INTIMACY, PASSION, COMMITMENT, PHYSICAL AFFECTION AND RELATIONSHIP STAGE AS RELATED TO ROMANTIC RELATIONSHIP SATISFACTION

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CHAPTER 1

INTRODUCTION

Since the days of Freud, the question of love and the attempt to define it have continued to baffle psychologists and researchers. According to Nicholi (2002), "Freud said that when you look at people's behavior, their one purpose in life is to be happy and that 'sexual (genital) love…[is] the prototype of all happiness' (p. 126)." It has been made clear by the many and various theories of love that have been proposed in the last 40 years that our understanding of love is still quite rudimentary (Berscheid & Reis, 1998; Rubin, 1988).

It has been hypothesized that love is not a single construct, and he identified six styles of love: eros (erotic love), ludus (game-playing love), storge (friendship love), mania (jealous love), agape (altruistic love), and pragma (practical love). There has been some empirical support of this theory of love (Engel, Olson, & Patrick, 2002). Hatfield and Rapson (1995) attempted to clarify the meaning of love by defining four categories of people's experience of love: secure (comfortable with intimacy and independence), skittish (uncomfortable with intimacy, but comfortable with independence), clingy (comfortable with intimacy, but afraid of independence), and fickle (comfortable with neither intimacy nor independence). Yet another theory of love proposes that love begins with passionate feelings toward the loved one and is characterized by strong sexual attraction. However, as love matures and the relationship progresses, love becomes more

companionate in nature, meaning it is characterized by friendship and emotional intimacy (Hatfield, 1988).

Sternberg (1986, 1997) proposed that love can be conceptualized as being comprised of three components which collectively constitute love. These three components are intimacy, passion, and decision/commitment. Intimacy implies emotional closeness and bondedness. Passion implies physical and sexual attraction. Decision/commitment implies a decision and dedication to staying in the relationship. Together, these three components form the three sides of a triangle which symbolizes love. The degree of investment in each of these three components in Sternberg's Triangular Theory of Love can vary based on the individuals involved in a couple's relationship and the stage of the relationship.

Sternberg (1986) described the course that intimacy, passion, and commitment often take during the development and maintenance of a successful relationship. As a relationship begins, intimacy is low, but it quickly increases. While in a successful relationship intimacy will continue to increase until the relationship is terminated, it will eventually increase at a much slower rate. Like intimacy, passion will rapidly increase at the beginning of the relationship, and then it will level off. Commitment is the slowest to increase in a relationship, and it is also the last to peak. Lemieux's (1996) study provided support for the changes in passion and commitment, but not for the changes in intimacy across the relationship span. Lemieux found passion to be predictive of "affection behaviors."

Other lines of research on love have focused on the neurological and biological processes that lead to mating and formation of bonds between two individuals (e.g. pair

bond formation). This line of research suggests love and other positive constructs such as trust may be linked to the release of peptide hormones such as oxytocin and vasopressin (Bales & Carter, 2003; Bielsky & Young, 2004; Carter, 1998, 1999; Cho, De Vries, Williams, & Carter, 1999; Insel, 2000; Insel, Preston, & Winslow, 1995; Liu, Curtis, & Wang, 2001; Porges, 1998; Young, 2002). Other studies underscore the importance of love to physical and psychological well-being. Myers (2000) found that people who were single or divorced were typically not as happy as people who were married. Furthermore, people who are married tend to be healthier than people who are single (Stack, 1998).

Love is extremely complex, and it can be difficult to measure due to the inherent subjectivity of the experience of love. One line of research on love attempts to study the subjective experience of love through self-report measurements (Sternberg, 1997). Other lines of research attempt to measure the manifestations of love such as physical affection either through self-report (Gulledge, Gulledge, & Stahmann, 2003) or through observation of couples (Stier & Hall, 1984).

Physical Affection

Physical affection is commonly considered an important component of loving relationships. Physical affection is defined as "any touch intended to arouse feelings of love in the giver and/or the recipient" (Gulledge et al., 2003, p. 234). Therefore, romantic physical affection refers to any touch intended to arouse feelings of love in the giver and/or the recipient in a romantic relationship. While (interpersonal) touch and physical affection are often used interchangeably, there are differences between the two terms. Interpersonal touch refers to any physical contact between two people. This could include forms of touch ranging from hitting to kissing, to shaking hands, to breastfeeding.

Physical affection can be thought of as a subcategory of touch. If physical affection is "any touch intended to arouse feelings of love in the giver and/or the recipient" (Gulledge, et al., 2003, p. 234), then this presents researchers with difficulties in determining exactly which forms of interpersonal touch are physical affection and which forms of interpersonal touch are not physical affection. Unfortunately for researchers, there are few if any types of interpersonal touch that can be ruled out from being physical affection based entirely on the type of interpersonal touch. Punching another person typically is not physical affection, but under the right circumstances it could be considered as such. A light tap on the shoulder in a playful manner could be considered physical affection. Conversely, holding hands is typically considered to be a form of physical affection, but there are times where grabbing and holding someone's hand could be considered controlling, and is therefore not physical affection.

Another factor in determining whether or not a specific instance of interpersonal touch is physical affection is the motivation behind the touch. For example, a man who holds his partner's hand may appear to be doing so out of love and a desire to touch his partner, or the motivation behind the action could be an attempt to control his partner. His partner may view the act as either controlling or loving, which would have an impact on determining whether or not such touch was indeed perceived as physical affection. After all, the man may believe that controlling his partner is done out of love, when his partner does not share his view. Similarly, a woman who puts her arm around her partner in public could be doing so out of love and a desire to be physically closer to her partner, or she could be territorial, and she is doing so to send a message to other women that her partner is currently in a romantic relationship (Guerrero & Andersen, 1994, 1999).

Given the complexities involved in understanding physical affection and touch, researchers attempting to study physical affection are presented with many problems, and results of observational studies of physical affection have been mixed. In an analysis of observational studies, Stier and Hall (1984) found no significant gender differences in touching behaviors. This conclusion was supported by Hall and Veccia's (1990) study. However, when age and body parts were analyzed, significant gender differences in touching behaviors were observed. There is the possibility that the stage of the relationship of the couple affects patterns in public displays of affection (Guerrero & Andersen, 1991, 1994, 1999).

Gender differences may impact patterns of physical affection within a relationship. Guerrero and Andersen (1994, 1999) found that during casual dating, men were significantly more likely to initiate physical affection than women. There were no significant differences in physical affection initiation patterns between men and women among couples who were dating seriously. However, among couples who were married, women tended to touch men more frequently. Willis and Briggs (1992) concluded that during dating, men tend to initiate physical affection more than women, but after marriage, women tend to initiate physical affection more frequently than men. It should be noted, however, that this study was conducted by observation in public places. It is possible that touching patterns regardless of any other variables, differ based on the setting and environment.

There has been limited research on gender differences in the initiation patterns of sexual physical affection. Hill (2004) found that men did initiate sexual physical affection significantly more often than did women. In a study of 32 college-age men,

Dworkin and O'Sullivan (2005) found that men reported initiating sexual physical affection more frequently than their female partners. One possible reason for this phenomenon is that men are expected to be more aggressive in romantic relationships, whereas women who initiate sexual physical affection are seen as violating social norms. Men may view the initiation of sexual physical affection as being part of their social role (Mongeau, Carey, & Williams, 1998). Men may feel more comfortable with sexual intimacy than they do with non-sexual intimacy such as emotional intimacy or non-sexual physical affection (L'Abate, 2001).

In spite of the difficulties inherent in studying physical affection, there has been moderate research on physical affection and interpersonal touch (Gulledge, Hill, Lister, & Sallion, 2007). The main reason for the continuing research on physical affection probably lies in the importance physical affection has to human well-being. For example, physical affection has been associated with various health benefits such as decreased blood pressure (Fishman, Turkheimer, & DeGood, 1995), decreased anxiety (Olson & Sneed, 1995), decreased aggression (Field, 1999, 2002), reduction of pain (Fishman et al., 1995), and the release of the hormones oxytocin and vasopressin, which are associated with pair bond formation and healthy social interactions (Carter, 2003). There is emerging evidence that physical affection is associated with relationship satisfaction (Gulledge et al., 2003; Hill, 2004).

Healthy interpersonal relationships are very important to human beings. Most, if not all of the DSM-IV diagnoses involve at least some degree of impaired social functioning (Teyber, 2000). Therefore the absence of healthy interpersonal relationships can be indicative of poor mental health, whereas the presence of healthy interpersonal

relationships can be indicative of good mental health. Similarly, healthy romantic relationships are associated with physical health and happiness (Baumeister & Leary, 1995), while unhealthy romantic relationships are associated with physical health problems such as sexual dysfunction (Metz & Epstein, 2002) and eating disorders.

Stages of Relationship

For all of the importance physical affection may hold on romantic relationships, little research has been conducted on the extent to which physical affection is affected by stage of a romantic relationship. There is difficulty in defining relationship stages based on the actual status of the relationship. One barrier to operationalizing relationship stages is the unique nature of each relationship. Not all relationships progress at the same rate, which makes chronological categorization unreliable. The nature of romantic relationships varies from couple to couple. Sternberg's Triangular Theory of Love may provide some insight into this problem. Various relationships contain varying levels of intimacy, passion, and commitment. One relationship may progress quickly with regard to passion; whereas a different relationship may progress more quickly with regard to intimacy and commitment, and passion develops later on, if at all.

One solution to this problem has been to categorize relationship stages based on self-reported measures of relationship stages. Interestingly, these categories seem to be strongly related to the level of commitment in the relationship. Guerrero and Andersen (1991, 1994, 1999) categorized relationship stages into casual dating, serious dating, and married. Hill (2004) used similar measures of relationship stages. One problem with the classification system used by Guerrero and Andersen is that it may categorize people whose relationships are more similar to the married stage as being in the serious dating

stage. For example, a cohabitating couple with children would be classified as serious dating since they have no plans to marry. Furthermore, same-sex couples who cannot legally marry but nonetheless have a strong, stable, and committed relationship would be categorized as being in the serious dating relationship stage. Therefore, it may be more appropriate to change the married stage to a committed stage, in order to more accurately reflect relationship stages (Hill, 2004).

Physical affection initiation patterns may vary based on the stage of the relationship and gender. According to Hall and Veccia (1990), young men tend to initiate touch more often than young women; whereas older women tend to initiate touch more often than older men. This may be due to men believing it is their duty to initiate physical affection early on, as well as a desire for older women or women in committed relationships to maintain intimacy, passion, and commitment in their established relationships. Young men may initiate sexual physical affection more often than women as a sexual strategy. As dating moves into the serious dating stage, men and women tend to initiate physical affection with equal frequency (Guerrero & Andersen, 1991, 1994). Both men and women are invested in the relationship, and physical affection tends to play the role of warding off other potential mates through the use of "tie signs" or public physical affection (Guerrero & Andersen, 1991, 1994). Finally, when the couple has entered a committed phase in their relationship, women tend to initiate physical affection more frequently in order to maintain the bond (Guerrero & Andersen, 1991, 1994).

Relationship Satisfaction

According to Berscheid and Reis (1998), the literature on relationship satisfaction is diverse and complex. This may be due in part to the fact that three separate research

traditions cover this topic, but it may also be due to the complexity of relationships themselves. According to Berscheid and Reis (1998), "No single factor has proved to be an especially potent predictor of satisfaction, and even groups of variables often account for a relatively small portion of the variance" (p. 234). Sternberg (1986) hypothesized that relationship satisfaction was high when the self-reported dimensions of love (intimacy, passion, commitment) closely resembled the ideal dimensions of love. The greater the discrepancy between the love and satisfaction, the greater the dissatisfaction. Additionally, Contreras, Hendrick, and Hendrick (1996) found that romantic love and marital satisfaction are closely associated.

While there are many available measures of relationship satisfaction, many of these measures assume a marital relationship is present, and therefore they may not be valid when measuring relationship satisfaction among unmarried couples (Berscheid & Reis, 1998). A generic measure of relationship satisfaction that does not assume the status of the relationship would be most appropriate for a study that is inclusive of married and unmarried people.

Definition of Terms

Physical affection is "any touch intended to arouse feelings of love in the giver and/or the recipient" (Gulledge et al., 2003, p. 234). The concept of physical affection includes both sexual and non-sexual physical affection.

Relationship stage is a construct of the status and development of a romantic relationship. Based on Guerrero and Andersen (1994, 1999), there are three stages to romantic relationships: casual dating, serious dating, and committed.

Relationship satisfaction is an abstract psychological concept which represents the level of contentment a person has for the romantic relationship in which they are involved.

Intimacy "refers to feelings of closeness, connectedness, and bondedness in loving relationships" (Sternberg, 1997, p. 315).

Passion "refers to the drives that lead to romance, physical attraction, sexual consummation, and related phenomena in loving relationships" (Sternberg, 1997, p. 315).

Commitment (or decision) "refers, in the short-term, to the decision that one loves a certain other, and in the long-term, to one's commitment to maintain that love" (Sternberg, 1997, p. 315).

Statement of the Problem

There has been relatively little research that examines the effects physical affection has on romantic relationship satisfaction (Gulledge et al., 2007). What little research and literature may exist on the frequency and initiation patterns of physical affection during the course of romantic relationships is typically observational in nature (Guerrero & Andersen, 1991, 1994, 1999), which leaves a vacuum of knowledge with regards to physical affection that occurs in private settings.

While Lemieux (1996) Lemieux assessed relationship stages generally based on Guerrero and Andersen's (1991, 1994, 1999) casual dating, serious dating, or married stages, participants were ultimately assigned to either a single or married category to define their relationship stage. This may have been an over-simplification of relationship stages as committed yet unmarried couples were assigned to a serious dating stage.

While there is evidence to suggest that physical affection may play a role in romantic relationship satisfaction, it is unclear the extent of the role physical affection plays, and what the role of physical affection is across romantic relationship stages and gender. Up to now, studies have not included such variables as romantic relationship stage, passion, intimacy, commitment, and gender as predictor variables for relationship satisfaction. This study aims to expand our understanding of the relationship between physical affection to relationship satisfaction by addressing some of the methodological limitations in previous studies, so as to help fill the vacuum of knowledge in the area of romantic relationship satisfaction and physical affection.

Research Questions

The research questions addressed in this study were:

Question 1

What factors are associated with physical affection?

Question 2

What physical affection factors and love factors are associated with romantic relationship satisfaction?

Question 3

Do physical affection factors vary across gender and romantic relationship stage?

Hypotheses

Since this study is exploratory in nature, null hypotheses will be used.

Null Hypothesis 1

There are no stable and valid factors associated with physical affection.

Null Hypothesis 2

The factors of physical affection and love are not associated with romantic relationship satisfaction.

Null Hypothesis 3

The physical affection factors do not vary across gender and romantic relationship stage.

Significance of the Study

Since healthy romantic relationships are associated with improved health and increased happiness (Baumeister & Leary, 1995), it is beneficial to better understand which factors play an important role in the formation and maintenance of romantic relationships. Physical affection may be a significant factor in the formation and maintenance of healthy and fulfilling romantic relationships by increasing relationship satisfaction and improving the quality of the relationship. Given the recent increase in divorce rates in the United States (Berscheid & Reis, 1998), new interventions involving

the use of physical affection could be utilized in couples counseling in order to increase relationship satisfaction and stability, which could in turn reduce the divorce rate.

Physical affection results in the release of oxytocin in mammals (Carter, 2003; Uvnas-Mober, 1998). Emerging evidence suggests deficits in oxytocin may be linked to a variety of mental disorders such as depression (Arletti & Bertolini, 1987; Uvnas-Mober, 2003; Uvnas-Mober et al., 1999), anxiety (Bale, Davis, Auger, Dorsa, & McCarthy, 2001), stress (Heinrichs Baumgartner, Kirshbaum, & Ehlert, 2003) excessive aggression in adolescents (Field, 2002), or even autism (Insel, 2000). So perhaps physical affection interventions could be designed and used to treat or help control the symptoms of such disorders. Furthermore, physical affection, through the release of oxytocin, may promote faster healing of wounds, and it may help reduce obesity and increase energy by causing increased mobilization of the body's energy reserves (Stock Fastbom, Bjorkstrand, Ungerstedt, & Uvnas-Mober, 1990). Therefore, increased understanding of factors associated with physical affection has implications for the promotion of not only healthy relationships, but for physical and mental health in general.

Limitations

There are some limitations to this study. One of the greatest limitations is the use of the Physical Affection Behavior-Rating Scale, as this study attempts to establish validity or reliability of potential scales. Another limitation of this study is that the participants were university students from the Southwestern area of the United States. The sample was predominantly young well-educated heterosexual Caucasians; therefore,

the generalizability of this study may be limited. The use of self-report questionnaires is a limitation in this study as actual behaviors may be different from reported behaviors and the information collected is inherently subjective in nature (Schwarz, 1999). Actual physical affection patterns were not measured in this study. Instead, this study relied on self-report information, which may not be an accurate reflection of actual physical affection patterns among participants. For example, a participant may play with his or her partner's hair once every two weeks, which, according to the participant is quite frequent. Others, however, may deem it to be infrequent. While an observational study would help to eliminate some of the subjectivity, it was not chosen for this study because of the myriad of ethical and logistical problems given the intimate nature of such a study.

Overview of Remaining Chapters

Chapter III is an overview of the research methods used in this study. It includes information on participants who were sought for this study as well as a description of the research procedures used. It includes information regarding the instruments used in this study.

Chapter IV consists of the results of this study, and Chapter V provides a discussion of the results, conclusions, limitations, and recommendations for future research.

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter provides an overview of literature relevant to this study. First, various theories of love are discussed, including Sternberg's Triangular Theory of Love and the components of intimacy, passion, and commitment. The next section reviews physical affection. This section includes definitions and meanings of physical affection, inconsistencies in physical affection research, gender differences in physical affection, and physical affection as it relates to intimacy, passion, and commitment. The final section reviews relationship theory, including biological explanations for the formation and maintenance of romantic relationships, relationship satisfaction research, and stages of romantic relationships.

Love

For all of the attention love has received throughout the ages by poets, playwrights, philosophers, theologians, and scientists, love continues to be a difficult concept to define, let alone study. Much of the difficulty associated with studying love comes from the enormous complexity of the concept of love itself (LeDoux, 2002). Furthermore, love is a subjective feeling that changes and evolves over time. The nature of love may vary based on the subject that is receiving love (be it a partner, parent, a

higher power, or a physical object). While a woman can love both her husband and her child, the love she feels for each of them is (hopefully) different, even though it may have many similarities. Even attempts to understand love in terms of its biological basis of attachment (LeDoux, 2002) or its behavioral manifestations (e.g. physical affection) have met with only limited success (Gulledge et al., 2007). Unless otherwise stated, love for the purposes of this study refers to romantic love between partners. In this section, various theories of love will be examined, with special emphasis on Sternberg's Triangular Theory of Love.

The predominant approach to studying love is to classify various types of love (Berscheid & Reis, 1998). One of the earliest attempts to scientifically conceptualize love was made by Berscheid & Walster (1978) and later developed by Hatfield (1988) who divided love into passionate and companionate love. During the early stages of romantic relationships, passionate love is present. Passionate love is marked by romance, physical attraction, and infatuation. As the relationship matures, passionate love is gradually replaced by companionate love. Companionate love is marked by attachment and emotional intimacy. There is no set rate for the transformation of passionate love into companionate love, and relationships that do not endure may never achieve any companionate love.

Lee (1977) proposed that love could best be understood by determining individual styles of love. Six common love styles were identified by Lee: (a) *eros* (erotic love), (b) *ludus* (game-playing love), (c) *storge* (friendship love), (d) *mania* (jealous love), (e) *agape* (altruistic love), and *pragma* (practical love). There has been some empirical validation for these love styles (Engel, Olson, & Patrick, 2002).

Another approach to understanding love has been to conceptualize love as the attempt to fulfill personalized stories of love (Sternberg, Hojjat, & Barnes, 2001). According to this theory, people develop a belief or story of what love should be, and they attempt to find partners with whom they can optimally play out such stories. An example of a love story is the *Fantasy* love story, which is defined as when a person "often expects to be saved by a knight in shining armour or to marry a princess and live happily ever after" (p. 201).

A more recent approach to defining and understanding love has been proposed by Robert Sternberg (1986, 1988, 1997). Sternberg's Triangular Theory of Love holds that love can best be understood in terms of its three basic components: intimacy, passion, and decision/commitment (1986, 1988, 1997). Each of these components is represented as a side of a triangle. The triangle itself represents love. The type of love in a relationship, as determined by the relative ratios of intimacy, passion, and decision/commitment, is reflected by the shape of the triangle. The amount of love, regardless of the shape, is reflected by the size of the triangle.

According to Sternberg (1986, 1997), multiple triangles can exist within a relationship. A triangle could be used to represent the current state of love in the actual relationship, while a different triangle could represent the desired or idealized state of love for the relationship. These triangles could have very different shapes and sizes. Indeed, significant differences in shape and/or size between the actual versus the idealized state of love is predicted to be indicative of relationship dissatisfaction (Sternberg, 1986).

According to Sternberg (1986), intimacy refers to "feelings of closeness, connectedness, and bondedness in loving relationships" (p. 119). It consists, in part, of a desire to improve the welfare of one's partner, happiness when with one's partner, holding one's partner in high regard, dependability, emotional support, sharing of emotions or belongings, and communication. Intimacy is largely an "emotional investment in the relationship" (Sternberg, 1986; p. 119). Intimacy can also be conceptualized as sharing one's true self with another person (Pickering, 1993).

Passion refers to sexual, romantic, and physical components of a relationship (Sternberg, 1986). Sexuality typically, but not always, dominates the construct of passion. Passion may include "self-esteem, succorance, nurturance, affiliation, dominance, submission, and self-actualization" (Sternberg, 1997, p. 315). Passion, by and large, refers to the motivation for being in a romantic relationship (Sternberg, 1986).

Decision/Commitment refers "in the short-term, to the decision that one loves a certain other, and in the long-term, to one's commitment to maintain that love" (Sternberg, 1997, p. 315). It is possible for a person to experience only part of this component. A person could commit to the relationship without loving the other person. It is possible that someone could complete the decision to love their partner without ever committing to the relationship. Decision/Commitment, by and large, refers to the cognitive choice to be in the relationship and to stay with the relationship (Sternberg, 1986).

While these three components of love are presented as discrete categories for the sake of increasing understanding, Sternberg himself acknowledges that these components of love are intricately connected to each other and that they interact with each other

(1997). For example, an increase in passion could lead to an increase in intimacy. There is evidence that increases in passion could be linked to increases in intimacy and commitment (Gulledge et al., 2007). This interconnection provides opportunities for the practice of love (e.g. initiating physical affection (passion) in order to increase intimacy and commitment), but it also provides difficulties for researching love as the components are not clearly separated from each other.

According to Sternberg (1997), the varying proportion of intimacy, passion, and commitment, present in a relationship results in different types of love. The types of love include *Non-love* (presence of none of the love components), *Liking* (intimacy with no passion or decision/commitment), *Infatuation* (passion with no intimacy or decision/commitment), *Empty love* (decision/commitment with no intimacy or passion), *Romantic love* (intimacy and passion without decision/commitment), *Companionate love* (intimacy and decision/commitment without passion), *Fatuous love* (passion and decision/commitment without intimacy), and *Consummate love* (complete combination of intimacy, passion, and decision/commitment). While Sternberg identifies the majority of love types as being impure and falling between various types of love, they can be used as general indicators of types of love.

The degree or intensity of intimacy, passion, and commitment are expected to change through the course of a healthy relationship (Sternberg, 1986). During the beginning stages of a typical romantic relationship, intimacy starts off low, but it rapidly increases as the couple spends time communicating and self-disclosures become more frequent and personal. While intimacy will increase throughout the entire course of a

healthy romantic relationship, the rate at which it increases will eventually slow dramatically. The point at which this occurs varies from one relationship to another.

Similarly, passion will increase rapidly during the beginning stages of a relationship, even more rapidly than intimacy. Just after the actual level of passion peaks, the subjective experience of the level of passion starts to decrease as an "opponent process" begins to take place (Sternberg, 1986, p. 127). During this process, the couple begins to grow accustomed to the level of passion which, like increased tolerance to a drug, causes the perceived level of passion to decrease.

Unlike intimacy and passion, decision/commitment increases slowly during the beginning stages of a relationship. Assuming the relationship is not dissolved, as the relationship matures, the couple will make a decision to love the each other and they will become increasingly committed to each other. Typically, there are formal social rituals (even across most cultures) such as marriage which mark dramatic increases in decision/commitment. As to whether such rituals enhance commitment, or they are indicative of preexisting commitment remains to be determined. Decision/commitment is the last of the love components to peak. After peaking, the level of decision/commitment may decline slightly (Sternberg, 1986).

While there is no single reason that relationships dissolve, it stands to reason that an interruption of the process of love as described by Sternberg (1986) would result in the stunting or even termination of a relationship. Relationships which do not properly develop, as could be evident by a lack of intimacy, passion, and/or decision/commitment, are not as well balanced and are therefore typically not as stable. Another factor in the stability and satisfaction in a relationship may be the degree of importance the individuals

attach to the various components of love. If passion is not deemed important by the couple, then a relationship lacking in passion may still be satisfying and stable. The triangle may not be as predictive to relationship satisfaction as the differences between the shapes of the actual and idealized triangles. However, Lemieux (1996) found that a significant portion of variance in relationship satisfaction was accounted for by the three components of love.

Attachment

Love is a difficult concept to comprehend, let alone to study. Many attempts have been made throughout the course of human history to better understand love. Yet contemporary researchers such as psychologists and neurologists struggle with studying love as much as past generations. One line of research as to the nature of love is the study of the biological underpinnings of attachment, also called pair-bond formation. This line of research still faces many challenges. As Wang and Aragona (2004, p. 319) wrote: "The lack of previous research in this area may be partly explained by the complexity of pair bond formation, which involves, but is not limited to, sensory processing, memory, motivation, and more subtle aspects of behavior that may be difficult to measure."

Due to the elusive and often subjective nature of love, alternative paradigms through which the manifestations of love can be studied have been pursued. The field of neurobiopsychology has used a different approach to study love – namely the study of the formation and maintenance of pair bond formation. According to LeDoux (2002), studies on closely related mammals are an important and worthwhile means by which a better

understanding of human behavior and neurological functioning can be obtained. Based on this animal research, two nanopeptide hormones, oxytocin and vasopressin, have been strongly implicated in pair bond formation (Bales & Carter, 2003; Bielsky & Young, 2004; Carter, (1998, 1999); Cho et al., 1999; Insel, 2000; Insel et al., 1995; Liu et al., 2001; Porges, 1998; Young, 2002). Therefore, the study of the neurobiological basis, especially the roles of oxytocin and vasopressin, for pair bond formation is an important piece in understanding the puzzle of what it means to love, and how interpersonal attachments are formed.

Although oxytocin and vasopressin are found in non-mammalian species such as some reptiles, they are primarily found in mammals (Bielsky & Young, 2004; Carter, 1998). Their roles in the bodies and the brains of mammals appear to be fairly universal across mammalian species. Both hormones are found throughout the body and the brain, although they are unable to penetrate the blood-brain barrier (Insel, 2000). Therefore the levels of oxytocin and vasopressin in the brain and the body are regulated by separate mechanisms (Geiner, Altstein, & Whitnall, 1988). While the exact natures of these mechanisms are not yet known, it appears that oxytocin levels are controlled by estrogen, while vasopressin levels are controlled by testosterone (Hiller, 2004). It is known that vasopressin plays a vital role in male sexual arousal and pair bond formation in the brain, and works as an anti-diuretic in the kidneys (Gainer & Wray, 1994). Oxytocin plays a vital role in pair bond formation and sexual arousal in both males and females in the brain, and causes lactation and labor (contractions) in the female body (Bielsky & Young, 2004).

Oxytocin and vasopressin are produced in the hypothalamus, where they are then transported to the pituitary gland. From there they are released into the bloodstream (Insel, 2000). Once in the bloodstream, oxytocin and vasopressin are then able to bind to receptors in the "olfactory system, limbic-hypothalamic system, brainstem, and spinal cord areas" (Carter, 1998, p. 787).

In females, oxytocin in the brain has been shown to be released during stimulation of the genitals, be it through sexual stimulation or through birth (Gingrich, 2000). Non-sexual touch (physical affection) has been shown to produce a release of oxytocin, although at much lower levels than genital stimulation (Carter, 2003; Uvnas-Mober, 1998). When pheromones of the opposite sex come into contact with the olfactory senses, oxytocin is not only released, but it may play a key role in the resulting sexual attraction (Bielsky & Young, 2004). Finally, oxytocin has been shown to be released during positive memories of people, places, events, etc., which probably plays a role in the formation of bonds to these memories or what they represent (Insel, 2000).

Much of the neurobiological research on pair bond formation has been done through the study of prairie voles (*Microtus ochragaster*) (Insel, 2000). Prairie voles are an ideal species to study as they form monogamous bonds and are similar to humans in terms of social interactions. Additionally, prairie voles are closely related to another species of voles, the montane voles (*Microtus montanus*), which do not form pair bonds (Insel, 2000). Therefore these species "offer the possibility of comparative studies" (Insel, 2000, p. 178).

Similar to a pack of wolves, prairie voles tend to live in social units with other related prairie voles, with only the top male and female mating (Getz & Hofman, 1986).

All other prairie voles in the social unit do not engage in mating. Only after meeting an unrelated male do female prairie voles become sexually mature (Carter et al, (1987); as cited in Insel, 2000). According to Carter, Devries and Getz, after a day of constant mating, a pair bond is then created (as cited in Insel, 2000).

Unlike prairie voles, montane voles do not form pair bonds when mating. Since oxytocin and (in males) vasopressin are still released as a result of genital stimulation (mating), the reasons for the differences in pair bond formation between the two species probably lies in the location of the oxytocin and vasopressin receptor sites in the brain (Young, 2002). Unlike montane voles, prairie voles "have a high density of [oxytocin] receptors in the nucleus accumbens [and] vasopressin receptors are concentrated in the ventral pallidum of the prairie vole but not of the montane vole" (Young, 2002, p. 22). These areas of the brain serve to reinforce behaviors via dopamine release (McBride, Murphy, & Ikemoto, 1999). Therefore, when oxytocin and vasopressin receptors in areas of the limbic system are activated as a result of mating, a pleasurable reward is created from the release of dopamine which serves to promote pair bond formation. As previously mentioned, memories can also elicit the release of oxytocin in the brain, which may cause a dopamine reward to be released, which would further reinforce the pair bond. Through this behavioral reward and reinforcement mechanism, oxytocin and vasopressin serve to create pair bonds in certain species, which include prairie voles and human beings.

While oxytocin and vasopressin may be essential to the formation of pair bonds, it seems that one large dose of one or either of these hormones given directly into the brain is not sufficient to elicit the formation of a pair bond. Repeated exposures to oxytocin

and vasopressin are necessary for pair bond formation to occur (Cushing & Carter, 2000). The importance of oxytocin to pair bond formation is illustrated by the fact that prairie voles who are injected with oxytocin form pair bonds more quickly than prairie voles who are not injected with oxytocin (Bales & Carter, 2003; Cho et al., 1999).

Just as humans need time for pair bonds to be created (through friendships, dating and courtship), so too do prairie voles need repeated exposures to oxytocin and vasopressin for a pair bond to be created. It is possible that since oxytocin and vasopressin are important to the formation of a bond, and since repeated exposures strengthen that bond and the related trust, human romantic relationships tend to start off slowly and with minimal physical contact because repeated exposures to oxytocin brought about from physical affection and happy memories have not yet been created. Furthermore, the need for repeated exposure to oxytocin before pair bonds are formed may explain why the decision/commitment component in Sternberg's Triangular theory of love peaks after the intimacy and passion components (Sternberg, 1986).

Vasopressin and oxytocin receptors are present in the olfactory systems of both males and females (Bielsky & Young, 2004). It appears that both hormones somehow help the brain to identify and process the presence of pheromones given off by members of the opposite sex, which in turn aids in social and mate recognition, especially in rodents as they tend to use their senses of smell quite often. Both prairie and montane voles use oxytocin and vasopressin receptors in the olfactory regions of their brains, even though only prairie voles use these hormones to form pair bonds.

In both species of voles (as well as humans), oxytocin and vasopressin are necessary hormones for sexual arousal, although the mechanisms by which they work

appears to be different in males and females. Oxytocin aids in sexual excitation (Porges, 1998) through the stimulation of oxytocin receptors in the ventromedial nucleus of the hypothalamus (Bale et al., 2001). While oxytocin is essential for both male and female sexual arousal, only small amounts of it are necessary for male sexual arousal, whereas females need higher levels of oxytocin to become sexually aroused (Hiller, 2004). While this process has yet to be shown to occur in humans, it is a possible explanation for Engel et al.'s (2002) finding that women's experience of passion in a romantic relationship is strongly related to commitment and investment.

It is this sexual response that is so important to pair bond formation. After all, sexual intercourse releases the largest amount of oxytocin in females, and a large amount of vasopressin in males (Insel, 2000). Female prairie voles are able to form pair bonds as the result of sexual intercourse or cohabitation (Williams Catania, & Carter, 1992), although sexual intercourse significantly reduces the period of cohabitation necessary for pair-bond formation (Insel et al., 1995). Yet for male prairie voles, sexual intercourse is essential for pair-bond formation to occur, as they will not form pair bonds without it (Liu et al., 2001). Only when vasopressin is injected into male prairie voles' brains are they able to form pair-bonds without mating (Winslow et al, 1993). Therefore it is the vasopressin that is released during mating, in conjunction with the release of oxytocin that is essential to the male's pair bond formation. Again, while these findings have not been duplicated in male humans, it could help explain why men place more value on sexual physical affection for relationship satisfaction than do women (Hill, 2004).

In humans as well as prairie voles, oxytocin has been implicated in non-romantic pair-bond formation, namely the mother-infant bond. Oxytocin is released during birth,

as a result of the vaginal stimulation in the birthing process (Gingrich, 2000). Women who give birth via the vagina have increased oxytocin and increased subsequent handlings and feedings of their babies than women who give birth via Caesarean section (Nissen et al., 1996). The very mechanisms of pair-bond formation and even love may be imbedded in human biology.

Oxytocin plays an important role in breastfeeding. While prolactin causes the production of breast milk, oxytocin causes the release of breast milk from the nipple (Gainer & Wray, 1994). A study of mother-infant interactions and the role of oxytocin adds additional information to the role of oxytocin in breastfeeding (Matthiesen Ransjo-Arvidson, Nissen, & Uvnas-Moberg, 2001). In this study, infants were observed massaging their mothers' breast with their hands prior to nursing. During the actual nursing, the massage stopped, but began again when the infant would pause during feeding. The infants' massages were shown to increase levels of oxytocin in the mothers shortly following the massages. In short, babies instinctively massage their mothers' breasts in order to increase the amount of oxytocin in the mother, which will in turn cause an increased release of breast milk as well as to serve to cement the mother-infant emotional bond.

Oxytocin has been shown to have a profound effect on human neurological functioning. Oxytocin may have a calming effect on the brain by stimulating receptors in the brainstem, which would lower blood pressure and pulse-rate (Light, Grewen, & Amico, 2005), as well as stimulating receptors in the amygdala, which can reduce anxiety (Bale et al., 2001). Additionally, oxytocin may have anti-depressant effects on the brain, although the mechanisms by which this may occur are unknown (Arletti & Bertolini,

1987; Uvnas-Mober, 2003). This may be a reason for married people being happier than single people (Myers, 2000). It has even been shown that oxytocin may play a significant role in autism and schizophrenia, as people who suffer from autism or schizophrenia show significantly lower levels of oxytocin and have difficulty with pair-bond formation (Insel, 2000).

Oxytocin has also been shown to reduce subjective stress in humans (Hendrichs et al., 2003) as well as stress hormones (Field, 2002). Oxytocin may even promote faster healing of wounds and increased mobilization of the body's energy reserves (Stock et al., 1990). People with eating disorders have imbalances of oxytocin and vasopressin in their brains, although it is unknown if the eating disorders have caused this imbalance or if the imbalance has caused the eating disorders (Demitrach et al, 1990; Frank et al, 2000).

While research in this area is lacking, the health benefits which oxytocin may produce could play a role in the formation and maintenance of romantic relationships. Physical affection, which would in turn lead to the release of oxytocin, may act as a barrier to some physical and mental illnesses. Such illnesses can put strain on a romantic relationship, which may result in lower satisfaction and stability (Berscheid & Reis, 1998).

Oxytocin and vasopressin are essential hormones to mammals as they play an important role in sexual arousal, pair-bond formation, breast-feeding, and healthy neurological functioning. Yet the question remains: "Is oxytocin involved in the normal development of attachment in humans? The data necessary to answer this question are simply not available at present. The animal data are suggestive," but by no means conclusive (Insel, 2000, p. 182). If oxytocin is involved in the normal development of

human attachment, then physical affection, which is the primary release mechanism for oxytocin (and vasopressin) would play an important role in romantic relationship satisfaction.

In addition to biological theories of attachment, there are psychological theories of attachment. Melanie Klein helped to spur the object relations movement in her work on infants' attachment to their mothers' breasts (Monte, 1999). According to Klein, infants must rely solely on their mothers' breasts for nourishment as well as for affection. Thus the breast becomes the center of the infant's world. Infants, through their suckling on the breast, internalize their mother's breasts as being part of themselves. Because infants view themselves and their mothers' breasts as being one, any emotions babies may feel are automatically applied to their mothers' breasts. As infants mature, they begin to differentiate between their mothers' breasts and themselves, and they begin to see their mothers' breasts as being both life-giving objects marked by goodness as well as life-destroying (if their nourishment is withheld) objects of badness. Klein concludes that throughout our lives, human beings then interact with others based on the transference they have for their mothers' breasts.

A more scientific approach to psychological theories of attachment came in the form of Bowlby's Attachment Theory (Bowlby, 1958, 1973, 1980, 1982). Bowlby theorized that in order to maximize a child's chance of survival, a child would develop an emotional bond with the mother that would provide the child with a secure base from which the child could explore his/her environment when not feeling threatened, as well as protection for when the child was threatened. Based on the mother's ability to meet the child's needs and demands, children would develop various styles of attachment to their

mothers. The majority of babies had *secure* attachment styles. Securely attached babies would become upset when their mothers left, and would seek their mothers out. Babies who do not cry when their mothers leave nor do they seek out their mothers were classified as having an *avoidant* attachment style. Finally, babies who would display anxiety prior to their mother leaving, then become extremely upset during their mothers absence, but then refuse contact with their mothers upon their return were classified as having an *ambivalent* attachment style.

One of the appeals of Attachment Theory is that it predicts future behavior in relationships. Attachment styles have been shown to remain relatively stable over time (Berscheid & Reis, 1998). This stability has prompted the study of the relationship between attachment style and romantic relationships. There are many similarities between parent-child interactions and romantic interactions. Just as parents tend to speak to their children in higher tones, so too do romantically involved couples speak in higher tones to each other (Bombar & Littig, 1996). Many of the physical affection behaviors between parent-child dyads and romantic couples are also similar, such as caressing the skin, kissing, snuggling, nuzzling, suckling, and tickling.

According to Hatfield and Rapson (1995), romantically involved adults can be placed into four categories: Secure (comfortable with intimacy and independence), Skittish (uncomfortable with intimacy, but comfortable with independence), Clingy (comfortable with intimacy, but afraid of independence), and Fickle (comfortable with neither intimacy nor independence). There is emerging evidence that securely attached adults have higher marital satisfaction than adults who are not securely attached (Feeney,

2002). Securely attached adults may have more stable and more intimate romantic relationships, which may result in greater romantic relationship satisfaction.

Physical Affection

Some of the earliest and most famous studies of touch were performed by Harry Harlow (1958, 1973). These studies were done to test the behavioral theory that infant monkeys would become more attached to surrogate mothers who were made of wire with feeding bottles, instead of soft cloth-covered mothers in which feeding bottles were never placed. Harlow found that the infant monkeys would turn to the cloth covered mothers instead of the wire covered mothers when presented with a fear-inducing stimulus. Furthermore, the baby monkeys spent much more time with the cloth covered 'mothers' than with the wire mothers. The disparity between the time spent with the cloth surrogate and the wire surrogate was so great, it lead Harlow to suggest that "the primary function or nursing as an affectional variable is that of insuring frequent and intimate body contact of the infant with the mother" (Harlow, 1958; p. 677). A subsequent finding suggested that monkeys who were raised in isolation and in the absence of touch exhibited greater levels of aggression than monkeys who were raised in the presence of touch (Harlow et al., 1976). These findings are consistent with aggression studies done with humans (Field, 1999, 2002).

Typically, physical affection is found in only caregiver/child or romantic relationships (Hazen & Zeifman, 1994). The behaviors present in these types of relationships may closely resemble each other. This is perhaps due to the need to

establish and maintain a bond in these relationships in order to improve the relationship's stability and satisfaction.

Given the importance of interpersonal touch and physical affection, there is relatively little research on the subject. There is even less research as to how physical affection actually influences romantic relationships. This lack of research may be due to the "infrequent and ambiguous meaning" of touch" (Hall & Veccia, 1990, p. 1155). Much of the research regarding physical affection addresses gender differences in touching patterns based on observations by the researchers (Major, 1981). One problem with this approach is that the researchers tend to attribute the meaning of touches themselves instead of asking the couple what the touch meant to them. Major (1981) criticized this practice as having introduced a bias toward postivity to the research literature.

In an attempt to clarify the meanings of various types of physical affection, Pisano, Wall, and Foster (1986) analyzed the perceived meanings 237 students from Ball State University attributed to various types of physical affection. Attributed meanings included friendliness, playfulness, warmth/love, sexual desire, comfort/reassurance, or dominance/control. Warmth/love was attributed to cradling partner's face in hands, resting head on partner's shoulders, stroking partner's face, stroking partner's hair, kissing partner's cheeks, and kissing partner's hand. Playfulness was attributed to punching partner's arm, patting, slapping, or kicking partner's behind, and tickling partner. Combing partner's hair was viewed as being indicative of friendliness. Sexual desire was attributed to stroking partner's leg, giving body massage to partner, licking partner's face, massaging partner's behind, kissing partner with tongue contact, and

stroking partner's behind. Physical affection behaviors were typically not seen as being indicative of dominance/control as Major (1981) had predicted. Finally, the perceptions of meanings for various types of physical affection were similar for both genders and whether the physical affection was being given or received.

Research into the patterns of physical affection behaviors among romantic couples has yielded mixed results. In addition to many of the studies providing contradictory findings, the two major research reviews regarding gender differences in touching behaviors have come to different conclusions (Hall & Veccia, 1990). Part of the difficulty in determining physical affection patterns could be due to inconsistent methodology (Hall & Veccia, 1990). According to Major (1981), the type of relationship (e.g. partner, friend, etc.) touching dyads being observed is often not even determined. In a review of observational studies on gender differences in touching behaviors, Stier and Hall (1984) found no overall differences in public touch initiation patterns between men and women.

Hall and Veccia (1990) found no significant gender differences in overall touch frequency. However, when the body part used to initiate the touch and the age of the dyads was taken into consideration, differences in touch initiation patterns were found. Men were more likely to put their arms around women, while women were more likely to join arms with men. For couples under 30 years old, men were more likely to initiate touch, while women were more likely to initiate touch for couples over 30 years old. It is unknown if the gender difference in touch initiation is a function of age, relationship stage, or both.

A methodological weakness of observational studies is that they do not take into account private touching behaviors. Many types of physical affection, especially those sexual in nature, typically take place in private places, not in public. There may be differences in physical affection patterns performed in private versus those performed in public.

Physical affection patterns may have different meanings based on the environment in which they occur. Putting a hand on a partner's leg could be an attempt to communicate sexual interest in private settings (Pisano, Wall, & Foster, 1986) whereas in public it could be used to express a desire for the partner to stop talking. Putting an arm around a partner could be an attempt to cuddle in private settings, while it could be used as a "tie sign" in public settings to show the unavailability of the partner (Guerrero & Andersen, 1999, p. 203; Morris, 1977).

As Hall and Veccia (1990) hypothesized, differences in touch initiation patterns may be a function of gender and relationship stage. In an observational study of 154 opposite-sex couples, relationship stage was found to have an affect on physical affection patterns (Guerrero & Andersen, 1994, 1999). Couples who were seriously dating would touch each other twice as often as couples who were casually dating or married. The authors hypothesized that couples who are seriously dating do not yet have a high enough level of commitment to render the use of tie signs unnecessary, but they do have enough commitment to be invested in maintaining the relationship. Therefore, couples who are seriously dating engage in tie signs to ward off potential competitors. Couples who are casually dating do not yet have enough commitment to necessitate the use of tie signs. An additional finding was that men were more likely to initiate touch during the casual

dating stage, while women were more likely to initiate touch among married couples. A possible explanation for this is that men may be more aggressive and may be socialized to initiate touch, which would result in men more frequently initiating touch during the early stages of a relationship. Once the relationship is firmly established (e.g. marriage), women may feel more comfortable initiating touch.

Hill's (2004) study on physical affection frequency and initiation patterns across relationship stages yielded contradictory results. No significant gender differences were found in overall physical affection initiation patterns or frequency across relationship stages. This discrepancy may be due the differences in research methodology (self-report was used instead of observation), as well as the inclusion of sexual physical affection types which typically do not take place in public settings. Across all three relationship stages, men reported initiating sexual physical affection significantly more often than women. This finding was bolstered because men and women reported the exact same frequency of sexual contact.

While most of the studies on physical affection focus on physical affection patterns, few studies have focused on the connection between physical affection and relationship satisfaction. Hill (2004) found physical affection to be significantly correlated with romantic relationship satisfaction. Gulledge, Gulledge, and Stahmann (2003) provided strong correlational evidence of the link between physical affection and relationship satisfaction. Backrubs/massages, cuddling, kissing on the face, hugging, and kissing on the lips were all significantly correlated with relationship satisfaction. Holding hands and caressing were not significantly correlated with relationship satisfaction.

Gulledge, Gulledge, and Stahmann's (2003) study also measured the intimacy, frequency, expressiveness of love, and favoritism of various physical affection types. Men rated kissing on lips, and women rated cuddling as their favorite type of physical affection. Men reported cuddling and women reported holding hands as their most frequent forms of physical affection. Both men and women rated kissing on the lips as the most intimate form of physical affection, as well as being the most expressive of love. A significant positive correlation was also found between the giving and receiving of physical affection and the ease of conflict resolution within the relationship.

There are two main limitations to this study. The first limitation is that no sexual physical affection types were studied. Another limit of this study is the sample was very homogeneous (young Mormons), which may limit its generalizability. Furthermore, this study did not take into account the relationship stage of the participants.

Physical affection is an attempt to grow more intimate with another person. It is an attempt to close the physical and psychological distance between two people (Guerrero & Andersen, 1999). Gurevitch (1990) refers to physical affection as being an attempt to enter into a union with another person. Indeed, types of physical affection which have been rated as being more intimate, are strongly correlated with relationship satisfaction (Hill, 2004).

Physical affection may contribute to intimacy in a variety of ways. The actual act of physical affection may be intimate. Sexual physical affection types have been rated as being more intimate than non-sexual physical affection types (Hill, 2004). Perhaps the act of sharing one's body with another person increases emotional intimacy. In order for physical affection to occur, couples must be in close proximity. Being physically close to

another person increases opportunities for both verbal and nonverbal communication, and therefore increased emotional intimacy (Flaherty, 1999). Yet the link between emotional intimacy and physical affection ultimately remains somewhat of a mystery. Aside from oxytocin being released during physical affection and the resulting trust and pair-bond formation, it is unclear as to how (or even if) physical affection directly impacts emotional intimacy beyond shared experiences and closer proximity which may then result in the sharing of emotional intimacy.

Physical affection and passion are closely linked, but they are by no means the same construct (Lemieux, 1996; Sternberg, 1997). Passion refers to the emotional desire for romance, sexual desire, and a desire for sensual pleasure. Physical affection is the behavioral manifestation of passion.

Physical affection may contribute to commitment in direct and indirect ways. Because commitment is the last component of love to develop, physical affection, simply by its contribution to intimacy and passion, enables the development of commitment. Because physical affection causes the release of oxytocin, which is linked to pair-bond formation, physical affection may directly increase the level of commitment. Furthermore, if physical affection does aid in conflict resolution it could increase relationship satisfaction and stability by decreasing conflict (Gulledge, Gulledge, & Stahmann, 2003). Physical affection has also been associated with relationship unity (Gurevitch, 1990). Finally, through the public use of tie signs, physical affection could signal commitment to a relationship (Guerrero & Andersen, 1999).

Romantic Relationship Satisfaction

"No single question in relationship research has captured more attention than why one relationship endures and another dissolves" (Berscheid & Reis, 1998; p. 230). Yet for the multitude of research which has been conducted in order to better understand relationship satisfaction, a comprehensive understanding of what factors lead to relationship satisfaction and stability still eludes researchers (Berscheid, 1999). There has been little evidence to support the hypothesis that satisfying relationships remain stable while unsatisfying relationships end (Berscheid & Reis, 1998). The study of relationship satisfaction and stability is made all the more difficult because relationships are not static, rather they constantly change and evolve. What may be important to relationship satisfaction early in the relationship could be different from what is important to relationship satisfaction in later relationship stages (Smith, Vivian, & O'Leary, 1990). Berscheid (1999) has called for more research which studies satisfaction across relationship stages, not just at one point in a relationship.

It can be difficult to categorize relationship stages because every relationship is unique and develops at a unique rate. Some relationships are slow to develop, while other relationships rapidly develop. Therefore the amount of time a couple has been together may give an inaccurate assessment of the relationship. Even indicators such as marriage are not necessarily good indicators of the state of the relationship as some couples may marry while the relationship is still in its early stages, while other couples may not marry until the relationship has developed to a level of maturity. This difficulty

in classifying relationship stages is compounded by the various types or styles of love which are present in the couple and/or the relationship.

Guerrero and Andersen (1991, 1994, 1999) classified couples as being casually dating, seriously dating, engaged/cohabitating, or married. These classifications were based on participant self-report. Other studies (Hill, 2002; Hill, 2004; Lemieux, 1996) have utilized this approach, or a close variant of it. The strength of this approach is that it gives a more accurate depiction of the stage of the relationship as opposed to the amount of time the couple has spent together. One disadvantage to this approach has been the classification of marriage as the most developed relationship stage, as this excludes homosexual couples and couples who are cohabitating but not married. The cohabitating and engaged participants have been placed in the same category as participants who are seriously dating (Guerrero & Andersen, 1991, 1994, 1999) or even with those who are casually dating (Lemieux, 1996). Hill (2004) proposed placing cohabitating, engaged, and married participants into a committed category.

Some general trends in relationship satisfaction have been found. Shortly following marriage, marital satisfaction typically begins to decrease, and it continues to decrease until the final stages of the relationship (Berscheid & Reis, 1998; Glenn, 1990). One possible cause for this decline in marital satisfaction could be a decline in positive interactions, including physical affection, not an increase in negative interactions (Huston et al. 1987).

One difficulty with understanding relationship satisfaction is that much of the satisfaction research revolves around married couples. Many of the instruments used to measure relationship satisfaction are specific to married couples (Berscheid & Reis,

1998). The formation of a generic relationship satisfaction scale (Hendrick, 1988; Henrick, Dicke, & Hendrick, 1998) which can be used to study relationship satisfaction in any romantic relationship has been a significant methodological improvement in studying romantic relationship satisfaction.

One approach to understanding marital satisfaction has been to analyze interactions between the couple in order to determine which behaviors increase relationship satisfaction, and which behaviors decrease relationship satisfaction. Through this approach, it has been determined that satisfied couples have less negative interaction than unsatisfied couples (Berscheid & Reis, 1998). Typically, the number negative interactions are better predictors of the level of marital satisfaction than the number of positive interactions (Gottman & Levenson, 1986).

There are limits to the level of understanding which can be obtained by analyzing couples' interactions. It does not take into account environmental influences such as the presence of children. Another limitation of the behavioral analysis approach is that it does not adequately differentiate between relationship satisfaction and relationship stability (Berscheid & Reis, 1998). The assumption that a satisfactory marriage is a stable marriage and an unsatisfactory marriage is unstable and will dissolve may not always hold true. There are many marriages which in which the couple has low marital satisfaction, but the marriage is stable because of other factors (Heaton & Albrecht, 1991). Another factor in the stability of marriages with low satisfaction may be the availability of options (e.g. financial, available potential mates) (Berscheid & Reis, 1998).

Summary

While there are many theories on love, Sternberg's Triangular Theory of Love seems to be the simplest, most flexible, and most comprehensive theory. Sternberg's Triangular Theory of Love, which postulates that love consists of intimacy, passion, and decision/commitment, also provides theoretical predictions regarding the relationship between love, relationship satisfaction, and relationship stages.

There is an abundance of evidence that the peptide hormones oxytocin and vasopressin play a role in the formation and maintenance of pair-bond formation and attachment, however there is not yet adequate evidence to firmly conclude that oxytocin and vasopressin play a role in human pair-bond formation and attachment. Psychological theories such as Object Relations (Monte, 1999) and Attachment Theory help explain the formation and maintenance of romantic attachment.

Research on physical affection patterns as well as the effects of physical affection on romantic relationships remains somewhat ambiguous, although some general trends have emerged. Overall, there appear to be few gender differences in public physical affection patterns. Physical affection patterns may vary as a function of gender and relationship stage, although more research is needed before a firm conclusion can be made. Physical affection appears to play an important role in the formation and the maintenance of satisfactory romantic relationship. There is evidence that physical affection could play an important role in Sternberg's three components of love: intimacy, passion, and commitment.

Research on relationship stages and romantic relationship satisfaction is still in its early stages however some general trends are emerging. Relationship stages are best determined according to the subjective report of participants. Relationship satisfaction typically declines after marriage. Environmental influences, as well as the nature of interactions between couples have an effect on relationship satisfaction as well as relationship stability.

There is a lack of research which integrates love, relationship satisfaction, relationship stage, and physical affection. There is some support for the theory that the frequency, initiation patterns, importance of physical affection to relationship satisfaction, and the intimacy of physical affection types may be influenced by love, gender, relationship satisfaction, and relationship stage. The goal of this study was to determine the accuracy of this theory.

CHAPTER III

METHOD

The purpose of this study was to determine the relationship between physical affection, love, and relationship satisfaction. This chapter provides details of the participants, instruments, procedure, and data collection.

Procedure

Participants were recruited from undergraduate psychology courses at a Midwestern comprehensive university during 2007-2008. Prior to data collection, approval from the Oklahoma State University Institutional Review Board (IRB) was sought and obtained (IRB #ED07107). As part of a consortium of courses and professors in an online format, participants received extra credit for their participation from their professors. Participants who were not in a romantic relationship when they participated were instructed to respond based on their most recent romantic relationship. Participants were directed to a website where they completed the informed consent form (Appendix A). Upon completion of the informed consent form, participants completed the Demographic Form (Appendix B), *Sternberg Triangular Love Scale*, *Relationship Assessment Scale*, and the *Physical Affection Behavior-Rating Scale* (Appendix C). The order in which the instruments were administered was not randomized as had been

desired due to technical limitations when designing the website. Data were collected electronically and analyzed, beginning with the exploratory factor analysis, which then determined which factors were included in the testing of the hypotheses.

Instrumentation

Demographic Form

The demographic form (See Appendix B) was developed to include information relevant to this study. The demographic form is a 10-item questionnaire that asks for the participants' gender (male, female), age, ethnicity, marital status, the duration of their relationship, whether the relationship is with a person of the same sex, the importance that both giving and receiving physical affection has to their romantic relationship satisfaction, and the stage of their romantic relationship. The romantic relationship stage is determined with the question, "How would you describe your current romantic relationship?" There are four possible answers: (A) Casual dating (no firm commitment, may or may not be dating other people); (B) Serious dating (dating is exclusive to your partner); (C) Engaged or Cohabitating; or (D) Married. Each stage was used as a categorical variable, with the exception of C and D, which were combined into a single categorical variable labeled "committed."

Relationship Assessment Scale

The *Relationship Assessment Scale* (RAS) will be used to measure the participants' level of satisfaction with their romantic relationships (Hendrick, 1988). The *Relationship Assessment Scale* is a self-report measure that consists of seven 5-point

Likert-like scales. An example of the questions on the *Relationship Assessment Scale* is "In general, how satisfied are you with your relationship?" The higher the score for the responses on the *RAS*, the greater the relationship satisfaction; therefore, lower scores suggest lower relationship satisfaction. Men and women whose average score is above 4.0 tend to be satisfied with their romantic relationship; whereas, men who score closer to 3.5 and women who score below 3.5 tend to have greater relationship dissatisfaction (Hendrick, Dicke, & Hendrick, 1998). The *Relationship Assessment Scale* has demonstrated reliability with an alpha of 0.86, a mean inter-item correlation of 0.49, and a test-retest reliability of 0.85 (Hendrick, 1988). The *Relationship Assessment Scale* has a correlation with the *Kansas Marital Satisfaction Scale* (Schumm, Paff-Bergen, Hatch, Obiorah, Copeland, Meens, & Bugaighis, 1986) of 0.64 for men and 0.74 for women. Furthermore, the *Relationship Assessment Scale* has a 0.80 correlation with the Dyadic Adjustment Scale (Spanier, 1976), both scales can discriminate between couples who are currently dating, and couples who have terminated their romantic relationship and are no longer dating (Hendrick, Dicke, & Hendrick, 1998).

Sternberg Triangular Love Scale

Originally developed in 1988 by Robert Sternberg (1988), the *Sternberg Triangular Love Scale* has undergone subsequent revisions by Sternberg as well as others. The original *Sternberg Triangular Love Scale* was a 72-item questionnaire designed to measure the three components of Sternberg's Triangular theory of love, which includes intimacy, passion, and commitment. Each item was measured on a nine-point Likert-like scale ranging from 1 (not at all) to 9 (extremely). The scale was

constructed in such a way that half (36) of the items measured actions and half (36) of the items measured feelings. Among both the feeling and the action items, 12 of the items measure intimacy, 12 of the items measure passion, and 12 of the items measure commitment.

Sternberg continued to revise and establish construct validity for the *Sternberg Triangular Love Scale* (Sternberg, 1997). In a study of 50 men and 51 women, Sternberg determined the overall mean score to be 7.03 (s.d. = 1.50). The mean of the intimacy subscale was 7.39 (s.d. = 1.19); the mean of the passion subscale was 6.51 (s.d. = 1.65); the mean of the commitment subscale was 7.20 (s.d. = 1.49). The overall coefficient alpha was 0.97, while the coefficient alphas for intimacy, passion, and commitment were 0.91, 0.94, and 0.94 respectively. The inter-scale correlations between the subscales were 0.71 between passion and intimacy, 0.73 between passion and commitment, and 0.73 between intimacy and commitment.

In order to establish external validity, Sternberg correlated the characteristic scores of the *Sternberg Triangular Love Scale* to the *Rubin Love Scale* (Sternberg, 1997). The *Triangular Love Scale* was more closely correlated to the Rubin Love Scale than it was to *Rubin Liking Scale*. Correlations between the *Sternberg Triangular Love Scale* and the *Rubin Liking Scale* were 0.61 for intimacy, 0.59 for passion, and 0.56 for commitment. As Sternberg predicted, the correlations between the *Sternberg Triangular Love Scale* and the *Rubin Love Scale* were higher: 0.70 for intimacy, 0.82 for passion, and 0.71 for commitment. The correlations between relationship satisfaction scores and the intimacy, passion, and commitment subscales were 0.76, 0.76, and 0.67 respectively (Sternberg, 1997).

Aron and Westbay (1996) further revised *Sternberg's Triangular Love Scale*. The revised scale features only 19 items, and it has lower inter-scale correlations than Sternberg's version. The alpha coefficients of the three subscales are 0.85 for intimacy, 0.83 for passion, and 0.93 for commitment. The inter-scale correlations between the subscales were 0.63 between passion and intimacy, 0.62 between passion and commitment, and 0.72 between intimacy and commitment. Aron and Westbay's version of the *Triangular Love Scale* was used in this study as it is shorter than the original Sternberg Triangular Love Scale, yet it does not sacrifice validity or reliability.

Physical Affection Behavior-Rating Scale

The *Physical Affection Behavior-Rating Scale* was originally developed in 2002 to measure the frequency of physical affection between partners, the subjective importance of physical affection to relationship satisfaction, initiation patterns of physical affection between the partners, and the perceived intimacy of various types of physical affection. The scale was not standardized, nor was its validity or reliability established.

The items on the scale were based on common types of physical affection found in the literature (Pisano, Wall, & Foster, 1986), observed and experienced types of physical affection, and other examples of physical affection suggested by the author's master's thesis committee. The items were arranged at random, with the exception of not placing similar types of physical affection in consecutive order.

In this study, a revised version of the *Physical Affection Behavior-Rating Scale* was used to provide a more accurate assessment of physical affection. The revised version contains 25 different types of physical affection instead of 29 types of physical

affection that were on the original version of the scale. Some items were removed (such as shaking partner's hand) because they were shown to not be indicative of romantic physical affection in the thesis study (Hill, 2004), while other items were combined (e.g., sleeping with partner was combined with napping with partner). Additionally, other items were reworded in order to clarify their meaning (e.g., "physically stimulate partner" was changed to "masturbate partner").

Following consultation with the author's dissertation committee, it was decided to further modify the PABS by adding an additional Likert-like scale under each physical affection type in order to clarify physical affection initiation patterns. Instead of one question rating physical affection initiation with a low score being partner initiations most often and a high score being participant initiates most often, two questions were included measuring initiation, with one question measuring physical affection initiation done by the participant, and another question measuring physical affection initiation done by the participant's partner.

The revised version of the *Physical Affection Behavior-Rating Scale* (Appendix C) is a self-report measure consisting of 125 items. Each item is a seven point Likert scale. Twenty five different types of physical affection are assessed on this scale. The types of physical affection are: touch partner's leg, touch partner's arm, touch partner's breasts/chest, embrace partner from behind, kiss partner's neck, sit on partner's lap, rest head on partner, snuggle/cuddle with partner, give body massage to partner, dance with partner, have sexual intercourse with partner, kiss partner's face or body, hold hands with partner, kiss partner on lips, brush/play with partner's hair, tickle partner, put arm around partner, bite/nibble on partner, oral sex with partner, groom partner, kiss partner on

mouth with tongue, sleep (literally) with partner, hug partner, bathe with partner, and masturbate partner.

Under each of the 25 types of physical affection are five Likert-like responses. The first response under each type of physical affection measures the frequency in which the couple engages in this type of physical affection. A low score of 1 indicates the couple never engages in that specific type of physical affection, while a high score of 7 indicates the couple constantly engages in that specific type of physical affection. The second response under each type of physical affection measures the initiation patterns of that specific type of physical affection. A low score of 1 indicates the participant never initiates that specific type of physical affection, while a high score of 7 indicates the participant tends to frequently initiate that type of physical affection. The third response under each type of physical affection also measures the initiation patterns of that particular type of physical affection, however it measures how often the participants partner tends to initiate that type of physical affection. A low score of 1 indicates the participant's partner never initiates that specific type of physical affection, while a high score of 7 indicates the participant's partner tends to frequently initiate that type of physical affection. The fourth response under each type of physical affection measures the importance the specific type of physical affection is perceived to have to relationships satisfaction. A low score of 1 indicates that type of physical affection has no importance to relationship satisfaction, while a high score of 7 indicates that type of physical affection is very important to relationship satisfaction. Finally, the fifth response under each type of physical affection measures how intimate the participant rates that type of physical affection. A low score of 1 indicates that type of physical affection is not at all

intimate, while a high score of 7 indicates that type of physical affection is very intimate. An example of questions on the *Physical Affection Behavior-Rating Scale* is, "How often do you kiss your partner's neck, or your partner kisses your neck?"

Variables

Gender

The gender of the participants was measured by a question on the demographic form. The question offered only male and female options.

Relationship stage

Based on Guerrero & Andersen (1994), participants were be grouped into three relationship stages: (1) casually dating, (2) seriously dating, or (3) in a committed relationship. Relationship stage was based on their response on the demographic form. Those who reported casual dating were be assigned to a casual dating stage (1). Those who reported being in a serious dating relationship (exclusively dating their partner) were placed in the serious dating stage (2). Finally, those who reported being engaged, cohabitating, or married were placed in the committed relationship stage (3).

Relationship satisfaction

Participants' relationship satisfaction was be measured using the Relationship Assessment Scale (RAS). The final score was the mean of the answers for each of the seven questions. Two of the questions (4, 7) were reverse scored.

Intimacy

Participants' level of intimacy was the mean score of the intimacy subscale on the Sternberg Triangular Love Scale (STLS).

Passion

Participants' level of passion was the mean score of the passion subscale on the STLS.

Commitment

Participants' level of commitment was the mean score of the decision/commitment subscale on the STLS.

Physical affection frequency

The frequency of physical affection was measured by the Physical Affection Behavior-Rating Scale. Physical affection frequency was measured by a Likert-type question under each of the 25 types of physical affection asking how frequent each type of physical affection occurs. Actual frequency data used in the analyses were derived from the four physical affection factors revealed in the factor analysis.

CHAPTER IV

RESULTS

The purpose of this study was to determine the relationship between physical affection, love, and relationship satisfaction. This chapter presents the research questions for this study, as well as the hypotheses, and analyses used to answer each research question. A summary of demographic and descriptive information of the participants is followed by three sections, one for each of the three research questions. This chapter concludes with a summary of the findings.

Research Questions

The research questions that guided the analyses of this study are as follows:

Question 1

What factors are associated with physical affection?

Question 2

What physical affection factors and love factors are associated with romantic relationship satisfaction?

Question 3

Do physical affection factors vary across gender and romantic relationship stage?

Hypotheses

Since this study is exploratory in nature, null hypotheses were used.

Null Hypothesis 1

There are no stable and valid factors associated with physical affection.

Null Hypothesis 2

The factors of physical affection and love are not associated with romantic relationship satisfaction.

Null Hypothesis 3

The physical affection factors do not vary across gender and romantic relationship stage.

Participants

Participants in this study consisted of 370 undergraduate students from a large state university in the southwestern United States. Participants were between 18 and 35 years old with a mean age of 19.34 years (SD = 2.031). Participants included 248 women (67.03%) and 122 men (32.97%). Participants were primarily Caucasian (n = 298, 80.54%), followed by Native American (n = 22, 5.95%), African-American (n = 16, 4.32%), Other (n = 13, 3.51%), Hispanic (n = 11, 2.97%), and Asian American (n = 10, 2.70%). The majority of participants (n = 274, 74.05%) were in a romantic relationship when they participated in this study, whereas 96 participants (25.95%) were not in a romantic relationship when they participated in this study.

The length of participants' romantic relationships were between 0 and 180 months, with a mean duration of 15.05 months (SD = 19.021). The vast majority of participants were single (n = 358, 96.76%), followed by married (N = 9, 2.43%), divorced (n = 2, 0.54%), and widowed (n = 1, 0.27%). A platykurtic distribution was achieved when participants described, based on their romantic relationship stage, as 119 participants (32.16%) reported being in the casual dating stage, 196 participants (52.97%) reported being in a serious dating stage, and 55 participants (14.86%) reported being in a committed relationship. The majority of participants were in a romantic relationship with someone of the opposite sex (n = 344, 92.97%), with the remainder (n = 26, 7.03%) being in a relationship with someone of the same sex.

The frequency and participant initiation patterns of physical affection were measured by the *Physical Affection Behavior-Rating Scale* (PABS). The frequency and initiation of physical affection scores ranged between 4.26 and 4.57 for both men and women (Table 1). Passion, intimacy, and commitment were measured by the *Triangular Love Scale* (Aron & Westbay, 1996). The mean score for men was higher than the mean score for women across all three love factors. Finally, the mean relationship satisfaction scores, as measured by the *Relationship Assessment Scale*, are listed on Table 1 for both men and women.

Table 1. Descriptive Statistics of Scales by Gender.

Scale	*N*	*M*	*SD*
Physical Affection Behavior-Rating Scale			
Frequency of PA			
Male	115	4.57	.85
Female	243	4.56	.77
Participant Initiated PA			
Male	115	4.42	.89
Female	243	4.26	.80
Triangular Love Scale			
Passion			
Male	122	6.78	1.45
Female	248	4.37	1.37
Intimacy			
Male	122	6.91	.85
Female	248	4.47	.59
Commitment			
Male	122	5.96	1.18
Female	248	4.21	1.38
Relationship Assessment Scale			
Male	122	3.74	.87
Female	248	3.91	.80

Note. PA refers to the term "physical affection." Frequency of PA refers to the mean frequency of physical affection factors as measured by the Physical Affection Behavior-Rating Scale. Participant Initiated PA refers to the mean score of participant-initiated physical affection as measured by the Physical Affection Behavior-Rating Scale. Partner Initiated PA refers to physical affection as initiated by the participant's partner as measured by the Physical Affection Behavior-Rating Scale. Range of the Physical Affection Behavior Scale scores are between 1 and 7. Range of the Triangular Love Scale scores are between 1 and 9. Range of the Relationship Assessment Scale scores are between 1 and 5.

Question 1

Question 1

What factors are associated with physical affection?

Null Hypothesis 1

There are no stable and valid factors associated with physical affection.

An exploratory factor analysis was performed on the 25 physical affection items presented to participants in the *Physical Affection Behavior-Rating Scale* (PABS) in order to reduce the large number of items in to several common factors (Weiss, 1971). From an examination of the scree plot (Figure 1), the eigen values, and the items representing factors, a three-factor solution was chosen as the best representation of the data. By utilizing the varimax rotation technique, three factors emerged from the analysis, which were scales named Hot, Warm, and Demonstrative upon interpretation of the items representing each factor or scale.

Figure 1: Scree Plot for Varimax Rotation Factor Analysis

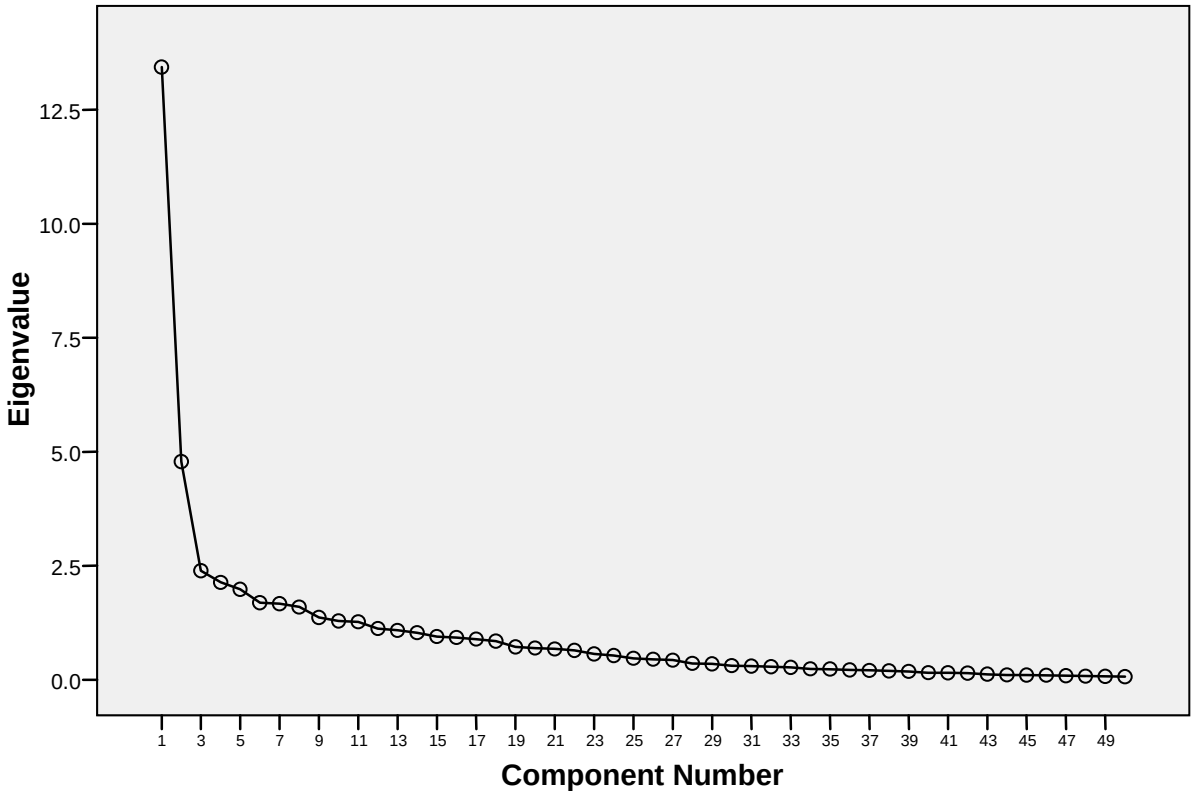


Table 2 lists the rotated component matrixes. The cutoff score for significance was set at 0.45. The "a" listed after the physical affection type refers to the frequency of the physical affection type, while a "b" listed after the physical affection type refers to how often the participant initiated the physical affection type. Because physical affection frequency (a) and physical affection initiation (b) both exceeded the cutoff threshold on virtually the same physical affection types, frequency (a) was used in all subsequent data analysis, while initiation (b) was not used in subsequent data analysis. A 0.45 cutoff was used in order to eliminate physical affection types from falling into more than one factor.

Both (a) and (b) were included in the factor analysis, however only factor (a) was used during subsequent statistical analyses (e.g. Chronbach's α, regression, and ANOVA's).

The first factor, named Hot, contained five items. The Hot affection factor included sexual intercourse, oral sex, sleeping with partner, bathing with partner, and masturbating partner. These items are primarily sexual in nature, therefore the term "hot" seemed most appropriate in characterizing this factor. The second factor, named Warm, contained seven items. The Warm affection factor included touching partner's leg, touching partner's chest/breast, kissing partner's neck, snuggling with partner, kissing partner's body or face, kissing partner's lips, and kissing partner on the mouth with tongue. Items on the warm factor may or may not be considered sexual, however they are more sexual than the third factor. The third factor, named Demonstrative, contained three items. Items on the demonstrative affection factor included holding hands with partner, kissing partner on lips (without tongue), and hugging partner. Items on the demonstrative factor tend to be less sexual in nature, and therefore more acceptable as public displays of affection, as well as "tie signs" which are used in public settings to ward off potential suitors. In short, items on the demonstrative factor are ways of demonstrative affection.

Table 2. Rotated Component Matrix

	Hot	Warm	Demonstrative
Touch Leg -a	0.18	**0.45***	0.10
Touch Leg -b	0.20	0.16	0.21
Touch Arm -a	-0.03	0.30	0.10
Touch Arm -b	0.06	0.08	0.13
Touch Breasts/Chest -a	0.38	**0.62***	-0.07
Touch Breasts/Chest -b	0.37	0.20	-0.06
Embrace from Behind -a	0.09	0.35	0.10
Embrace from Behind -b	0.18	0.10	0.18
Kiss neck -a	0.17	**0.66***	0.05
Kiss neck -b	0.21	**0.45***	0.18
Sit on Lap -a	0.07	0.14	0.16
Sit on Lap -b	0.09	0.10	0.10
Rest Head -a	-0.07	0.02	0.15
Rest Head -b	-0.07	0.03	0.24
Snuggle -a	0.17	**0.48***	0.34
Snuggle -b	0.20	0.30	0.41
Massage -a	0.12	0.13	0.08
Massage -b	0.09	0.12	-0.02
Dance -a	0.01	0.07	0.11
Dance –b	0.06	-0.02	0.07
Sexual Intercourse -a	**0.73***	0.28	-0.03
Sexual Intercourse -b	**0.75***	0.19	-0.04
Kiss Body/Face -a	0.18	**0.74***	0.15
Kiss Body/Face -b	0.24	**0.54***	0.27
Hold Hands -a	-0.04	0.14	**0.72***
Hold Hands -b	0.03	0.16	**0.78***
Kiss Lips -a	0.13	**0.68***	**0.45***
Kiss Lips -b	0.19	**0.54***	**0.49***
Brush Hair -a	-0.03	0.13	0.14
Brush Hair -b	0.04	0.17	0.14
Tickle -a	0.09	0.12	0.13
Tickle -b	0.12	-0.02	0.07
Arm Around Partner -a	0.00	0.21	0.22
Arm Around Partner -b	0.10	0.04	0.20
Bite/Nibble -a	0.32	0.28	-0.09
Bite/Nibble -b	0.29	0.22	-0.07
Oral Sex -a	**0.82***	0.27	0.07
Oral Sex -b	**0.80***	0.13	0.11
Groom Partner -a	0.15	0.11	0.16
Groom Partner -b	0.14	0.17	0.14
Kiss with Tongue -a	0.17	**0.71***	0.33
Kiss with Tongue -b	0.27	**0.55***	0.39
Sleep with Partner -a	**0.52***	0.17	0.07
Sleep with Partner -b	**0.53***	0.14	0.05
Hug Partner -a	-0.35	0.26	**0.72***
Hug Partner -b	**0.62***	0.14	**0.79***
Bathe with Partner -a	**0.74***	0.01	0.03
Bathe with Partner -b	**0.75***	-0.02	0.02
Masturbate Partner -a	**0.71***	0.22	0.21
Masturbate Partner -b	**0.74***	0.16	0.07

Items with an * after them were included into the factor as they met the 0.45 cutoff. Items are arranged by physical affection type instead of by numerical value in order to demonstrate the similarities between (a) and (b).

The reliability of each scale was determined using Cronbach's α . A Cronbach's α above 0.70 indicates strong reliability (Gall et al., 2003). Cronbach's α was 0.838 for the Hot factor, 0.867 for the Warm factor, and 0.734 for the Demonstrative factor. Cronbach's α was run for each of the three factors on the *Triangular Love Scale* (passion, intimacy, commitment), as well as the single factor on the *Relationship Assessment Scale* (RAS). The alpha coefficients were 0.895 for passion, 0.871 for intimacy, 0.958 for commitment, and 0.868 for the RAS.

The null hypothesis was not supported as three factors (Hot, Warm, and Demonstrative) of physical affection were yielded from the exploratory factor analysis. Because these factors were determined to be reliable, they may be used for future research on physical affection, such as in answering subsequent questions in this study.

Question 2

Question 2

What physical affection factors and love factors are associated with romantic relationship satisfaction?

Null Hypothesis 2

The factors of physical affection and love are not associated with romantic relationship satisfaction.

A Pearson correlation analysis was conducted between the factors to be used in the regression analyses, namely Passion, Intimacy, Commitment, Hot, Warm, Demonstrative, and Relationship Satisfaction. The correlations are presented in Table 3. All of the factors were significantly correlated with all other factors at $p<0.001$. Of note are the strong intercorrelations between Passion, Intimacy, and Commitment, which is consistent with the literature (Sternberg, 1997). The three physical affection factors ranged in correlations from 0.187 between Demonstrative and Hot, to 0.532 between Hot and Warm, to 0.649 between Warm and Demonstrative.

TABLE 3. Pearson Correlations Among Variables

	Relationship Satisfaction	Passion	Intimacy	Commitment	Hot	Warm	Demonstrative
Relationship Satisfaction	1.00						
Passion	0.753*	1.00					
Intimacy	0.759*	0.818*	1.00				
Commitment	0.765*	0.816*	0.793*	1.00			
Hot	0.278*	0.351*	0.312*	0.365*	1.00		
Warm	0.324*	0.415*	0.350*	0.324*	0.532*	1.00	
Demonstrative	0.311*	0.338*	0.334*	0.250*	0.187*	0.649*	1.00

Note: *$p<0.001$

First, a regression analysis was performed utilizing relationship satisfaction as the dependent variable. The independent variables were the physical affection factors of Hot, Warm, Demonstrative, and the love factors of Passion, Intimacy, and Commitment. Together, the physical affection factors and the love factors explained a significant portion of variance in relationship satisfaction, $R^2 = 0.665$, $F(6, 351) = 115.94$, $p<0.001$. Passion significantly predicted relationship satisfaction scores, $b = 0.223$, $t(351) = 3.55$, $p<0.001$. Intimacy significantly predicted relationship satisfaction scores, $b = 0.287$, $t(351) = 4.90$, $p<0.001$. Commitment was the final significant predictor of relationship satisfaction scores, $b = 0.352$, $t(351) = 5.99$, $p<0.001$. Hot did not significantly predict relationship satisfaction scores, $b = -0.023$, $t(351) = -0.559$, $p = 0.549$. Warm also did not significantly predict relationship satisfaction scores, $b = -0.12$, $t(351) = -0.25$, $p = 0.803$. Finally, Demonstrative did not significantly predict relationship satisfaction scores, $b = 0.07$, $t(351) = 1.51$, $p = 0.132$.

Second, a regression analysis was performed utilizing relationship satisfaction, as the dependent variable, and Hot, Warm, and Demonstrative as the independent variables. This was done in order to test if the physical affection factors could predict a significant portion of the variance in relationship satisfaction. The physical affection factors (Hot, Warm, and Demonstrative) did explain a significant proportion of variance in relationship satisfaction, $R^2 = 0.149$, $F(3, 354) = 20.70$, $p<.001$. Hot significantly predicted relationship satisfaction scores, $b = 0.198$, $t(354) = 3.32$, $p<.001$. Demonstrative also significantly predicted relationship satisfaction scores, $b = 0.229$, $t(354) = 3.44$, $p<.001$. Warm did not significantly predict relationship satisfaction scores $b = 0.07$, $t(354) = 0.91$,

$p = 0.36$. Physical affection factors alone were able to account for a significant proportion of variance in relationship satisfaction.

The physical affection factors were found to be predictive of a significant proportion of variance in relationship satisfaction. When both the physical affection factors and the love factors were used to predict relationship satisfaction, the love factors were significant predictors, whereas the physical affection factors were not significant predictors of relationship satisfaction. Therefore, the null hypothesis was rejected.

Question 3

Question 3

Do physical affection factors vary across gender and romantic relationship stage?

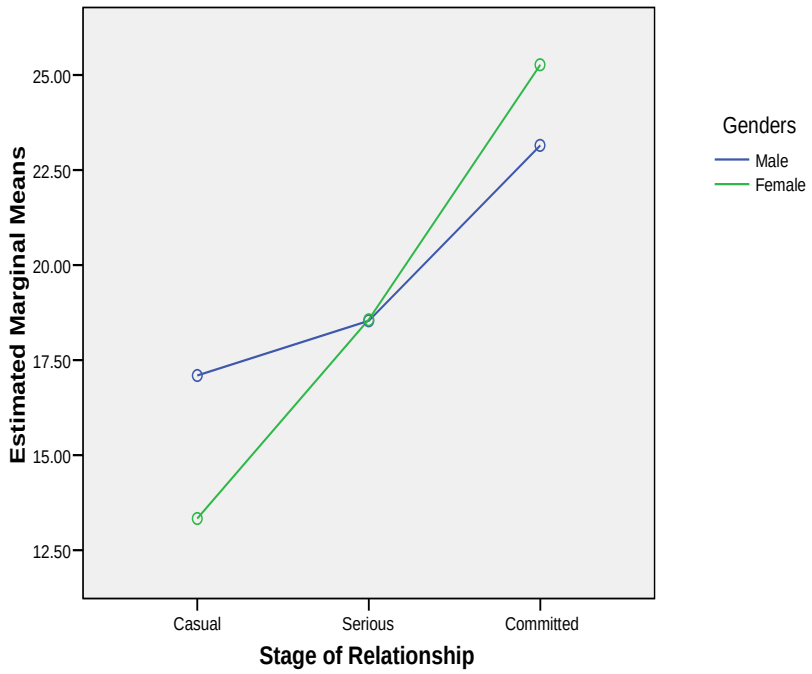
Null Hypothesis 3

The physical affection factors do not vary across gender and romantic relationship stage.

A 2 x 3 MANOVA was performed with gender (male, female) as the dependent variable and relationship stage (Casual Dating, Serious Dating, Committed) as the independent variable. A significant interaction was found between gender and relationship stage on Hot physical affection $F(2, 357) = 3.58$, $p<0.05$. There was no significant interaction between gender and relationship stage on Warm physical affection $F(2, 357) = 0.218$, $p = 0.80$, nor was there a significant interaction between gender and relationship stage on Demonstrative physical affection $F(2, 357) = 0.055$, $p = 0.95$.

Men reported higher levels of Hot physical affection than did women in the casual stage, while women reported higher levels of Hot physical affection than did men during the committed stage. Men and women reported the same amount of Hot physical affection during the serious dating stage. See Figure 2.

Figure 2: Gender Differences in Hot Physical Affection Across Stages



Tukey post-hoc analysis found significant differences in Hot physical affection between the casual and serious stages ($p<0.001$), the casual and committed stages ($p<0.001$), and between the serious and committed stages ($p<0.001$). For the Warm physical affection factor, significant differences were found between the casual and

serious stages ($p<0.001$), between the casual and committed stages ($p<0.001$), and between the serious and committed stages, no significant differences were found ($p>0.932$). Finally, for the Demonstrative physical affection factor, significant differences were found between the casual and serious stages ($p<0.001$), and between the casual and committed stages ($p<0.04$). No significant differences were found between the serious and committed stages ($p>0.30$).

Because a significant interaction between relationship stage and gender was found for Hot physical affection, the main effects for gender can only be discussed for Warm and Demonstrative physical affection. The main effects were not significant for gender across Warm physical affection $F(1,357) = 0.231$, $p = 0.63$ and Demonstrative physical affection $F(1,357) = 1.797$, $p = 0.18$.

As before, because a significant interaction between relationship stage and gender was found for Hot physical affection, the main effects for relationship stage can only be discussed for Warm and Demonstrative physical affection. A significant main effect was found for Warm physical affection and relationship stage $F(2,357) = 21.529$, $p<0.001$. A significant main effect was found for Demonstrative physical affection and relationship stage $F(2,357) = 12.792$, $p<0.001$.

Physical affection factors were found to vary across relationship stage, however they did not vary across gender. The exception being a main effect which was found between gender and relationship stage on Hot physical affection. Therefore the null hypothesis was rejected.

Chapter Summary

The purpose of this chapter was to test the three following null hypotheses: 1. There are no stable and valid factors associated with physical affection; 2. The factors of physical affection and love are not associated with romantic relationship satisfaction; and 3. The physical affection factors do not vary across gender and romantic relationship stage.

Three physical affection factors were found using an exploratory factor analysis, Hot, Warm, and Demonstrative. A regression analysis found that the three physical affection factors predicted a significant amount of variance in romantic relationship satisfaction. A second regression analysis found that the three physical affection factors and the three love factors (Passion, Intimacy, Commitment) predicted a significant (and much larger) portion of variance in romantic relationship satisfaction. Finally, a MANOVA was conducted to determine if any interactions or main effects were present. A significant interaction was found between gender and relationship stage on Hot physical affection. Additionally, significant main effects were found for Warm and Demonstrative physical affection on romantic relationship stage. No significant main effects were found for Warm and Demonstrative physical affection on gender.

CHAPTER V

DISCUSSION

The purpose of this study was to determine the relationship between physical affection, love, and relationship satisfaction. This chapter provides a discussion of the results of this study beginning with limitations, then important conclusions, then implications of this study, and finally a concluding comment.

Limitations

One limitation of this study was the relative homogeneity of the sample, which limits the generalizability of the results. Participants were primarily young, unmarried, heterosexual, and Caucasian. Of special note is the large percentage of participants who are single and have never been married, as well as the young age of most of the participants. While relationship stage was included as a variable in this study, due to the role hormones play in physical affection and the natural changes in hormone levels as people age, physical affection may play a different role in relationship satisfaction for a young committed couple than for an elderly committed couple. Therefore, caution should be used when applying the results of this study to couples who are significantly older.

The high intercorrelations between all of the variables in this study results in the possibility of multicolinearity. The overlap between physical affection factors and love factors could be more closely examined. This could be addressed in future studies.

Finally, the use of self-report questionnaires is a limitation in this study as actual behaviors may be different from the self-reported behaviors and the information collected is inherently subjective in nature (Schwarz, 1999). For example, a participant may play with his or her partner's hair once every two weeks, which, according to the participant is quite frequent. Others, however, may deem it to be infrequent. While an observational study would help to eliminate some of the subjectivity, it would create several different ethical and logistical problems given the intimate nature of this study.

Conclusions

The *Physical Affection Behavior-Rating Scale* (PABS) was found to be valid. Three reliable physical affection factors (Hot, Warm, Demonstrative) were determined through use of an exploratory factor analysis. The Hot scale seems to be more sexual in nature than the other scale. Items on this scale include sexual intercourse, oral sex, sleeping with partner, bathing with partner, and masturbating partner. Bathing with partner might serve as a foreplay if done prior to sexual intercourse. It may also indicate sexual intercourse which occurs in the shower/bathtub. Finally, bathing may also be a post-intercourse activity. Sleeping with partner may be included as sexual physical affection tends to be physically demanding, and a period of rest following sexual physical affection could be desirable or necessary. Hot physical affection behaviors tend to be done in private. It seems that Hot physical affection is most closely linked to Sternberg's theory of Passion in the Triangular Theory of Love (Sternberg, 1997).

Warm physical affection included touching leg, touching chest/breast, kissing neck, snuggling, kissing of body or face, kissing lips, and kissing mouth with tongue.

These behaviors are less sexual than the behaviors found in Hot, however they are still powerful. Many of these behaviors were significantly correlated to romantic relationship satisfaction (Gulledge, Gulledge, Stahmann, 2003). Warm physical affection behaviors tend to be done in both private and public settings. Warm seems to be an intermediate step between Hot and Demonstrative physical affection. Warm physical affection may be most closely linked to Sternberg's theory of Intimacy in the Triangular Theory of Love (Sternberg, 1997).

Demonstrative physical affection includes holding hands, kissing on lips without tongue, and hugging. These behaviors tend to closely resemble the tie signs described by Guerrero and Andersen (1991, 1994). Demonstrative physical affection behaviors tend to be done in public settings as a physical manifestation of commitment and as a means of warding off other potential mates. Demonstrative physical affection behaviors may be most closely linked to Sternberg's theory of commitment in the Triangular Theory of Love (Sternberg, 1997). Just as Sternberg suggests that a balance in Intimacy, Passion, and Commitment creates a healthier love (Sternberg, 1997), it is also hypothesized that a balance in the three types of physical affection (Hot, Warm, Demonstrative) would lead to a healthier and more satisfactory romantic relationship.

Measurement of physical affection types used in previous research have varied greatly. Due to the lack of valid instruments with which to measure physical affection, research tends to use a wide variety of physical affection types with no discernable purpose behind their specific use (Gulledge, Gulledge, Stahmann, 2003). By establishing the validity of the PABS, future researchers now have an instrument which can be used to create more standardized research than in the past.

Physical affection was shown to be significantly predictive of romantic relationship satisfaction. Therefore, by assessing a couple's physical affection patterns, a general understanding of a couple's relationship satisfaction may be gained. This study demonstrates that the physical aspect of romantic relationships cannot be excluded as unimportant.

The combination of physical affection factors (Hot, Warm, Demonstrative) and love factors (Passion, Intimacy, Commitment) as predictive variables greatly increased the predictive power for relationship satisfaction. It seems that while physical affection factors alone explain a significant percent of variance in relationship satisfaction, the addition of emotions when predicting relationship satisfaction is quite important. This finding lends support to the definition of physical affection as being "any touch intended to arouse feelings of love in the giver and/or the recipient" (Gulledge, Gulledge, & Stahmann, 2003, p. 234). The feelings of love which come from physical affection may be what actually accounts for most of the relationship satisfaction. Therefore to engage in physical affection without any deeper feelings of love could be empty and ineffective in increasing relationship satisfaction.

A significant interaction between gender and relationship stage on Hot physical affection was found. Men reported more Hot physical affection in casual stage than did women. In the serious dating stage, men and women reported no differences in Hot physical affection. During the committed stage, women reported more Hot physical affection than did men.

Several explanations may exist for this finding. The results could be due to the sampling, as the sample did not consist of matched-pair couples. Another possibility is

that men may be exaggerating their sexual encounters during the casual dating stage as there are social and biological pressures for men to engage in sexual encounters early in relationships (Morris, 1977). Men may gain more tolerance for sexual arousal than women during the course of a relationship (Sternberg, 1997). Women may be slower than men in their development of Passion during the course of a relationship.

While no main effect was found between gender and Warm and Demonstrative physical affection, a significant main effect was found between relationship stage and Warm and Demonstrative physical affection. As the relationship progresses, couples tend to participate in increased Warm and Demonstrative physical affection, which might mirror the changes in love (Passion, Intimacy, Commitment) which evolve across the relationship stages.

Implications

Theory

As a result of this study, three physical affection factors (Hot, Warm, Demonstrative) have been established for use in future research. A revised version of the PABS could be created to include only those items which were loaded onto the factors. The frequency of physical affection and the initiation of physical affection were found to be nearly identical constructs, therefore initiation patterns could be excluded in future research.

Since the physical affection factors were significantly predictive of relationship satisfaction, future research in the area of relationship satisfaction should include physical affection. Physical affection seems to play an important role in relationship satisfaction, however the additional power of Sternberg's Love factors (Passion, Intimacy,

Commitment) for predicting relationship satisfaction suggests that the emotions behind physical affection cannot be underestimated. Physical affection may indeed be a vehicle for sharing strong emotions.

The significant main effect of romantic relationship stage on romantic relationship satisfaction suggests researchers should heed Bersheid's (1999) call for studying romantic relationships across various stages, not as static constructs. Physical affection and love change over the course of relationship stages.

Practice

Given the importance of romantic relationship satisfaction to physical and mental health (Baumeister & Leary, 1995, Metz & Epstein, 2002, & Segrin, 1998), new methods and techniques for assessing and improving relationship satisfaction could be of great benefit to society. Based on the results of this study, physical affection is a significant predictor of romantic relationship satisfaction. Therefore, physical affection frequencies could be used to assess relationship satisfaction. A lack of physical affection could indicate lower levels of relationship satisfaction, while a high amount of physical affection could indicate higher levels of relationship satisfaction.

For couples experiencing low relationship satisfaction, behavioral interventions such as instructing couples to cuddle or give each other massages may help increase relationship satisfaction. Furthermore, couples could be instructed to discuss how various types of physical affection would impact their feelings of passion, intimacy, and commitment in order to help the couple better understand how their behaviors affect their emotions as well as their partner's emotions.

Individuals suffering from a variety of mental health issues which tend to foster social isolation such as depression, anxiety, or eating disorders could be instructed to seek out physical affection from friends, relatives, or massage professionals in order to share in some of the beneficial healing powers of oxytocin, as well as to experience a physical connection with other human beings. The inclusion of physical affection homework may be a valuable supplement to psychotherapy.

Future Research

Future research should first and foremost focus on establishing further validity and reliability for the PABS. A confirmatory factor analysis could be conducted on the PABS. The establishment of test-retest reliability is another area for future research on the PABS.

Another area of future research would be a replication of this study which would involve a more diverse sample. More specifically, the sample should include subjects with a greater range in age, s larger number of married people, as well as greater ethnic diversity. To give a specific example, is the relationship between physical affection and romantic relationship satisfaction the same between a young Caucasian couple verses an elderly Hispanic couple?

This study was written largely assuming heterosexual couples, even though a small percentage of the participants reported not being heterosexual. Another direction for future research could involve looking at potential similarities and differences between same-sex couples and heterosexual couples? What is the relationship between physical affection and relationship satisfaction for gay couples versus lesbian couples? Due to

social stigma or the potential for discrimination, do same-sex couples have different frequencies in physical affection than heterosexual couples? For example, do heterosexual couples tend to hold hands more often than same-sex couples because same-sex couples may fear retaliation if they are seen holding hands in public?

Do couples who report a relative balance between Hot, Warm, and Demonstrative physical affection have more satisfactory relationships than couples with unbalanced physical affection patters? For example, would a couple who engages almost entirely in Hot physical affection be as satisfied with their relationship as a couple who engages in all three types of physical affection?

Given that the physical affection factors alone predicted a significant amount of variance in relationship satisfaction, yet the physical affection factors plus the love factors predicted even more variance, there seems to be some overlap between the physical affection factors and the love factors. For example, Passion and Hot physical affection seem similar to each other. Future research could also explore the overlap between the love factors and the physical affection factors.

A final area for future research is with regards to this study's finding that men report more Hot physical affection than women during the casual dating stage, and women report more Hot physical affection than men in the committed relationship stage. Is this the result of actual differences in the frequency of Hot physical affection, or is it because the frequency is perceived differently?

Concluding Comments

Healthy and happy romantic relationships are extremely important to individuals as well as to society as a whole. Romantic relationships can provide warmth, love, understanding, and acceptance, which promote mental health and happiness. Loving relationships tend to be happy and healthy relationships, and physical affection is a strong predictor of love. Physical affection is both a manifestation of love and an attempt to create love. Physical affection allows us to connect with another person by showing our feelings for them. By touching another human being in a loving way, not only can we bridge the physical distance between two human beings, we can bridge the distance between hearts and souls.

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APPENDIX A

INFORMED CONSENT

You are being asked to participate in a research investigation as described in this form. This research is being done in order to fulfill the research requirement of a doctoral dissertation through Oklahoma State University. This study is titled "Physical Affection as Related to Intimacy, Passion, Commitment, Relationship Satisfaction and Relationship Stage in Romantic Relationships." The purpose of this research project is to investigate the relationship between physical affection and romantic relationship satisfaction. Your participation could help therapists to create and implement effective interventions to improve relationship satisfaction. In the following study, you will be asked for basic demographic information, information regarding your sexual and non-sexual physical affection behavior, information regarding the level of satisfaction with your relationship, and information regarding your love for your partner. At no time will you be asked for information which could personally identify you. Participation in this study should take between 20 and 30 minutes.

Participants will be asked to visit a website and complete the following forms/instruments: (1) Complete and sign the informed consent form; (2) complete a demographic form; (3) complete the Sternberg Triangular Love Scale; (4) complete the Relationship Assessment Scale; and (5) complete the Physical Affection Behavior-Rating Scale.

Participation in this research project is strictly voluntary. Participants may withdraw from this study at any time without fear of reprisal or penalty. The researcher will take adequate measures to protect confidentiality. All information will be stored on CD's in a locked drawer for up to 10 years. No identifying information will be collected. Only the primary researcher and his dissertation committee will have access to this data. There are no known risks associated with this project which are greater than those ordinarily encountered in daily life. There are no expected benefits to the participants in this study. If at any time you have a question or concern regarding this study, please contact Michael T. Hill, M.A. at (828) 719-9888 or michael.hill@okstate.edu, or contact the chair of his dissertation committee, Al Carlozzi, Ph.D., at (918) 594-8277. If you are a student at Oklahoma State University and you would like help with any emotional problems, please call University Counseling Services at 477-5472 and make an appointment.

If you have questions about the research and your rights as a research volunteer, you may contact Dr. Sue C. Jacobs, IRB Chair, 415 Whitehurst Hall, Stillwater, OK 74078, 405-744-1676 or irb@okstate.edu. I have read and fully understand the consent form. I sign it freely and voluntarily. A copy of this form has been given to me.

_____ _____

Signature of Participant Date

Signed: Michael T. Hill, M.A.

APPENDIX B

Demographic Form

The following questions deal with your personal history and current experience with love and romantic relationships. Please answer each question. Select only one answer per item. **If you are not currently in a romantic relationship, please answer the questions based on your most recent romantic relationship.**

1. I am a: (A) Man (B) Woman

2. My ethnic heritage is:
   (A) Asian or Pacific Islander
   (B) European-American (White)
   (C) African-American (Black)
   (D) Hispanic/Latin-American
   (F) Other (Please Specify) _____

3. My age is: _____ years old

4. Are you currently in a romantic relationship? (A) Yes (B) No

5. How long have you been in this romantic relationship? _____

6. How would you describe your current romantic relationship?
   (A) Casual dating (No firm commitment, may or may not be dating other people).
   (B) Serious dating (Dating is exclusive to your partner, yet no firm commitment exists).

7. What is your marital status?
   (A) Single
   (B) Married
   (C) Divorced
   (D) Widowed

8. Is your current romantic relationship with a person of the same sex?
   (A) No (B) Yes

9. Overall, how important is touching your partner to your satisfaction in your relationship?

1	2	3	4	5	6	7
Not At All			Moderate		Very Important	

10. Overall, how important is being touched by your partner to your satisfaction in your relationship?

1	2	3	4	5	6	7
Not At All			Moderate		Very Important	

APPENDIX C

PHYSICAL AFFECTION BEHAVIOR-RATING SCALE

Directions: Rate the following touching behaviors based on the questions asked below. Partner refers to the person with whom you are in a romantic relationship. If you are not currently in a romantic relationship, base your answers on your most recent romantic relationship.

Touch partner's leg (or partner touches your leg)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Touch partner's arm (or partner touches your arm)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Touch partner's breasts/chest (or partner touches your breasts/chest)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Embrace partner from behind (or partner embraces you from behind)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Kiss partner's neck (or partner kisses your neck)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Sit on partner's lap (or partner sits on your lap)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Rest head on partner (or partner rests head on you)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Snuggle/Cuddle with partner

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Give body massage to partner (or partner massages you)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Dance with partner

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Have sexual intercourse with partner

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Kiss partner's body or face (excluding oral sex) or partner kisses your body or face

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Hold hands with partner

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Kiss partner on lips (or partner kisses your lips)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Brush/play with partner's hair (or partner plays with your hair)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Tickle partner (or partner tickles you)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Put arm around partner (or partner puts arm around you)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Bite/Nibble on partner (or partner nibbles on you)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Give oral sex with partner (or gives oral sex to you)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Groom partner (e.g. remove food around mouth, touch up hair, pick lint off of clothes, etc.)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Kiss partner on the mouth, with tongue (or partner kiss you on the mouth with tongue)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Sleep (literally) with partner

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Hug partner (or partner hugs you)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Bathe with partner

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

Masturbate partner (or partner masturbates you)

When you are together, how often do you as a couple do this?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often do you initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How often does your partner initiate this behavior?

1	2	3	4	5	6	7
Never			Sometimes			Constantly

How important is this to your relationship satisfaction?

1	2	3	4	5	6	7
Not At All			Moderate			Very Important

How intimate do you consider this behavior to be?

1	2	3	4	5	6	7
Not At All			Moderate			Very Intimate

VITA

Michael T. Hill, M.A.

Candidate for the Degree of

Doctor of Philosophy

Dissertation: INTIMACY, PASSION, COMMITMENT, PHYSICAL AFFECTION AND RELATIONSHIP STAGE AS RELATED TO ROMANTIC RELATIONSHIP SATISFACTION

Major Field: Counseling Psychology

Biographical:

Personal Data: Twenty-nine year old man from upper-midwest.

Education: Bachelor of Arts, Saint Olaf College
Master of Arts, University of North Dakota

Experience: Predoctoral Intern at Appalachian State University

Professional Memberships: American Psychological Association

Name: Michael T. Hill, M.A. Date of Degree: May, 2009

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: INTIMACY, PASSION, COMMITMENT, PHYSICAL AFFECTION AND RELATIONSHIP STAGE AS RELATED TO ROMANTIC RELATIONSHIP SATISFACTION

Pages in Study: 102 Candidate for the Degree of Doctor of Philosophy

Major Field: Counseling Psychology

Scope and Method of Study: Quantitative Analysis utilizing Pearson correlation coefficients, Factor Analysis, MANOVA, and linear regression.

Findings and Conclusions:

The purpose of this study was to explore the relationship between physical affection, intimacy, passion, commitment, romantic relationship stage (casual dating, serious dating, committed) and gender on romantic relationship satisfaction. Participants included 370 (122 men, 248 women) university students. By creating the Physical Affection Behavior-Rating Scale, participants were able to report frequency and initiation patters for 25 physical affection types. An exploratory factor analysis indicated the presence of three physical affection factors: Hot, Warm, and Demonstrative.

A linear regression confirmed that the three physical affection factors accounted for a significant portion of variance in relationship satisfaction. The combination of the physical affection factors and love factors (Intimacy, Passion, Commitment) explained an even greater portion of variance in romantic relationship satisfaction. A MANOVA found the presence of an interaction between gender and relationship stage for Hot physical affection. Conclusions and implications were discussed.

ADVISER'S APPROVAL: Al Carlozzi, Ed.D._____