, in turn leading to more secure attachment between parent and child. Such interactions can then help the quality and speed of parental responsiveness, perhaps even decreasing the potential for abuse (Leerkes & Siepak, 2006). The more that people know and understand about attachment and emotions, in regard to how they function, form, and are maintained, the more productive and beneficial interactions and experiences can be.

As the study of attachment literature has expanded, multiple theories have been developed to assist in understanding this concept. For the purposes of this research, attachment is being conceptualized from a working models framework. This allows for the incorporation of foundational theories, as well as more recent theories of attachment. The idea of attachment as a working model stems from Bowlby's (1969/82) concept of attachment as a means for understanding the world, and has been further modified through developmental and social-personality theorists as a multifaceted, interconnected network that assists in formulating and understanding information relevant to attachments and relationships (Baldwin, Fehr, Keedian, Seidal, & Thomson, 1993; Collins & Read, 1994; Main, Kaplan, & Cassidy, 1985; Mikulincer, Dolev, & Shaver, 2004; Mikulincer & Shaver, 2003).

## Purpose of the Study

The current study serves to elaborate on existing literature regarding attachment by further exploring the adult population. Rather than emphasizing the role of attachment with romantic figures, as is common in Social Psychology, the focus here will remain on attachment to the primary caregiver, while also considering the role of emotion identification.. Specifically, the goal of the current study is to examine the relationship between emotion identification and attachment style.

Participants viewed a series of four emotion picture/emotion word pairings including: positive picture/positive word, positive picture/negative word, negative picture/negative word, and negative picture/positive word. Upon viewing each picture/word pair reaction times were recorded for how quickly participants identified whether the pairings were congruent (positive/positive, negative/negative) or incongruent (positive/negative, negative/positive). It was hypothesized that those individuals with a secure attachment would correctly identify positive, negative, and incongruent pairings more quickly than those with an insecure attachment. Because securely attached individuals tend to identify more positive emotional experiences than insecurely attached (Baldwin, et al., 1996; Kerr, Melley, Travea, & Pole, 2003), it was also hypothesized that people with a secure attachment would be fastest at responding to positive pairings.

Insecurely attached adults were expected to have more difficulty appropriately identifying the three emotion-related stimuli (positive, negative, or incongruent picture/word pairs), consistent with previous literature which suggests that avoidant individuals tend to have less emotional reactions to their experiences than those who are securely attached (Kerr, Melley, Travea, & Pole, 2003) and anxious/ambivalent individuals tend to experience more negative

emotions (Collins & Read, 1990). Therefore, it was hypothesized that avoidant adults would display the slowest overall reaction time for the incongruent category, but not for the identification of congruent stimuli, and anxious/ambivalent adults would be fastest for negative stimuli, but not for positive or incongruent pairings.

Terms:

**Attachment:** Attachment can be defined as an emotional bond or connection between two people for the purpose of gaining a sense of safety and security. Once formed attachments tend to endure throughout a person's life. Attachments can form at any age, and typically begins in infancy with the first attachment being to the mother or primary caregiver (Ainsworth, 1969). Infant attachment to the mother is seen as primary, but with the understanding that multiple attachments to differing caregivers or individuals are possible, but secondary (Farran & Ramey, 1977).

**Secure Attachment:** Individuals with a secure attachment are able to develop and gain comfort and trust with others without much difficulty. They seldom concern themselves with fears of neglect or abandonment, and are able to maintain feelings of safety and closeness with others (Hazan & Shaver, 1987).

**Avoidant Attachment:** People with an Insecure Avoidant attachment struggle to develop intimacy with others. More specifically, dependence and trust on another create discomfort and apprehension (Hazan & Shaver, 1987).

**Anxious/Ambivalent Attachment:** Individuals with an Insecure Anxious/Ambivalent attachment have strong desires for intimacy, but believe others are hesitant for the same intimacy. Individuals with this attachment tend to fear abandonment and indifference from others (Hazan & Shaver, 1987).

## CHAPTER 2

### ADULT ATTACHMENT AND EMOTION IDENTIFICATION:

#### A COGNITIVE EVALUATION

##### **Infant Attachment**

Broadly, attachment can be defined as an emotional connection between two people, which, once formed tends to endure throughout a person's life. Attachments can form at any age, and typically begins in infancy with the first attachment being to the mother or primary caregiver (Ainsworth, 1969). The current conceptualization of attachment stems from the historical psychoanalytic notions of instinctual drives, object-relations, and stages of development. From this viewpoint infant-mother relationships were explained based on inferences of the internal drives of infants, as well as the relationship between mother and child. Furthermore, the connection between mother and child were seen as the first and foundational piece in the future establishment of emotional relationships with others (Ainsworth, 1969). While these concepts sparked revolutionary ideas, they lacked concise understanding and support.

Bowlby's theory of attachment started with his investigation into an alternative to traditional Freudian and psychoanalytic theories of attachment as secondary to a child's libidinal tie to the mother. Bowlby's theory can be considered a combination of evolutionary, ethological, and developmental perspectives (Bretherton, 1992). His theory maintained the psychoanalytic underpinnings that interpersonal relationships are of importance, but added the view that biological, evolutionary, and environmental factors are influential in dictating infant-mother interactions and patterns. He believed that within a species specific behaviors work to enhance survival, especially through the vulnerable time of infancy. Of central importance, Bowlby emphasized the attachment between a young child and his or her mother, as well as related

behaviors between mother and infant. He underlined the influence of biological factors and environment in initiating attachment-related behaviors, and how such interactions in turn influence survival (Ainsworth, 1969). Infant attachment to the mother is seen as primary, but with the understanding that multiple attachments to differing caregivers are possible, but secondary (Farran & Ramey, 1977).

Stemming from Bowlby's work, and in collaboration with him, Ainsworth worked to empirically test Bowlby's theory. Ainsworth's early work suggested that an infant's perception of security stems from the infant's ability to feel that the mother is not only consistently available, but also dependable and receptive to the infant's behaviors. Such security allows the infant to investigate his or her surroundings and explore novel stimuli (Ainsworth, 1979).

Ainsworth developed the strange situation paradigm as an assessment to categorize infant behaviors and determine a corresponding attachment style. The strange situation is a standardized laboratory procedure that provides the opportunity to observe infants in a new environment, and observe how attachment influences exploratory behaviors. The child and mother are placed in a series of separations and reunions and infant responses are measured, especially attachment related behaviors such as proximity-maintenance (i.e., motivation to maintain closeness with a caregiver), proximity-seeking (i.e., seeking closeness to caregiver when faced with danger), contact-maintaining (i.e., efforts to continue contact with a caregiver), interaction avoidance (i.e., efforts to evade contact with primary caregiver), and searching behaviors (i.e., looking for a caregiver) (Ainsworth & Bell, 1970).

From the strange situation stemmed two primary classifications, infants with a secure attachment or an insecure attachment. Insecure attachment can be further categorized as anxious-avoidant and anxious-ambivalent. Infants with a secure attachment were found to engage in



exploration while looking to the mother for approval and security. When separated from the mother, exploration decreased and attachment behaviors aimed at increasing proximity to the mother increased. Further, when these infants regained access to their mothers they were likely to acknowledge the mother and aimed to briefly increase physical contact with her (Ainsworth, 1979).

Anxious-avoidant infants, on the other hand, demonstrated significant avoidance toward the mother as indicated by minimal engagement in attachment-related behaviors, as well as a tendency to ignore the mother altogether. Finally, anxious-ambivalent infants, tended to display anxiety throughout the procedure starting before being separated from the mother. These infants tended to display incredible anguish when she left, and displayed mixed behaviors when she returned, both seeking closer proximity while also displaying resistance to increased contact (Ainsworth, 1979).

**Attachment Behaviors.** The development of attachment relationships begins early in life, with an infant's innate ability to demonstrate and engage in activities that promote proximity to the primary caregiver, thereby fostering security and ultimately survival (Stayton, Ainsworth, & Main, 1973). Initially, these behaviors appear more reflexive in nature. As the infant begins to discriminate between people, attachment behaviors become geared toward the primary caregiver (Ainsworth, 1989).

Behaviors aimed at increasing an infant's proximity to the caregiver have been termed "attachment behaviors" (Ainsworth, 1969; Bowlby, 1958). These behaviors involve signals sent from the infant, and are aimed at gaining the attention of the mother and bringing her closer. Such behaviors can also include intentional participation from the infant to achieve contact with the mother or caregiver (Bell & Ainsworth, 1972). Specifically, such attachment behaviors

include crying, following the caregiver at departure, and welcoming the caregiver upon return (Stayton et al., 1973). While attachment-related behaviors might fluctuate in regard to amount, once this attachment is formed it does not cease (Stayton, Ainsworth, & Main, 1973).

For many months following birth, babies are incapable of active pursuit of the mother and thereby rely on signaling behaviors such as crying, smiling, and gestures. Of these behaviors, crying has been found to be the most effective at increasing proximity to the caregiver during these early months (Bell & Ainsworth, 1972). Specifically, the most effective means of quieting a child consists of the mother picking him or her up or feeding him or her, both of which require an increase in physical closeness. Over time, the need for actual physical contact to quiet crying decreases, with one year old infants showing increased satisfaction with merely increased proximity. Overall, the speed at which a mother responds to cries is directly reflective of a decrease in crying, as well as the infant's attachment classification; infants with a consistently responsive mother from the beginning tended to display secure attachments (Bell & Ainsworth, 1972).

As infants develop through the first six months of life, they cross a developmental milestone enabling locomotion, thereby creating more effective and goal-oriented proximity seeking (Ainsworth, 1989). A child's development, in conjunction with behavioral conditioning learned from mother-infant interactions, allows for an expansion in attachment behaviors (Ainsworth & Bell, 1970). Specifically, as an infant progresses throughout the first year of life, the motivation underlying the attachment behavior of crying shifts, starting initially as a means to increase physical contact with the mother when she is out of visual and auditory contact, and progressively being used when the mother is within physical proximity (Bell & Ainsworth, 1972). Stayton et al. (1973) evaluated infants in their natural environment (home) for the extent

of crying and following when the mother left the room, as well as the number of positive greetings upon the mother's reentry into the room. Results indicated that infants capable of following were more likely to pursue the mother than cry when she left, and were more likely to respond favorably to the mother's reentry by greeting her. However, while duration of crying overall tends to decrease with time across the first year, due to the implementation of additional attachment behaviors, the frequency of crying remained the same (Bell & Ainsworth, 1972). Additionally, babies who received little response from their caregiver for crying in the first four months tended to increase their duration of crying in the subsequent months in the first year (Bell & Ainsworth, 1972).

**Mother Responsiveness.** While attachment is clearly important in infant responsiveness to the mother, an infant's attachment also appears to be directly related to the type of affection demonstrated by the mother (Tracy & Ainsworth, 1981). Face-to-face interactions seem to play an integral part in the development of attachment and the maintenance of positive affect, but these interactions alone are not sufficient (Blehar, Lieberman, & Ainsworth, 1977; Stern, 1974). More specifically, infants with a secure attachment tend to receive different means of affection from their mothers when compared to their insecure peers. Specifically, mothers of infants with a secure attachment tend to demonstrate affection most often via hugging or cuddling, and overall have infants who exhibit more positive emotions (Matas, Arend, & Sroufe, 1978; Tracy & Ainsworth, 1981).

Mothers of anxious-avoidant infants, on the other hand, do not avoid affection altogether, but instead tend to prefer affection with minimal direct body contact with the child such as kissing. These mothers also tend to display less overall emotional expression toward their infant than mothers of both secure and anxious-ambivalent infants (Ainsworth, 1979; Tracy &

Ainsworth, 1981). Furthermore, infants with a secure attachment are more likely to have a mother who initiates positive interactions with their child, and thus, such children are more inclined to reciprocate these positive interactions. Mothers on the other hand who engage in fewer overall interactions, and are deemed rather unresponsive, tend to have infant children with anxious attachments. Additionally, these infants responded similarly in interactions with strangers (Blehar et al., 1977).

### **Adult Attachment**

Research on adult attachment styles has also described three distinct styles reflective of infant attachment: secure, anxious (called resistant or ambivalent in infancy), and avoidant. While it is difficult to ascertain a one-to-one correlation of infant to adult attachment, similarities exist in the categorization of attachment-related facets (Hazan & Shaver, 1987). Research indicates that adult attachment serves the same purpose as infant attachment: creating security, emotional responsiveness and availability (Collins & Read, 1990; Hazan & Shaver, 1994). However, hallmark differences do exist between infant and adult attachments. One difference between the two is the reciprocal nature found within adult relationships. Additionally, as individuals mature, they become capable of deriving security from expectations and feelings of comfort or safety, without immediate access to such components (Hazan & Shaver, 1994).

The idea of attachment styles in adulthood began with Hazan and Shaver's (1987) attempt to redefine the underpinnings of adult romantic relationships. To do so, they utilized Bowlbian theory of attachment, suggesting that attachment was an integral component of romantic love. They composed the Adult Attachment Questionnaire (AAQ), a forced-choice method of measuring attachment, which asked respondents to identify with one of three descriptions of interactional patterns; each descriptor corresponded with an attachment style.

Results indicated that individuals with differing attachment styles tend to have different love experiences. Specifically, individuals with a secure attachment style described their romantic relationships in a positive light (happy, friendly, trusting), whereas individuals with avoidant or anxious/ambivalent styles were more negative and uncertain. Avoidant styles were reflective of fears of intimacy, and those with anxious/ambivalent styles reported desires for reciprocal feelings in relationships, jealousy, and obsessive thinking (Hazan & Shaver, 1987).

Additional means of assessing adult attachment have been commonly used throughout the literature. Bartholomew and Horowitz (1991) devised the Relationship Questionnaire, an attachment measure similar to the AAQ, where respondents are asked to identify with a forced-choice category. However, this measure provides four attachment categories: secure, fearful, dismissing, or preoccupied. Participants are then asked to use a Likert-scale to measure each of the four categories. Brennan, Clark and Shaver (1998) devised the Experiences in Close Relationships, a two-factor Likert-scale questionnaire asking participants to score a series of questions, which yields both a measure of avoidance and anxiety. Different from the above-mentioned questionnaires, The Adult Attachment Interview is a semi-structured interview, which asks participants questions pertaining to their childhood relationships with primary caregivers and others serving in similar roles. Individuals are then asked a series of follow-up questions regarding emotional responses and childhood experiences in an attempt to gauge the person's corresponding attachment style (George, Kaplan, & Main, 1984).

**Working Models/Mental Representations.** Since birth individuals are involved in and experience multiple forms of relationships. Such interactional patterns and attachments extend across the lifetime, and are complex in nature, therefore being better understood as multifaceted working models or mental representations of relationships and emotional experiences (Bowlby,

1969/1982; Collins & Read, 1990; Hazan & Shaver, 1994). Collins and Read (1994) describe these working models as networks, which can be further arranged using default hierarchies. At the top of the hierarchy are one's most generic and general views of relationships. While such views are likely constructed from memories and events, they do not vividly describe any particular attachment or relationship. The middle of the hierarchy is then used to describe more specific relationship roles, for example mother-child, while still remaining somewhat general. At the bottom of the hierarchy are particular, very specific relationships with one individual, for example a person's specific relationship with a sibling. These working models are viewed in relation to the bigger picture of life, to include behaviors, emotions, and cognitions, and are reflective of life experiences (Collins & Read, 1994; Hazan & Shaver, 1994).

Each network is assumed to have multiple overlapping models, and activation of the models depends, in part, on context. Models are automatically accessed in memory when one is presented with information relevant to attachment. Once such activation begins, cognitive appraisals of the environment are generated, in turn leading to emotional and behavioral responses (Collins & Read, 1994). However, because individuals have multiple attachment models within their networks, they differ with regard to the ease of accessibility. A person's current working model of relationships is built predominately from past experiences, memories, and expectations. These expectations are based on schemas, or cognitive representations, of typical patterns of communication, either with that individual, or someone who fits a similar role (Baldwin et al., 1996). Solid and established schemas have a tendency to bias an individual's memory to information that is relevant and/or consistent with the existing schema (Collins & Read, 1994). Memories driven by schemas are directly relevant to working models of attachment in that each person's attachment style will likely provide increased opportunities for the storage

and recollection of memories pertaining to that particular attachment style (Collins & Read, 1994). For those who have experienced multiple secure attachments with others, this schema will be readily available, and therefore most easily and quickly accessible.

Overall, working models for individuals with a secure attachment tend to be more positive, while working models for individuals with an insecure attachment tend to be more negative. Baldwin et al. (1993), for example, utilized a lexical decision task to further examine these models, specifically looking at spreading activation, schemas, and automaticity. Findings suggest that reaction times of participants were faster when the category presented matched the category of attachment. For example, those individuals with an avoidant attachment style responded faster to negative outcome words, while individuals with secure attachments responded most quickly to positive words. Additionally, when asked to describe specific personal situations relevant to each of the three attachment styles, individuals found it easier to describe situations that matched their personal attachment style (Baldwin et al., 1996).

### **Attachment and Emotion**

Not only is attachment style integral to relationships, cognitive evaluations and behavioral responses, it also plays a vital role in affect regulation (Mikulincer & Orbach, 1995). Parental interactions and infant attachment have profound implications for adult perceptions of emotions. For example, Leerkes and Siepak (2006) asked participants to view video clips of crying infants and then identify what was making the infant cry, personal reactions to the infants, and their adult attachment style. They demonstrated that when emotional needs are not met during childhood, or when insecure working models are active, it is more difficult to identify emotions, negative appraisals of situations are more likely, and incongruent emotional responses can arise in distressing situations. Adults with secure attachments appear to be more open with

others in identifying and discussing emotional states and are more likely to work to resolve situations that provoke negative feelings through civil means and problem-solving, rather than aggression and hostility (Collins & Read, 1990; Mikulincer, 1998). Mikulincer and Orbach (1995) found that when adults were asked to reminisce on childhood examples of negative emotional experiences (resentment, sorrow, worry), those with a secure attachment were able to recall these uncomfortable memories, but were able to separate emotional responses and limit such responses to one particular memory. Adults with an insecure attachment, on the other hand, became easily overwhelmed by the heightened emotional states.

To better understand the relationship between emotions and attachment, Mikulincer and Shaver (2003) proposed a unified model that utilizes attachment-related anxiety or avoidance. Specifically, attachment avoidance and attachment anxiety are seen as existing on a continuum. Where an individual falls on the anxiety/avoidance continuum dictates attachment security/insecurity, as well as how that person responds to stress and emotional situations. Such responses can be categorized into two main strategies: hyperactivating or deactivating (Mikulincer & Shaver, 2003).

Deactivating strategies include a tendency for an individual to look to oneself to tackle current psychosocial stressors, and are generally utilized more frequently by individuals with high avoidance. The goal of deactivating strategies is to decrease an individual's vulnerability to potential emotional threat by allowing the individual to disengage, both cognitively and emotionally, from the situation (Mikulincer & Shaver, 2003). The more cognitively demanding a task, the less effective the deactivating strategy will be (Mikulincer et al., 2000). An individual does not have to be consciously aware of a thought for it to interfere with other cognitive or



behavioral processes. Deactivation however only pertains to conscious thought processes of that individual (Fraley & Shaver, 1997; Wegner & Smart, 1997).

Hyperactivating strategies are most often associated with high anxiety, and are quite the opposite of deactivating strategies. Hyperactivation refers to an individual's effort and reliance in seeking external supports. When utilizing such strategies, one might engage in self-depreciating thoughts and catastrophizing of one's weaknesses, in attempts to gain sympathy from others, thus gaining closer proximity to them (Mikulincer et al., 2004). Additionally, hyperactivation entails heightened states of emotional arousal, which only increases the individual's distress (Mikulincer & Florian, 1995). Overall, attachment style determines the use of deactivating or hyperactivating strategies when processing emotional stimuli.

While research in the domain of adult attachment is abundant, much of the research concerning the relationship between attachment and emotions is limited to childhood experiences. Attachment seems to play a vital role in human development, communication, emotion recognition and comprehension, and the development of appropriate mental representations of emotional experiences (Denham et al., 2002; Greg & Howe, 2001; Raikes & Thompson, 2006). Because attachment is considered a somewhat stable trait, it seems logical that the importance of emotional experiences would not be limited to childhood, and would be important in establishing and maintaining healthy adult relationships (Kerr et al., 2003). The current study extends existing research on the relationship of attachment style and the identification of emotions by further exploring the adult population. More specifically, this study examined adult attachment styles in relation to processing time and accuracy in identifying positive, negative, and incongruent picture/word pairings of visual stimuli.

## CHAPTER 3

### METHOD

#### **Participants**

Participants included 216 undergraduate students from a Southeastern university. Participants received credit in their Introductory Psychology course for their participation. Participants were between 18 and 49 years of age ( $M = 20.02$ ,  $SD = 3.68$ ). Most participants were women (146; 68%), with 70 men (32%). Consistent with the population of the university, most participants were Caucasian (114; 53%), with representative numbers of African American (76; 35%), Asian American (4; 2%), and Hispanic/Latino(a) (10; 5%) participants. Additionally, there were 13 (6%) participants who identified as multi-racial or “other.” Regarding marital status, most participants were single (210; 97%), with 5 married (2%), and 2 divorced or widowed (1%). Participants reported living in the university area between less than one month and 32 years ( $M = 2.33$  years). The majority of participants indicated their primary caregiver as both mother and father (139; 64%). There were 36 (17%) raised by mother alone, 2 (1%) raised by father alone, 22 (10%) raised by mother and stepfather, 3 (1%) raised by father and stepmother, and 15 (7%) who reported being raised by “other.” Participants self-identified being from a rural (72; 33%), suburban (112; 52%), or urban area (32; 15%). See Table 1 for demographic information.

#### **Materials**

Participants completed an informed consent form and three questionnaires. Questionnaires included a demographic questionnaire, the Adult Attachment Questionnaire (AAQ), and the Experiences in Close Relationships-Revised (ECR-R).

**Demographic Questionnaire.** The demographic questionnaire provided a better understanding of the sample studied, and included the following information: age, sex, race, participant's caregiver during childhood, and geographic region where the participant was reared (participants self-identified as rural, suburban, or urban). For the purposes of this study, if participants were unable to identify their geographic region, individuals were classified by the researcher based on definitions provided by the United States Department of Agriculture (USDA) or the United States Census Bureau. A geographic region is considered rural when it meets the following qualifications: less than 1,000 people per square mile, less than 50,000 people total, and lands neighboring the metropolis have less than 2,500 people. In the literature, the definition for "suburban" is defined almost interchangeably with "rural." According to the USDA, suburban areas include those which are labor-market areas around urban regions which include 10,000-49,000 people. Furthermore, suburban areas are reliant on urban areas for economic stability and must have either 25 percent of workers commuting to core counties for labor, or employment in the county is derived from 25 percent of employees commuting from core counties (USDA, 1993). Finally, urban is defined according to the United States Census Bureau as consisting of at least 50,000 people, with at least 1,000 people per square mile, and at least 500 people per square mile in surrounding census groups (Census Bureau, 2012).

**Adult Attachment Questionnaire (AAQ; Hazan & Shaver, 1987).** The AAQ is a forced-choice measure of attachment where participants select one of three categories that is the best descriptor of personal attitudes toward relationships. Each of the three descriptions corresponds to one of three attachment styles: secure, avoidant, and anxious/ambivalent (Hazan & Shaver, 1987/1990). Specific psychometric properties for the AAQ were difficult to ascertain, as this measure is part of a multiple part study. However, the AAQ has been shown to be

consistent across time, has acceptable reliability and validity, and appears to be similar to the Relationship Questionnaire and Adult Attachment Scale (Brennan & Shaver, 1998; Chongruska & Thompson, 1996). The AAQ has convergent validity with measures of constructs such as intimacy and commitment, length of relationship, and overall relationship satisfaction (Hazan & Shaver, 1987; Levy & Davis, 1998; Kirkpatrick & Davis, 1994).

**Experiences in Close Relationships-Revised (ECR-R; Brennan, Clark, and Shaver, 1998).** The ECR-R is a 36 -item self-report questionnaire designed by Brennan, Clark, and Shaver (1998), and modified by Fraley, Waller, and Brennan (2000). The ECR and Revised Experiences in Close Relationships (ECR-R) questionnaires attempt to target a general conceptualization of attachment style, rather than a specific current relationship. Factor analysis revealed 18 items (36 questions), which load on two dimensions labeled anxiety and avoidance. Anxiety is considered to involve a fear of rejection or abandonment within the context of an attachment relationship, as well as feelings of despair or stress when separated from the individual. Avoidance includes a fear of intimacy or emotional experience and an increased need for autonomy. Scoring high on either of these two dimensions indicates an insecure attachment style. Likewise, scoring low on both of these dimensions indicates a secure attachment style (Brennan et al., 1998; Wei et al., 2007).

Psychometric properties for the measure are good. Test-retest reliability is as follows,  $r = 0.86$  (Avoidance) and  $r = 0.82$  (Anxiety) (Wei et al., 2007). Internal consistency for the Avoidance and Anxiety subscales are 0.91 and 0.93, respectively (Sibley & Liu, 2004). The ECR demonstrates construct validity as it is positively correlated with measures of constructs such as self-concealment and touch-avoidance, and is negatively correlated with measures of constructs such as self- sufficiency and emotional awareness (Wei et al., 2007). Revisions to wording of the

questionnaire for research purposes are permitted by the originator, and included changing wording from “partner”/“romantic partner” to “caregiver”/ “parent”. Item 7 (“When my parent/caregiver is out of sight, I worry that he or she might become interested in someone else”) and item 2 (“I often worry that my parent/caregiver will not want to stay with me”) were eliminated, as they were not appropriate to the parent/caregiver relationship.

**Picture/Emotion Word Pairings.** In addition, each participant completed a series of 40 images of picture/emotion word pairings. All pictures were selected by the experimenter and consisted of color images related to common positive or negative family oriented scenarios. Picture/word pairings were included in a pilot study to ensure consistency in positive or negative ratings across participants. Additionally, a manipulation check was included as part of the pilot study to ensure participants were responding to pairs based on congruence of positive or negative emotion. Specifically, ten percent of images involved the family unit (e.g., mother, father, and children playing at the park), 17.5 percent included only father and child (e.g., father helping child with homework), 32.5 percent involved only mother and child (e.g., mother scolding child), and 40 percent of pictures included only the child (e.g., child crying). Each picture included an empirically validated positive or negative emotion word extracted from the Positive and Negative Affect Schedule-Expanded Form (Watson & Clark, 1994).

Each image was paired with an emotion word to form a positive, negative, or incongruent pair. The congruent pairs included either positive pictures/positive emotion word pairs or negative pictures/negative emotion word pairs, whereas the incongruent pairs had either a positive picture/negative word, or a negative picture/positive word. All picture/word pairings were randomly selected and counterbalanced such that each category of pictures was paired with each category of words across participants. All images were randomly presented to participants

on a computer screen using E-Prime experimental software (Schneider, Eschman, & Zuccolotto, 2002).

### **Procedure**

This study was conducted in a research lab, allowing up to two participants to complete the task at the same time. Participants were notified of their rights as a participant and received an informed consent form. Upon reviewing and signing the informed consent form participants completed a practice trial which included viewing a series of picture/word pairs on a computer screen, and rating as positive or negative as quickly as possible. Each participant was shown the location of “yes” and “no” keys for their dominant hand (left or right) on the keyboard. Participants raised their hand after completion of the practice trial to notify the researcher to start the formal trial. Instructions for the formal trials were identical to those for the practice trials. Each person viewed an equal number of picture/word pairings, all presented in a randomized order. As participants responded to each pair, reaction times and accuracy were automatically recorded on the computer, and unobservable to the participant. Following completion of the computer task, participants completed the demographic questionnaire, followed by the Experiences in Close Relationships-Revised, The Adult Attachment Questionnaire, and the Likert scale version of The Adult Attachment Questionnaire. Once the questionnaires were completed and collected participants were debriefed and excused.

## CHAPTER FOUR

### RESULTS

#### **Preliminary Analyses**

**Rurality.** Prior to completing analyses to test hypotheses, preliminary t-test analyses were conducted to determine if any differences were discovered between participants who identified as from rural vs. non-rural areas on reaction time and accuracy. No differences between participants from rural areas and those from non-rural areas were demonstrated on any dependent variables. Therefore, all participants were combined during subsequent analyses.

#### **Hypotheses Testing**

**AAQ and Reaction Time.** To assess the relationship between attachment style and picture/word pairings, a 3 (AAQ attachment style: secure vs. insecure anxious/ambivalent vs. insecure avoidant) x 4 (picture/word pairings: positive picture/positive word vs. negative picture/negative word vs. negative picture/positive word vs. positive picture/negative word) mixed-model ANOVA was conducted. There was no significant main effect of AAQ, ( $F(2, 205) = 0.24, p = .786$ ). The main effect of picture/word pair effect approached significance, ( $F(3, 205) = 2.31, p = .077$ ). There was no significant interaction between AAQ attachment style and picture/word pair ( $F(5, 205) = 0.70, p = 0.628$ ). See Table 2 for general ANOVA results. See Table 3 for AAQ group means.

**AAQ and Accuracy.** To examine the relationship between attachment style and picture/word pairings, AAQ Attachment Style (3) x Picture/Word Pair (4) ANOVA on accuracy was conducted. There was no significant main effect of AAQ, ( $F(2, 205) = 0.183, p = 0.258$ ). There was no significant main effect of picture/word pair, ( $F(3, 205) = 0.049, p = 0.986$ ). There

was no significant interaction between AAQ attachment style and picture/word pair ( $F(5, 205) = 1.16, p = 0.329$ ).

**ECR-R and Reaction Time.** In order to create a dichotomous representation of high and low ECR-R respondents (i.e., secure vs. insecure), a median split was conducted on ECR-R, with all participants with an ECR-R mean score of 2.31 ( $n = 210$ ) or higher being assigned to the ECR-R High (Secure) group and all those below 2.31 ( $n = 206$ ) assigned to the ECR-R Low (Insecure) group. To assess the relationship between attachment style and picture/word pairings, a 2 (attachment style: secure vs. insecure) x 4 (picture/word pair type: positive picture/positive word vs. negative picture/negative word vs. negative picture/positive word vs. positive picture/negative word) mixed-model analysis of variance (ANOVA) on reaction time was conducted. There was no significant main effect of ECR-R, ( $F(1, 205) = 0.595, p = 0.442$ ). Results revealed a significant main effect of picture/word pair group alone, ( $F(3, 205) = 4.87, p = 0.003$ ). There was no significant interaction between ECR-R attachment style and Picture/Word Pairing type, ( $F(3, 205) = 0.396, p = 0.756$ ). Post hoc testing revealed that the negative picture/negative word group had significantly longer reaction times than any other picture/word pairs. See Table 4 for general ANOVA results. See Table 5 for ECR-R group means.

**ECR-R and Accuracy.** To examine the relationship between attachment style and picture/word pairings, an Attachment Style (2) x Picture/Word Pair (4) ANOVA on accuracy was conducted. There was no significant main effect of ECR-R, ( $F(1, 205) = 0.649, p = 0.421$ ). There was no significant main effect of picture/word pair, ( $F(3, 205) = 0.033, p = 0.992$ ). There was no significant interaction between ECR-R attachment style and picture/word pair ( $F(5, 205) = 0.054, p = 0.983$ ).



**ECR-R and AAQ Correlation.** To assess the relationship between the attachment measures, a correlation between average ECR-R score and AAQ (Secure vs. Insecure) was conducted, however was not significant ( $r = .009, p = .898$ ).

## CHAPTER FIVE

### DISCUSSION

Why is it important to understand if one can identify positive versus negative images?

The literature suggests that being able to identify the emotional state of one's child leads to better emotional experiences for that child, in turn leading to more secure attachments between parent and child. Such interactions can then help parents' responsiveness and the quality of those responses, perhaps even decreasing the potential for abuse (Leerkes & Siepak, 2006). The manner in which caregivers meet and respond to a child's emotional needs impacts how they perceive and respond to others in the future. This, in conjunction with attachment style, has an influence on future interpersonal relationships as adults, including behaviors, attitudes, expectations, and life satisfaction (Collins & Read, 1990).

In addition to the impact on current and future relationships, attachment and emotional intelligence have implications for career and academic opportunities (Leerkes & Siepak, 2006). The more people know and understand about attachment and emotions, including how they function, form, and maintain, the more productive and beneficial each interaction and experience can be. Specifically, individuals will be able to regulate emotions to stressful experiences, respond more adaptively and appropriately to others, and more accurately identify emotions. While unfortunate events do occur, as mental health professionals and researchers, we can seek to minimize the negative impact of such events, and increase the ability to cope and respond well in future situations.

Hypotheses suggested that attachment style would influence reaction time on the picture/word pairs, with differences based upon congruence or incongruence of the pairs. Specifically, it was hypothesized that people with secure attachments would be able to more

quickly identify all picture/word pairs (identify positive, negative, and incongruent) than those with an insecure attachment, and would be fastest at identifying positive picture/positive word pairs. Those with insecure avoidant attachments were expected to have the slowest overall reaction time for the incongruent category, but not for positive or negative pairings. Additionally, insecure anxious/ambivalent adults were hypothesized to be fastest for negative stimuli, but not for positive or incongruent pairings. Contrary to these hypotheses, overall results revealed no differences between secure or insecure attachment on reaction time. Furthermore, it was speculated that the incongruent picture/word pairs would require longer reaction times for participants; however results indicated that it was not congruence that dictated reaction time, but rather congruent negative pictures and words. Mikulincer and Shaver (2003) proposed an integrative model describing attachment style that aids in the understanding of emotion regulation, and can possibly provide some rationale for these findings. This model utilized attachment-related anxiety or avoidance to better understand an individual's cognitions, emotional responses, and behaviors.

Attachment avoidance and attachment anxiety are seen as existing on a continuum; therefore, an individual's differences are evident regarding degrees of each dimension. Where an individual falls in the insecure attachment realm dictates how he or she responds to stress or emotional situations. Specifically, high avoidance is related to the utilization of deactivating strategies, whereas high anxiety corresponds with hyperactivating strategies. Deactivating strategies include a tendency for an individual to look to his or herself to tackle current psychosocial stressors. Hyperactivating strategies do quite the opposite; an individual places great effort in seeking external support (Mikulincer, Solev, & Shaver, 2004). Perhaps the utilization of attachment strategies (hyperactivation or deactivation) was at work during this

experiment, and compensating for any potential differences related to overall attachment style (secure vs. insecure).

Additionally, it is possible that the picture/word task elicited a novel and cognitively taxing process, and therefore rendering any attachment related strategies less effective. The goal of deactivating strategies in particular is to decrease an individual's vulnerability to potential emotional threat by disengaging cognitively and emotionally from the situation (Mikulincer & Shaver, 2003). However, the more cognitively demanding a task, the less effective the deactivating strategy (Mikulincer, Burnbaum, Woddis, & Nachmias, 2000). More specifically, because the negative picture/negative word pairing had the slowest overall reaction times it is possible that ineffective suppression of personally related negative thoughts regarding relationships or attachment bonds interfered with performance on the computer generated task, regardless of attachment style.

Some considerations for this study include potential limitations in generalizability due to a sample consisting of a college population. Future studies should consider examining attachment style with wider age ranges, include increased demographic variability, and span across numerous settings. While demographic make-up might be limited due to the college sample, a major strength was in the close distribution between secure and insecure attachment styles (AAQ – 59% secure, 41% insecure). More information is needed to determine the potential role of attachment strategies in the identification of emotional stimuli. While this study did not find significant results based on attachment, this could be attributed to the manner in which emotion identification was measured. Follow up studies might consider investigating emotion identification in other ways, such as via emotion recognition ability and/or assessment of nonverbal coding abilities.

This research included several strengths, especially regarding the uniqueness of data collection. While previous research has demonstrated a link between attachment style and emotion identification, the current study sought to explicitly address both attachment and emotions by incorporating a novel reaction time task. Additionally, much of adult attachment literature has emphasized attachment to a romantic partner, whereas this study focused on original attachment to the primary caregiver. Furthermore, this study obtained a large number of participants, with varied attachment styles.

In conclusion, the results suggest that negative emotional states tend to impact our ability to quickly process information. More information is necessary to determine the role of attachment style in this process, however examining the role of hyperactivating and deactivating strategies appears promising. Identifying and understanding an individual's attachment style can assist in understanding how that individual processes and manages emotional information and situations. Such information can assist clinicians in helping client's regulate emotional states and manage anxiety or avoidance-related coping strategies. Furthermore, with this information parents and teachers can feel better equipped to understand the emotional states and needs of their children.

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TABLES

Table 1.

Demographic Information

Sex	Male 70(32%)	Female 146(68%)				
Race	AA 76(35%)	A 4(2%)	C 114(53%)	H 10(5%)	M 13(6%)	
Marital	S 210(97%)	M 5(2%)	D 1(.5%)	W 1(.5%)		
Raised	B 139(64%)	M 36(16%)	F 2(1%)	MS 22(10%)	FS 3(1%)	O 15(7%)
Geo	R 72(33%)	S 112(52%)	U 32(15%)			

Table 2.

AAQ (3) X Picture/Word Pairings (4) ANOVA  
Dependent Variable = Reaction Time

Source	df	F	<i>p</i>
AAQ	2	0.24	.786
Picture/Word Pairings	3	2.31	.077
AAQ X Picture/Word Pairings	5	0.70	.628

Table 3.

Means for Reaction Time Across AAQ

	N	Mean	Std.Dev
Secure	127	1687.73	1345.5
Avoidant	75	1608.25	664.71
AnxiousAmb	14	1681.29	467.11
Total	216	1659.7176	1108.00271

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Table 4.

ECR-R (2) X Picture/Word Pairings (4) ANOVA  
Dependent Variable = Reaction Time

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Source	df	F	<i>p</i>
ECR (Secure/Insecure)	1	0.60	.442
Picture/Word Pairing	3	4.87	.003
ECR X Picture/Word Pairing	3	0.40	.756

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Table 5.

Means for Reaction Time Across ECR-R

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	N	Pairing	Mean	Std.Dev
ECR-R Low	106	Total	1696.70	875.95
ECR-R High	110	Total	1624.08	1296.07
Total	216	Total	1659.72	1108.00

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APPENDIX A  
DEMOGRAPHIC INFORMATION

1. **Age:** \_\_\_\_\_

2. **Sex:** Male Female  
(Circle one)

3. **Race:** African American  
(Circle one) Asian  
Caucasian  
Hispanic  
Multiracial  
Other: \_\_\_\_\_

4. **Marital Status:** Single Married Divorced Widowed  
(Circle one)

5. **Growing up, who raised you?**  
(Circle one) Both biological parents  
Mother only  
Father only  
Mother and stepfather  
Father and stepmother  
Other \_\_\_\_\_

6. **How long have you lived in Statesboro?** (Months and/or years) \_\_\_\_\_

7. **Where did you grow up or live most of your life:**  
(Circle one) Rural area  
Suburban area  
Urban area