12-2014

The Relationship between Attachment, Couple Conflict, and Recovery from Conflict

Nathan C. Taylor
Utah State University

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THE RELATIONSHIP BETWEEN ATTACHMENT, COUPLE CONFLICT, AND RECOVERY FROM CONFLICT

by

Nathan C. Taylor

A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in

Family, Consumer, and Human Development
(Marriage and Family Therapy)

Approved:

_______________________
Dr. W. David Robinson
Major Professor

_______________________
Dr. Ryan Seedall
Committee Member

_______________________
Dr. Kay Bradford
Committee Member

_______________________
Dr. Mark McLellan
Vice President for Research and
Dean of the School of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

2014
ABSTRACT

The Relationship Between Attachment, Couple Conflict, and Recovery from Couple Conflict

by

Nathan C. Taylor, Master of Science

Utah State University, 2014

Major Professor: Dr. W. David Robinson
Department: Family, Consumer, and Human Development

Researchers have begun to utilize advances in technology to complement self-reports in an effort to understand intrapersonal and interpersonal factors that are involved in conflict. The objective of this study was to use skin conductance to measure physiological arousal during and after couple conflict to provide clarity to the association between attachment styles, physiological reactivity to conflict, and recovery from couple conflict. Ten couples ($n = 20$) were connected to skin conductance equipment while engaging in a 10-minute conflict task, and a distraction task and discussion that was used to represent recovery from conflict. The $t$-tests results showed that the difference from baseline scores for gender and attachment styles were not significant. Bivariate correlation analysis was used for descriptive variables and attachment and physiological arousal. Multiple regressions were used to analyze skin conductance difference scores with attachment avoidance and anxiety. Results showed that attachment anxiety was associated with greater physiological reactivity during the conflict and recovery portions.
of the study. These findings are the first to link attachment anxiety and physiological reactivity with the use of skin conductance as a measure of physiological arousal. The results from the multiple regressions for avoidant attachment were not significant. The implications for the study include a methodology for future researchers to follow to study attachment, conflict, and recovery from conflict. Clinical implications are also present in that the study highlights the importance of assessing for attachment styles when working with couples to better understand physiological reactions during and after conflict, and emphasizes the utility of biofeedback devices to facilitate emotional regulation. Research implications are also discussed.

(114 pages)
PUBLIC ABSTRACT

The Relationship Between Attachment, Couple Conflict, and Recovery from Couple Conflict

Nathan C. Taylor

Advances in technology have opened the door for increased understanding to the physiological changes that influence and are influenced by conflict. The objective of this research was to use these advances in technology to better understand the relationship between attachment and physiological reactivity during conflict, as well as during recovery from couple conflict. Skin conductance equipment was used to measure 10 couples (n = 20) physiological arousal while discussing an area of conflict, and during a recovery section which included a relationship distraction task and discussion. Five multiple regressions were used to analyze physiological reactivity during and after conflict with attachment anxiety and avoidance scores. The results from the multiple regressions were that those higher in attachment anxiety were significantly associated with higher levels of physiological arousal during the conflict and recovery tasks. The association between attachment avoidance and physiological arousal was not found to be significant. The research findings are significant in that they are the first to link attachment anxiety to physiological arousal and recovery using skin conductance. The findings also demonstrate the importance of assessing attachment style when working with couples in a clinical setting, as well as using biofeedback tools to help measure and
regulate arousal. Future research needs to continue to build upon attachment and physiological arousal to conflict, while also addressing recovery from conflict.
ACKNOWLEDGMENTS

I would like to thank my committee chair, Dr. Dave Robinson, for his support throughout this process and the continued opportunities he has provided. I will always be grateful for the privilege to work with him, along with the academic and life lessons he has taught me. Thank you to my other committee members, Dr. Ryan Seedall and Kay Bradford. Dr. Seedall has taught me skills to be a mentor, and has been a critical part of my development. Dr. Bradford has been a great role model for academic development and professionalism, and has provided me with vision and direction. I also must thank all the other important people that have become my Utah State University Marriage and Family Therapy family.

I would like to thank my wonderful wife, Kourtney, who truly sacrificed the most throughout the process, and my boys, Boston and Cooper, who provide purpose and meaning. I thank my family, for the scaffolding and opportunities that they have given me. I last thank God, who for undeserved reasons continues to shower blessings down on me.

Nathan C. Taylor
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CHAPTER I
INTRODUCTION

Research has long pointed to the benefits that come from being in a relationship. Though relationships are beneficial, problems such as decreased satisfaction, divorce, and declines in self-rated health have been linked to conflict within relationships (Gottman, 1999; Umberson, Williams, Powers, Liu, & Needham, 2006). Conflict is a common occurrence in most relationships, and has been shown to be an important variable in the success of relationships (Caughlin & Vangelisti, 2006; Cummings, Goeke-Morey, & Papp, 2001; Gottman, 1998).

As a result of the importance of conflict in relationships, researchers have extensively studied many of the influencing factors of conflict. Attachment styles have shown to be an influencing factors when it comes to conflict, with secure attachment being associated with greater benefits, such as being less likely to view arguments as threatening, and being better at recovering from conflict when compared to those with avoidant or anxious attachment (Pistole & Arricale, 2003; Salvatore, Kuo, Steele, Simpson, & Collins, 2011).

Advances in technology have allowed for a greater understanding of what takes place within the human body during conflict, specifically by accessing unconscious factors affecting and being affected by conflict. Some research has combined attachment and physiology to develop greater understanding of conflict, with both cortisol and skin conductance being used to measure physiological arousal (Diamond, Hicks, & Otter-Henderson, 2006; Powers, Pietromonaco, Gunlicks, & Sayer, 2006). Though using skin conductance to measure physiological arousal to study the relationship between arousal
and conflict has been performed (see Diamond et al., 2006; Seedall & Wampler, 2012), researchers have not used skin conductance to develop an understanding into the association between attachment and the recovery from couple conflict. The present study will add to the extant literature on physiological arousal and conflict, as well as introduce findings on the association between attachment anxiety, avoidance, and the recovery from conflict.

**Benefits of Couple Relationships**

Researchers have provided understanding into many of the benefits that have been linked to being in couple relationships. One of the benefits found is those in stable couple relationships is an association with greater psychological well-being, and lower levels of depression, anxiety, and hostility (Gillmore, Lee, Morrison, & Lindhorst, 2008; Wu & Hart, 2002). Psychological benefits associated with a being in a stable relationship were also found to diminish if the relationship ended. One factor that is important to consider when discussing the benefits of relationships is commitment level, with higher commitment levels being associated with greater psychological well-being (Dush & Amoto, 2005). Researchers frequently use married couples to study the benefits of couple relationships, with results being an association between married couples having better physical health and longer life expectancy when compared to their unmarried counterparts (Kiecolt-Glaser & Newton, 2001). Researchers have linked stable couple relationships to greater psychological well-being, fewer health problems, and life expectancy as benefits of being in a stable couple relationship.
Conflict in Relationships

Though benefits can be prevalent in couple relationships, a common area of difficulty in relationships is conflict. Conflict is inevitable in couple relationships, with couples using a variety of strategies to manage conflict (Marshal, Jones, & Feinberg, 2011). Conflict management strategies include behaviors such as avoidance, making threats, and compromising (Greef & De Bruyne, 2000). Though different strategies do work for some couples, such as yelling with volatile couples, research has shown there is a significant difference in the way that happy and unhappy couples resolve conflict (Gottman, 1998; Olson, Olson-Sigg, & Larson, 2008). Olsen et al. (2008) reported that strategies such as taking conflict seriously, seeking to understand partners’ opinions and ideas, being able to resolve differences, and being able to share ideas and feelings are more prevalent during conflict with happy couples than unhappy couples. These findings demonstrate some of the mechanisms of healthy conflict, and are important since conflict in inevitable.

Though conflict is not always problematic, researchers have shown that destructive behaviors during conflict, such as contempt and criticism, have been predictive of divorce (Gottman, 1998). Continual conflict is also problematic in a relationship and can lead to poorer health over time (Umberson et al., 2006). Though engaging in conflict becomes problematic, researchers have also shown that avoiding conflict is not the strategy to minimize negativity, with couples who avoid conflict being associated with lower levels of satisfaction and being less likely to express their needs to their partner (Caughlin & Vangelisti, 2006; Laursen & Hafen, 2010).
In conclusion, conflict is prevalent in all relationships, with multiple strategies being used by couples to manage conflict. Strategies such as avoidance have been linked to more problematic outcomes. How couples navigate conflict is a key to understanding couple dynamics.

**Attachment and Conflict**

If conflict is inevitable in a relationship and should not be avoided, a greater exploration needs to take place to understand the factors associated with conflict. Researchers have sought to understand how attachment influences conflict (Salvatore et al., 2011; Simpson, Rholes, & Phillips, 1996). Attachment is a theory of close relationships that are developed in infancy while responding to distress (Bowlby, 1982). Though developed in infancy, attachment styles persist into adulthood and are often activated during stressful situations (Mikulincer & Shaver, 2007). When distressing situations occur, such as conflict, one’s attachment styles strategies can emerge (Gross & Thompson, 2007; Pistole & Arricale, 2003; Sroufe, 2005). Attachment strategy behaviors that may be activated during distress include denying one’s wish or need for help, or ruminating on threats (Mikulincer & Shaver, 2003). In studying both attachment and conflict, researchers found that higher levels of secure attachment histories were predictive of an improved ability to recover from couple conflict (Salvatore et al., 2011). In contrast, those with higher levels of anxious and avoidant attachment were observed participating in more negative behaviors during conflict, such as being less warm and supportive, and displaying greater levels of stress and anxiety during interactions (Simpson et al., 1996). By studying attachment and conflict together, findings have
demonstrated links between attachment styles and how couples engage in conflict and recovery from conflict. Further research is needed to continue to understand these associations.

**Physiology and its Role in Conflict**

Just as attachment has shown to be important in understanding couple conflict, human physiology has also been found to be associated with conflict (Gottman, 1998). When conflict occurs, arousal of the sympathetic nervous system occurs, often triggering a fight, flight, or freeze response (Murray-Close, Holland, & Roisman, 2012). The body reacts to this arousal by increasing heart rate, diverting blood and oxygen flow, stimulating the production of glucose, dilating pupils, raising cardiac output, and launching a variety of other physiological processes (Sapolsky, Romero, & Munck, 2000). These physiological reactions provide one indicator to the way in which we can attend to or respond to conflict (Tell, Pavkov, Hecker, & Fontaine, 2006). In what Gottman (1999) described as emotional flooding, individuals can become so physiological aroused that they cannot attend to or focus on other tasks, such as effective conflict resolution (Buehlman, Gottman, & Katz, 1992). Researchers have demonstrated the importance of including human physiology in the study of couple conflict, with more research needed to understand the reciprocal influences.

**Attachment, Physiology, and Conflict**

With physiology being an important variable to the understanding of conflict, researchers have begun to explore how attachment and physiology affect and are affected
by conflict. Cortisol, which is a hormone that is released in response to stress, has shown to be helpful in understanding attachment and conflict, with results indicating insecure attachment styles produce greater physiological reactivity than secure attachment styles (Powers et al., 2006). The same study also showed the importance of the partners’ attachment style to the physiological reactions to conflict, both in the midst of conflict and during the recovery. They found that men had a sharper increase in cortisol levels during conflict and recovered slower when they interacted with a female partner with a high level of insecure attachment. Skin conductance has also been used to study attachment and physiological arousal, with varying results. Diamond et al. (2006) found that those with high attachment avoidance had greater physiological reactions, while Seedall and Wampler (2012) found that actor avoidance was not predictive of physiological reactions, but that there was greater incongruence in arousal for those high in attachment avoidance. Though cortisol has been used to study the linkages of conflict and conflict recovery, research using skin conductance have reported varying results on the association between attachment and conflict, and has yet to address recovery from conflict. Future research is needed to add clarity to attachment, physiology, and conflict, and should also include the important topic of recovery.

In conclusion, researchers have examined the association between conflict and attachment, with how couples argue having great importance to outcomes of conflict. Attachments styles have also been found to be associated with how couples argue, and how they recover from conflict. Researchers have utilized advances in technology to develop a greater understanding to the physiological reactions during and after conflict,
which has opened the door for non-self-report studies to gather accurate information of
responses to conflict. With research on attachment and physiology increasing our
understanding of conflict, researchers have recently begun to study all of these important
topics together. Studies using measures such as cortisol levels and skin conductance have
produced findings that demonstrate relationships between attachment, conflict, and
physiological reactivity. Since few studies have been completed on conflict, attachment,
and physiological arousal, there are varied results and therefore, additional research is
needed. Through the present study I will add to the current literature by using skin
conductance to measure physiological arousal to better understand the association
between attachment and conflict. In addition, my research will provide a greater
understanding to the link between physiological arousal, attachment, and recovery from
conflict, which to my knowledge has not be addressed with skin conductance as the
measure of physiological arousal.
CHAPTER II
LITERATURE REVIEW

Attachment theory emphasizes the tendency for humans to develop and maintain powerful bonds with significant others, and describe an individual’s innate drive for companionship (Bowlby, 1988; Johnson, 2004). Being in a bonding relationship has been shown to be very beneficial to an individual’s health, but negatives can also emerge from unhealthy relationships (Gillmore et al., 2008). Conflict is an important relationship dynamic that can lead to problems such as decreased satisfaction and physical health, if not addressed appropriately (Gottman, 1999; Umberson et al., 2006). Conflict is prevalent in all intimate relationships, and needs to be understood in order to avoid the pitfalls that can come from the unhealthy parts of this important interaction (Marshal et al., 2011).

Attachment theory has been used to better understand strategies that individuals engage in during stressful situations such as conflict (Simpson et al., 1996). Technology has been used to understand physiological reactions, such as the engagement of the sympathetic nervous system, that are activated during and after conflict (Murray-Close et al., 2012). More recently, attachment and physiology have been used together to continue to add clarity to conflict and conflict recovery (Diamond et al., 2006; Powers et al., 2006).

The focus of the present study is to add clarity to the association between attachment styles and physiological reactivity during and after conflict. In this chapter I will discuss the benefits of couple relationships, conflict in couple relationships,
attachment and conflict, physiology and conflict, how physiology has been used to study attachment and conflict, and the purpose of this study.

**Benefits of Couple Relationships**

One of the most basic needs of people is for a safe emotional connection with others (Johnson, 2007). This need for connection develops in infancy with parent relationships, and later has an impact on couple relationships (Hazan & Shaver, 1987). Researchers have shown that stable couple relationships have been linked with greater psychological well-being, with benefits including lower levels of depression, anxiety, and hostility, and report fewer mental health problems than those not in relationships (Gillmore et al., 2008).

The benefits of relationship connection also increase with the commitment level in the relationship. Researchers have shown that the higher the commitment in the relationship, the greater the psychological well-being of the individual, with both partners reporting high self-esteem, life satisfaction, and lower distress (Dush & Amoto, 2005). Commitment level in the study was ordered as married, cohabitating, dating exclusively, dating multiple people, and not dating. Relationships are beneficial to one’s psychological well-being, with committed relationships associated with higher levels of well-being.

Married couples have often been used to demonstrate the benefits of being in a relationship, with findings emphasizing increased physical health, mental health, and happiness. Married couples have better physical health, are happier, and report having fewer behavioral problems, such as incarceration or partner violence (Deklyen, Brooks-
Gunn, Mclanahan, & Knab, 2006; Kiecolt-Glaser & Newton, 2001). Results from the 2009 National Health Statistics Report revealed that married adults generally had lower rates of fair to poor health, chronic health conditions, impairments, and emergency room visits than unmarried adults (Schoenborn & Heyman, 2009). Better physical health and fewer chronic health conditions may also be a factor in why married individuals live longer. Researchers studying marriage and mortality reported that never married men have a two to three times’ higher risk of death due to cardiovascular disease, respiratory disease, and external causes (Kaplan & Kronick, 2006). Overall, nonmarried women have a 50% higher mortality rate than married women, and nonmarried men have a 250% high mortality rate than married men (Waite & Gallagher, 2002). Married people also tend to be happier than single, widowed, or cohabitating people. About 40% of married people report that they are happy with their lives, compared to 22% of widowed, 22% of cohabitating, 18% of divorced, and 15% of separated people reported being happy (Waite & Gallagher, 2002).

In conclusion, research has shown the benefits that come from being in a healthy, supportive, and committed relationship. Greater psychological well-being has been shown, with married individuals reporting being happier than their unmarried counterparts. Those in relationships also tend to live longer, and suffer from fewer health risks. With researchers demonstrating the benefits of relationships, future research needs to focus on strengthening couple relationships to maximize the advantages associated with companionship.
Conflict in Couple Relationships

Though there are many benefits to being in a relationship, how couples navigate conflict is important to the dynamics of the relationship. Most couples have conflictual interactions regularly (Cummings et al., 2001). Although the prevalence of conflict is important, how couples argue and disagree during regular conflictual interactions seems to be more consequential to the success of the relationship than how often they experience conflict (Noller & Feeney, 1998; Stanley, Markman, & Whitton, 2002).

Since all couples argue, conflict does not always have to be accompanied by negative consequences. Researchers, using a national survey of more than 50,000 participants, compared differences in the way happy and unhappy couples resolve conflict (Olson et al., 2008). The researchers found that 78% of happy couples reported their partner was able to understand their opinions and ideas when discussing problems, compared to 20% of unhappy couples. It was also found that 78% of happy couples can share ideas and feelings with their partner during disagreements, compared to 25% of unhappy couples. Only 12% of unhappy couples were able to resolve differences during conflict, compared to 58% of happy couples. The researchers also reported that 72% of happy couples had similar ideas about how to settle disagreements, compared to 28% of unhappy couples. Finally, 54% of happy couples reported that their partner takes disagreements seriously, compared to only 14% for unhappy couples. These findings further demonstrate that it is not just the presence of conflict, but the way in which couples respond to conflict that is important. The findings also demonstrate positive
conflict resolution strategies, such as being able to share feelings during conflict and taking your partner seriously.

Though conflict does not always have to be problematic, researchers have shown many of the negative consequence associated with continued conflict. One of the negative consequences associated with conflict is when arguments frequently result in a negative encounter; it can speed up the decline in health over time (Umberson et al., 2006). In addition, couples who argue frequently perceive greater declines in self-rated health when compared to couples with less frequent conflict (Hawkins & Booth, 2005). Though decline in health is more individually based, conflict has also been associated with negative relational consequences. Conflict has been used to predict the outcome and satisfaction of marriage. In a study by John Gottman (1998), destructive behaviors used in newlyweds’ conflict interactions were used to predict divorce seven years later with 82.5% accuracy and couple satisfaction with 80% accuracy.

Even though conflict can be detrimental, the lack of conflict does not necessarily mean a relationship is healthy. Avoiding conflict is prevalent in many relationships, with 78% of couples reporting that they go out of their way to avoid conflict with their partner (Olson et al., 2008). Researchers have shown that couples who avoid conflict are associated with lower levels of satisfaction (Caughlin & Vangelisti, 2006). Relationships where conflict is avoided likely results in the suppression of needs, and relationships that are not sensitive to each other’s needs are perceived as lacking in closeness and support, which are risk factors for adjustment difficulties (Laursen & Hafen, 2010). Another problem occurs because avoided conflict often escalates, and can lead to patterns where
the avoidance increases the conflict instead of the desired result of minimizing conflict (Wilmot & Hocker, 2001). These findings support that it is not the presence of conflict that is problematic, but the way in which conflict is addressed and recovered.

Another important factor in understanding conflict is to recognize gender differences associated with the way conflict is managed. Females are more likely to bring up conflict, and are more likely to see their partners as the cause of the problems, while males are more likely to view problems as mutually shared (Faulkner, Davey, & Davey, 2005). Men are also more likely to withdraw from negative interactions, while women are more likely to pursue conflict (Johnson, 2004). With male and females having some differences in their responses to conflict, gender is an important variable to include when studying conflict.

Internal factors such as depression, anxiety, and stress have also been linked to how couples manage conflict. Depression was found to be predictive of higher levels of marital conflict when either the husband or wife had depression (Faulkner et al., 2005). Anxiety has also been linked to conflict, in that general anxiety is associated with higher levels of anger, which can result in negative interaction patterns and escalation in response to conflict (Harrington, 2006). Stress can also influence conflict, in that when stress becomes high, it can leave partners overwhelmed and exhausted, and spouses may lack the time or energy to respond to their spouse (Brock & Lawrence, 2008). This can lead to conflict in that partners react to frustration in irritable, critical, or negative exchanges (Ellison, Henderson, Glenn, & Harkrider, 2011). Depression, anxiety, and stress have been shown to be important interpersonal variables in the study of conflict.
In summary, conflict is prevalent in every relationship, and can be detrimental if not handled properly. Happy couples are able to share opinion, feelings, and ideas during conflict, share similar strategies on how to resolve conflict, and take their partner’s arguments seriously. Conflict is so important that it has been used to predict divorce with 80% accuracy. If conflict is avoided, needs are often suppressed and patterns can escalate and exacerbate the conflict. Gender, depression, anxiety, and stress are important variables associated with conflict, and should be included in the study of conflict. With the importance of conflict in couple relationship, future research needs to be performed to continue the understanding of this inevitable relationship dynamic.

**Attachment**

In addition to conflict, another important way of understanding couple interaction is to examine the role of attachment. A person’s way of relating with others is related to the care the individual received from an attachment figure (usually a parent). This is the foundation of an individual’s attachment style (Bowlby 1973, 1988). Attachment theory emphasizes the innate human need to establish non replaceable, long-term relationships with a few individuals (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1982). Attachment develops in infancy where caregivers are supposed to serve as a secure base for infants to explore their environment, but are able to return to a safe haven for comfort when feeling distressed or threatened (Bowlby, 1973, 1988). Mary Ainsworth and her colleagues developed the Strange Situation (SS) as a way to identify infant attachment behaviors (Ainsworth et al., 1978). Depending on how the infant responded to the
separation and reunion with their primary caregiver, the infant would be classified into one of three attachment styles: secure, avoidant, and resistant.

Though these attachment styles develop in infancy, they persist through adulthood (Bowlby, 1988). According to Mikulincer and Shaver (2003, 2007), the primary strategy of adult attachment involves seeking the proximity of attachment figures during times of need. A secure attachment develops when attachment figures are available and responsive to the individual’s needs. Securely-attached adults have received consistent care and support from partners, and believe that they are worthwhile individuals and that overall, others are benevolent, trustworthy, and dependable (Mikluncer & Shaver, 2003). If attachment figures are consistently unavailable or unresponsive, this indicates that the primary strategy of proximity seeking is unsuccessful, which results in the use of secondary attachment strategies to deal with the increasing feelings of insecurity (Mikluncer & Shaver, 2003). The secondary strategies involve deactivation or hyperactivation. Attachment deactivation forms in response to consistent rejection of requests to have needs met, and involves the inhibition of seeking attachment figures (Butzer & Campbell, 2008). Hyperactivation of the attachment system is a response to inconsistency in responding to attachment needs, and involves persistent attempts to an attachment figure to provide more satisfying and reassuring care and support (Butzer & Campbell, 2008).

These attachment strategies can play a significant role in the development of a secure couple relationship. The continued use of the secondary strategy of deactivation is a characteristic of avoidantly-attached adult (Mikulincer & Shaver, 2003). Avoidantly-
attached individuals prefer keeping distance from partners and generally mistrust others. They generally deny needs or emotional states that activate the attachment system, while not wanting to rely on others for emotional support, not liking to have to provide emotional support to others, and prefer to distance themselves in order to maintain autonomy and independence (Mikulincer & Shaver, 2007). The continued use of the hyperactivation strategy is a characteristic of an anxiously-attached adult (Mikulincer & Shaver, 2007). Anxiously-attached individuals are uncertain about the availability and supportiveness of their partners, doubt their self-worth, and seek assurance of their acceptance by their partners (Ainsworth et al., 1978; Bowlby, 1973; Lee & Thompson, 2011).

As noted, attachment is developed in infancy through interaction with their caregiver, and persists through adulthood. Attachment in adulthood involves turning to an attachment figure in times of need, with secure attachment continuing when the attachment figure is available and responsive. When needs are not met, the individual utilizes secondary strategies of deactivation and hyperactivation. The continued use of these strategies is characteristic of anxious or avoidant attachment.

**Attachment and Conflict**

With attachment playing an important role in couple relationships, it is beneficial to understand the relationship between attachment and the relationship dynamic of conflict. Attachment is an important part of understanding conflict because one’s attachment style is thought to be activated during stressful, threatening experiences (Bowlby, 1988). There has been a significant amount of research done on how attachment
styles play a role in conflict. Securely attached individuals are less likely to view arguing as threatening to attachment, and are better at recovering from conflict (Pistole & Arricale, 2003; Salvatore et al., 2011). The positives of a secure attachment also help with the interaction of different attachment styles, with the partner of a securely attached individual being better at handling conflict (Salvatore et al., 2011). There have been two explanations as to why partners of securely attached individuals are better at handling conflict. The first explanation is that the securely attached partner helps to buffer the negative consequences that can result from conflict (Gross & Thompson, 2007; Sroufe, 2005). This is done because the secure partner does not view conflict as threatening and are better at recovering from the conflict, and, therefore, can contain potential spillover interactions and smooth the transition following the conflict to other types of interactions (Salavatore et al., 2011). This buffering effect in conflict recovery may be facilitated by the securely attached individuals’ dyadic modeling, or the nonindependent influence of partners (Berk & Andersen, 2000). The other explanation to partners of securely attached individuals being better able to handle conflict is because interaction patterns established in early relationships are often carried into later relationships, and therefore secure individuals choose romantic partners who are better at recovering from conflict (Salvatore et al., 2011; Sroufe, 2005).

While a secure attachment style brings many buffering characteristics to conflict, avoidant attachment has many negative influences on conflict. Researchers have shown that avoidant-attached individuals are less likely to show reactivity to conflict, but are also less likely to open up to their partner during conflict, or offer warmth and support
Avoidant individuals also are less likely to perceive conflict because they do not want to activate attachment-related feelings, and are likely to withdraw rather than engage further if disagreements arise (Mikulincer & Florian, 1998). Though they do not show reactivity or want to activate it, it does not mean that reactivity is not occurring. In a study by Mikulincer and Florian (1998), avoidant individuals showed significant heart-rate reactivity to an experimental anger induction, despite the fact that they did not report anger. This study shows the importance of having self-report and physiological measures to assess reactions to conflict.

Attachment avoidance has also been linked to conflict behaviors. Avoidant-attached partners are less likely to give their partners support during stressful life events, behave more negatively in partner interactions, and show more anger with their partners (Campbell, Simpson, Kashy, & Rholes, 2001; Feeney & Collins, 2001; Simpson et al., 1996). It also may be difficult to interact with an avoidant partner when they are discussing concerns because their extreme self-reliance makes them unlikely to ask for help (Collins & Feeney, 2000). In general, avoidant attachment has been associated with many problematic conflict behaviors.

Like avoidant attachment, anxious attachment also has many associations with conflict. Anxiously attached individuals report more day-to-day conflict with greater severity, and exhibit more defensive and contemptuous behaviors to their partners during conflict (Campbell, Simpson, Boldry, & Kashy, 2005; Creasey & Ladd, 2005). The defensive and contemptuous behaviors can often be demonstrated by increased anger and hostility during conflict (Simpson et al., 1996). Anxiously-attached individuals are also
more likely to perceive their daily interactions as conflictual because of their high sensitivity to rejection (Campbell et al., 2005). Relationships with an anxiously attached partner also report lower levels of satisfaction (Banse, 2004; Collins & Read, 1990).

Gender differences have also been found to be linked to attachment and conflict. In a study by Creasy (2002), young adults discussed their top two relationship difficulties for 15 minutes with the goal of moving toward conflict resolution. Results demonstrated that a female’s attachment security was predictive of positive behaviors during conflict, while a male’s attachment insecurity was predictive of negative behaviors during conflict. In another study demonstrating gender differences in attachment and conflict, women with more avoidant attached partners reported more conflict, while men with more anxiously attached partners report more relationship conflict (Brassard, Lussier, & Shaver 2009). With gender differences being present in attachment and conflict, it is important to include gender when studying attachment and conflict.

In conclusion, attachment styles have been associated with several conflict dynamics. Secure attachment has many positive buffering effects on couple conflict. In comparison, individuals with insecure attachment styles may be at risk for later complications tied to conflict recovery, but if they have a partner who facilitates in disengaging from conflict, these relationships can be stable over time (Salvatore et al., 2011). Avoidant and anxious attached individuals and their partners report increased problems when it comes to conflict. Gender differences have also been associated with attachment and conflict, and need to be included in research. Future research needs to
continue to study attachment and conflict to increase clarity in the relationship between the two.

**Physiology and Conflict**

In addition to conflict and attachment being found to be associated, human physiology has also been linked with conflict. Recent technology has provided increased understanding into how human physiology affects and is affected by conflict. When conflictual interactions occur, the sympathetic nervous system becomes aroused, often triggering the fight, flight, or freeze response (Murray-Close et al., 2012). The body reacts to this arousal by increasing heart rate, diverting blood and oxygen flow, stimulating production of glucose, dilating pupils, raising cardiac output, and launching a variety of other physiological processes (Sapolsky et al., 2000).

Gottman described these reactions as diffuse physiological arousal (DPA; Levenson & Gottman, 1985). The concept of DPA is used to describe the body’s general alarm mechanism, and represents the “many systems that are simultaneously activated to mobilize the body, so that we can cope effectively with emergencies and situations that are perceived dangerous” (Gottman, 1999, p. 75). Gottman (1999) explained that marital conflict can elicit DPA, and the psychological consequences can be quite negative in that it reduces couples’ ability to process information, and is harder to attend to what the other person is saying.

The concept of DPA has also been described as emotional flooding, where a partner becomes overwhelmed and disorganized by the way their partner expresses negativity (Gottman, 1999). The negativity can come in the form of criticism, contempt,
or defensiveness, and leaves the other partner hyper-vigilant to any further negativity. Flooding creates a physiological arousal, including increased heart rate, breathing, and sweating, and results in a reduced ability to process information, attention, and creative problem-solving (Tell et al., 2006). This emotional state becomes deregulating in the sense that a person can attend to or do little else when flooded (Buehlman et al., 1992). According to Gottman (1993), flooding is the first step leading to an emotional divorce within marriage, and is related to: viewing one’s marital problems as severe, believing that it is better to work out problems alone, arranging the marriage so that the partners’ lives are more in parallel rather than interdependent, and loneliness within a relationship.

Physiological arousal begins well before a conflict occurs, and initially starts with previous interactions. In marriages that work well, couple’s interactive styles are constructive, affirming, and enjoyable, while in unhappy marriages, the interactive style may be destructive, defeating, and dismal (Levenson & Gottman, 1985). When people feel attacked, which often happens during conflict, they tend to respond negatively, and in unstable and unhappy marriages, they often escalate the negativity (Gottman, 1999). An individual begins to develop expectations based on previous interaction styles. These expectations may be pleasure for healthy marriages, or dread and pessimism for unhealthy marriages, and can lead to physical arousal before an interaction occurs (Levenson & Gottman, 1985). This arousal is then carried over into the conflict itself.

Researchers have also revealed gender differences associated with physiological reactions to conflict. Levenson, Carstensen, and Gottman (1994) found that negative affect from conflict was associated with higher levels of physiological arousal in men, but
did not find the same results for women. Gottman and Levenson (1988) argued that men’s higher levels of physiological arousal lead to greater discomfort with negative emotion, and underlie the tendency to withdraw while women pursue. These findings support including gender in the study physiology and conflict.

A benefit to measuring physiological arousal and conflict is it has provided additional insight into the unconscious reactions of conflict. Physiological stress responses are less consciously controlled than self-reports (Powers et al., 2006). Self-report provides a window into the conscious emotional experiences, while studying physiological arousal provides additional understanding to emotional experiences that may be less accessible to the individual. An example of the benefits of using physiological measures and emotional experiences has been demonstrated in research on anxiety. Reiner (2008) found that the use of biofeedback, a device used to measure physiological changes, was preferred by patients in the treatment of anxiety over other emotional regulating strategies, such as yoga and meditation. Accessing unconscious reactions has utility in providing additional understanding and regulation of emotional experiences.

In review, human physiology has provided increased understanding of conflict. Conflict affects and is affected by our inherent fight, flight, or freeze response that arises during stress induced arousal. Couple conflict can elicit this reaction, and becomes problematic when they become flooded and have a reduced ability to process information. This flooding is often the first step to couple dissolution, and can result in negativity. Patterns of negativity can occur, and physiological arousal can begin to occur
before conflict even takes place and can lead to negative expectations consistent with unhealthy relationships. By studying physiological arousal, researchers are able to understand unconscious reactions to conflict. Future research is needed to continue to understand the associations between physiology and conflict.

Attachment, Physiology, and Conflict

Using physiological measures has increased our understanding of conflict, which is further enhanced by including attachment with physiology and conflict. Links between attachment and conflict, and physiology and conflict have been discussed in previous sections. Researchers have begun to explore the connection between all three variables, and have seemed to answer the call by Diamond (2001) of the need to address the link between attachment and psychophysiology, to advance the role of attachment processes in the experience and regulation of affect. Cortisol and skin conductance levels are two of the physiological measures that have been used to study attachment and conflict.

Cortisol

One method that has been used effectively to study physiological arousal and attachment is cortisol, which is a hormone that is released into the bloodstream in response to stress. In a study by Powers et al. (2006), 124 young adult dating couples’ cortisol levels were measured during a 15-minute conflict negotiation task. Results from this study demonstrated that individual and partner attachment styles influenced physiological reactions to conflict. Insecure attachment styles produced greater physiological reactivity. Women who had greater attachment avoidance had higher
higher in attachment anxiety showed more rapid increases in reactivity, had higher cortisol levels during the conflict, and took longer for levels to recover than those lower in anxiety. This study also demonstrated how attachment relationships serve as a regulatory function in which more securely attached individuals are able to regulate partners’ feelings of distress. When men interacted with female partners who were high in attachment security, their cortisol levels dropped during and after the conflict task. When men interacted with female partners that were high in an insecure attachment, they showed a sharper increase in cortisol levels during the conflict task, and were slower to recover following the conflict. Women’s physiological reactivity and recovery did not depend on their male partners’ attachment style. The research by Powers et al. (2006) also set forth a protocol that could be utilized and adapted for future research on attachment, physiology, and conflict.

In another study conducted by Brooks, Robles, and Schetter (2011), cortisol levels of 30 couples were measured prior, during, and following a conflict discussion task. Similar to Powers et al. (2006), results showed that men high in attachment anxiety were more physiologically reactive during a conflict discussion when compared to those with lower attachment anxiety. Though these results were similar, others were not consistent. Results revealed that when women interacted with a partner who had high attachment avoidance, they had greater physiological reactivity than those interacting with lower attachment avoidant partners. The results from Powers et al. (2006) revealed that
women’s physiological reactivity was not predicted by their partners’ attachment avoidance or anxiety.

In conclusion, studying cortisol levels have been helpful to begin to understand the association between physiology, conflict, and recovery. Future research is needed to continue to add clarity to the association.

**Skin Conductance**

Like cortisol levels, skin conductance is another way to measure physiological arousal, and has been shown to accurately measure emotional arousal. Skin conductance is an accurate measure of electrodermal activity, which is a physiological indicator of emotional arousal and its suppression (Dawson, Schell, & Filion, 2007). In a study by Diamond and colleagues (2006), 148 adults were exposed to psychological stressors and attachment-related issues (eg: hypothetical breakup), one of which was to discuss a recent experience of conflict. Results showed that those high in attachment avoidance had greater physiological reactions, which were measured by skin conductance. Seedall and Wampler (2012) looked at attachment avoidance and physiological reactivity from conflict. Physiological reactions were measured during couple interactions where distressing topics were recalled and discussed. Results revealed that actor avoidance was not predictive of physiological reactions, but that there were greater incongruence’s in arousal for those high in attachment avoidance. One explanation for not finding an actor relationship is that conflict is more common in couple relationships, and therefore, may not have resulted in as stressful of a reaction in a laboratory setting. The research using skin conductance to study attachment and conflict have focused on the physiological
reactions during the conflict itself, but have yet to be used to address recovery from conflict.

The link between physiology and attachment has begun, but there is still work to do. Studies measuring cortisol and DPA have been performed to shed light on how attachment influences physiological reactions to conflict, and have set forth protocols that can be utilized and adapted by future research. Some results have been consistent, like men high in attachment anxiety being more physiologically reactive during conflict discussions than those with lower attachment anxiety, while other results have varied. Researchers have also measured skin conductance to provide understanding into how attachment influences physiological reactions during conflict. Unlike the cortisol studies, the studies using skin conductance have yet to look at the association between attachment, and physiological arousal and recovery from conflict.

The Purpose of This Study

Through this literature review I have summarized the innate drive for emotional connection, and the many benefits that come from healthy close connections, such as a decreased risk of depression, anxiety, mental illness, and poor health (Gillmore et al., 2008; Schoenborn & Heyman, 2009). Though there are positives that come from healthy relationships, unhealthy relationships can be damaging (Umberson et al., 2006). Conflict is an important relationship dynamic that can lead to unhealthy relationships. Since conflict is inevitable, how couples argue, disagree, and recover appears to be more consequential to the success of marriage than what they argue about, or how often they experience conflicts (Noller & Feeney, 1998; Stanley et al., 2002). Attachment has been
linked to how couples argue, and extensive research has been performed on how attachment styles are associated with conflict and conflict resolution.

Human physiology has also shown to be important in how couples interact, and is being used to understand unconscious processes of conflict (Levenson & Gottman, 1985; Mikulincer & Florian, 1998; Sapolsky et al., 2000). Gottman suggested that the physiology that occurs during conflict may impair our ability to solve marital conflict (Gottman, 1998). If the physiological changes that occur during conflict prevent the couple from resolving the disagreement, it is important to understand the arousal during the conflict, and the process of recovery. Research has begun to use human physiology to explore attachment and conflict, and have set forth initial protocols to studying conflict that need further research. Researchers have measured cortisol in studying the association of attachment, conflict, and recovery, while the studies using skin conductance levels have only studied conflict, with future research still needed. The purpose of my study is to provide greater clarity to the potential role of attachment in conflict by using skin conductance to measure physiological arousal. I will also examine the potential influence of attachment on recovery from conflict, which has not been addressed in the literature with the use of skin conductance.

This quantitative research will seek to address two questions: (1) Is anxious attachment significantly associated with physiological arousal during couple conflict, and during recovery from couple conflict?, and (2) Is avoidant attachment significantly associated with physiological arousal during couple conflict, and during recovery from couple conflict?
CHAPTER III

METHODS

The present study utilizes advances in technology to further the understanding of attachment, conflict, and recovery from couple conflict. Ten ($n = 20$) heterosexual couples were connected to skin conductance monitors to measure physiological arousal during a 10-minute conflict task, and during a distraction task and discussion following the conflict. Attachment was used as an independent variable, with couple satisfaction, depression, anxiety, and stress being included as potential predictor variables for analysis. Physiological arousal difference scores from the conflict task, and the distraction task and discussion were calculated to represent arousal and recovery from conflict. Difference scores were analyzed with covariates using forced-entry multiple regression. The results were used to answer whether there is a relationship between anxious and avoidant attachment, conflict, and recovery from couple conflict.

Participants

Participants came from a parent study which consisted of a two-session couple intervention. Ten heterosexual ($n = 20$) couples were chosen from the parent study. Participants were recruited mainly through flyers dispersed throughout the community, in areas such as university child daycare centers, schools, restaurants, religious establishments, newspapers, and university facilities. Participants in the study engage in a conflict task, and therefore, participants were excluded if physical violence had occurred within the last three months and resulted in a mark or hospital visit. Participants under the
age of 18 were also excluded from the study. Couples were also excluded if at least one partner did not score below 104.5 on the Couple Satisfaction Index (CSI; Funk & Rogge, 2007). Those scoring below the cutoff are considered clinically dissatisfied, and represent couples that would be seen in therapy. Including only dissatisfied couples was chosen to have a sample that would be similar to what would be seen in therapy, and therefore, results could be utilized by therapists. To participate, individuals were required to be in a romantic relationship, including dating, engaged, cohabitating, or married. There was no length restriction on the relationship.

A summary of the participant demographic information can be found in Table 1. For the 20 participants, ages ranged from 22 to 55, with a $M = 29.25$ and a $SD = 10.52$. Of the 10 couples, eight were married, one was engaged to be married, and one was cohabitating. Of the 20 participants, one had been divorced prior to the current relationship. The couples’ relationship length ranged from six months to 33 years, with an $M = 6.35$ years and a $SD = 9.18$. Five of the couples had children. Seventeen participants identified themselves as White/Caucasian. The sample also were highly educated, with eight participants reporting having a four-year college degree, eight reporting some college, two having a graduate degree, and two having a high school or equivalent diploma. In terms of employment, eight participants were employed full-time, seven employed part-time, three students, and two homemakers.
Table 1

Sample Demographic Variables

<table>
<thead>
<tr>
<th>Variable name</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (Sample size)</td>
<td></td>
</tr>
<tr>
<td>Relationship status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>16 (80)</td>
</tr>
<tr>
<td>Engaged</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Cohabitating</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Ethnic/Racial origin</td>
<td></td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>17 (85)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Biracial</td>
<td>1 (5)</td>
</tr>
<tr>
<td>Highest level of education</td>
<td></td>
</tr>
<tr>
<td>High school diploma or equivalent</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Some college</td>
<td>8 (40)</td>
</tr>
<tr>
<td>College graduate (4 year)</td>
<td>8 (40)</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>8 (40)</td>
</tr>
<tr>
<td>Part- time</td>
<td>7 (35)</td>
</tr>
<tr>
<td>Homemaker</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Student</td>
<td>3 (15)</td>
</tr>
</tbody>
</table>

Procedures

Data collected for this research project was obtained from the first session of a parent study. The first session lasted approximately two hours, and a summary of the protocol can be seen in Table 2. A complete protocol of the parent study is included in Appendix A. Prior to the couple attending the session, self-report assessments were sent via email and were required to be completed before beginning the first session. The
Table 2

Outline of Study

<table>
<thead>
<tr>
<th>Phase</th>
<th>Tasks performed</th>
</tr>
</thead>
</table>
| 1     | Informed consent  
*Couple fills out Couple Disagreement Scale* |
| 2     | Meet with each couple individual and identify individual area of change discussion topic  
Five minute break  
*Skin conductance electrodes are connected*  
*Couple agrees on conflict topic for discussion*  
*Therapist leaves the room and couple relaxes (3 minutes)* |
| 3     | Couple interview (15-20 minutes) |
| 4     | First partner discuss individual area of change with partner (10 minutes)  
Second partner discusses individual area of change with partner (10 minutes)  
*Couple discusses relationship conflict area*  
*Distraction task*  
*Distraction discussion*  
Question and answer: “What was it like to discuss an area of disagreement?” |

*Note. The italicized tasks represent the sections of the larger study that were used for this study.*

assessments were sent out before to try and minimize the time participants were at the study location.

Upon arrival to the study, participants filled out an informed consent and a Couple Disagreement Scale, which is a list of 23 common issue topics that couples often fight about. Each individual rated on a scale of 0-100 the severity of the problem, and on a
scale of 0-100% how often the conflict was resolved (see Appendix B). An example of some of the topics included: communication, money and handling of family finances, and sexual relationship. As the participants were filling out the scales, a researcher took one of the participants into a separate room and asked if there had been any violence in the last three months, gave a brief explanation of the protocol, and asked the participant to identify a topic that they would like to change about themselves that they could discuss with their partner for 10 minutes. When both couples had finished their scales and discussion with the researcher, they were given a 5-minute break to use the restroom, and were asked to wash their hands in preparation for electrodes to be applied. During this time, the researcher compared the partners Couples Disagreement Scales, and picked two moderately distressing topics that were similar between partners, and were not always resolved.

After a 5-minute break, participants entered a therapy room and sat in separate chairs. This was done so that couples would not touch, which would interfere with the skin conductance readings. Electrodes were placed on the middle finger and index finger of participants’ non-dominant hands. Once electrodes were in place, the researcher asked the couple to pick between conflict topics chosen from the Couple Disagreement Scale, or asked if they would like to choose another topic. The couple was then asked to try and relax for 3 minutes without talking while the therapist left the room. This 3 minute period was used for a baseline skin conductance level.

After 3 minutes, the therapist entered the room and began a 15-20 minute couple interview. The therapist engaged both participants in a structured conversation with
questions about how they met, what first attracted them to each other, and how their relationship was different from their parents. Following this couple interview, the participant who was randomly selected to go first was asked to introduce the topic that they would like to change about them, and discuss it with their partner for 10 minutes. The therapist did not interact with the couple during these discussions. After 10 minutes, the participants filled out a questionnaire and then the other partner would introduce their topic.

Following the individual discussions was the conflict resolution task. During the conflict resolution task, the couple was asked to discuss the conflict topic from the Couple Disagreement Scale that was chosen earlier, with a goal to understand each other and make steps towards a resolution. The therapist was in the room during this discussion, but did not participate in the discussion. After the 10 minutes was over, participants engaged in a distraction task which consisted of reading through a list of important aspects of a couple relationship, and ranking the 10 most important. This was designed to distract the couple from the conflict previously discussed while keeping them focused on relationship topics. Following the distraction task, the couple had a discussion where they compared their answers, which was called the distraction discussion. This was placed here to still measure recovery while the couple reengaged in a discussion about the topic of relationships. The couple then talked for 3-4 minutes and compared answers. A question and answer piece followed this distraction task and discussion, and was a brief discussion with the therapist where the couple was asked strengths, areas of
improvement, and what it was like to discuss conflict. The couple were then excused, which completed session one.

Measures

Self-report measures were used in this study to assess for attachment anxiety and avoidance, couple satisfaction, depression, anxiety, and stress. Physiological arousal was measured through the use of skin conductance.

Attachment Scale

The Experience in Close Relationship Scale (ECR) was used to measure adult attachment (Brennan, Clark, & Shaver, 1998). The ECR is a 36-item, self-report scale, which consists of two 18-item subscales, anxiety and avoidance. Attachment anxiety is defined as involving a fear of interpersonal rejection or abandonment, while attachment avoidance is defined as involving a fear of dependence or discomfort of intimacy (Mikulincer, Shaver, & Pereg, 2003). These two scales were found to be nearly uncorrelated ($r = .11$) suggesting that the measure captures two separate underlying dimensions of adult attachment (Brennan et al., 1998). Responses to the subscales are on a 7-point Likert scale, ranging from disagree strongly (1) to strongly agree (7). Scores are averaged to give an overall score of 1-7 for the anxious and avoidant attachment styles, with higher scores having more of the attachment styles. An example of an anxious attachment question is “I worry about being alone,” while an avoidant attachment question is “I worry about getting too close to other.” The ECR was chosen because it
has been shown to be a reliable measure of adult-attachment, and could be administered via self-report.

**Couple Satisfaction Index**

To assess for relational satisfaction, the 32-item Couple Satisfaction Index (CSI) was used (Funk & Rogge, 2007). The CSI assesses global evaluations of romantic relationships. Items are scaled on a 6- and 7-point Likert scales. Example of items are: “How good is your relationship compared to most,” “To what extent has your relationship met your expectations,” and “My relationship with my partner makes me happy.” The CSI correlates .87 with the widely used Dyadic Adjustment Scale (Spanier, 1976) and -.79 with the Ineffective Arguing Inventory (Kurdek, 1994). Scores are summed, with higher score representing higher levels of satisfaction. The cutoff for clinical dissatisfaction is 104.5.

**Depression, Anxiety, and Stress Scale**

The 21-item Depression, Anxiety, and Stress Scale (DASS-21) were used to measure the negative affect that may have been present in participants (Lovibond & Lovibond, 1995). The DASS-21 differentiates between three subscales: depression, anxiety, and stress. Participants indicate the extent to which they have experiences symptoms within the last week on a 4-point Likert scale between 0 (“Did not apply to me at all”) and 3 (“Applied to me very much, and most of the time”). An example of a depression statement is “I felt like I had nothing to live for.” An example of an anxiety statement is “I experienced trembling.” An example of a stress statement is “I found it hard to wind down.” Scores are totaled and multiplied by two. See Table 3 for scoring.
Table 3

**DASS-21 Scoring Breakdown**

<table>
<thead>
<tr>
<th>Severity label</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>0 – 4</td>
<td>0 - 3</td>
<td>0 – 7</td>
</tr>
<tr>
<td>Mild</td>
<td>5 - 6</td>
<td>4 – 5</td>
<td>8 – 9</td>
</tr>
<tr>
<td>Moderate</td>
<td>7 – 10</td>
<td>6 - 7</td>
<td>10 – 12</td>
</tr>
<tr>
<td>Severe</td>
<td>11 - 13</td>
<td>8 - 9</td>
<td>13 – 16</td>
</tr>
<tr>
<td>Extremely severe</td>
<td>14 +</td>
<td>10 +</td>
<td>17 +</td>
</tr>
</tbody>
</table>

*Note:* Scoring breakdown and severity labels from Loveland and Loveland (1995).

**Skin Conductance**

Participants’ physiological responses were measured using skin conductance, also known as galvanic skin response (Hempel et al., 2005). Psychophysiological measures access the process not under conscious awareness or control, thereby increasing the potential for a more valid, sensitive measure of individual, moment-by-moment emotional arousal (Seedall, 2011). Skin conductance was chosen for this study because it is a valid indicator of the sympathetic nervous system and has been linked to stressful experiencing and attempts to regulate emotion, with research already identifying it as a valuable indicator of how attachment relates to physiological arousal (Dawson et al., 2007; Diamond et al., 2006; Katz & Gottman, 1996; Roisman, Tsai, & Chiang, 2004). Participants’ physiological arousal was measured using a digital biofeedback device (M150, Biopac, Goleta, CA) and an amplifier module (GSR100C, Biopac).
Adhesive disk electrodes were connected to the index and middle fingers of participants’ non-dominant hand. Skin conductance scores were measured ten times per second, with continuous data points for each participant being stored using the biofeedback software.

**Data Analysis**

In preparation for data analysis, the first step was to smooth the skin conductance output. The smoothing process acts as a way to minimize the spikes that occur on the output that come from external factors such as noise, movement, or rubber sole shoes (Braithwaite, Watson, Jones, & Rowe, 2013). To smooth, the skin conductance output were displayed using the biofeedback software program (AcqKnowledge 4.2, Biopac). Each participant’s skin conductance was smoothed to smoothing factor of 3, which was the default setting of the software program. This medium smoothing factor was chosen because it was sensitive enough to remove external spikes, but not too oversensitive to distort the overall shape (Braithwaite et al., 2013).

Once the smoothing process was completed, skin conductance level means were obtained from the conflict and recovery sections of the study using the biopac software. To increase reliability of the data, time stamps for the conflict discussion task and recovery tasks were obtained from the video recordings of the study. This was done to try and eliminate any human error that may have occurred when starting the skin conductance readings. Three conflict score means were obtained from the conflict discussion. The conflict discussion lasted approximately ten minutes, with the skin conductance from the conflict discussion being divided into thirds to capture the potential
changes in arousal during the conflict task (Figure 1). Two recovery score means were calculated from the first three minutes of the distraction task and discussion (Figure 1). The first three minutes of the distraction task and discussion were chosen because there was some variability in the amount of time these tasks took for each couple, so three minutes was chosen to control for recovery over time.

Once the three conflict and two recovery means were calculated, difference scores were calculated by subtracting the three conflict and two recovery means from the baseline relaxation section mean. The baseline relaxation score was obtained from the mean skin conductance level from the three minute period of relaxation that occurred at the beginning of the study.

Once the difference scores were calculated, I wanted to get an overall view of the different attachment styles physiological reactions. Data were separated into high

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Figure 1. Origin of conflict and recovery scores. The conflict task skin conductance levels were divided into three means: conflict 1, conflict 2, and conflict 3. The recovery tasks were skin conductance means from the first three minutes of the distraction task and distraction discussion.
attachment anxiety, high attachment avoidance, and a low attachment anxiety/avoidant group. The ECR used in this study measures attachment on a linear scale from one to seven. High and low attachment styles were determined from the medium possible score, so scores 3.5 and above were considered high. I determined to do a low attachment anxiety and avoidance group instead of a low avoidance or anxiety, because simply looking at low attachment anxiety may actually be measuring high attachment avoidant. Means between the three groups were compared using three t tests, in conjunction with a Levine’s test which was used to assess for homogeneity of variances (Field, 2005).

After getting an overall view of attachment styles and the different physiological reactions during the conflict and recovery, I next assessed for any gender differences in the skin conductance baseline and difference scores by separating the data by gender and using a t test to compare the means. A Levine’s test was also used in conjunction with the t test, with the results being nonsignificant. Following analysis assessing gender differences, correlation analyses were used next to understand the relationship between predictor, control, dependent, and sample variables. The predictor variables were attachment anxiety and avoidance. Control variable included baseline skin conductance means, depression, anxiety, stress, and gender. Baseline skin conductance means were included because there are many individual factors that can influence skin conductance, including temperature, skin surface, and placement of electrodes (Dawson et al., 2007). Including the baseline skin conductance in analysis is a way to control for these factors (Diamond et al., 2006). Depression, anxiety, and stress scores were included in all
analyses to control for intrapersonal factors that have been shown to be associated with conflict (see Ellison et al., 2011; Faulkner et al., 2005; Harrington, 2006).

As previously stated, I separated the bivariate correlation analyses by gender to seek to control for potential gender differences. Sample variables used for correlation included age, relationship status, children, and couple satisfaction scores. Sample variables were included to portray relationships between the other variables that may be attributed to the sample dynamics. Analyzing correlation was the conclusion of preliminary analysis.

Analyzing difference scores and correlations prepared for the primary analysis, which is forced-entry multiple regression. Research has shown many factors that influence conflict, such as attachment, gender, depression, anxiety, and stress. Research has also shown many intrapersonal factors are associated with attachment (Sroufe, 2005). With several factors influencing conflict and attachment, I chose multiple regression for this study, because it can be used to predict outcomes from several predictors (Field, 2005). I chose the forced-entry method of multiple regressions as the primary analysis, which is where the predictors are forced into the model simultaneously without rankings (Field, 2005). I chose forced entry multiple regression because, though factors such attachment and gender have been shown to be important in conflict and recovery, past work was not enough to rank which predictors were most important, which is needed for hierarchical regression analysis. As a result, all variables were analyzed together without ranking. It is acknowledged that when studying couples, the data points between partners are not independent, and dyadic analysis would have been ideal because
it takes into account potential influence of couples by assessing partner and actor effects (Kenny, Kashy, & Cook, 2006). As a result of a small sample size, I chose multiple regressions for analysis to provide much of the same information, though it does not address actor-partner interdependence.

Five multiple regression analyses were performed using the three difference scores from the conflict task and the two recovery difference scores as outcome variables. For each regression analysis, the predictor variables were attachment anxiety and avoidance scores. Consistent with the preliminary analysis, gender was included in all analyses to control for the variability in skin conductance levels between males and females. I also used a $t$ test to analyze differences in the variable means between males and females to analyze if gender scores were significantly different. A Levine’s test was used in conjunction to test for homogeneity of variance, which was assumed.

In summary, data analysis began with smoothing skin conductance levels and obtaining skin conductance means for a baseline, three conflict, and two recovery periods. Once means were obtained, difference scores were calculated to represent physiological changes from baseline. Data were first separated into high anxiety, high avoidant, and low anxiety/avoidant groups to provide an initial illustration into the physiological arousal of the three groups. Data were then analyzed to assess for gender differences in the physiological reactivity. A $t$ test was used to compare the difference scores between males and females, followed by bivariate correlation analysis to examine relationships between predictor variables, control variables, dependent variables, and sample variables. Following the preliminary analysis, five forced-entry multiple
regressions were used to analyze whether the predictor and control variables were significantly associated with the physiological arousal difference scores from the conflict and recovery tasks. The results will add to the literature on the linkage between attachment and physiological arousal during conflict, and introduce the association for recovery from conflict.
CHAPTER IV
RESULTS

Conflict has long been studied, and how couples handle conflict has been shown to be an important predictor to the success of the relationship. More recently, researchers have begun to study how attachment influences conflict, which has continued to increase the understanding of the many factors that play a role in conflict (Pistole & Arricale, 2003; Salvatore et al., 2011). With conflict happening in every relationship, of additional importance to understanding the impact of attachment and conflict is to understand the linkage to recovery from couple conflict, which is not as commonly addressed in the literature and needs to be explored. Technology has allowed for additional advances in understanding conflict, as it has linked attachment and the physiological changes that occur as a result of conflict tasks or discussion (Diamond et al., 2006; Powers et al., 2006). Though there has been research on attachment and physiological changes to conflict, more research needs to be done to fully grasp the link between the two.

This study was designed to further address attachment, conflict, and recovery from couple conflict, while also providing an impetus for further study. The primary purpose was to add to the current literature on the potential role of attachment in conflict and the physiological recovery from couple conflict. To provide greater clarity on the relationship between attachment, conflict, and recovery from couple conflict, skin conductance levels were analyzed with attachment anxiety and avoidance scores. The following section will outline the preliminary, correlation, and primary analyses.

Preliminary analysis includes assessing differences between attachment styles and
genders. Correlation analyses were used to examine the relationship between additional variables included in the study, as well as the relationship between attachment and the arousal difference scores. The primary analysis included five multiple regression to illustrated the relationship between anxious and avoidant attachment and recovery from couple conflict.

**Preliminary Analysis**

In order to prepare for a multiple regression analysis, a variety of preliminary analyses were performed. Missing data were not a problem in analysis, as there were no missing data points. An inclusion criterion for this study was to include only couples with at least one dissatisfied member, according to the CSI. This criterion was included because it is more likely to represent couples who enter therapeutic treatment, and they would be more likely to have quicker and greater physiological reactions to the conflict discussion than satisfied couples (Olson et al., 2008). Having quicker and greater reactions was important in this study because the conflict discussion was limited to 10 minutes. Including only dissatisfied couples was also chosen because it had not been addressed in the literature using skin conductance, with Diamond and colleagues (2006) excluding dissatisfied couples, and Seedall and Wampler (2012) having a mixture of satisfied and dissatisfied couples.

As discussed in the previous chapter, a baseline skin conductance mean was taken from a relaxation portion of the study, three difference scores were calculated during the conflict discussion, and two recovery differences scores were calculated during the
distraction task and discussion. The difference scores were used for both preliminary and primary analysis.

**Physiological Differences by Attachment Style**

Once means and difference scores were calculated, the subjects were first separated into high anxious, high avoidant, and low avoidant and anxious groups. This separation was designed to give an initial overview into the physiological arousal differences between attachment styles.

The physiological arousal baseline mean raw scores for those high in anxious attachment ($M = 7.88$, $SD = 3.94$) was higher than those with high avoidance ($M = 7.04$, $SD = 4.56$) and low anxiety/avoidance ($M = 6.20$, $SD = 2.71$). See Table 4 for descriptive statistics of the attachment group scores. When comparing the raw scores between high anxious, high avoidance, and low anxiety/avoidance, those higher in anxious attachment had increased arousal throughout the conflict and recovery tasks (see Figure 2).

Table 4

<table>
<thead>
<tr>
<th>Attachment Styles and Physiological Arousal Raw Difference Scores Comparison</th>
<th>High anxiety</th>
<th></th>
<th>High avoidance</th>
<th></th>
<th>Low anxiety/avoidance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Conflict 1</td>
<td>2.52</td>
<td>2.56</td>
<td>1.93</td>
<td>1.54</td>
<td>1.84</td>
<td>1.03</td>
</tr>
<tr>
<td>Conflict 2</td>
<td>2.20</td>
<td>2.78</td>
<td>1.56</td>
<td>1.73</td>
<td>1.40</td>
<td>1.26</td>
</tr>
<tr>
<td>Conflict 3</td>
<td>2.00</td>
<td>2.67</td>
<td>1.43</td>
<td>1.93</td>
<td>1.20</td>
<td>1.50</td>
</tr>
<tr>
<td>Distraction task</td>
<td>1.57</td>
<td>2.52</td>
<td>1.56</td>
<td>2.11</td>
<td>1.03</td>
<td>1.72</td>
</tr>
<tr>
<td>Distraction discussion</td>
<td>2.00</td>
<td>2.73</td>
<td>1.59</td>
<td>1.88</td>
<td>1.20</td>
<td>1.80</td>
</tr>
</tbody>
</table>
Gender Differences

After analyzing the data to understand attachment styles, the means and difference scores were used to understand the potential gender difference in physiological reactivity. The raw scores for the baseline skin conductance mean for the men \((M = 6.22, SD = 2.90)\) was lower than for females \((M = 7.70, SD = 4.02)\); however, when analyzed, the male and females baseline skin conductance scores were not significantly different from each other, \(t(18) = -.94, p > .05\). Table 5 shows a complete list of the male and female conflict and recovery from conflict difference scores, as well as a \(t\) score comparing the means. There was no significant difference between male and female difference scores, which means that though gender has been shown to be associated with differences in conflict, in this study male and female physiological reactivity was not significantly
Table 5

*Male and Female Difference from Baseline Scores*

<table>
<thead>
<tr>
<th></th>
<th>Male M</th>
<th>Male SD</th>
<th>Female M</th>
<th>Female SD</th>
<th>t score</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict 1</td>
<td>2.30</td>
<td>1.60</td>
<td>2.26</td>
<td>2.53</td>
<td>.05</td>
<td>.39</td>
</tr>
<tr>
<td>Conflict 2</td>
<td>1.82</td>
<td>1.64</td>
<td>1.97</td>
<td>2.71</td>
<td>-.15</td>
<td>.30</td>
</tr>
<tr>
<td>Conflict 3</td>
<td>1.65</td>
<td>1.84</td>
<td>1.78</td>
<td>2.56</td>
<td>-.12</td>
<td>.30</td>
</tr>
<tr>
<td>Distraction task</td>
<td>1.83</td>
<td>1.84</td>
<td>1.42</td>
<td>2.42</td>
<td>.42</td>
<td>.37</td>
</tr>
<tr>
<td>Distraction discussion</td>
<td>1.96</td>
<td>1.98</td>
<td>1.66</td>
<td>2.55</td>
<td>.29</td>
<td>.70</td>
</tr>
</tbody>
</table>

Different. Figure 3 plots the difference scores for males and females representing the physiological changes from baseline.

**Correlation**

Once potential attachment and gender differences were better understood, the next step in data analysis was to begin looking at the relationships between variables by running bivariate correlational analyses. This was done to assess the relationship of independent and dependent variables, as well as characteristics that help describe the sample. In preparation for preliminary data analysis, the data set were separated by gender, consistent with what was described in the previous section in controlling for gender differences. Of note from the correlations analysis is that couple satisfaction had a significant negative correlation with stress for men. Women in the study had a significant positive correlation between stress and anxiety. Both men and women had a significant
positive relationship between depression and stress. Table 6 shows the correlation between many of the variables measured. The table is separated by gender, with male correlations above the bold line and females below.

In addition to understanding the relationships between the variables listed above, correlation analysis was used to better understand the relationship between attachment, and the physiological arousal during couple conflict and recovery. Overall, the direction of the correlations was predicted to be positive between anxious attachment and physiological reactivity for both men and women (see Table 7). Correlations are broken into categories of large (1 > r > .5), medium (.5 > r > .3), small (.3 > r > .1), and trivial (.1 > r > 0; see Cohen, 1988). Men had a positive relationship between physiological
Table 6

**Correlation of Variables Included in the Study**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td><strong>.98</strong>*</td>
<td>.69*</td>
<td>-.22</td>
<td>-.19</td>
<td>-.42</td>
<td>-.38</td>
<td>-.61</td>
</tr>
<tr>
<td>2. Couple satisfaction</td>
<td>.15</td>
<td></td>
<td><strong>.35</strong></td>
<td></td>
<td></td>
<td></td>
<td>.72*</td>
</tr>
<tr>
<td>3. Attach. anxiety</td>
<td></td>
<td></td>
<td><strong>.45</strong></td>
<td>.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Attach. avoidance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Stress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Diagonal: Correlations between men and women; Lower diagonal: Correlations among women; upper diagonal: Correlations among men. The bolded diagonal is the correlation between male and females. *p < .05. **p < .01. ***p < .001.

reactivity difference scores and anxious attachment which was large, with the last part of the conflict and distraction discussion being significant (*p < .05*). The women’s first two conflict scores had a positive medium association with attachment anxiety, with the remaining three having a positive small association. The relationship between avoidant attachment and physiological reactivity for men was positive, with the distraction task and discussions relationship to arousal being small the three conflicts scores relationships being trivial. The correlation was negative between avoidant attachment and physiological reactivity for women, with the association being medium for the last conflict score and the remaining scores having a large association with arousal.
Table 7

*Correlation of Attachment and Physiological Arousal*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attach. anxiety</td>
<td>-.45</td>
<td>.15</td>
<td>.04</td>
<td>.61</td>
<td>.63</td>
<td>.64*</td>
<td>.62</td>
<td>.68*</td>
</tr>
<tr>
<td>2. Attach. avoidance</td>
<td>-.08</td>
<td>.13</td>
<td>.26</td>
<td>.03</td>
<td>.02</td>
<td>.06</td>
<td>.24</td>
<td>.13</td>
</tr>
<tr>
<td>3. Baseline skin level</td>
<td>.36</td>
<td>.26</td>
<td>.55</td>
<td>-.36</td>
<td>.40</td>
<td>-.39</td>
<td>-.47</td>
<td>-.46</td>
</tr>
<tr>
<td>4. Conflict 1</td>
<td>.31</td>
<td>-.61</td>
<td>-.05</td>
<td>-.23</td>
<td>.96***</td>
<td>.93***</td>
<td>.92***</td>
<td>.89***</td>
</tr>
<tr>
<td>5. Conflict 2</td>
<td>.34</td>
<td>-.54</td>
<td>-.32</td>
<td>.93**</td>
<td>.01</td>
<td>.99***</td>
<td>.95***</td>
<td>.93***</td>
</tr>
<tr>
<td>6. Conflict 3</td>
<td>.27</td>
<td>-.47</td>
<td>-.40</td>
<td>.88***</td>
<td>.98***</td>
<td>.21</td>
<td>.95***</td>
<td>.95***</td>
</tr>
<tr>
<td>7. Distraction task</td>
<td>.17</td>
<td>-.50</td>
<td>-.54</td>
<td>.81**</td>
<td>.95***</td>
<td>.98***</td>
<td>.27</td>
<td>.96***</td>
</tr>
<tr>
<td>8. Distraction discussion</td>
<td>.21</td>
<td>-.56</td>
<td>-.37</td>
<td>.92***</td>
<td>.98***</td>
<td>.98***</td>
<td>.97***</td>
<td>.18</td>
</tr>
</tbody>
</table>

Note. Diagonal: Correlations between men and women; Lower diagonal: Correlations among women; upper diagonal: Correlations among men. * $p < .05$. ** $p < .01$. *** $p < .001$.

In summary, there was a large association in males with anxious attachment and physiological reactivity during both conflict and recovery, while their relationship with avoidant attachment and physiological reactivity was trivial during the conflict, and medium during the recovery from conflict. For females, there was a medium association between anxious attachment and physiological reactivity during the beginning portions of conflict, and a small association during the end of the conflict and recovery from conflict. There was a negative relationship between avoidant attachment and physiological
reactivity in females, with a large relationship during the majority of the conflict and recovery.

**Primary Analysis**

Five multiple regression analyses were performed using the three difference scores from the conflict task and the two recovery difference scores as outcome variables. For each regression analysis, the predictor variables were attachment anxiety and avoidance scores. Gender was included in all analyses to control for the variability in skin conductance levels between male and females. Another variable included in all analyses was participants’ baseline skin conductance mean. This score was included in the analyses because there are many individual factors that can influence skin conductance, including temperature, skin surface, and placement of electrodes, and including baseline in the analyses was a way to control for these factors (Dawson et al., 2007; Diamond et al., 2006). Depression, anxiety, and stress scores were also included in all analyses to control for many of the intrapersonal factors that may be related to conflict. Table 8 includes the demographic variables included in the analyses. A t test was used to compare variable means between males and females. Attachment anxiety and gender were significantly different $t(18) = -.437, p < .001$, indicating that for attachment anxiety, there is a significant relationship with gender. The other variables means were not significantly different between males and females, though depression, $t(18) = -1.98, p = .06$, and anxiety, $t(18) = -1.95, p = .07$, were both nearing significance.
### Table 8

**Variables Included in Regression Analysis**

<table>
<thead>
<tr>
<th></th>
<th>Entire Sample</th>
<th></th>
<th>Men</th>
<th></th>
<th></th>
<th>Women</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Attachment anxiety</td>
<td>3.84</td>
<td>1.29</td>
<td>2.93</td>
<td>.67</td>
<td>4.74</td>
<td>1.12</td>
<td></td>
</tr>
<tr>
<td>Attachment avoidance</td>
<td>3.53</td>
<td>.83</td>
<td>3.57</td>
<td>.93</td>
<td>3.49</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td>Baseline skin levels</td>
<td>6.96</td>
<td>3.49</td>
<td>6.22</td>
<td>2.90</td>
<td>7.70</td>
<td>4.02</td>
<td></td>
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<tr>
<td>Depression</td>
<td>13.00</td>
<td>11.15</td>
<td>8.40</td>
<td>6.79</td>
<td>17.60</td>
<td>13.02</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>7.20</td>
<td>10.83</td>
<td>2.80</td>
<td>2.70</td>
<td>11.60</td>
<td>14.04</td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>13.30</td>
<td>7.88</td>
<td>10.60</td>
<td>6.93</td>
<td>16.00</td>
<td>8.16</td>
<td></td>
</tr>
</tbody>
</table>

### Conflict 1

Multiple regression analysis was used to test if attachment anxiety and avoidance was associated with participants’ physiological changes during the first third of the conflict task. Conceptually, the beginning of the conflict may represent a time when the couple would be highly distressed because it was a conflict topic that they had discussed previously without resolution, and they were discussing conflict in front of another person. The results of the overall regression were not significant, and indicated that the two predictors and control variables explained 50.6% of the variance, $R^2 = .51$, $F(7, 19) = 1.75$, $p = \text{n.s.}$ It was found that attachment anxiety was significantly associated with physiological changes during this section of the conflict task ($\beta = 1.03$, $p < .05$), with those higher in attachment anxiety being more reactive. Attachment avoidance was not
Table 9

*Regression Coefficients for Conflict 1*

<table>
<thead>
<tr>
<th>Variables</th>
<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.20</td>
<td>2.56</td>
<td></td>
</tr>
<tr>
<td>Attach. anxiety</td>
<td>1.63</td>
<td>.57</td>
<td>1.03*</td>
</tr>
<tr>
<td>Attach. avoidance</td>
<td>-0.23</td>
<td>.58</td>
<td>-0.09</td>
</tr>
<tr>
<td>Baseline skin</td>
<td>-0.20</td>
<td>.14</td>
<td>-0.34</td>
</tr>
<tr>
<td>Gender</td>
<td>-1.62</td>
<td>1.19</td>
<td>-0.40</td>
</tr>
<tr>
<td>Depression</td>
<td>-0.03</td>
<td>.06</td>
<td>-0.16</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-0.06</td>
<td>.06</td>
<td>-0.31</td>
</tr>
<tr>
<td>Stress</td>
<td>-0.06</td>
<td>.10</td>
<td>-0.22</td>
</tr>
</tbody>
</table>

* $p < .05$.

associated with physiological changes ($\beta = -0.09, p = n.s.$). See Table 9 for the complete coefficient table.

**Conflict 2**

Multiple regression analysis was used to test if attachment anxiety and avoidance was associated with participants’ physiological changes during the middle third of the conflict task. This time period would represent the middle of an argument, where a couple had likely shared their perspective on the conflict in preparation for resolution. The results of the overall regression was not significant, and indicated that the two predictors and control variables explained 53.6% of the variance, $R^2 = .54$, $F(7, 19) =$
It was found that attachment anxiety was significantly associated with physiological changes during the middle conflict period ($\beta = 1.05, p = .01$), with those higher in attachment anxiety being more reactive. Attachment avoidance was not associated with physiological changes ($\beta = -.05, p = \text{n.s.}$). See Table 10 for the complete coefficient table.

**Conflict 3**

Multiple regression analysis was used to test if attachment anxiety and avoidance was associated with participants’ physiological changes during the final third of the conflict task. Conceptually, this part of the conflict would represent the ending of an

<table>
<thead>
<tr>
<th>Table 10</th>
</tr>
</thead>
</table>

**Regression Coefficients for Conflict 2**

<table>
<thead>
<tr>
<th>Variables</th>
<th>$B$</th>
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<th>$\beta$</th>
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<td></td>
</tr>
<tr>
<td>Attach. anxiety</td>
<td>1.77</td>
<td>.58</td>
<td>1.05**</td>
</tr>
<tr>
<td>Attach. avoidance</td>
<td>-.14</td>
<td>.59</td>
<td>-.05</td>
</tr>
<tr>
<td>Baseline skin</td>
<td>-.35</td>
<td>.14</td>
<td>-.55*</td>
</tr>
<tr>
<td>Gender</td>
<td>-1.74</td>
<td>1.22</td>
<td>-.41</td>
</tr>
<tr>
<td>Depression</td>
<td>-.02</td>
<td>.06</td>
<td>-.09</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-.05</td>
<td>.07</td>
<td>-.26</td>
</tr>
<tr>
<td>Stress</td>
<td>-.04</td>
<td>.10</td>
<td>-.14</td>
</tr>
</tbody>
</table>

* $p < .05$, ** $p < .01$. 
argument, where couples come to a resolution, or come to a realization that the argument is similar to past arguments where a resolution was not found. The results of the overall regression was not significant, and indicated that the two predictors and control variables explained 52.8% of the variance, $R^2 = .53$, $F(7, 19) = 1.92$, $p = n.s$. It was found that attachment anxiety was significantly associated with physiological changes during this part of the conflict task ($\beta = 1.04$, $p < .05$), with those higher in attachment anxiety being more reactive. Attachment avoidance was not associated with physiological changes ($\beta = -0.03$, $p = n.s$). See Table 11 for the complete coefficient table.

Table 11

Regression Coefficients for Conflict 3

<table>
<thead>
<tr>
<th>Variables</th>
<th>$B$</th>
<th>$SE B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
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<td>2.63</td>
<td></td>
</tr>
<tr>
<td>Attach. anxiety</td>
<td>1.74</td>
<td>.58</td>
<td>1.04*</td>
</tr>
<tr>
<td>Attach. avoidance</td>
<td>.09</td>
<td>.59</td>
<td>.03</td>
</tr>
<tr>
<td>Baseline skin</td>
<td>-.40</td>
<td>.14</td>
<td>-.64*</td>
</tr>
<tr>
<td>Gender</td>
<td>-1.58</td>
<td>1.23</td>
<td>-.38</td>
</tr>
<tr>
<td>Depression</td>
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</tr>
<tr>
<td>Anxiety</td>
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<td>.07</td>
<td>-.35</td>
</tr>
<tr>
<td>Stress</td>
<td>-.02</td>
<td>.10</td>
<td>-.05</td>
</tr>
</tbody>
</table>

* $p < .05$. 
Distraction Task

Multiple regression analysis was used to test if attachment anxiety and avoidance was associated with participants’ physiological changes during the distraction task following the conflict. Conceptually, this time period would be when couples stop discussing conflict, but the relationship discussion is still on their mind, and represents recovery from conflict. The results of the overall regression were nearing significance, and indicated that the two predictors and control variables explained 61.5% of the variance, $R^2 = .62, F(7, 19) = 2.74, p = .06$. It was found that attachment anxiety was significantly associated with physiological changes during the distraction task ($\beta = 1.03$, $p < .01$), with those higher in attachment anxiety being more reactive. Attachment

Table 12

Regression Coefficients for Distraction Task

<table>
<thead>
<tr>
<th>Variables</th>
<th>$B$</th>
<th>$SE B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.67</td>
<td>2.30</td>
<td></td>
</tr>
<tr>
<td>Attach. anxiety</td>
<td>1.67</td>
<td>.51</td>
<td>1.03**</td>
</tr>
<tr>
<td>Attach. avoidance</td>
<td>.37</td>
<td>.52</td>
<td>.15</td>
</tr>
<tr>
<td>Baseline skin</td>
<td>-.47</td>
<td>.13</td>
<td>-.78**</td>
</tr>
<tr>
<td>Gender</td>
<td>-1.71</td>
<td>1.08</td>
<td>-.42</td>
</tr>
<tr>
<td>Depression</td>
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<td>.05</td>
<td>-.13</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-.09</td>
<td>.06</td>
<td>-.46</td>
</tr>
<tr>
<td>Stress</td>
<td>.00</td>
<td>.09</td>
<td>.01</td>
</tr>
</tbody>
</table>

** $p < .01$. 
was not associated with physiological changes ($\beta = -.15, \ p = \text{n.s.}$). See Table 12 for the complete coefficient table.

**Distraction Discussion**

Multiple regression analysis was used to test if attachment anxiety and avoidance were associated with participants’ physiological changes during the distraction discussion following the distraction task. The distraction discussion would conceptually represent when couples return from conflict to discuss other aspects of their relationship, and represents recovery from the conflict. The results of the overall regression were not significant, and indicated that the two predictors and control variables explained 55.1% of

Table 13

*Regression Coefficients for Distraction Discussion*

<table>
<thead>
<tr>
<th>Variables</th>
<th>$B$</th>
<th>$SE\ B$</th>
<th>$\beta$</th>
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<td>1.03**</td>
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<td>Attach. Anxiety</td>
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<td>1.03**</td>
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<td>Attach. Avoidance</td>
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<td>.009</td>
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<tr>
<td>Baseline skin</td>
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<td>.15</td>
<td>-.665*</td>
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<tr>
<td>Gender</td>
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<td>-.432</td>
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<td>Depression</td>
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<td>.06</td>
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<tr>
<td>Stress</td>
<td>.03</td>
<td>.10</td>
<td>.113</td>
</tr>
</tbody>
</table>

* $p < .05$. ** $p < .01$. 
the variance, $R^2 = .55, F(7, 19) = 2.10, p = \text{n.s.}$ It was found that attachment anxiety was significantly associated with physiological changes during the distraction discussion ($\beta = 1.03, p = .01$), with those higher in attachment anxiety being more reactive. Attachment avoidance was not associated with physiological changes ($\beta = -.00, p = \text{n.s.}$). See Table 13 for the complete coefficient table.

**Conclusion**

In conclusion, preliminary, correlational, and forced entry multiple regression analyses were used to provide understanding to the data, relationships between variables, and associations between attachment anxiety and avoidance, and the physiological arousal to conflict and conflict recovery. The results were that those higher in attachment anxiety were significantly associated with higher levels of physiological reactivity during conflict and the recovery from conflict. Attachment avoidance was not found to be associated with physiological reactivity. A discussion of the results, along with implications and limitations will be presented in the discussion section.
CHAPTER V
DISCUSSION

As a result of the significance of conflict in relationships, researchers have studied many of the influencing factors of conflict. One area of conflict that has been studied is how attachment styles are associated with conflict, and how it impacts the individual and their partner. Increased conflict, decreased emotional reactivity during conflict, and being better able to recover from conflict are just a few of the associations found between conflict and attachment styles, and highlight the importance of researching these topics.

Researchers have also utilized advances in technology to understand conflict, and have used physiological measures such as cortisol and skin conductance to better understand conflict. Physiological measures have been useful in developing a greater understanding of conflict because they access unconscious factors influencing and being influenced by conflict. In this study, prior studies were replicated by using skin conductance to measure physiological arousal during couple conflict. The present study also uses skin conductance to measure physiological arousal during the recovery of couple conflict, which to my knowledge has not been addressed in extant literature using skin conductance levels as the measure of physiological arousal. The purpose of this study is to lay the groundwork for future research. Attachment anxiety being associated with physiological reactivity during conflict and recovery from conflict was found to be significant. A brief summary of the research questions and findings, limitations, contributions to previous research, implications, and suggestions for future research will be presented below.
Research Questions and a Brief Summary of Findings

This study focused on two research questions. The first research question addresses the association between anxious attachment and physiological arousal during conflict and recovery from couple conflict. Attachment anxiety in this study had some relationship with general anxiety, with a .51 correlation between the two, which shows that there are some similarities, but they are measuring different items. This is consistent with previous research where attachment anxiety is predictive of behavior even when general forms of anxiety are controlled (Shaver & Mikulincer, 2013). Participants in the high anxiety group also displayed higher arousal difference scores throughout the conflict and recovery tasks, representing increased reactivity to the conflict (see Figure 2). A significant correlation was found in that men with higher levels of attachment anxiety had greater physiological differences from baseline during the end of the conflict ($r = .64$) and during the distraction discussion ($r = .68$).

The results from the primary analysis were that anxious attachment and physiological arousal were significantly associated during the three conflict sections, and during the recovery period which included the distraction task and discussion. The direction of the association was positive, with higher attachment anxiety predicting greater physiological arousal during the conflict and recovery. This finding is significant in that, to my knowledge, it is the first study using skin conductance to find an actor effect with attachment anxiety and physiological arousal to conflict.

The second research question addressed whether attachment avoidance would predict physiological arousal during conflict and recovery from couple conflict.
Participants in the high attachment avoidant group had slightly higher levels of physiological arousal than the low anxiety/avoidance group, perhaps because they were able to use strategies to avoid attachment related thoughts during the discussion (see Figure 2). Attachment avoidance was also not found to be significantly correlated with any of the conflict or recovery difference scores. Though not significant, females had large and medium negative correlations between attachment avoidance and difference scores during the conflict and recovery tasks.

Surprisingly, results from the five multiples regressions were that attachment avoidance was not associated with physiological arousal during the conflict, or during the recovery period which included the distraction task and discussion. These results are surprising because, though avoidant individuals are less likely to show strong emotional reactivity to conflict, studies have shown that physiological changes occur for those high in avoidant attachment, though their self-reports indicate that they were not angry (Creasey & Ladd, 2005; Mikulincer & Florian, 1998).

In conclusion, results demonstrated that higher levels attachment anxiety was associated with higher levels of physiological arousal during conflict and recovery, with females being positively correlated with difference score. Attachment avoidance was not associated with higher levels of physiological arousal during conflict or recovery.

**Limitations**

Although the strengths of this study has been demonstrated throughout this paper, such as being a clinical sample, no lost data, and following a strict research protocol, this study in not without limitations which point to the need for future research. The
limitations in the study are the study sample and design. With being a pilot study, the sample size is naturally small with an $n = 20$. Though the sample size was small, valuable preliminary information was found that results in a strong foundation for future research to follow. Another limitation of the sample size is the length of the relationship and age of participants. The average length of relationship was 6.35 years, but if you take away the high outlier the average length drops down to 3.44 years. The age of participants was also younger, with an average of 29.25 years, and consisted of primarily of Caucasian participants. This lack of diversity in the sample limits the amount of generalizability the data can be portrayed to, and future research needs look at couples in longer relationships, older participants, and recruit more ethnic diversity.

The other limitation came from the study design. As a result of being part of a larger study, conflict and recovery were not the entire focus of the research design. One limitation that comes from being part of a larger study is that there was a large amount of time between the baseline skin-conductance reading and the conflict discussion. During that time, couples participated in a 15-20 minute joining session, and two 10 minutes discussions where they discussed something they would like to change about themselves. Though who went first during the 10 minute discussion was randomized to try and eliminate some bias, the time and couple interactions between baseline and conflict are limitations in the study. With the preliminary data from this study, future studies can focus conflict and recovery from couple conflict without the need to be part of a larger study.
Discussion on How Findings Fit with Previous Research

This study was designed to add to the literature on attachment and physiological arousal to couple conflict, as well as to introduce the use of skin conductance as a measure of arousal to better understand attachment and recovery from couple conflict. The following section will discuss how the findings on attachment anxiety and avoidance fit with the current literature on conflict.

Findings on Attachment Anxiety

The first research question addresses the association between anxious attachment and physiological arousal during conflict and recovery from couple conflict. The results from the first research question contribute to the literature of how attachment influences conflict and recovery from conflict. In studies using cortisol to measure physiological arousal, Brooks et al. (2011) found that males high in anxiety were predictive of greater physiological reactivity to couple conflict, and Powers et al. (2006) found that males high in anxiety had higher arousal levels during conflict and recovery. This previous research supports what was found in this study. This study was unable to identify if it was males, females, or both that predicted higher reactivity because the data were not separated by gender in the primary analysis because of the small sample size. Though the data were not separated, gender was controlled for in the multiple regressions.

Higher attachment anxiety being predictive of higher physiological arousal also adds new direction to using skin conductance levels as measures of arousal during conflict and recovery. Seedall (2011) used skin conductance levels to study attachment and actor-partner effects on physiological arousal. The purpose of studying actor-partner
effects in couples is to seek to understand the influences of the individual and their partner on outcome variables. A partner effect was found in couples when a female had higher levels of attachment anxiety which resulted in higher physiological arousal during a semi-natural couple conversation, but did not find an actor effect during the conversation. One difference in the present study is only dissatisfied couples with at least one partner below the CSI cutoff of 104.5 were included in this study. Olson et al. (2008) describe many of the different ways that unhappy couples and happy couples respond to conflict. These different responses to conflict may have resulted in couples who were more reactive and less capable of working through a conflict task or recover from discussing conflict, which resulted in a significant association between anxious attachment and physiological arousal.

The results from the first research question fits well with research on the needs of those high in attachment anxiety because physiological arousal was measured continually. Using skin conductance levels instead of cortisol levels as physiological measures of arousal allows researchers to measure arousal continually, compared to cortisol levels which were taken before and after the conflict (Brooks et al., 2011; Powers et al., 2006). With skin conductance being used, means from five continuous periods during the conflict and recovery were graphed for highly avoidant, highly anxious, and low in both attachment styles (see Figure 2).

Results from graphing the changes overtime showed an increased arousal at the beginning of conflict for those who scored high on attachment anxiety when compared to those who scored high in attachment avoidance, or low in attachment anxiety/avoidance
(see Figure 2). Those high in attachment anxiety arousal then decreased during the remaining conflict, though remaining higher than those in the high avoidance and low in both attachment styles. The heightened arousal in the beginning of conflict for the anxiously attached participants may be a result of their heightened need for support seeking mixed with their negative perceptions of support seeking (Vogel & Wei, 2005). Shaver and Mikulincer (2013, p. 30) described this as a “want but cannot” pattern, where anxiously attached individuals have a strong desire to seek support from attachment figures, but also have fears of rejection and doubts that interfere with support seeking. The arousal, therefore, may be heightened by the anxiously attached individual needing to use more direct means of support (e.g., discussing the conflict) versus the indirect means that are usually associated with anxious attachment (e.g., silent treatment; Collins & Feeny, 2000).

By being able to track the arousal continually, the research may give confirmation to previous research by demonstrating the physiological arousal that occurs when those high in attachment anxiety are put in a situation where they are wanting support but have fear that the support will be available.

In conclusion, attachment anxiety being significantly associated with physiological arousal fits well with previous literature on attachment anxiety. By using skin conductance as measures of physiological arousal, reactivity was tracked over time which gives both insight and direction for future studies.
Findings on Attachment Avoidance

The second research question addressed whether there was an association between attachment avoidance and physiological arousal during conflict and recovery from couple conflict. There are several possible explanations why those higher in avoidance were not associated with physiological arousal during the conflict or recovery from couple conflict. The first can be explained by comparing the high avoidant participants to the low avoidant and anxious participants (see Figure 2), which are similar during the conflict stage. Edelstein and Shaver (2004) reported that under low stress situations, avoidant and nonavoidant individuals often cannot be distinguished from one another, and only when stress goes beyond their capabilities can avoidant strategies be detected. Though a conflict topic was chosen by the couple, the topic may not have been stressful enough to activate the arousal of highly avoidant participants. Avoidant adults have defensive strategies to regulate closeness to others when they or their partner are threatened (Edelstein & Shaver, 2004). These defensive strategies may have taken place during the couple conflict. If they did not become physiologically aroused or invested in the conflict, they may have been able to remain distant from the conflict and their partner. Avoidant adults seek to keep distance from their partners as a way to prevent attachment system activation, which protects them from rejection, punishment, or distress they learned to associate with close relationships.

A comparison between this study and previous research also gives possible explanations to why avoidant attachment was not associated with physiological arousal. Diamond et al. (2006) found that those high in attachment avoidance had greater
physiological reactions, which were measured by skin conductance. In their study, they had a relationship discussion and a hypothesized separation discussion. The hypothesized separation discussion in their study may have been more arousing than the conflict discussion in our study because it may have activated more attachment-related thoughts and emotions. Edelstein and Shaver (2004) reported that threatening thoughts of separation or rejection can make avoidant strategies evident. Future research would benefit from using attachment-related discussions, like separation, to more accurately measure avoidant attached participants’ arousal.

Another key difference in the Diamond et al. (2006) study is they interviewed the couples individually when discussing the relationship and hypothetical separation. This is a contrast to the couple discussion, where the therapist was present but not involved in the discussion, that occurred in the present study. An interview with a researcher may have been more arousing, and may have resulted in an inability to use avoidant strategies to regulate closeness. These avoidant strategies may have been more easily accessible in couple conversation, in that previous experiences in discussing conflict in couple relationships would likely result in an avoidant attached partners knowing how to keep their partner at a physical and psychological distance. A therapist interview likely would have more direct questions than a couple conversation, and may have been more difficult for the highly avoidant participant to use their strategies to regulate closeness.

Brooks et al. (2011) and Powers et al. (2006) also found that attachment avoidance resulted in increased physiological arousal, but there were differences in those studies as well. Both of these studies used cortisol to measure physiological arousal, and
had a conflict discussion similar to the structure of the present study. Brooks et al. (2011) found that women with an avoidant partner had more physiological reactivity. This partner effect would not have been found in the present study, as the regression only looked at actor effects. Powers et al. (2006) found that women who had greater attachment avoidance had higher cortisol levels and more extreme reactivity to conflict tasks, but recovered quicker. In both of the studies mentioned, the findings were significant for the females. A possibility for the differing results is the high avoidant group in this study only had one female participant, and controlled for gender but did not separate gender for analysis.

Another interesting finding from the second research questions come from the recovery from couple conflict section. For the highly avoidant group, their trajectory of arousal declined from the beginning of the arousal until the conflict distraction task, where their arousal began to increase (see Figure 2). Though this was supposed to be a recovery period, highly avoidant participants increased arousal. A possible explanation for this peak during the distraction task is that highly avoidant participants were anticipating the distraction discussion, which involves comparing their rankings of important relationship items with their partner, which followed the distraction task. This heightened arousal for highly avoidant participant to the anticipation of a discussion about relationships can also be seen with the Powers et al. (2006) study, where participants’ had an increasing trajectory of arousal prior to their relationship conversations. The distraction discussion may feel unsafe for highly avoidant
participants, as they fear rejection from their partner as they share rankings of relationship attributes that are important to them.

Those high in avoidant attachment not being associated with arousal during conflict and recovery from conflict points towards confirmation of previous research, as well as provides new direction for research. Having a difficulty distinguishing between high and low avoidant attachment, becoming physiologically aroused in anticipation of discussing conflict, and needing attachment threatening experience to activate attachment strategies confirm findings from prior studies. The results from this study also point to the need of using skin conductance instead of cortisol to study conflict, recovery from conflict, and avoidant attachment, and to include partner and actor effects.

Implications

The implications of studying attachment and physiological arousal during couple conflict and recovery from conflict have been addressed throughout this paper, but will be made explicit here. The findings from this study have implications to couples, clinicians, and researchers.

Couple Implications

The findings in this study have implications for couples in the general population wishing to improve their relationships. Couples could benefit from findings by using the results in a self-help manner. This study can help nonclinical couples better understand how their attachment influences common relationship dynamics such as conflict. By learning their partners’ attachment style and their own attachment style, couples can
better understand the patterns that they often engage in when conflict arises (e.g., fear of rejection, pursue, or avoid; see Edelstein & Shaver, 2004; Shaver & Mikulincer, 2013). Understanding attachment would also help to determine conflict resolution techniques to employ, such as Gottman’s (1999) emphasizing soft start-ups. It would also benefit the lay population to understand the attachment and physiological reaction implications, which would give understanding to why a partner with high attachment avoidance never seems to care when we engaging. This important information can be beneficial to couples in the general population to understand the influences of attachment and conflict.

**Clinical Implications**

The findings from this study provide clinicians with areas of focus that should be considered when working with couple conflict. The implications are generalizable to clinicians because the sample consisted of couples with at least one partner being clinically dissatisfied according to the CSI, which would likely be consistent with the population that seeks couples therapy. The present study demonstrates the importance of assessing client attachment. Bowlby (1988) emphasized the need to inform clinical work with attachment theory. Emotionally-Focused Therapy (EFT) has used attachment theory as a theoretical tenet, especially for working with couples (Johnson, 2004). The findings from the present study support Bowlby and EFT therapists’ emphasis on the use of attachment theory in a clinical setting. By assessing for client attachment styles, a therapist can understand both individual and systemic contributions that may be influencing the presenting problems. Assessment of attachment styles can come in forms of self-report, like the ECR (Brennan et al., 1998) used in this study, or the Adult
Attachment Interview (George, Kaplan, & Main, 2002). The attachment styles can also be shared with clients, which may provide greater understanding and empathy to their own behaviors and the actions of their partners.

This study also demonstrates the need for physiological understanding in addition to attachment assessment. In one study, biofeedback tools, a method for physiological measuring, were preferred over other relaxation techniques to calm anxiety (Reiner, 2008). It could be expected that biofeedback tools in therapy can be used similarly to help clients calm and become aware of their physiological reactions that occur prior, during, and following conflict. This process used in therapy can help clients learn to be self-aware of when they are becoming physiologically aroused, so self-soothing strategies can be incorporated to help manage the arousal (Greenberg, 2004). This has several implications for clinicians. First, this provides a clinician with in-session opportunities to teach self-soothing strategies to couples as they are experiencing physiological arousal (Greenberg, 2004). If done successfully, this new positive experience could act as a boost of confidence and hope that negative patterns of interactions can be changed, which is important to a successful therapeutic outcome. It can also help clients learn to recognize potential triggers, which also are useful to combine with the knowledge gained by assessing for attachment styles.

The second implication is this provides clinicians an opportunity to train individuals to learn to recognize signs when their partners are experiencing physiological arousal. This would be especially important for partners of high attachment anxiety individuals, who become more aroused during conflict and recovery. By recognizing the
signs of arousal, they can respond to the needs better to prevent increased arousal and encourage physiological recovery. The therapist can also incorporate conflict recovery skills, such as Gottman’s (1999) soft-startup, to help regulate the reactivity when addressing conflict. It is also beneficial to be aware of their partners’ triggers, which they may unintentionally activate.

The third implication is it can help the therapist know when to use interventions such as enactments. Enactments allow a therapist to structure, facilitate, and coach couple interactions where they address a conflict at its source (Butler & Gardner, 2003). By using biofeedback to help clients become self-aware and incorporating self-soothing strategies before doing an enactment, the outcome of the enactment would more likely create a positive experience such as softening (Andersson, Butler, & Seedall, 2006).

In conclusion, findings from this study have clinical implications for therapist. Therapist should consider assessing for attachment styles to provide themselves and their clients with valuable information. It would also be beneficial to assess physiological reactions using a biofeedback device in a clinical setting. Assessing physiological reactivity is beneficial for helping clients become more self-aware and regulate their emotions, can help partners recognize signs of arousal, and can help the therapist better structure interventions such as enactments.

**Research Implications**

The third population that the present study has implications for is researchers. The information from this study allows researchers to follow the protocol of this pilot study for future research, continue to study association between anxious attachment and
physiological arousal, and greater understanding of avoidant attachment when trying to promote arousal.

The first implication for researchers is the present study sets forth a protocol that can be followed in future research to study physiological arousal from conflict and recovery from conflict. Future research will be discussed later in this section, but the protocol for this study can be used separately or combined with a parent study, which provides flexibility for a research team. Attachment was used as an independent variable in the present study, but the basic protocol could be followed by researchers using other independent variables. This pilot study truly sets forth an adaptable protocol that has implications for researchers to be able to further the knowledge of conflict and recovery from conflict.

The second implication for researchers addresses attachment anxiety being predictive of physiological arousal during conflict and recovery. This has implication for researchers because it is the first known skin conductance study to find that actor anxiety can be predictive of physiological arousal during conflict. This supports studies using cortisol to measure physiological arousal, where Brooks et al. (2011) found that males high in anxiety predicted greater physiological reactivity to couple conflict, and Powers et al. (2006) found that males high in anxiety had higher arousal levels during conflict and recovery. A benefit of using skin conductance over cortisol is that it is less evasive and continuous, which allows tracking physiology over time without interruption. These findings suggest to researchers the need to continue to study attachment and
physiological arousal from couple conflict and recovery from conflict, to gain a great consensus and understanding of their influences on relationships.

The third implication for researchers is highly avoidant participants need highly stressful or attachment threatening areas of conflict to increase arousal. In the present study, couples chose a moderately distressing conflict topic that they have had before to discuss. This was activating enough for highly anxious participants, but did not have the same effect for highly avoidant participants. Other studies had individuals discuss a hypothetical breakup, or were involved in an interview with a researcher (Diamond et al., 2006; Powers et al., 2006). The hypothetical breakup would have activated attachment activating thoughts and emotions, while a researcher interviewer can dig deeper to more arousing emotions. These both contrast the couple discussion in this study, where highly avoidant participant use strategies learned throughout their relationship to avoid the conflict arousal. The present study provides further guidance and direction for future researchers in studying avoidant attachment.

In conclusion, the present study has implication for clinicians, couples, and researchers. Clinicians can benefit by assessing for attachment and using biofeedback devices to help clients become more self-aware and regulate their emotions, help partners recognize signs of arousal, and can help the therapist better structure interventions such as enactments. Couples implications from this study include learning partners’ attachment styles, and understanding the implications of physiology during conflict. Researchers can benefit from this study by using the protocol for future research on couple conflict and
recovery, continuing to study anxious attachment and physiological arousal, and by using attachment threatening or highly stressful topics to activate highly avoidant participants.

**Suggestions for Future Research**

The findings from the present study provide preliminary results of anxious attachment being associated with higher levels of physiological arousal during couple conflict and while recovering from conflict. Suggestions for future research were briefly mentioned in the limitation and implication sections, and will be discussed in further detail here. It is suggested that future research focus specifically on conflict and recovery from conflict, incorporate dyadic analysis, include qualitative analysis, and evaluate self-soothing strategies.

The first suggested research is that a purist study needs to be performed with the entire focus of looking at conflict and recovery from conflict. The present study was part of a larger study, and as a result had tasks being performed that were not looking at conflict and recovery. Future research could use the research protocol from the conflict and recovery sections to study this independently. By looking at the conflict and recovery individually, a purist study would provide greater reliability in that other tasks would not be influencing the results. Future research would also need to replicate the study across demographics to improve the overall generalizability.

The second direction for future research is the use of dyadic analysis as methodology. A fundamental reason future research should use dyadic analysis is because though each couple consisted of two participants, they are not two independent participants. The two participants making a couple are nonindependent, with
compositional effect, partner effect, and mutual influence all being sources influencing the similarity in couple participants scores (Kenny et al., 2006). An example of why this is important is avoidant individuals are often unresponsive to their partners when their partners need them, perhaps as a way to distance themselves from negative emotions and distress (Edelstein & Shaver, 2004). The consequence is partners may learn to avoid seeking support or expressing distress or fear of further rejection, which influence the arousal they experience during conflict. Using dyadic analysis would also be beneficial to study whether securely attached partner help to buffer the negative consequences that can result from conflict (Gross & Thompson, 2007; Sroufe, 2005). By using dyadic analysis, researchers will continue to increase knowledge on attachment and couple conflict and recovery from conflict.

The third suggestion for future research is the need to incorporate qualitative analysis in the methodology. Qualitative analysis would be beneficial for both anxious and avoidant attachment. Those high in attachment avoidance tend to have poor communication during conflictual discussions, with the quality of communication decreasing as the level of the conflict increases (Edelstein & Shaver, 2004). This could be further tested in this study by comparing the joining section to the conflict and recovery sections, which would allow you to code changes in the avoidant individual communication patterns. Qualitative analysis would also be beneficial for participants high in anxiety because those high in attachment anxiety are associated with indirect methods of support seeking, and seek more assurance following relationship conflict (Shaver & Mikulincer, 2013). Knowledge could be increased on the strategies used by
those high in anxious or avoidant attachment by future research incorporating qualitative analysis.

The fourth and final suggestion for research is to evaluate self-soothing strategies with attachment styles. Future research could incorporate self-soothing strategies during the recovery section of the study. Future research could not only look at various self-soothing strategies, such as mindfulness, yoga, or physical touch, but could also have a control group and utilize an experimental design. The results would help identify if certain self-soothing strategies are better matched with anxious or avoidant attachment styles. This study would have implications for clinicians, as it would inform clinicians which emotion-regulating interventions to use.

In conclusion, future research is needed to further the knowledge of attachment, couple conflict, and recovery from conflict. Suggestions for future research from this study include a purist study focusing specifically on conflict and recovery from conflict, incorporating dyadic analysis, include qualitative analysis, and evaluating self-soothing strategies.

**Conclusion**

The purpose of this study was to extend the knowledge of attachment and conflict, and to add to the gap in the literature by using skin conductance to study physiological recovery from couple conflict. The results of the study were those higher in anxious attachment were significantly associated of higher physiological arousal during couple conflict, and during the recovery from conflict. These findings are significant in that they are the first to link attachment anxiety with conflict and recovery using skin conductance.
as a measure for arousal. Attachment avoidance was not predictive of physiological arousal during the conflict or recovery. This study has implications for couples, clinicians, and researchers. Suggestions for future research include performing a purist study specifically focusing on conflict and recovery from conflict, using dyadic analysis and qualitative analysis as methodology, and using the study as a catalyst to evaluate self-soothing strategies in conjunction with attachment styles.
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APPENDICES
Appendix A

Research Protocol
PHASE 1: Informed Consent

Research Associate:
1. Couple arrives and is greeted.
2. Tell/show the couple where the snacks and bathrooms are located.
3. Ask them if they are willing to turn their cell phones off, or if they would like they can leave them with the research associate and they can remain on. The research associate will answer them to ensure that there are no emergency calls.
4. Research associate goes into a room with both participants.
5. Informed Consent

The first part of this process is for you to read a basic overview of this study and provide your consent to participate and have your information used in research we are doing. You are welcome to read silently, or I am happy to ready it for you. Do you have a preference?

- Ask if they have any questions about the informed consent

I just want to highlight a few things that are really important. One thing is that what you do here is completely confidential. You will be assigned a participant number, and no names or identifying information will be attached to any of your materials, including the video. In addition, everything will be locked up in a secure place that only the primary investigators can access. Also, if at any time you feel unable to continue, please notify any member of the research team, and we will let you have a break or end the research session. Do you have any questions for me?

PHASE 2: Assessment Packet

Therapist:
1. You will give both partners the assessment packet to complete.
2. While one partner begins the packet, you will invite the other into a separate room.
3. In the other room, you will say the following:

I wanted to meet with you for a few minutes about a couple of things. First is that we it is really important to us that you feel safe while you are here. For that reason, I need to ask you if you or your partner have engaged in any physical violence (pushing, shoving, hitting, etc.) with each other in the past three months.

If they report that there has been violence, you will need to assess the degree and frequency of violence. For example, you will want to ask how often it occurred and what typically happened. You will then ask whether the physical violence ever left marks or required a hospital/doctor’s visit. If it did, you will need to screen out the
couple and refer them for therapy. Otherwise, you will just need to make sure that both partners feel safe.

_I also want to talk to you a little bit about how this session will proceed. After you finish the paperwork, I will interview you both for about 20-25 minutes regarding your couple relationship. You will then participate in a few conversations with your partner. For one of these, you will discuss with your partner for 10 minutes something that you would like to change about yourself. It needs to be a personal problem rather than a relationship problem. What comes to mind when you think about that?_

Let them know that they can take their time and that they can brainstorm and find one a topic.
- Ask them to rate their distress level (1-10) regarding the issue, with 10 extremely high distress and 1 being very little distress. **Make sure that they do not report a distress level higher than 7.** If it is higher than a 7, explore whether a different topic would be better.
- Confirm that they feel COMFORTABLE and SAFE discussing that topic with their partner. If they do not, please help them choose another issue.

4. Thank the partner for his/her time and take them back to where the other person is completing the assessment packet. Then take the other person into the other room and repeat the process.

5. After they complete the assessment packet, thank them and then tell them the following:

_We are now going to take a quick five minute break. The part of the meeting after the break will last about an hour, during which he will be attached to a measure of skin conductance, which helps us know what is going on internally as you talk to your partner. As a result, if you think you might need to use the restroom, please do so now. Also, regardless of whether you need to use the restroom, please wash your hands so that the skin conductance reading is correct._

6. While they are taking the five minute break, please look at the Problem Solving Checklist they completed as part of their assessment packet. Make sure that there is an issue that they both marked that they can discuss. If there are multiple issues, choose a moderately distressing one. It may be useful to choose two potential issues for the couple to discuss.

7. When they return, you will then attach the skin conductance electrodes to the index and middle fingers of their non-dominant hand. You can say the following:
Okay, now we will move to the next part of our meeting. During this part, we will be taking a measurement of your skin conductance to understand more about what is going on internally as you talk with me and your partner. To do this, I need to attach these two stickers with gel in them. Do you have any questions for me about the skin conductance?

8. Once you have answered their questions, place the skin conductance electrodes on their fingers. In order for a proper connection to be established with the skin, you will need to wait five minutes before beginning to record. As a result, you will need to help them decide on a topic for them to discuss during the conflict resolution segment. You can say the following:

_During the break, I looked over one of the forms you filled out to see what topic you might discuss during the conflict resolution task. It seems that you both agree that __________ is an issue in your relationship. Is that a topic that you are both willing to discuss in here in a little while, or would you like to discuss a different topic? The goal will be to make steps towards a resolution._

9. If they indicate that they are fine with that topic, please proceed. If one of them indicates that they would like a different one, present a different issue from the form. If necessary, give them back the forms and have them choose a topic to discuss together before continuing.

Research Associate:
1. While the therapist is meeting with the couple, prepare the skin conductance software:
2. Open up AcqKnowledge software (it should automatically detect the hardware: #000911)
3. Make sure hardware is set to 5, 10 Hz, DC, and DC.
4. Select MP150 > Set Up Channels
5. In the bottom left of the box, click on “Add New Module.”
6. Select GSR100c from the menu and click on “Add.”
7. Move the red channel switch to match the top of the skin conductance device (one is channel 1 and the other is channel 2). Click on “OK.”
8. Double check that the GSR100C Configuration matches what is shown on the front of the skin conductance device. Change it to match, if necessary. Click on “OK.”
9. Click on “Calibrate.”
10. In the “Input Channels Setup” box, please make sure channel one is labeled, “Male,” and channel two is labeled “Female.”
11. Exit out of the box and you are ready to go!

**PHASE 3: Couple Interview**
Therapist:
1. Once they have agreed on a moderately distressing topic to discuss and five minutes have passed since attaching the electrodes, you will need to connect the electrodes to the skin conductance cables. At this time, make sure that the electrodes are sticking to the partners appropriately. If they are not, you may need to get a little bit of clear tape and help it stay in place.

2. They will then be asked to clear their minds and relax for about 3 minutes.

*We are going to begin the interview in just a few minutes. However, right now I would like you to take about three minutes and focus on relaxing and clearing your mind. If possible, avoid talking to each other and just try and relax.*

3. At the conclusion of the three minutes, reenter the room.

Research Associate:
1. **Begin recording video first and then physiological data.**

Therapist:

4. Instruct the couple you will be interviewing them for about 15-20 minutes about their couple relationship.

*For the next 15-20 minutes, I’m going to ask both of you some questions about your couple relationship. When I ask the questions, either one of you can respond, but keep in mind that I would like to hear from both of you about equally during the interview.*

5. Conduct the couple interview (15-20 minutes)

1. **Tell me a little bit about how you two met.**
   - What first attracted you to him/her?
   - How did you know that you wanted to be with him/her?
   - What are some of your best memories of your early relationship?

2. **How does your relationship compare to your parents’ relationships?**
   - What parts of your parents’ relationships have you tried to repeat?
   - What parts of your parents’ relationships have you tried to change?

3. **What are some of the ways that you both work to improve your relationship?**
   - How do you show each other that you care?
   - What ways have you found to stay connected to each other?
4. Based on your experience, what advice would you give to others you are beginning close relationships?

**PHASE 4: Couple Interactions**

**Therapist:**
1. Thank the couple for their responses on the interview, and let them know that they will now begin a few conversations with each other.

   Thank you for your responses and being willing to talk about your couple relationship with me. For the next half hour or so, you will engage in a few conversations with each other. For this first part, you will talk with each other about something you want to change about yourself. ________________, you have been randomly chosen to start first. What I would like you to do is to talk together for 10 minutes about what you would like to change about yourself. I will let you know when it has been 10 minutes, and then you will each answer a few questions about your experience. Then ________________ will introduce his/her topic and you will talk about it. Do you have any questions?

2. After 10 minutes, stop the couple and thank them for talking about the issue. Then give them the questionnaire regarding their perceived social support. Make sure that they get the correct version, according to whether it was the person’s issue or not. Give them a few minutes to complete the questionnaire, and then ask them to talk about the other person’s issue.

   Now I would like ________________ to introduce his/her issue, and you can both talk about it for 10 minutes.

3. After 10 minutes, stop the couple and thank them for talking about the issue. Then give them the questionnaire regarding their perceived social support. Make sure that they get the correct version, according to whether it was the person’s issue or not. Give them a few minutes to complete the questionnaire.

4. Next, you will introduce the conflict discussion.

   This conversation is an issue in your relationship about which you typically have conflict. I believe the issue that you decided on was ________________. Now I would like you to talk for 10 minutes about that issue, with the goal to make steps towards a resolution. As with the other conversations, I will let you know when your 10 minutes is done.

5. After 10 minutes, ask them to talk for four minutes about the topics that they typically agree on the most as a couple.
6. After the four minute discussion, you will ask them to complete brief 18-card q-sort where each will choose the 6 cards they feel most represent positive relationships. Partners will then talk for 4-5 minutes and compare each person’s results.

*Now I would like each of you to take these 18 cards. On them is described some important aspects of couple relationships (and their opposites in parentheses). I’d like you to first choose the six cards that you feel like are most important. Then when you have both done that, I will have you talk for 4-5 minutes and compare your results.*

7. Please make sure they leave the six most important cards out for us to write down.

8. Let the couple know that you have just a few more questions for them about what they just experienced.

1. **What was it like for you to discuss an area of disagreement in your relationship?**
   - How do you typically handle disagreements in your relationship?
   - How has your way of dealing with conflict changed since you were first together?

2. **What do you feel are your greatest strengths as a couple?**

3. **What do you feel are the areas you most want to work on as a couple?**

9. Now let them know they are finished. Disconnect the skin conductance and let them know they can throw the electrodes away. Thank them for their time, and schedule their follow-up (feedback) session for about three weeks later.
Appendix B

Couple Disagreement Scale
**Left side:** For each issue, please rate how much of a problem it is currently in your relationship on a scale ranging from 0 (no problem at all) to 100 (a severe problem):

<table>
<thead>
<tr>
<th>Degree of Problem (0-100)</th>
<th>% of TimeResolved (0-100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Childrearing / issues concerning child(ren)</td>
<td></td>
</tr>
<tr>
<td>2. Career decisions</td>
<td></td>
</tr>
<tr>
<td>3. Balancing demands of work and home life</td>
<td></td>
</tr>
<tr>
<td>4. Household tasks, who does what around the house</td>
<td></td>
</tr>
<tr>
<td>5. Money, handling family finances</td>
<td></td>
</tr>
<tr>
<td>6. Recreation, leisure time activities</td>
<td></td>
</tr>
<tr>
<td>7. Relationships with in-laws</td>
<td></td>
</tr>
<tr>
<td>8. Relationships with friends</td>
<td></td>
</tr>
<tr>
<td>9. Jealousy/mistrust/extramarital affairs</td>
<td></td>
</tr>
<tr>
<td>10. Our sexual relationship</td>
<td></td>
</tr>
<tr>
<td>11. Communication between us</td>
<td></td>
</tr>
<tr>
<td>12. Demonstrating affection, intimacy, closeness</td>
<td></td>
</tr>
<tr>
<td>13. Amount of time spent together</td>
<td></td>
</tr>
<tr>
<td>14. Alcohol and/or drug use</td>
<td></td>
</tr>
<tr>
<td>15. Conduct (right, good, or proper behavior)</td>
<td></td>
</tr>
<tr>
<td>16. Aims, goals, values, philosophy of life</td>
<td></td>
</tr>
<tr>
<td>17. Religion or Spirituality</td>
<td></td>
</tr>
<tr>
<td>18. How we make decisions, who makes decisions</td>
<td></td>
</tr>
<tr>
<td>19. Personality clashes or differences (e.g. other is moody or critical)</td>
<td></td>
</tr>
<tr>
<td>20. Differences of opinion regarding egalitarian versus traditional sex roles</td>
<td></td>
</tr>
<tr>
<td>21. Our views of and goals for life</td>
<td></td>
</tr>
<tr>
<td>22. How we handle stress</td>
<td></td>
</tr>
<tr>
<td>23. How we express our emotions</td>
<td></td>
</tr>
</tbody>
</table>

**Right side:** For each problem, please rate how often you resolve disagreements to your mutual satisfaction from 0 (never) to 100% (always). If it is no problem at all, leave this column blank.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Our core values</td>
<td></td>
</tr>
<tr>
<td>25. Other (specify):</td>
<td></td>
</tr>
<tr>
<td>26. Other (specify):</td>
<td></td>
</tr>
</tbody>
</table>