Predictors of Father-Child and Mother-Child Attachment in Two-Parent Families

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PREDICTORS OF FATHER-CHILD AND MOTHER-CHILD ATTACHMENT
IN TWO-PARENT FAMILIES

by

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ABSTRACT

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The attachment of a child and his or her caregiver is a bond that helps tie them together emotionally. The most important principle of attachment theory is the need of a child to develop a relationship with at least one primary caregiver for healthy emotional and social development to occur. The majority of attachment research has focused primarily on mother-child attachment, minimizing fathers’ contributions to attachment. The current study examined attachment of both mothers and fathers in two-parent families. Research questions focused on the relationship between mother-child attachment and father-child attachment, the relationship between child temperament and father-child attachment security, and whether the amount of time each parent is away from his/her child predicts attachment security. The participants in this study consisted of 50 sets of parents (100 participants) who had at least one child between the ages of 3-5. The relationship between father-child and mother-child attachment was not significant.
Likewise, the relationship between child temperament and parent-child attachment was not significant. Also, parents’ time away from their child was not a significant predictor of attachment. Further research is needed with more ethnicities and cultures represented; a more balanced sample of economic classes; mothers who work more hours outside of the home; and the use of more impartial, third party observation measures to assess attachment and child temperament.

(74 pages)
PUBLIC ABSTRACT

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Jared Benware, M.S. and Gretchen Gimpel Peacock, Ph.D. at Utah State University examined parent-child attachment in two-parent families. Specifically, the relationship between mother-child and father-child attachment, the relationship between a child’s temperament and parent-child attachment, and the relationship between the attachment and the amounts of time a parent spends away from his or her child. The researchers solicited parents as participants to complete questionnaires that measure parent-child attachment and the temperament of their child. This study focused especially on providing more information on the connection between father-child attachment and mother-child attachment rather than focusing only on mothers as the primary attachment figure or fathers as supplemental attachment figures to mothers.
I would like thank my committee chairperson, Dr. Gretchen Peacock, for the countless hours and support she invested in this project. I also would like to thank my other committee members, Dr. Donna Gilbertson, Dr. Clint Field, and Dr. Scott DeBerard, for their expertise and knowledge that they have shared with me during my graduate school experience at Utah State University. I would also like to thank my wife, Merilee, for her inspiration and for always believing in me.

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CHAPTER I
INTRODUCTION

Out-of-home care for children has become more common as the number of mothers in the workforce increases. With this in mind, some parents may face a decision as to whether or not to place their child in non-parental daycare. Some parents are opposed to placing their child in the hands of others for several hours a day and will make adjustments necessary to have a parent at home with the child. Some parents believe they can be the most effective parent by continuing to work outside the home and have fewer concerns about placing their child in out-of-home care. Other parents may not have the option to decide whether or not to work outside the home because their financial situation does not allow a parent to stay home to care for the child. One possible reason why this choice is even a question for some parents is because of psychological theories regarding parent-child attachment.

The attachment of a child and his or her caregiver is a bond or tie that helps bind them together emotionally. For the child, these emotional connections are based on the need for safety and security, which are essential in infancy and young childhood. The most important principle of attachment theory is that a young child needs to develop a relationship with at least one primary caregiver for healthy social and emotional development to occur. Without this attachment, the child is at increased risk for psychological and social difficulties (Cassidy, 1999).

Attachment theory was formulated by John Bowlby (1958) in an attempt to discredit popular notions of psychoanalytic therapists that infants loved their mothers
solely because they provided oral gratification. A colleague of Bowlby, Mary Ainsworth, devised the Strange Situation procedure that helped evaluate the type of attachment style infants had with their mothers. In this procedure, the child is observed playing for an extended period of time while the primary caregiver and a stranger enter and exit the room. The child's responses are observed and coded when the primary caregiver enters and exits the room.

Ainsworth and others’ (1978) identified several attachment styles in their study which utilized the Strange Situation procedure (Ainsworth, Blehar, Waters, & Wall, 1978). Sixty-five percent of the children in this study showed a secure attachment style. These children showed distress upon separation from their mother, but greeted her happily upon her return. Once reassured, they continued to explore their environment. Twenty percent of the sample showed an avoidant style. These children did not cry upon separation and they avoided and ignored their mother when reunited. Ten percent of the children exhibited an anxious-ambivalent attachment style. These children were quite distressed upon separation from their mother. When reunited they acted angry and alternately approached and resisted their mother. They were also preoccupied with their mother and rarely returned to exploration. The remaining 5% showed uncategorized behaviors, which later were recognized as another attachment style—disorganized-disoriented. These children showed contradictory behaviors; they approached the mother when distressed and avoided her when the mother approached them (Main & Solomon, 1986).
The early work of Bowlby and Ainsworth has helped researchers describe and measure attachment styles in children. There has been extensive research conducted over the past 40 years focusing on the attachment styles of infants and toddlers and the behaviors they exhibit in situations designed to measure attachment, such as the Strange Situation procedure (e.g., Bowlby, 2007; Field, Stoller, Vega-Lahr, Scafidi, & Goldstein, 1986; Kearsley, Zelazo, Kagan, & Hartmann, 1975; Melhuish, 1987; Pool, Bijleveld, & Tavecchio, 2000).

Maternal characteristics, including maternal psychopathology and stress, have been evaluated in relation to attachment in children (e.g., Caveney-Pote, 2008; Macfie & Swan, 2009; Rubin, Both, Zahn-Waxler, & Cummings, 1991; Schechter & Willheim, 2009; Wan & Green, 2009). Associations have been shown between maternal depression and insecure mother-child attachments (e.g., Rubin et al., 1991). Insecure mother-child attachments have also been associated with maternal post traumatic stress disorder (Schechter & Willheim, 2009), borderline personality disorder (Macfie & Swan, 2009), and schizophrenia (Caveney-Pote, 2008).

In addition to evaluating how maternal characteristics influence attachment, the traits of the child have been examined in terms of their role in the formation of attachment style (e.g., Bost, Eunsil, & Wong, 2010; Calkins & Fox, 1992; Laible, Panfile, & Makariev, 2008; Melhuish, 1987; Szewczyk-Sokolowski, Bost, & Wainwright). For example, Melhuish’s study showed that 76% of children considered as having an easy temperament showed little concern when separated from their parent in a Strange Situation procedure, whereas 50% of difficult children showed marked concern at
separation (Melhuish, 1987). Similarly, Calkins and Fox (1992) identified a significant association between attachment style and level of inhibition shown by the child. Specifically, children with insecure attachment styles had higher levels of inhibition compared to children with secure attachment styles.

Researchers have also studied the interaction between attachment and environmental factors (e.g., De Schipper, Tavecchio, & Van Ijzendoorn, 2008; Field et al., 1986; Melhuish, 1987; Pool et al., 2000; Sagi, Koren-Karie, Gini, Ziv, & Joels, 2002). Melhuish (1987) concluded that non-parental daycare (relative, babysitter, daycare agency) is not associated with damaging emotional effects for a child overall. However, not having stable daycare settings—the same caregiver consistently—was associated with an insecure attachment style. Pool and colleagues (2000) centered their study on the peer environment of daycare settings and how it affects the emotional development of the child. Their findings revealed that children in daycare groups that included children in the same age group had higher attachment scores compared to children in groups with a wider age range. Field and colleagues (1986) evaluated maternal behaviors and attachment-related behaviors shown by infants. Their findings demonstrated that mothers who stayed at home with their child full-time made more exaggerated facial expressions, vocalizing, and touched their infants more than the mothers who had their infants in daycare. The infants who had a mother at home full-time displayed more motor activity and distress brow behavior—behaviors indicative of attachment—when left alone compared to the infants in daycare. The researchers suggested that the home care infants showed
more distress during separation due to the fact their mothers touched them and displayed more exaggerated emotions (Field et al., 1986).

As illustrated from the findings of these studies, much of past research regarding parent-child attachment has focused primarily on mother-child attachment. While this focus has dominated research, there have been some studies that have focused on father-child attachment (e.g., Ainsworth, 1967; Fletcher, 2009; George, Cummings, & Davies, 2010; Goodsell & Meldrum, 2009). Findings focusing on father-child attachment show that children with mothers who have depression or other psychopathology are still capable of forming a secure attachment with their father and/or their mother when fathers provide support and take on the care giving duties (Fletcher, 2009). Studies have also documented that children with a secure attachment to their mother are more likely to have a secure attachment with their father (Ainsworth, 1967; Goodsell & Meldrum, 2009). George and colleagues (2010) showed that a child can exhibit an independently classified attachment style with his/her father and mother. For example, their results showed that less responsive parenting by both mothers and fathers was related to insecure attachment. However, low paternal responsiveness was linked with avoidant attachment, while low maternal responsiveness was associated with an anxious-ambivalent style (George et al., 2010).

It is proposed that this study will extend the tradition of past research in this field, with the major research question asking what factors lead to particular attachment styles in children. However, this study will also help provide additional information on father-child attachment in functioning, two-parent families. The parent-child relationship will
also be explored in the context of mothers in and out of the home. Parents may interact differently with their child when the mother works full-time compared to scenarios where the mother of the child stays at home full-time.

The following research questions will be addressed in the proposed study:

1. What is the relationship between father-child attachment and mother-child attachment?

2. What is the relationship between child temperament and parent-child attachment security?

3. Does the amount of time each parent is away from his/her child (e.g., working, attending school) predict attachment security?
Parent-child attachment has shown to be important for the emotional development of a child (Berlin, Cassidy, & Appleyard, 2008; Bretherton & Munholland, 1999; Pearce & Pezzot-Pearce, 2007). A majority of attachment studies have looked at the mother-child attachment process and the factors that affect development. Father-child attachment has often been overlooked. The following literature review will focus on attachment theory, details surrounding mother-child attachment, and research focused on father-child attachment.

**Attachment Theory**

Parent-child attachment is an emotional bond or tie between an infant and his or her primary caregiver. For the child, these emotional connections are based on the need for safety and security, which are essential for the child to thrive in infancy and young childhood. A critical principle of attachment is that a young child needs to develop a relationship with at least one primary caregiver for healthy social and emotional development to occur. Without this, the child is at increased risk for psychological and social difficulties (Cassidy, 1999). Typically, any adult can meet the child’s needs at first, but gradually infants begin to discriminate and respond differently to unfamiliar adults. By about six or seven months of age, infants make active attempts to maintain contact with their primary caregiver(s) (Schroeder & Gordon, 2002). By the end of the child’s first year, the primary attachment figure (usually a parent) is the child’s main source of
comfort when distressed and is also used as a “secure base” from which the child ventures out to explore the world (Waters & Cummings, 2000).

Two pioneers in attachment theory were John Bowlby and Mary Ainsworth. Bowlby, who is credited as being the “father of attachment theory” (Broderick & Blewitt, 2009), devised attachment theory in an attempt to combat contemporary ideas of psychoanalytic therapists that infants loved their mothers solely because they provided oral gratification. Bowlby sought to develop the theory using behavioral and evolutionary principles instead of the popular psychodynamic model made famous by Sigmund Freud. Bowlby (1958) first discussed attachment theory in his paper, *The Nature of a Child’s Tie to His Mother*. This paper was included in Bowlby’s (1969, 1973, 1982) first of three volumes of what is considered to be the classic model on attachment theory, entitled *Attachment and Loss*.

The early work of Bowlby helped Ainsworth to form and research basic tenets of attachment theory in the 1960s and 1970s, such as a secure base and attachment patterns, concepts which were discussed by Bowlby (1953) in *Child Care and the Growth of Love*. Ainsworth’s early research in Scotland and Uganda focused on infant-parent interactions during a child’s first year of life. This early research was published in 1967 in a book entitled *Infancy in Uganda*. After working and conducting research in the United Kingdom and Africa, Ainsworth returned to the United States where she created an assessment to measure attachment. This measure, the Strange Situation procedure, is still considered the gold standard of attachment assessment today.
Measurements of Attachment

Two common measures that are used in attachment research are the Strange Situation procedure and the Attachment Q-Sort (AQS). Each of these measures is briefly described in this section.

The Strange Situation

In the Strange Situation procedure, which is probably the most commonly used measure in attachment research, the child is observed playing for a period of time in an unfamiliar, but nonthreatening room while the caregiver and a stranger enter and leave the room. The child's responses are observed when the primary caregiver enters and exits the room.

Ainsworth helped to advance attachment research by implementing the Strange Situation procedure in her 1978 study (Ainsworth et al., 1978), to evaluate the type of attachment style infants had with their mothers. Ainsworth designed the procedure for infants between the ages of 12-18 months. Ainsworth chose this age range because younger children usually have not selectively attached to a specific caregiver and may not be able to crawl to their caregiver in times of stress, whereas older children may not be stressed enough by the procedure (Ainsworth et al., 1978).

The procedure uses eight different episodes or scenarios the child faces. The first episode consists of the mother, child, and the observer. The observer simply introduces the mother and child to the experimental room and then leaves the area. The second episode consists of the mother as a nonparticipant (but in the room), watching her child
play and explore the room for 3 minutes. The third scenario introduces a stranger (not the observer) to the room. For the first minute the stranger is silent. During the second minute the stranger converses with the mother. During the third minute the stranger approaches the child while in play. After 3 minutes the mother suddenly leaves the room and goes to the observation room. The fourth scenario is the first separation episode. Here, the child is alone with the stranger for 3 minutes or less depending how distressed the child may be. The stranger tries to play with the child and gears her behavior toward the child.

The fifth episode has been called the first reunion episode. This episode consists of the mother and child. The mother re-enters the room, greets, and if needed, comforts the baby. The mother then tries to re-involve the child in play. After 3 minutes or more, depending on how long it takes to get the child comfortable playing again, the mother leaves the room again. The sixth episode is the second separation episode and consists of the baby alone in the room for 3 minutes or less depending on how distressed he/she is. For the seventh episode, the stranger enters the room once more and tries to interact and play with the child for 3 minutes or less, depending on the child’s stress level. The final scenario, or the second reunion episode, sees the mother enter the room again and pick up her baby. The stranger leaves the room at this point (Ainsworth et al., 1978).

Ainsworth and colleagues (1978) observed 106 infants, approximately 1 year old, and their mothers. The participants were all white, middle-class, Baltimore-area families, who were contacted through pediatricians. Ainsworth and her colleagues used six behavioral variables as a method for scoring their observations during the Strange
Situation episodes. These variables were proximity and contact seeking, contact maintaining, resistance, avoidance, search, and distance interaction.

The proximity and contact seeking variable refers to the degree an infant shows physical contact with his/her caregiver. For example, a high score would result from the infant purposefully approaching the caregiver by crawling or walking, whereas a low score would result from a child who was playing or crying and did not make contact with the caregiver. The contact maintaining variable refers to the physical contact the child maintains with a person once that contact is achieved. The highest score in this category would be given when an infant maintains contact with the adult for more than two minutes and shows at least two instances of resistance when contact is stopped. Resistance behaviors include a child pushing his/her mother away, squirming from contact, or rejecting toys from the mother. The highest score for this category is given when the child shows two or more of the following behaviors: repeated hitting; resistance to being held; exhibiting a temper tantrum; and repeated pushing away, throwing down, or hitting toys that are offered. Avoidance behaviors shown by an infant include actively steering clear of the mother in a reunion episode. This includes the infant paying little or no attention to the mother even when she picks up the infant and tries to engage him or her. The search variable consists of the amount of crying and searching the child exhibits for his or her mother upon separation. The highest score is given here when the child goes to the door within 45 seconds of the caregiver leaving and remains there for at least 30 seconds. Distance interaction refers to the degree a child interacts with his/her mother from a distance, including smiling or showing toys, with his or her mother from a
distance. The highest score is given when the child establishes an interaction with his or her caregiver for at least 45 seconds, the child shows the caregiver a toy at least twice during an episode, or the child pauses and attends to what the adult is saying for at least 45 seconds (Ainsworth et al., 1978).

From these Strange Situation observations, Ainsworth was able to categorize the infants into three different attachment groups. These groups were later given labels, which were termed, *secure, avoidant,* and *anxious-ambivalent* (Ainsworth et al., 1978).

Sixty-five percent of the children in Ainsworth’s study (Ainsworth et al., 1978) showed a secure attachment style. These children showed distress upon separation from the mother, but greeted her happily upon return. Once reassured, they continued to explore their environment. Twenty percent of the sample showed an avoidant style. These children did not cry upon separation and they avoided and ignored their mother when reunited. Ten percent of the children exhibited an anxious-ambivalent attachment style. These children were quite distressed upon separation. When reunited they acted angry and alternately approached and resisted their mother. They were also preoccupied with their mother and rarely returned to exploration. The remaining 5% showed uncategorized behaviors, which later were recognized as another attachment style—*disorganized-disoriented*, so named by Mary Main. These children showed contradictory behaviors; they approached the mother when stressed and avoided her when the mother approached (Main & Solomon, 1986).

The Strange Situation procedure has strong ecological validity based on a meta-analysis completed by Van Ijzendoorn and Kroonenberg (1988). They analyzed data
consisting of 2,000 infant-parent dyads over 32 studies, including studies with non-Western language and/or cultural bases and found the global distribution of attachment categorizations to be: secure–65%, avoidant–21%, and anxious-ambivalent–14%. This distribution is consistent with Ainsworth’s original study of 65%, 20%, and 10%, respectively (Van Ijzendoorn & Kroonenberg, 1988). Main, Kaplan, and Cassidy (1985) concluded that the Strange Situation procedure possesses strong reliability. They studied six-year-old children who had been part of a Strange Situation procedure at one year old. The correlation between security of attachment to the mother at one year and the security of attachment to mother at six years old was $r = .76, p < .001$ (Main et al., 1985).

Although the Strange Situation procedure was originally devised for infants, it has been adapted for kindergarten age children (George et al., 2010). George’s version of the procedure followed a format similar to Ainsworth’s original procedure, except that only one separation period was employed, which lasted 55 minutes followed by a five minute reunion. Children with a secure attachment showed comfort, pleasure, and the ability to continue playing in the presence of the parent. Children with an avoidant attachment maintained or increased emotional and/or physical distance from the parent when reunited. Children with an anxious-ambivalent attachment seemed to exaggerate intimacy, dependency, and helplessness with the parent upon reunion. The breakdown of attachment styles in this study was somewhat similar to the classification in the Ainsworth study (Ainsworth et al., 1978): 55% of children displayed a secure attachment, 19% showed an anxious-ambivalent style, 13% displayed an avoidant style, and 13% had a disorganized attachment.
Attachment Q-Sort

Waters and Deane (1985) developed the AQS to measure children’s attachment behaviors. A range of exploratory behavior, social referencing, and other aspects of social behaviors are observed using the measure. The observer has a Q-set, or cards, that make reference to specific behaviors. After observing the child, the observer sorts the cards into three different piles (descriptive of the child, not descriptive of the child, neither/cannot judge). Each of the three piles is then further divided into three more piles for a total of nine piles. The items listed on the cards are assigned to categories in terms of their relevance to the child being described. Items that are more characteristic of the child are given high placements (piles 7-9), and items that are less characteristic of the child are placed in the low categories (piles 1-3). Items that are neither characteristic nor uncharacteristic of the child and/or items that are not observed are sorted to the center of the distribution (piles 4-6). The measure includes 90 items, which are sorted into nine categories of ten items each, and is designed for children ages 1-5 years. The observer compares the resulting description with the behavioral profile of a typically secure child as provided by experts in the field of attachment theory. The resulting attachment score is the correlation between the Q-sort of the child being observed and that of the typically secure child. In this case, the score can range from -1.0 to +1.0, with a +1.0 score indicating the child exhibits exactly the same attachment-related behaviors of a securely attached child. However, this is no cutoff score dividing secure children from insecure children (Waters & Deane, 1985).
The AQS itself has shown moderate convergent validity with the Strange Situation procedure with a .50 correlation between AQS security scores and Strange Situation security (Vaughn & Waters, 1990). Data on reliability of the AQS is limited, but it has been shown to have modest stability estimate for the first 5 years of life ($r = .28$; Van Ijzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004).

**Other Measures of Attachment**

In addition to the Strange Situation procedure and the AQS that are typically used for infants, other methods of assessing attachment in toddlers and older children have been used including paper-and-pencil measures, interviews, and projective measures. A number of attachment measures have been created for a particular study and are not commonly used, which limit the psychometric data of these measures.

The Attachment Q-Sort Questionnaire (AQSQ; Vaughn & Waters, 1990) consists of 12 items that discriminate between secure and insecure attachment. The items ask parents about their child’s behaviors rather than having the parents or others observe the child directly. The 12 items are rated on a 9-point Likert scale with behavioral descriptions that correspond to the AQS.

The Cassidy-Marvin System (Cassidy & Marvin, 1987, 1992) is a categorical classification system for preschool children aged 3-4. It is a modification of the Strange Situation procedure and uses a seven-point avoidance scale and a nine-point security scale determined by an observer. The child’s behavior during reunion is classified as secure, avoidant, ambivalent, controlling/disorganized, and insecure/other.
The Disturbances of Attachment Interview (Smyke & Zeanah, 1999) is a semi-structured interview that covers 12 items that measures a child’s preference for an adult for care, seeking comfort when distressed, responding to comfort when offered, social and emotional reciprocity, emotional regulation, checking back after venturing away from the caregiver, shyness toward an unfamiliar adult, willingness to go off with relative strangers, and excessive clinging. This method was designed specifically to detect the presence of Reactive Attachment Disorder.

The Separation Anxiety Test (Klagsbrun & Bowlby, 1976) is a semi-projective test designed to assess separation and attachment in children aged 4-7 years. Children are presented with pictures consisting of mild and severe separation scenarios. The child is asked how they would feel if they were placed in these scenarios themselves. Responses are scored based on emotional openness, coherence, anger, pessimism, and blame.

The Adult Attachment Interview (Main, Goldwyn, & Hesse, 2002) is semi-structured interview that allows adults to recall their early experiences with their primary attachment figures, with a focus on times of separation and illness. The adult is rated on a nine-point scale for security. The adult is classified as secure, dismissing, preoccupied, or unresolved based on their overall thoughts and responses. While the Strange Situation and the AQS are often thought of first when measuring attachment, these measures require a lot of time to administer, making their use difficult when collecting data from larger numbers of participants. Paper and pencil measures like the AQSQ may be more practical than the original AQS or observing children in a Strange Situation. Paper and pencil measures also tend to be more convenient for parents because they can complete
them at their own pace rather than taking a day to visit a testing or research center to have their child observed.

**Maternal Contributions to Attachment**

Maternal characteristics, including maternal psychopathology and stress have been evaluated in relation to mother-child attachment (e.g., Caveney-Pote, 2008; Macfie & Swan, 2009; Rubin et al., 1991; Schechter & Willheim, 2009; Wan & Green, 2009). For example, Hipwell, Goosens, Melhuish, and Kumar (2000) observed infants at one year whose mother required in-patient observation for mental health disorders such as Major Depressive Disorder, Bipolar Disorder, Manic Disorder, or Schizoaffective Disorder. Another group of infants whose mothers were diagnosed with Major Depressive Disorder on an outpatient basis were also observed. Sixty-eight percent of infants who had mothers diagnosed with Major Depressive Disorder (the in-patient and outpatient groups combined) showed behaviors that indicated an insecure attachment. Furthermore, 36% of infants across the in-patient and outpatient groups showed a disorganized attachment style (Hipwell et al., 2000).

Insecure mother-child attachments have also been associated with maternal Borderline Personality Disorder (Macfie & Swan, 2009). Macfie and Swan used a sample of 30 children, aged 4-7, whose mothers had been diagnosed with Borderline Personality Disorder along with 30 normative comparisons. Macfie and Swan sought to assess representations of mother-child attachment by using the Attachment Story Completion Task (ASCT; Bretherton, Ridgeway, & Cassidy, 1990). The ASCT story stems were
designed to elicit responses from children concerning the parent-child relationship in stressful situations, such as when a child spills juice or when a child gets hurt. The stems were broken down into three major composite categories—Caregiver-Child Relations, Self-Representations, and Emotional Regulation. When compared to the control group, children with mothers who had been diagnosed with Borderline Personality Disorder told stories that contained more fear of abandonment, more negative mother-child relationship expectations, more shameful representations of the self, and poorer emotion regulation indicated by more confusion of boundaries between fantasy and reality. Macfie and Swan (2009) conducted correlations between maternal borderline features and child maladaptive narrative composites. They found significant correlations between Identity Disturbance and Child-Caregiver Relations ($r = .30, p < .05$), Identity Disturbance and Emotional Regulation ($r = .42, p < .01$), Negative Relationships and Emotional Regulation ($r = .35, p < .01$), Self-Harm and Child-Caregiver Relations ($r = .26, p < .05$), Self-Harm and Self-Representation ($r = .26, p < .05$), and Self-Harm and Emotional Regulation ($r = .25, p < .05$) (Macfie & Swan, 2009).

Schechter and Wilheim (2009) sought to see if a connection existed between maternal Post Traumatic Stress Disorder (PTSD) and insecure attachments with their children, specifically secure base distortions. Behaviors exhibited by children with secure base distortions range from aggression toward the caregiver and self-endangering behavior to hyper-vigilance toward the caregiver (Schechter & Willheim, 2009). Seventy-six mothers and their children, who ranged in age from 12-48 months, were grouped into clinical and control samples. The clinical sample consisted of mothers who were
diagnosed PTSD and the control sample contained mothers without the diagnosis. Mothers were assessed for PTSD using the Clinician Administered PTSD Scale and Posttraumatic Symptom Checklist-Short Version. Secure base distortions were assessed in children using the Disturbances of Attachment Interview. All of the children who met criteria for secure base distortions had a mother who had a diagnosis of PTSD. Severity of maternal PTSD was significantly associated with the number of secure base distortion criteria met on the Disturbance of Attachment Interview, with roughly one third of the variance of secure base behavior accounted for by severity of maternal PTSD ($F = 32.81$, $R = .30$, $p < .001$) (Schechter & Willheim, 2009).

**Child’s Temperament and Attachment**

In addition to evaluating how maternal characteristics influence attachment, the temperament of the child has been examined in terms of its role in the formation of attachment (e.g., Bost et al., 2010; Calkins & Fox, 1992; Laible et al., 2008; Melhuish, 1987; Szewczyk-Sokolowski et al., 2005). For example, Melhuish (1987) concluded that children with difficult temperaments showed significantly fewer signs of pleasure around a stranger when left by their mother in a Strange Situation procedure when compared to children with easy temperaments. Specifically, 76% of 18-month-old children considered to have an easy temperament showed little concern at separation from their mother and when approached by a female stranger, whereas 50% of difficult children showed marked concern at separation (Melhuish, 1987).
Similarly, Calkins and Fox (1992) found a significant association between attachment style and level of inhibition shown by children, which was characterized by close proximity to the mother during free play, and the lack of vocalization or crying when a stranger approached. Calkins and Fox (1992) observed 52 infants at 2 days old, with follow-up observations at 5, 14, and 24 months of age. Temperament was assessed at 2 days and 5 months old. Attachment and behavioral inhibition was assessed for at 14 and 24 months of age, respectively. Results showed that children with insecure attachment styles had higher levels of inhibition compared to children with secure attachment styles. For example, insecure infants were more likely to cry when their pacifier was taken away compared to secure infants ($x^2 = 4.36, p < 03$). Also, mother’s ratings of their infants’ level of social fear were positively related to the infants’ scores on the index of inhibition ($r = .38, p < .01$; Calkins & Fox, 1992).

Szewczyk-Sokolowski et al. (2005) also studied the interaction between temperament and attachment. Szewczyk-Sokolowski and her colleagues had mothers ($N = 98$) complete a modified version of Infant Characteristics Questionnaire (ICQ) to assess child temperament. The measure was adapted for older children of preschool-age. Child attachment was assessed using the AQS during two home visits. Szewczyk-Sokolowski found that children who were rated by their mothers as having a difficult temperament received lower AQS security scores than children who were rated as having an easier temperament ($r = -.33, p < .01$; Szewczyk-Sokolowski et al., 2005).
The Role of Environment in Attachment

Researchers have also looked at the type of environment a child is in and how that affects attachment style (e.g., De Schipper et al., 2008; Field et al., 1986; Melhuish, 1987; Pool et al., 2000; Sagi et al., 2002). The child’s environment consists of where he/she primarily spends his/her time and the conditions of those surroundings, whether they are at home with parents, with a friend or relative, or at a formal daycare center.

The Melhuish study (1987) also examined the emotional behavior and cognitive development of children at 18 months of age, as a result of daycare experience, temperament, and gender. Melhuish used the results of a longitudinal study that focused on the emotional effects and attachments of first-born children who are placed in non-parental care such as care from a relative, babysitter, or nursery and compared those groups to parental care–women who did not return to employment after having their child. Data from this study were direct observations of emotional behavior of children at 18 months, parental interviews, and questionnaires that specifically rated the child’s temperament. The Strange Situation procedure was used to measure attachment of children. Melhuish concluded that all types of non-parental daycare (relative, babysitter, daycare agency) are not generally associated with insecure mother-child attachments. Melhuish believed this to be the case due to the early start the children were placed in daycare–seven to nine months of age (Melhuish, 1987).

Pool et al. (2000) centered their study on the peer environment of daycare settings and how it affects the emotional development of the child. They assessed the parent-child attachment relationships of 45 children (24 boys and 21 girls), ranging in age from 2 to 6
years old. The study compared the parent-child attachment of children who are in a mixed-age daycare setting to children in a same-age daycare environment. It is important to note that the mixed-age group did not have an age difference of more than two years. Another important group that was studied is one in which children had experienced a change in their daycare centers and the effect that had on the child’s attachment to their primary caregiver.

The attachment relationships were measured by observers using the AQS. Pool and others’ (2000) hypothesis was that children in the mixed-age groups would form more secure attachments than children who are in same-age daycare settings due to the proposed stability of mixed-age groups and the stability of their caregivers. However, the results revealed just the opposite—the same-age groups had the highest average attachment score—.42, compared to .28 for mixed-age groups and .32 for the change of daycare groups (Pool et al., 2000).

Field et al. (1986) conducted a study that centered on infants and the separation distress they displayed in home care environments compared to daycare settings. The sample in this study consisted of 92 four-month-old infants and their middle class, college-educated mothers with an average age of 26. Half of the sample had received three months of continuous daycare at a university laboratory nursery 40 hours a week with a 1:4 teacher-to-infant ratio and an enrichment curriculum. The other half received three months of continuous home care from their mothers.

The infants were exposed to five different experimental conditions that included animated face-to-face interaction and still-face postures exhibited by their mother, as well
as the mother alternately entering and leaving the room. The results showed that the home care mothers made more exaggerated facial expressions ($p < .05$), vocalizing ($p < .05$), and they touched their infants more ($p < .01$) than the mothers who had their infants in daycare. The home care infants displayed more motor activity and distress brow behavior, behaviors indicative of attachment, compared to the infants in daycare. It is also important to note that mothers in the home care group touched their infants more during the first reunion and the home care infants gazed away from their mothers more than daycare infants did during the first reunion. Field et al. (1986) pointed out that the home care infants showed more distress during separation and the still-face moment due to the fact their mothers touched them and displayed more exaggerated emotions (Field et al., 1986).

**Fathers’ Role in Attachment**

As noted earlier, much of the research regarding parent-child attachment has focused primarily on mother-child attachment. Research has generally shown that mothers and fathers play different roles in the raising of children. Mothers have shown to take on more of a caregiver role while fathers tend to exhibit more of a play role with children (Bretherton, Lambert, & Golby, 2005; Paquette, 2004; Parke & Burielm, 2006). This might explain why much of the research in attachment theory has focused more on the mother-child relationship. While mother-child attachment studies have made up the majority of prior research, there have been some studies that have looked at fathers’ role in attachment (e.g., Brown, McBride, Shin, & Bost, 2007; Caldera, 2004; Field et al.,
1984; George et al., 2010; Goodsell & Meldrum, 2009). Although Bowlby (1958) suggested a hierarchy of attachment figures in children’s lives, he believed that children were at least capable of forming attachments to non-maternal figures, especially fathers. This claim was supported by early attachment work revealing that many infants are likely to be distressed upon separation from either parent (Field et al., 1984).

Brown et al. (2007) observed 46 children (21 girls and 25 boys) between the ages of two and three, and their fathers in their home setting. Observations, interviews, and the AQS were utilized to measure interactions and forms of father involvement with their children. Brown and his colleagues found that fathers who engaged in positive parenting behaviors, such as having a positive affect, had no effect on attachment security. On the other hand, when fathers did not engage in these forms of parenting, father involvement was detrimental to father-child attachment security. This relationship was illustrated by the significant interaction between father involvement and positive affect to predict father-child attachment security ($\beta = .40$, $F$ change $= 5.96$, $p < .05$) In other words, father involvement was associated with lower attachment security when fathers showed low levels of positive affect during father-child interactions. When fathers showed high levels of positive affect, involvement was unrelated to attachment security (Brown et al., 2007).

Caldera (2004) observed 60 fathers and mothers and their 14-month-old infants using questionnaires and the AQS. Caldera found that a significant predictor of father-child attachment security was fathers’ involvement in care giving activities such as feeding, dressing, and diaper-changing, $F (1,55) = 5.10$, $p < .05$. Paternal engagement in play and reading, as well as nurturing child-rearing attitudes was not significant
predictors of father-child attachment security. Caldera also found that father-child attachment security was significantly related to mother-child attachment security \((r = .48, p < .001; \text{Caldera, 2004})\).

George et al. (2010) showed that children can develop a separately classified insecure attachment style when both the father-child and mother-child relationship yields an insecure attachment. Their sample included 236 fathers, mothers, and kindergarten age children. They studied family process characteristics, such as parental warmth toward the child, parental responsiveness to the child, and the child’s attachment to his/her father and mother. Their results showed that less responsive parenting by both mothers and fathers was related to insecure attachment. Specifically, logistic regression models supported an increased likelihood of children being classified as anxious-ambivalent (to their mother) based on the mother’s level of responsiveness when compared to secure a classification \((\beta = -.67, p < .05)\). Low paternal responsiveness increased the likelihood of an avoidant father-child attachment when compared to a secure classification \((\beta = -.78, p < .05)\). It was also shown that mothers’ parenting behaviors did not influence the father-child attachment and vice versa (George et al., 2010).

**Summary**

As illustrated from these studies, there have been a number of studies that have focused on child attachment. Attachment theory dates back to 1958 when John Bowlby first made mention of it in his paper, *The Nature of a Child’s Tie to His Mother*. Studies since then have focused on the details affecting child attachment, such as parental
contributions, child temperament, and the role of the child’s environment. For example, maternal psychopathology has been shown to affect parent-child attachment, often resulting in insecure attachment styles. Efforts have been made to better evaluate attachment in the parent-child relationship by creating measures, such as the Strange Situation procedure and the AQS.

Even with several established measures and a number of studies confirming the multiple components of attachment theory, a majority of research have looked at mothers with few studies concentrating on fathers’ involvement in the attachment process. However, there have been some studies that have focused on father-child attachment.

Consistent with mother-child studies, studies emphasizing fathers generally have focused on children between 1-5 years old. Also, consistent with mother-child research, researchers have found that when fathers engage in care giving activities such as feeding, dressing, and diaper-changing, father-child attachment security is much more likely to occur. Additionally, it has been noted that the parenting behaviors of one parent do not influence the other parent’s attachment with the child and that a child’s attachment with one parent forms independently of the other.

The current study will attempt to not only continue to focus on factors that lead to certain parent-child attachment styles, but will also try to provide further information on how fathers fit into the picture of parent-child attachment. Specifically, father-child attachment will be addressed in connection with mother-child attachment rather than independently or as a supplement to mother-child attachment.
CHAPTER III

METHOD

Participants

The participants in this study consisted of 50 sets of parents (100 participants) who had at least one child between the ages of 3-5. The eligibility criteria consisted of parents (step-parents and parents of adopted children included), of at least one child, who had lived with the parent since the child was born. The final sample consisted entirely of biological parents, however.

The ethnic formation of the sample was almost entirely Caucasian (99%), with one parent reporting to be Hispanic. The average age of mothers in the sample was 32 with a range of 24-39, while fathers’ average age was 33 with a range of 26-40. Sixty-two percent of mothers had completed a college degree (associates, bachelors, or masters), while 66% of fathers held a college degree. The majority of the sample (86%) reported an annual household income greater than $40,000. Twenty-eight percent of mothers reported receiving counseling and/or medication for mental health concerns while 14% of fathers reported receiving such services. Twenty-eight percent of the children were in daycare at the time the study was completed. The average number of children in the home was three. Complete demographic information is provided in Table 1.

Measures

Participants completed a survey to obtain demographic information (Appendix C)
### Table 1

**Demographic Characteristics**

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender of the child</strong></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>54</td>
</tr>
<tr>
<td>Female</td>
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<td>46</td>
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<td>Three</td>
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<tr>
<td>Four</td>
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</tr>
<tr>
<td>Five</td>
<td>10</td>
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<table>
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</tr>
<tr>
<td>2</td>
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<tr>
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<td>4</td>
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<td>5</td>
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</tr>
<tr>
<td>6</td>
<td>1</td>
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<table>
<thead>
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<th><strong>Child currently in daycare</strong></th>
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</thead>
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</tr>
<tr>
<td>Home care</td>
<td>36</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Mother’s ethnicity</strong></th>
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</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Father’s ethnicity</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>49</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Mother–counseling/medication</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>14</td>
</tr>
<tr>
<td>No</td>
<td>36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Father–counseling/medication</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>7</td>
</tr>
<tr>
<td>No</td>
<td>43</td>
</tr>
</tbody>
</table>

(continued)
as well as information specific to the research questions. In addition to the information presented previously, the survey asked each parent to specify, in 6-month increments, what his/her typical daily activities included, such as how many hours are spent working at a job, in school, or some other activity that takes the parent away from his/her child over the course of the child’s life. The overall amount of time spent away from the child for each parent was quantified into one number for the purpose of data analysis.
The measure of attachment utilized in this study was a questionnaire derived from the AQS (Waters & Deane, 1985). The AQSQ (Vaughn & Waters, 1990), used for this study, consists of 12 items that discriminate between secure and insecure attachment. The items on the AQSQ ask parents directly about their child’s behaviors, as opposed to the original wording on the AQS designed for outside observers (Robinson, Rankin, & Drotar, 1996). The 12 items are rated on a 9-point Likert scale with behavioral descriptions that correspond to the AQS. To score the AQSQ, each response is compared with expert ratings (using a Pearson r correlation) of the most securely attached child resulting in a correlation coefficient security score for each participant (Waters, 1997). In theory, scores can range from -1.0 to +1.0, meaning a perfect positive or negative correlation with the most securely attached sort from the AQS (Van IJzendoorn et al., 2004). This form of scoring was used in the current research. Although limited psychometric information is available on this measure, Cronbach’s alpha was estimated at .70 in a recent study utilizing this measure (Lamont, 2010). In addition, some validity support was provided in another study in which mothers who visited their sick children more frequently in the hospital reported more secure attachment behaviors in their children (Robinson et al., 1996).

The AQS itself, which requires extensive observation of the child, has shown moderate convergent validity with the Strange Situation procedure with a .50 correlation between AQS security scores and Strange Situation security (Vaughn & Waters, 1990). Data on reliability of the AQS is limited, but it has been shown to have moderate test-retest ability (r = .28; Van IJzendoorn et al., 2004). Van IJzendoorn and colleagues also
concluded that that AQS mean security score in clinical samples (.21) was significantly lower than the mean security score in normal samples (.32).

Child temperament was assessed using the Revised Dimensions of Temperament Survey (DOTS-R; Windle & Lerner, 1986). The DOTS-R consists of 54 items that evaluate the temperament of the child on nine dimensions: activity level-general (high scores in this dimension typically show a child with high levels of energy and overall motor activity); activity level-sleep (high scores here are characterized by high levels of motor activity during sleep); approach-withdrawal (high scorers are more likely to approach new people or objects than low scorers); flexibility-rigidity (high scores mean the child has an easier time adjusting to changes in his/her environment); mood quality (the higher the score the more positive affect the child shows); rhythmicity-sleep (high scores translate into a more regular sleep-wake cycle); rhythmicity-eating (high scorers are characterized by regular eating habits); rhythmicity-daily habits (high scores means the child is accustomed to regular timing of daytime activities like using the bathroom or taking a break); and distractibility (high scores here mean the child is able to focus despite unrelated stimuli; Windle, 1992). On the DOTS-R, parents rate how well a particular behavior applies to their child using a four-point scale ranging from “usually true” to “usually false.” To obtain a DOTS-R score, all of the subscales are added up. Higher scores reflect a milder or easier temperament (Windle & Lerner, 1986). There are currently no cutoff scores associated with this measure. The total score of this measure was used in this study. The internal consistency, of the nine dimensions, ranges from .70 to .91 with a median of .80. The current study estimated Cronbach’s alpha for mother
ratings at .75, while father ratings were estimated at .80. Test-retest reliability over a six-week period ranges from .59 to .75 (Windle & Lerner, 1986).

**Procedure**

While participants were not grouped for the purposes of this study, the researcher recruited families in which the mothers typically stay with their child full-time each day as well as families in which mothers are away from their child for a portion of the day for purposes related to employment in the workforce, school attendance, or some other consistent obligation away from the home. Prior to data collection, approval for this study was obtained from the Institutional Review Board (IRB) at Utah State University.

Volunteers for this study were solicited from the community by posting flyers (Appendix B) at the local university, churches, apartment complexes, and daycare centers. The flyers included information detailing the importance of the study and how to contact the researcher. Calls for participation were also extended on social media websites for people from several states. Participants included friends, acquaintances, and friends of friends of the researcher. Those who agreed to participate received all the measures along with a written explanation of the study (Appendix B) and a Letter of Information (Appendix A) regarding the details of the study. These participants were either mailed a packet containing the measures and a pre-stamped envelope to mail the completed items back to the researcher or were hand delivered the information directly by the researcher. No identifying information, such as name or address, was requested so
all responses were anonymous, which made it impossible to determine where specific participants were from and what recruitment method they responded to.

Daycare centers were specifically targeted for volunteers to ensure parents who work outside the home as well as parents who do not work outside the home were represented. With the permission of the daycare center directors, flyers were posted at the center for parents to learn more about how to take part in the study. Additionally, a letter of information detailing the purpose of the study, along with the accompanying measures was left with the lead supervisors of each daycare center. This included directions on how to complete the questionnaires provided, such as both parents being required to complete the information. Twenty-five packets of information were handed out at daycares, with six completed packets returned. The researcher collected the packets from the daycare centers after the measures had been completed.
CHAPTER IV
RESULTS

Descriptive Statistics

Two parent report measures were used in this study. The AQSQ was used to measure the level of attachment security between parents and their child while the DOTS-R was employed to assess child temperament. A survey was also administered primarily to get information about the amount of time each parent is away from his/her child. Descriptive statistics for the survey, AQSQ, and DOTS-R are presented in Table 2, 3, and 4, respectively. Specifically, data for time spent away from the child for each parent (survey), attachment correlation scores (AQSQ), total attachment scores (AQSQ), and temperament scores for each parent (DOTS-R) are presented. The data displayed includes means, standard deviations, and ranges.

Relationship Between Father-Child and Mother-Child Attachment

The first research question of this study addressed the relationship between mother-child attachment and father-child attachment. A Pearson \( r \) correlation between father-child attachment security scores and mother-child attachment security scores was used to determine how strong the relationship is between those two variables. The correlation between the two variables was not significant \( (r = .16; p = .27) \).

A paired samples \( t \) test to compare mother-child attachment security scores and father-child attachment security scores was also conducted for informational purposes.
Table 2

*Descriptive Statistics of the Parents’ Time Away*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother’s time away (total hours per week)</td>
<td>50</td>
<td>11.43</td>
<td>8.06</td>
<td>0-47</td>
</tr>
<tr>
<td>Hours working at job per week</td>
<td>50</td>
<td>07.98</td>
<td>12.10</td>
<td>0-55</td>
</tr>
<tr>
<td>Hours at school per week</td>
<td>50</td>
<td>01.18</td>
<td>04.61</td>
<td>0-40</td>
</tr>
<tr>
<td>Hours at miscellaneous activity per week</td>
<td>50</td>
<td>02.26</td>
<td>01.60</td>
<td>0-20</td>
</tr>
<tr>
<td>Father’s time away (total hours per week)</td>
<td>50</td>
<td>49.51</td>
<td>19.17</td>
<td>36-71</td>
</tr>
<tr>
<td>Hours working at job per week</td>
<td>50</td>
<td>40.92</td>
<td>09.80</td>
<td>0-96</td>
</tr>
<tr>
<td>Hours at school per week</td>
<td>50</td>
<td>04.25</td>
<td>08.69</td>
<td>0-50</td>
</tr>
<tr>
<td>Hours at miscellaneous activity per week</td>
<td>50</td>
<td>04.25</td>
<td>03.45</td>
<td>0-20</td>
</tr>
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</table>

Table 3

*Descriptive Statistics of the AQSQ*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother correlation score</td>
<td>50</td>
<td>.493</td>
<td>.297</td>
<td>-.439-.896</td>
</tr>
<tr>
<td>Father correlation score</td>
<td>50</td>
<td>.196</td>
<td>.328</td>
<td>-.583-.812</td>
</tr>
</tbody>
</table>

Results indicated the average security correlation score for mothers ($M = .493, SD = .30, n = 50$) was significantly higher than the average security correlation score for ($M = .196,$ n = 50).
Table 4

*Descriptive Statistics of the DOTS-R*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
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<tr>
<td>Mother-child temperament total</td>
<td>50</td>
<td>106.40</td>
<td>10.14</td>
<td>79-127</td>
</tr>
<tr>
<td>Father-child temperament total</td>
<td>50</td>
<td>109.96</td>
<td>11.42</td>
<td>85-134</td>
</tr>
</tbody>
</table>

$SD = .33, n = 50), t (49) = 5.17, p = .000$. See Figures 1 and 2 for the spread of attachment scores for both mothers and fathers.

**Relationship Between Child Temperament and Parent-Child Attachment**

The second research question was intended to assess the strength of the relationship between parent-child attachment and child temperament. A Pearson $r$ correlation between mother-child/father-child attachment security scores and child temperament (as measured by a parent-completed DOTS-R) was used to answer this research question. There was a negative, insignificant correlation ($r = -.12$) between the father-child attachment and father-child temperament scores. There was also a negative, non-significant correlation ($r = -.08$) between mother-child attachment and mother-child temperament scores (see Table 5). For the breakdown of temperament scores, see Figures 3 and 4.

**Time Away from the Child and Attachment Security**

The third research question focused on the idea of parents spending time away from their child and its potential impact on attachment. While fathers were the primary
addition in this study, the relationship between time outside the home and attachment was assessed for both parents. Two multiple regressions—one predicting father-child attachment and another predicting mother-child attachment—were used to predict attachment security using the total time away from home for both mother and father. Results showed that parents’ time away from the child did not predict father-child
Table 5

Child Temperament and Father-Child Attachment Score Correlation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Father Temp.</th>
<th>p</th>
<th>Mother Temp.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father attachment</td>
<td>-.122</td>
<td>.399</td>
<td>-.064</td>
<td>.660</td>
</tr>
<tr>
<td>Mother attachment</td>
<td>-.017</td>
<td>.905</td>
<td>-.081</td>
<td>.578</td>
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</table>

Figure 3. Father-child temperament breakdown.

Figure 4. Mother-child temperament breakdown.
attachment, \( F(2, 49) = 1.176, p = .317, R^2 = .048 \), or mother-child attachment, 
\( F(2, 49) = 1.798, p = .177, R^2 = .071 \); see Table 6 and Table 7. For a breakdown of the 
time spent away by parents, see Figures 5 and 6.

Table 6

*Contribution of Time Away from the Child to Mother-Child Attachment*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father time away</td>
<td>0.10</td>
<td>.006</td>
<td>.230</td>
<td>1.632</td>
<td>.109</td>
</tr>
<tr>
<td>Mother time away</td>
<td>.003</td>
<td>.003</td>
<td>.144</td>
<td>1.026</td>
<td>.310</td>
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</tbody>
</table>

Table 7

*Contribution of Time Away from the Child to Father-Child Attachment*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father time away</td>
<td>-.004</td>
<td>.007</td>
<td>-.084</td>
<td>-.588</td>
<td>.559</td>
</tr>
<tr>
<td>Mother time away</td>
<td>.005</td>
<td>.004</td>
<td>.198</td>
<td>1.394</td>
<td>.170</td>
</tr>
</tbody>
</table>

For informational purposes, a Pearson \( r \) correlation between attachment scores 
and time away for each parent was conducted. Attachment scores and time away showed 
a weak association when it came to the same parent. In other words, mother-child 
attachment did not show a significant association with mother’s time away \( (r = .14; p = .35) \). Mother-child attachment also did not show a significant relationship with fathers
time away ($r = .22; p = .12$). Likewise, father-child attachment did not show a significant relationship with father’s time away ($r = -.09; p = .53$), or with mother’s time away ($r = .20; p = .16$; see Table 8).

Figure 5. Father’s time away breakdown.

Figure 6. Mother’s time away breakdown.
Table 8

*Parent-Child Attachment and Parent’s Time Away Correlations*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Father Time Away</th>
<th>$p$</th>
<th>Mother Time Away</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father Attachment</td>
<td>-.091</td>
<td>.529</td>
<td>.202</td>
<td>.160</td>
</tr>
<tr>
<td>Mother Attachment</td>
<td>.224</td>
<td>.118</td>
<td>.136</td>
<td>.347</td>
</tr>
</tbody>
</table>
CHAPTER V
DISCUSSION

The attachment of a child and his or her caregiver is a bond that helps tie them together emotionally. Based on prior research, the most important principle of attachment theory is the need of a child to develop a relationship with at least one primary caregiver for healthy emotional and social development to occur (Bowlby, 1958; Cassidy, 1999). A vast majority of research has focused primarily on mother-child attachment (e.g., Ainsworth et al., 1978; Caveney-Pote, 2008; Field et al., 1986; Kearsley et al., 1975; Macfie & Swan, 2009; Main & Solomon, 1986; Rubin et al., 1991; Schechter & Willheim, 2009; Wan & Green, 2009), minimizing fathers’ contributions to attachment. The current study extended the tradition of past attachment research in asking what factors lead to particular attachment styles in children. However, this study sought to provide more information on what contributes to father-child attachment in functioning, two-parent families. Factors in the current study, such as child temperament and time parents spent away from the child were key variables evaluated as potential predictors of parent-child attachment.

Father-Child and Mother-Child Attachment Connections

The current study addressed the relationship between mother-child and father-child attachment. Some prior research has shown that children with a secure attachment to their mothers are more likely to have a secure attachment with their fathers (Ainsworth, 1967; Caldera, 2004; Goodsell & Meldrum, 2009). However, George et al.
(2010) showed that a child’s attachment with his/her father was predicted independently by the father’s parenting alone. Similarly, their study revealed that mother-child attachment was uniquely predicted by the mother’s parenting and interactions with the child.

The current study showed a weak correlation between mother-child attachment and father-child attachment. This result coincides with George and others’ (2010) study in that attachment is built on parenting behaviors exhibited by each parent, rather than shared behaviors or combination of parental responses. In other words, one parent may be cold and unresponsive to his/her child while the other parent portrays the opposite behaviors. The latter parent may still have a secure attachment even while the former parent does not.

**Relationship Between Child Temperament and Parent-Child Attachment**

The second research question focused on the relationship between attachment and child temperament. The results showed a weak connection between child temperament and attachment to either parent. The results challenged the researcher’s hypothesis that child temperament affects attachment security. That hypothesis was based on work by Melhuish (1987) who concluded that 76% of 18-month-old children in his study who had an easy temperament had an easier time adjusting to parental separation. Szewczyk-Sokolowski and his colleagues (2005) had also found that children who were rated by their mothers as having a difficult temperament also had low attachment scores on the AQS.
The fact that the sample in the current study consisted mostly of highly educated people (96% of both mothers and fathers had completed at least some college coursework) with a middle class or upper middle class socioeconomic status, may also lend some information as to the weak correlation between child temperament and parent-child attachment with both parents. It is possible that parents with these types of educational experiences and economic resources may have learned to be more responsive to a child’s needs and may not be quite as stressed parenting a difficult child compared to a parent with lower education attainment and fewer economic resources. This idea is consistent with findings from Fish’s study (2001), which showed that more than half of the children with mothers dealing with poverty and with few social supports were classified as having an insecure attachment regardless of child temperament (Fish, 2001).

The findings of this research question revisit the nature versus nurture debate in relation to attachment theory. Does parental behavior help shape the level of attachment security in a child, or is the child’s temperament a major force behind that formation? The origins of a particular parent-child attachment are likely not that simple, or black and white. More likely, parent-child attachment is formed between the interaction of child temperament and parental response. This may explain why the results of this research question came back insignificant. A parent may rate his/her child as having a difficult temperament, but maintain a secure attachment with the child because both of them have learned about the other and how to interact with each other.
The third research question addressed the idea that time away by parents from their children may potentially impact attachment. The results from the current study showed that the amount of time a parent spends away from his or her child does not impact parent-child attachment.

The fathers in this study worked long hours on average ($M = 49.51$ per week) while mothers were away an average of 11.43 hours a week. This likely reflects that mothers were the primary caregivers with them, spending much more time with their child compared to fathers. While parents’ time away from their child did not predict attachment security for fathers or mothers, results showed that mother-child attachment scores were significantly higher (more secure) than fathers. These results show a possibility that quantity of time may be just as crucial as quality of time when forming a secure parent-child attachment. Of course, without actually measuring the quality of parent-child interactions, it is uncertain if that is actually true. Nevertheless, the fact that fathers worked more hours than mothers, overall further emphasizes the importance of quality in parent-child interactions when forming an attachment with the child. The results of this question may have been quite different had there been a more balanced number between mothers and fathers in terms of time spent away from the child. Mothers who worked outside the home were certainly well-represented within the sample. However, mothers worked very few hours compared to fathers, on average.
Limitations and Future Directions

The current study was limited by the relative homogeneity of the sample. About half of the sample was taken from one city and 99% of the sample was Caucasian. While several states were represented in terms of participant selection, a majority of the sample was located in one state. Future researchers may want to consider balancing the spread of participants in terms of participant location as well as sampling a wider range of ethnicities and cultures to see how these factors affect attachment. Along the same lines, the current sample consisted of highly educated participants with annual household incomes higher than average (more than half the sample made at least $60,000 per year). Future researchers should seek out a more balanced sample in terms of socioeconomic status and educational attainment in order to compare how attachment is affected by parents from varying backgrounds.

This study purposely looked at households where the mother worked outside the home and mothers who were full-time caregivers at home. Future researchers may look into a sample where the average time parents spend away from their child is more balanced between both parents. Doing so may help to neutralize attachment scores between parents. The attachment scores were significantly more secure for mothers than fathers, who were away from their child much more than mothers.

The AQSQ and DOTS-R are questionnaires used to measure attachment and temperament, respectively. The questionnaires were used for sake of practicality for the researcher. While the DOTS-R has shown to be a fairly reputable measure in terms of reliability and consistency, the AQSQ has very limited psychometric information and is
still a relatively underused measure. Also, paper/pencil attachment measures in general, with their highly subjective nature, mostly fail to measure up to more objective observation measures, such as the standard AQS. Future researchers may include a third party observer to measure these constructs to minimize or eliminate partiality.

Summary

The current study sought to provide more information on what contributes to father-child attachment in functioning, two-parent families. Research questions focused on the relationship between mother-child attachment and father-child attachment, the relationship between child temperament and father-child attachment security, and the amount of time each parent is away from his/her child and how that predicts attachment security. The results were not significant for all of the posed research questions. Further research is needed with more ethnicities and cultures represented; a more balanced sample of economic classes; mothers who work more hours outside of the home; and the use of more impartial, third party observation measures to assess attachment and child temperament.
REFERENCES


APPENDICES
APPENDIX A

Letter of Information
LETTER OF INFORMATION
Predictors of Father-Child Attachment

Introduction/Purpose: Professor Gretchen Gimpel Peacock and graduate student Jared Benware, both in the Department of Psychology at Utah State University are conducting a research study to find out more about father-child attachment. You have been asked to take part because you are a parent of a child between the ages of 3-5. There will be approximately 50 total families who participate (i.e., mothers and fathers of 50 children) in this research.

Procedures: If you agree to be in this research study, the following will happen to you.
1. You and your spouse/partner will be asked to complete a demographic survey
2. You and your spouse/partner will be asked to complete two questionnaires about your child and the relationship you have with him/her. The time to complete these forms should take about 20-30 minutes.

Risks: Participation in this research study is considered to involve minimal risk. However, you may experience some discomfort answering questions about your child.

Benefits: There may or may not be any direct benefit to you from these procedures. The investigators, however, may learn more about parent-child behaviors that may have direct or indirect benefit to families in the future.

Explanation & offer to answer questions: If you have other questions or research-related problems, you may reach the researchers are the contact information provided below.

Voluntary nature of participation and right to withdraw without consequence: Participation in research is entirely voluntary. You may refuse to participate or withdraw at any time without consequence or loss of benefits.

Confidentiality: Research records will be kept confidential, consistent with federal and state regulations. Only the principal investigator and student researcher will have access to the data which will be kept in a locked file cabinet or on a password protected
computer in a locked room. To protect your privacy, personal, identifiable information will not be included on any study documents.

**IRB Approval Statement:** The Institutional Review Board for the protection of human participants at USU has approved this research study. If you have any pertinent questions or concerns about your rights or a research-related injury, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu. If you have a concern or complaint about the research and you would like to contact someone other than the research team, you may contact the IRB Administrator to obtain information or to offer input.

**Investigator Statement:** “I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered.”

**Signature of Researchers**

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gretchen Gimpel Peacock</td>
<td>(435) 797-0721</td>
<td><a href="mailto:Gretchen.Peacock@usu.edu">Gretchen.Peacock@usu.edu</a></td>
</tr>
<tr>
<td>Principal Investigator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jared Benware</td>
<td>(801) 856-9333</td>
<td><a href="mailto:Jared.Benware@aggiemail.usu.edu">Jared.Benware@aggiemail.usu.edu</a></td>
</tr>
<tr>
<td>Student Researcher</td>
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APPENDIX B

Recruiting Materials
**Parent-Child Relationship Study**

Be part of an important study on parent-child relationships

- Are you a parent of a child between the ages of 3-5?
- Is the child living with both parents?

If you answered YES to both these questions, you may be eligible to participate in an attachment study.

The purpose of this study is to better understand how mothers and fathers relate to their children. By participating in this study, you can help the researchers learn more about parent-child relationships that may have direct or indirect benefit to families in the future.

Couples (18-65 years of age) of a child between the ages of 3-5 are eligible to participate.

To participate in this study, each parent simply needs to complete three questionnaires, which can be done from the comfort of your home.

Please contact Jared Benware at (801) 856-9333 or JaredBenware@Yahoo.com for more information.
Parent-Child Attachment Study

Be part of an important attachment study

- Are you a parent of a child between the ages of 3-5?
- Is the mother of the household typically away from the child full-time at school, work, or some other consistent obligation?

If you answered YES to both these questions, you may be eligible to participate in attachment study.

The purpose of this study is to compare father-child attachment in the context of mothers who spend most of their day inside or outside of the home. By participating in this study, you can help the researchers learn more about parent-child behaviors that may have direct or indirect benefit to families in the future.

Couples (18-65 years of age) of a child between the ages of 3-5 are eligible to participate.

To participate in this study, each parent simply needs to complete three questionnaires, which can be done from the comfort of your home.

Please call Jared Benware at (801) 856-9333 for more information.
Dear Parent,

Attached are materials for a research study on parent-child relationships. We appreciate you considering participating in this study. The purpose of this study is to better understand how mothers and fathers relate to their children. By participating in this study, you can help researchers learn more about parent-child relationships that may have direct or indirect benefit to families in the future.

If you are interested in participating, please read the attached Letter of Information and complete the three surveys. Each parent (mother and father) should complete a set of surveys. If you have any further questions, feel free to contact one of us.

Sincerely,

Jared Benware
Student Researcher
(801) 856-9333
jared.benware@aggiemail.usu.edu

Gretchen Peacock
Faculty Supervisor
(435) 797-0721
gretchen.peacock@usu.edu
APPENDIX C

Demographic Survey
Demographic Survey

Thank you for participating in this study. To begin, please answer these questions about yourself and your child by writing in or circling the most applicable answer. Each parent should complete his/her own survey. If you have more than one child within the 3-5 age range, please respond to these questions with your younger child in mind.

1. What is your child’s gender? _______________

2. What is your child’s age? _______________

3. What is your gender? _______________

4. What is your age? _______________

5. What is your ethnicity?
   - Caucasian / White
   - Asian / Pacific Islander
   - African American / Black
   - Latino/a / Hispanic
   - Native American
   - Other (please write in) _______________

6. What is your annual gross household income?
   - Under $10,000
   - $10,001-$20,000
   - $20,001-$30,000
   - $30,001-$40,000
   - $40,001-$50,000
   - $50,001-$60,000
   - $60,001-$70,000
   - $70,001-$80,000
   - $80,001-$90,000
   - $90,001-$100,000
   - Over $100,000

7. What is your highest level of education earned?
   - Some High School
   - High School Diploma/GED
   - Some College (but no degree)
   - 2-Year College Degree (Associate’s)
   - 4-Year College Degree (Bachelor’s)
   - Master’s Degree
   - Doctoral Degree
   - Professional Degree (MD, JD)
8. How many children currently live in your home? ______________

9. What is your current parental status of the child on whom you are completing these forms?

Biological Parent          Step-Parent          Adoptive Parent

10. If you are a step-parent or an adoptive parent, how old was the child when you began raising him/her? ______________  N/A

11. Have you ever received counseling and/or been prescribed medication for mental health concerns (Please indicate by circling ‘Yes’ or ‘No’)?  Yes     No

12. Is your child currently in daycare (Please indicate by circling ‘Yes’ or ‘No’)?  Yes     No

13. If applicable, what is the age range of children currently at your child’s daycare? ______________  N/A

14. Please estimate how many hours you have spent outside the home at school, work, and some other activity (i.e., volunteer work, military service, etc) per week during different stages of your child’s life.

<table>
<thead>
<tr>
<th>Child’s Age</th>
<th>Average Hours Away At School Per Week</th>
<th>Average Hours Away At Work Per Week</th>
<th>Average Hours Away At Other Activity Per Week</th>
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<tbody>
<tr>
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<tr>
<td>7 - 12 months</td>
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<td></td>
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<tr>
<td>1 - 1½ years</td>
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<tr>
<td>1½ - 2 years</td>
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<td>3½ - 4 years</td>
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</tr>
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<td>4 - 4½ years</td>
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<tr>
<td>4½ - 5 years</td>
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