

Love, Sweet Love 7

Love as a commitment device – the universality of love – biological and behavioral markers of love – romantic relationships are good for you – and they promote reproductive success – facing alluring alternatives – objections to the commitment-device thesis – the nature of love – passionate and companionate love – the maintenance of love – summary and conclusions

See, how she leans her cheek upon her hand!
O that I were a glove upon that hand,
that I might touch that cheek!

William Shakespeare, *Romeo and Juliet*, 2.2

In Verona, a beautiful old city in Italy, a band of volunteers pore over thousands of letters every year seeking solace or advice about their love lives. All the letters are addressed to someone who not only died 450 years ago but was a fictional character to boot; namely, Juliet Capulet, a character made famous in Shakespeare's play about star-crossed lovers, *Romeo and Juliet*. Both Romeo and Juliet . . . you guessed it . . . lived in Verona. The tradition started in about 1940, when the caretaker of Juliet's (supposed) house and tomb began to answer the letters addressed to Juliet, which had started piling up. Most of the letters are written by women, most seek romantic advice, and all of them receive a handwritten reply.

Seeking advice about love from a fictional character speaks to both the power of romantic love and the power of stories about love. Love and intimate relationships were a central theme in many of Shakespeare's plays and poems. Indeed, love has been

the centerpiece of many stories, plays, songs, and poems since the beginning of recorded history. And there is no sign of this preoccupation with romantic love letting up any time soon. In the United States, for example, romance novels were the most popular literary genre in 2009, capturing 13.2% of all book sales that year (\$1.36 billion dollars in sales; Norris and Pawlowski, 2010).

The power and sweetness of romantic love, and its centrality in human affairs, lend it an air of mystery that we suspect is behind the common view that it is hard to measure or define, and perhaps even beyond scientific treatment. In reality, as this chapter will attest to, concerted attempts by scientists from many disciplines and vantage points have converged to reveal a good understanding of both the nature and functions of love. In the first section, we canvass the evidence for the evolutionary explanation for love as a commitment device, and discuss some objections to the thesis. Next, we discuss the nature of love, arguing that it can be basically divided into two kinds – passionate love and companionate love – before discussing some alternative theories that posit more than two kinds of love. Finally, we analyze the role of interpersonal trust before moving to a brief account of how love and intimacy can be maintained over the long haul.

Love as a Commitment Device: Pair Bonding in Humans

The standard evolutionary explanation for the origin of (romantic) love is that it evolved as a commitment device to keep parents of children together long enough to help infants survive to reproductive age. This line of reasoning begins with the fact that, in all sexually reproducing species, ensuring the survival of offspring to reproductive age is fundamental to successful reproduction (Buss, 1988a). But, pair bonding is rare among mammals (only 3% or so of mammals pair bond). Why did pair bonding (and love) specifically evolve in humans?

The argument raised in Chapter 2 addresses the way in which the evolution of an unusually large brain in humans is tied to a decidedly odd life history. In a nutshell, our large brain necessitates being born in an exceptionally undeveloped state (to make it through the birth canal). Time spent in childhood is also significantly stretched in humans compared to other species. Human offspring (uniquely among primates) thus rely on others for many years past weaning to obtain enough food to survive, and to learn the skills and cultural rules for living successful lives. In short, the unique abilities of humans could only have evolved in tandem with a lot of the heavy lifting of motherhood being picked up by others in the family, including the father. Without love, it is hard to see how humans could have evolved.

This argument is plausible, but, like all scientific arguments, the evidence needs to be scrupulously examined. We start with examining the body of evidence supporting the thesis that (romantic) love is an evolved adaptation designed to bond partners together. If love is indeed an evolved adaptation, then it should possess certain characteristics. First, it should be universal. Second, it should be associated with specific hormones and biological markers. Third, successful pair bonding should be associated

with good health and successful reproduction. Fourth, mate search mechanisms should automatically shut down (to some extent) in the presence of love. We examine each of these in turn before discussing some of the problems or objections to this thesis that are often raised.

The universality of romantic love

It has sometimes been claimed that romantic love is an invention of European culture, with one popular analysis by de Rougemont ([1940] 1983) dating its inception to the twelfth century. However, there is considerable evidence for both the antiquity and the universality of romantic love. One popular pre-European legend of the Te Arawa tribe of Māori in New Zealand recounts the story of Hinemoa and Tutanekai, a tale resembling that of Shakespeare's *Romeo and Juliet*. Hinemoa and Tutanekai came from different tribes and were forbidden to marry because of the low status of Tutanekai (Young and Uenukukopako, 1995). Every night Hinemoa would hear the haunting sound of Tutanekai's flute across the lake from the island where he resided (Tutanekai was both handsome and a talented musician), but she could not gain access to a canoe as her father had ensured they were pulled well up on the beach. Finally, Hinemoa decided to swim to Tutanekai's island, a hazardous plan, but one she accomplished using calabashes as floats. They finally fell into each other's arms and lived happily ever after (a much nicer fate than that which befell *Romeo and Juliet*, who both committed suicide).

It turns out that Māori and western cultures are not alone in terms of the presence of romantic love. An analysis by William Jankowiak and Edward Fischer (1992) found good evidence (based on folk tales, ethnographies, evidence of elopement, and so forth) of romantic love existing in 147 of 166 cultures. This is a conservative figure, given that in 18 of the 19 love-absent cultures the ethnographic accounts were uninformative rather than definitive. In only one culture did an ethnographer claim that romantic love did not actually exist.

Biological and behavioral markers of love

Recent research emphasizes proximate emotional and neurological sub-systems that promote the development and maintenance of romantic relationships. Helen Fisher summarizes some of this research in her model of mating, reproduction, and parenting. According to her model, love and mating behaviors are guided by three distinct emotion systems: the lust, attraction, and attachment systems (1998, 2000). Fisher also provides evidence suggesting that the behaviors related to each of these emotion systems are governed by unique sets of neural activities.

For instance, the lust system motivates individuals to search out sexual opportunities (in general terms) and is mainly associated with **estrogens** and **androgens** in the brain. The attraction system, however, directs an individual's attention toward specific mates, leads to the craving for emotional union with this person, and is associated with high levels of **dopamine** and **norepinephrine**, along with low levels of **serotonin** in the

brain. Consistent with this suggestion, when both men and women who are deeply in love are asked to think of their partners while their brain is being scanned, regions of the brain that are associated with reward become activated (the same regions activated by cocaine), whereas they do not become activated when thinking of an acquaintance (see the analysis and discussion in Chapter 4). Finally, the attachment system is distinguished by the maintenance of close proximity to a loved one, feelings of comfort and security with this person, as well as feelings of emotional dependency. This system is associated with **oxytocin** (for women) and **vasopressin** (for men) (see Chapter 4). Overall, there are likely to be several neural circuits in the brain that function to promote attraction to specific individuals, and to forming and maintaining long-term relationships (see Chapter 4 again).

Fisher's attraction and attachment systems are similar to Bowlby's **attachment theory** (1969; Chapter 5). To briefly reprise this material, Bowlby proposed that the process of evolution by natural selection equipped infants with a repertoire of behaviors (essential for survival) that serve to facilitate proximity to caregivers, particularly in situations when support is required. Bowlby postulated that the bond forged between mother and infant in childhood provides the foundation for later relationships, and that the attachment system serves similar functions in both infants and adults in regulating the way emotions are experienced and expressed. As we discussed in Chapter 5, Zeifman and Hazan (1997; see also Shaver *et al.*, 1988) propose that attachment is one of the psychological mechanisms that has evolved to solve the adaptive problem of keeping parents together to raise offspring. The secure, loving feelings that partners experience in each other's presence, the lonely feelings while they are apart, and the desire to be together after separations are hallmarks of this attachment system, designed to keep people together in committed relationships.

Indeed, consistent with this thesis, adult romantic sexual love looks similar to the love between parent/caregiver and infant. Shaver *et al.* (1988) listed no fewer than 17 similarities between the two kinds of love, 12 of which we have listed in Table 7.1. For example, lovers often slip into **baby talk** when they talk to one another (nauseating though it might be for the casual observer), use favorite nicknames, and slip into singsong cadences. Lovers have a strong need to spend a lot of time together, often caressing and kissing one another. Lovers seem fascinated with each other's physical appearance, and engage in bouts of prolonged eye contact. Lovers often indulge in horse play and play games together. Lovers become distressed if they are parted for prolonged lengths of time, and are exquisitely sensitive to each other's needs. You get the point.

The similarity between the behavioral manifestations of parent–infant love and romantic love is consistent with the role that oxytocin plays in the formation of attachment bonds in both kinds of relationships. Indeed, the comparative evidence, especially the research with voles (see Chapter 4), suggests that evolution simply lifted the ancient bonding mechanisms originally developed in mammals to bond mother and offspring and then applied them to males in some species. That is the way evolution works – tinkering with pre-existent biological structures and processes.

Table 7.1 Similarities between infant attachment and adult romantic love

<i>Infant attachment</i>	<i>Romantic love</i>
Quality of attachment bond depends on caregiver's responsiveness	Love depends on partner's actual or imagined responsiveness
Caregiver provides secure base for infant to feel safe and to explore	Partner support and love promote feelings of safety and confidence
Attachment behaviors include holding, touching, kissing, rocking, smiling, crying	Loving behavior includes holding, touching, kissing, rocking, smiling, crying
When stressed (afraid, sick, threatened) infant seeks physical contact with caregiver	When stressed (afraid, sick, threatened) lovers seek physical contact with each other
Distress at separation, depression if reunion seems impossible	Distress at separation, depression if reunion seems impossible
Infants share games, toys, discoveries with caregivers	Lovers share toys, games, discoveries
Infant and caregiver engage in prolonged eye contact	Lovers engage in prolonged eye contact
Infant and caregiver seem fascinated with each other's physical features	Lovers seem fascinated with each other's physical features
Usually one key attachment relationship	Usually one key attachment relationship
Use baby talk, nicknames, coo	Use baby talk, nicknames, coo
Upon reunion, infants smile, and reach to be picked up	Upon reunion, lovers smile and hug
Caregiver exquisitely sensitive to infant's needs	Lovers exquisitely sensitive to each other's needs

Source: Adapted from Shaver *et al.*, 1988

Gonzaga and colleagues asked both partners of a number of couples to answer some questions about their relationship and to engage in videotaped interactions with their partners in the lab (Gonzaga *et al.*, 2001). They found that individuals reporting more love for their partners also reported desiring their partners more, were relatively happier with their relationships, spent more time in the physical presence of their partners, and engaged in a number of unique activities with their partners. Interestingly, these individuals were also particularly likely to nod their heads in agreement while talking to their partners and exhibit **Duchenne smiles**, which are spontaneous smiles that use the muscles round the eyes and the mouth, and are linked with positive emotions and enjoyment. When an independent group of raters was asked to watch the soundless videotaped interactions between each couple, they were able to accurately determine which individuals felt more love for their partners simply by

observing the expression of nonverbal displays of love (i.e. head nods and Duchenne smiles).

Finally, Gonzaga *et al.* (2006) measured the amount of oxytocin in the blood of a number of women after they had recounted positive emotional experiences regarding love or infatuation (study 2). The women in this study were also videotaped while reliving their positive emotional experiences, allowing the researchers to measure the degree to which they spontaneously displayed nonverbal signs of love and affiliation (i.e. head nods and Duchenne smiles) while just thinking of their partner. Consistent with prior research, women reporting more love for their partners displayed more head nods and Duchenne smiles. Moreover, the expression of these behaviors was also associated with higher levels of oxytocin in the blood (but see Chapter 4).

Romantic relationships are good for you (usually) and they promote reproductive success

Not only are pair bonds universal in humans, they are also associated with psychological and physical health (see Chapter 4). For example, when asked what factors make life most meaningful the majority of people first mention satisfying close relationships, particularly romantic relationships (Berscheid, 1985). To recap some of the material covered in Chapter 4, married people in North America and Europe are happier and more satisfied with life compared to individuals who have never married, widowed, or divorced (Gove *et al.*, 1990; Inglehart, 1990; Myers and Diener, 1995). Married individuals also generally experience better health than their non-married counterparts (Case *et al.*, 1992; Goodwin *et al.*, 1987; Gordon and Rosenthal, 1995). For example, broken social ties, or poor relationships, correlate with increased vulnerability to disease. Heart attack victims are more likely to have a recurrent attack when they live alone, and those who enjoy close relationships cope better with various stressors, including bereavement, job loss, and illness. Finally, happily married individuals are less likely to experience depression than unhappily married or unmarried individuals (for a review see Myers, 1999).

In Chapter 5 we reviewed evidence that also supports the benefits of pair bonding in terms of lower infant mortality, improved social competitiveness, later onset of pubertal timing in girls, and increased educational achievement for adolescents. Thus children born and raised within pair bonds were historically more likely to survive to reproductive age and attain success at attracting mates in adulthood (Geary, 2000).

Another major benefit of exclusive pair bonding is the avoidance of sexually transmitted diseases (STDs). At least 50 STDs have been documented, including viruses, bacteria, fungi, protozoa, and ectoparasites (see Centers for Disease Control and Prevention, 2002). The fertility of women in particular is severely compromised from contracting a STD, and often times the disease can spread to the fetus, or to the infant as he or she passes through the birth canal. For example, women with syphilis have a heightened risk of miscarriage, premature delivery, stillbirth, and infant death, and the chances that the fetus will contract the disease are almost 100% if not treated (Schulz *et al.*, 1990). Although many of these STDs have been recently introduced to humans

(e.g. HIV) others have been around for centuries; gonorrhea, for example, is mentioned in the Bible.

The strongest predictor of contracting STDs is the number of sexual partners someone has had (e.g. Moore and Cates, 1990), and therefore a good way to limit the risk of contracting a disease is to limit the number of sexual partners. Because women are more susceptible than men to contracting STDs (e.g. Glynn *et al.*, 2001; Moore and Cates, 1990), thus endangering their reproductive success, the presence of such pathogens may have been a selection pressure for long-term pair bonding (Mackey and Immerman, 2000).

Maintaining love in the face of alluring alternatives

Perhaps the biggest threat to the love and commitment people feel toward their current partners is the presence of desirable alternative partners. In modern societies, individuals are exposed to myriad attractive potential partners on a daily basis through a number of mediums, including television, magazines, the internet, and of course in person. There is evidence that this massive exposure to attractive alternatives to a current relationship partner can insidiously undermine feelings of love (see Kenrick *et al.*, 1989).

Nevertheless, there is good evidence that individuals in established relationships tend to perceive attractive opposite sex individuals as less appealing compared to their less committed or single compatriots (see Johnson and Rusbult, 1989). Simpson *et al.* (1990) had samples of dating and single individuals rate people in magazine advertisements in terms of their physical and sexual attractiveness. As shown in Figure 7.1, both men and women involved in dating relationships rated the physical attractiveness of the opposite sex individuals in the advertisements less positively than single participants. Participants in committed relationships were presumably motivated to derogate the appeal of the models in order to maintain their commitment to their relationship.

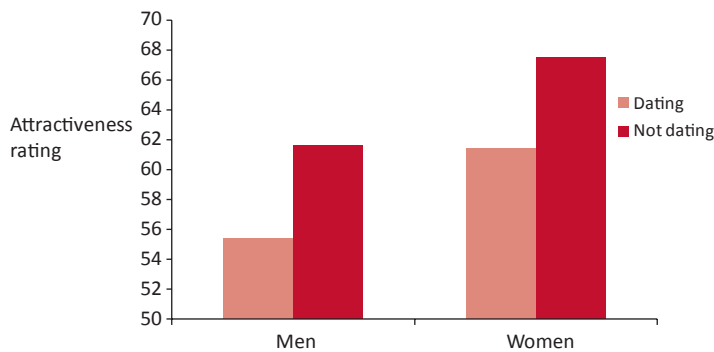


Figure 7.1 Attractiveness ratings of individuals in magazine advertisements as a function of gender and relationship status

Source: Adapted from Simpson *et al.*, 1990

In a more direct fashion, John Lydon and colleagues (Lydon *et al.*, 1999) led participants in committed relationships to believe that an attractive opposite sex individual was attracted to them, thus providing the participants a realistic alternative to their current partner. Those in committed relationships, however, subsequently downplayed the attractiveness of the potential partner, again presumably to defuse the threat posed by having a realistic alternative to their current partner.

Other research suggests that people in established relationships simply pay less attention to attractive opposite sex individuals. In a classic study, participants inspected an array of photographs presented on a screen, including some especially attractive individuals (Miller, 1997). Participants controlled the amount of time they spent viewing each picture with a remote control. Miller found that more committed individuals clicked through the pictures of attractive others more quickly than other photos. Interestingly, spending less time viewing the attractive opposite sex photos also predicted a lower likelihood of the relationship ending at two-month follow-up (also see Gonzaga *et al.*, 2008). Moreover, as described in Chapter 3, research by Jon Maner and colleagues (Maner *et al.*, 2009) showed that this process of blocking a wandering eye over attractive alternative partners for those in loving, committed relationships can occur quite automatically and out of conscious awareness. As the popular song (composed in 1934 and sung by many artists since) intones, “maybe millions of people go by but they all disappear from view, and I only have eyes for you.”

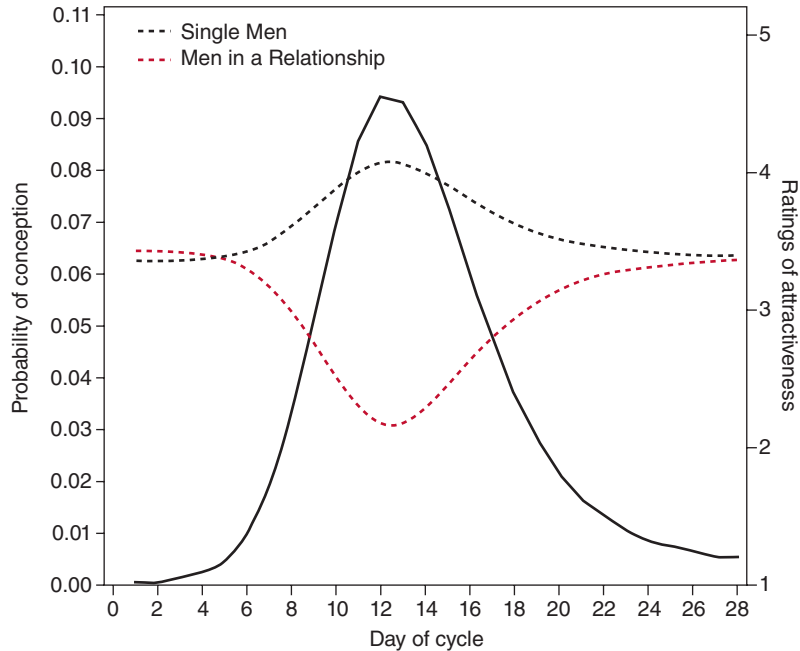


Figure 7.2 Ratings of female attractiveness after interactions as a function of relationship status and reproductive cycle

Source: From Miller and Maner, 2010. 2010 Elsevier Inc.

Finally, in some striking research findings illustrating the power of the automatic system for shutting down mate search, Miller and Maner (2010) asked men and women, working in two-person groups, to complete a number of cooperative tasks. Unbeknownst to the male participants, the woman was a confederate working with the research team. She was not taking any form of hormonal birth control, and the researchers closely tracked her menstrual cycle. Following each interaction, men rated the woman's attractiveness. The results from this study are shown in Figure 7.2. The upside down U (or bell curve) represents the probability of conception (or likelihood of becoming pregnant) across a 28-day menstrual cycle. When the probability of conception of the woman they interacted with was low, both single and partnered men rated her as equally attractive. Single men, however, rated the woman as being more



*"Nothing could be better than being here right now with you,
except, possibly, being right over there now with her."*

Figure 7.3

Source: 2008 Lisa Donnelly

attractive when the probability of conception of the woman was high, whereas men in relationships rated the same woman as less attractive when her probability of conception was high.

The evidence for the thesis that love is an evolved adaptation in humans may seem compelling at this point. Nevertheless, there are some problems or objections to this proposition that are often raised. First, how does the widespread adoption in many societies of arranged marriages square with the pair bonding thesis? Second, what about the widespread existence of **polygyny** (one man marrying more than one woman) – is this consistent with treating love as an evolved adaptation for commitment? Third, why do people fall out of love so readily and often separate? In short, is love really powerful enough to fulfill the role ascribed to it by this evolutionary argument? We deal with each these issues in turn.

Arranged marriages

As a thought experiment, ask yourself if you would be willing to marry someone who possesses the interpersonal and physical qualities that you desire in a partner but whom you do not love. Levine *et al.* (1995) asked college students from 11 different countries the same question – only 3.5% of American students said yes, whereas 50% of students from India and Pakistan endorsed this belief.

In collectivist cultures, like India and Pakistan, mate choice has much stronger economic and political implications for the entire family and perhaps the larger community, compared to individualistic cultures like the United States (see Buunk *et al.*, 2010). Indeed, arranged marriages are commonplace in collectivist cultures, such as India, Japan, the Middle East, and China (De Munck, 1996; Gupta, 1976; Hatfield and Rapson, 2006).

Arranged marriages are also common in hunter-gatherer cultures around the world, suggesting that parental influence over mate choice has been a longstanding feature of mate selection in humans. However, in many traditional cultures that practice arranged marriages, brides (and grooms) are typically given some choice in the matter. For example, in arranged marriages in Sri Lanka men and women who like one another (or fall in love) usually let their parents know their choices in advance through indirect channels (de Munck, 1998). Moreover, the criteria that parents and their children use in selecting mates are more or less the same, although parents tend to emphasize the importance of good investment characteristics (e.g. character, status, resources), and perhaps wisely give less weight to attractiveness than do their children (Buunk *et al.*, 2008).

Monogamy and polygyny

A whopping 84% of known cultures allow polygyny, and some men carry harem-building to excess (Fisher, 1992). According to the *Guinness Book of World Records*, the harem champion was an emperor of Morocco, with the unlikely name of Moulay Ismail the Bloodthirsty, who purportedly sired 888 children from his many wives. However, it has been estimated that only about 5 to 10% of men in cultures that allow

polygyny actually have more than one wife (Fisher, 1992), the majority of marriages being monogamous. In cultures in which polygyny is illegal it can and does exist in an informal way, with men maintaining a “mistress” to use an old-fashioned term. It is hard to judge the frequency of such arrangements in western countries today, but it is probably quite low.

In cultures that allow polygyny the wives often complain and suffer from bouts of jealousy, and there is evidence that polygynous families are more prone to conflict and intimate violence than monogamous arrangements (see Henrich *et al.*, 2012). Genetically speaking, there is also not much in it for the women. They may certainly attain a share of the status or wealth of their husband, but will probably have to compete for such resources with the other wives. From the male point of view there is the distinct genetic advantage of siring more offspring, but, on the other hand, considerable resources and wealth may be required to maintain more than one wife, and the task of ensuring spousal fidelity may become difficult, if not exhausting. Henrich *et al.* (2012) persuasively argue that the cultural shifts away from polygyny to monogamy over the last few thousand years have occurred because of the interpersonal and social costs exacted by having too many young men hanging around without the realistic chance of developing a long-term sexual relationship.

The existence of **polyandry** (one woman with more than one man) is exceedingly rare, in both humans and other species. The evolutionary reason is obvious. Women can only bear a limited number of offspring, so their reproductive success is not enhanced a great deal. Men are decidedly worse off, reproductively speaking, given that they may not be genetically related to the children they are expending considerable resources in helping to raise. However, in special circumstances polyandry can crop up as an option, such as when women are scarce or when women possess considerable economic power. In summary, the majority of marital relationships – across western, traditional, and hunter-gatherer cultures – are monogamous.

It is also instructive to note what occurs when so-called free love is practiced. The fate of cults in which free love has been attempted dramatically illustrates the point. The Oneida community was started in 1847 by John Noyes, an avant-garde religious zealot. In this community (which at its height had 500 men, women, and children) romantic love was banned, and men and women were expected to copulate with each other – often. Like many cults, Noyes and his immediate family held the whip hand, attempted to rigidly control reproduction (using withdrawal as a means of birth control), and Noyes and his son had first call on the pubescent girls. It did not work. Men and women constantly fell in love and formed clandestine intimate relationships with one another. The ancient love systems have an inexorable logic of their own.

Infidelity and divorce: is love meant to last?

Finally, over the past four decades divorce has been on the rise, whereas marriage seems to be on the decline in many countries, and many now choose to cohabit rather than marry in western countries (see Chapter 12). People continue to fall in love and form committed relationships, but is love meant to last forever?

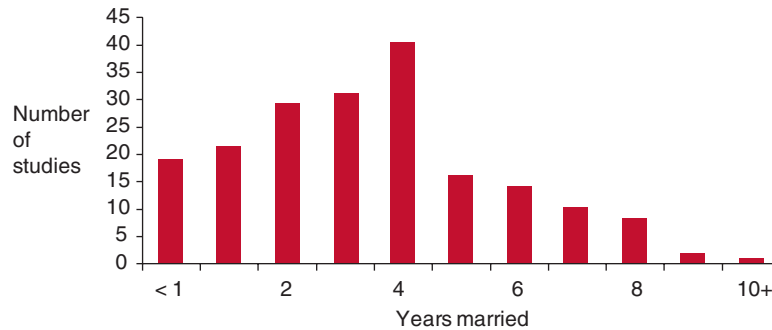


Figure 7.4 Modal years married when divorce occurred from 188 studies and 62 countries
 Source: From Fisher, 1992; © 1992 Helen E. Fisher

Helen Fisher (1998) argues that although long-term relationships have obvious reproductive benefits, the fires of romantic love typically last about as long as it takes an infant to make it to about four years old. Perhaps, so goes the argument, romantic love has evolved to meet this limited requirement. In support of this hypothesis, she has shown that the peak period for divorce is about four years across 188 areas, cultures, and ethnic groups from 62 countries (Fisher, 1992; see Figure 7.4). One central problem with this argument is that the majority of married couples in most cultures and countries stay together all their lives (see Chapter 12). Of course, it is hard to know what to make of this point, given the number of factors that may keep couples together, apart from being madly in love, including economic necessity, cultural prohibitions, strongly held values, and so forth. Moreover, one plausible possibility is that (as we will discuss later) the fires of romantic love may be eventually be replaced with a deep form of non-sexual bonding, which may also have evolutionary roots.

As we document later in Chapter 12, one of the major reasons people divorce is linked to extramarital sexual activity, which is common in western countries. Surveys in western countries have produced variable results, but the best surveys using nationally representative surveys in the US show that between 20 and 25% of men and between 10 and 15% of women report having engaged in extramarital sex at some time in their marriage (see Munsch, 2012). Given the different norms and sanctions concerning extramarital sex around the world, however, it is not surprising that there exists a lot of variability across cultures. One study by Careal and associates found that in Guinea Bissau (in Africa) 38% of men and 19% of women reported engaging in infidelity in the previous year, compared with 8% of men and 1% of women in Hong Kong (Carael *et al.*, 1995).

It is not difficult to propose plausible evolutionary arguments for extramarital sexual activity. For males, it looks like a way of having one's cake and eating it too. Males can spread their genes around, with the hope that some progeny will make it to puberty, while also ensuring that their own children are well cared for in the primary relation-

ship. For women, extramarital sex can enable them to obtain some top-quality genes while also perhaps retaining the support of their husbands.

However, extramarital liaisons carry risks and costs. They normally need to be carried out in a clandestine fashion, put the primary relationship at risk, and, if discovered in many cultures can face carry legal penalties or socially sanctioned physical attacks from the sinned-against partner (especially by men against women). Moreover, it is not as if the neurological, hormonal, cognitive, and behavioral “love” systems turn off in extramarital affairs. Thus, sexual activity that goes beyond a one-night stand always carries the risk of developing into full-blooded (and potentially life-wrecking) romantic love. Love is a dangerous emotion.

Summary

In summary, romantic love is likely to have evolved to ensure commitment between partners in order to successfully rear highly dependent offspring. Romantic love exists in the majority of cultures all over the world, and most committed relationships involve only two people. Committed partners are also more likely to downgrade the appeal of potential alternative partners, or not notice them altogether, presumably as a way to maintain the relationship. On its own, romantic love is not enough to make life-long partnership or married bliss a sure bet. However, evolutionary adaptations are never perfect and often possess a jury-rigged quality. Romantic love is no exception, giving a potent motivational push toward the kind of devotion and commitment required for the colossal investment involved in supporting a mate and raising children.

The Nature of Love

Up to this point we have avoided defining love or analyzing its nature in any detail, relying on a shared common-sensical understanding to guide our discussion. However, we now shift toward a discussion of the nature and content of love. If someone says they love another person, what does this mean? Are there different types of love that people can experience? If so, do these different types of love emerge at different stages of the relationship? And, can we really measure something as exotic and labile as love?

In answering these questions, it is important to bear in mind that the study of love in psychology was neglected prior to the 1970s, with the common assumption being made that love is merely a stronger version of liking or attraction. Rubin (1970) challenged this assumption by arguing that love and liking are quite different animals. Rubin conceptualized romantic love as a set of positive thoughts and feelings directed toward opposite-sex peers that could potentially lead to marriage. Liking, in contrast, was defined as having a healthy respect for another person and finding the company of that person rewarding. Indeed, self-reports of liking and loving using Rubin’s pioneering scales designed to tap these different sentiments proved to be only moderately correlated.

You might like to conduct another thought experiment at this point. Imagine that you have been involved in a romantic relationship, and you finally tell your partner (sincerely) that you love him or her. What characteristics or properties do you think a relationship or partner must have before deserving such an attribution? Make a list of 5 to 10 items, excluding things that it would be nice to have but are not essential (such as liking the Rolling Stones, or having delicate ears). Our guess (based on getting classes to do this over many years in our teaching) is that your list would include a set of items that speak to the quality of intimacy – such as closeness, trust, respect, warmth, and acceptance – and some items that address the passionate side of love – passion, chemistry, attraction, and sex.

This kind of exercise shows that the glib claim one often hears – love can't be defined – is wrong. Just as well, otherwise individuals would not have the slightest idea of when to use such an attribution or what their partner's declaration of love might mean. Indeed, the division between the two sides of love (what scientists term passionate and companionate love) has informed a good deal of scientific work, suggesting that common sense understandings of love are quite close to the mark.

Passionate love

In 1974, Ellen Berscheid and Elaine Walster (now Hatfield) were asked to write a chapter for a book on interpersonal attraction. They agreed with Rubin (1970) that liking, the primary focus of research on interpersonal attraction, and romantic love were not simply two ends of the same continuum, but were unique entities. Deciding to focus their chapter on love in romantic relationships instead of interpersonal liking, they laid the foundations for the study of **passionate love**. Passionate love is best described as a state of intense longing for union with another, a feeling that is aroused particularly in the early stages of a romantic relationship. When falling in love, there is a heightened sense of excitement associated with experiencing new and novel activities with a partner. It is also exquisitely pleasurable to be thought of as special, and to be held tightly in the arms of your lover. To add even more spice there is also typically an air of uncertainty in new relationships, along with some daydreaming about the future and a dawning realization that long-held dreams and goals may be fulfilled. Obsessive thinking and passionate desire are basic hallmarks of full-blooded passionate love. Hatfield and Sprecher's (1986) self-report measure of passionate love contains questions that tap into these kinds of feelings associated with passionate love (see Figure 7.5 for some example items).

Self-expansion According to Aron and Aron's (1997) **self-expansion** model, individuals have a fundamental motivation to grow and expand their sense of self – who they are as a person and how they fit into their social worlds (Aron and Aron, 1986). The process of falling in love provides an excellent opportunity for self-expansion as partners in fledgling relationships engage in novel, exciting, and arousing experiences that produce personal growth and self awareness. Indeed, in the early stages of falling in love Aron *et al.* (1995) found that individuals' self-concept descriptions grew in size

Example items from the Passionate Love Scale and Friendship-based Love Scale	
Passionate Love (Hatfield & Sprecher, 1986)	Friendship-based Love (Grote & Frieze, 1994)
1. I would feel despair if _____ left me.	1. I feel our love is based on a deep and abiding friendship.
2. I yearn to know all about _____.	2. I express my love for my partner through the enjoyment of common activities and mutual interests.
3. I sense my body responding when _____ touches me.	3. My love for my partner involves solid, deep affection.
4. I possess a powerful attraction for _____.	4. My partner is one of the most likable people I know.
5. Sometimes I feel I can't control my thoughts; they are obsessively on _____.	5. The companionship I share with my partner is an important part of my love for him or her.

Figure 7.5 Items from two scales measuring passionate and companionate (friendship-based) love respectively

and diversity over time as they faced new experiences and got to know their partners. Partners also reported higher self-esteem as the relationship progressed. As Chapter 3 discusses, as young lovers spend more time together, their self-concepts begin to overlap as each partner begins to include elements of the partner into their own self-concept (Aron *et al.*, 1991). In essence, “I” becomes “we.” Indeed, partners who feel closer to each other literally use the pronoun “we” when discussing their relationship more frequently than “I” (Agnew *et al.*, 1998). Rapid expansion of the self-concept while falling in love can thus be a rewarding experience that enhances feelings of passionate love.

Physical arousal and stress The intense longing associated with passionate love can also be experienced as a state of physical arousal. As we described in Chapter 4, studies using **fMRI** with individuals in the grip of romantic love show activity in the regions of the brain associated with the release of the neurotransmitters (**oxytocin** and **vasopressin**) and elevated levels of **dopamine**. These substances produce happiness and even euphoria, and trigger the release of hormones linked to sexual arousal (testosterone) and flight or fight stress hormones such as **cortisol** (Marazziti and Canale, 2004). In a laboratory experiment when individuals experiencing passionate love were asked to think of their partners and relationship in detail (e.g. to recall when they met their partners, and how they fell in love), they exhibited a spike in cortisol that was not observed when asked to think of an opposite sex friend (Loving *et al.*, 2009).

Helen Fisher summarizes it thus:

No wonder lovers talk all night or walk till dawn, write extravagant poetry and self-revealing e-mails, cross continents or oceans to hug for just a weekend, change jobs or

lifestyles, even die for one another. Drenched in chemicals that bestow focus, stamina and vigor, and driven by the motivating engine of the brain, lovers succumb to a Herculean mating urge (2004, p. 79).

Does this mean, therefore, that falling in love is detrimental to health? Tim Loving and colleagues (Loving *et al.*, 2009) do not think so. They remind us that starting romantic relationships can be a positive form of stress (Reich and Zautra, 1981). Both positive and negative life events can generate a similar physiological response generally recognized as a stress response (e.g. elevated cortisol levels; Rietveld and van Beest, 2007), but the effects of these events on an individual's health outcomes largely depend on the subjective interpretation of those events. Even though falling in love is physiologically stressful, it may nevertheless be perceived as a positive life event, which should be associated with favorable health outcomes (Brand *et al.*, 2007).

The slow slide in passion Time can be the sword of Damocles hanging over the head of passionate love. Indeed, passionate feelings are more frequent during the early stages of romantic relationships and generally show a pattern of decline thereafter (Acker and Davis, 1992; Baumeister and Bratslavsky, 1999; Sternberg, 1986). As partners get to know each other better, feel more certain about the stability of the relationship, and develop routines of interpersonal behaviors, there is simply reduced opportunity to experience the thrill of novelty and expand the self-concept. In one longitudinal study, it was found that passionate love significantly declined over the course of one year (Hatfield *et al.*, 2008).

Behaviorally, the decline in passionate love over time is captured by the decline in frequency of sexual intercourse. A large body of convergent evidence, starting with the work of Kinsey and colleagues (Kinsey *et al.*, 1948; Kinsey *et al.*, 1953), indicates that the frequency of sexual intercourse among married couples is highest during the early stages of marriage, but declines as time progresses (Call *et al.*, 1995; Marsiglio and Donnelly, 1991). This decline is multiply determined by factors including age-related reductions in sexual capacity (Greenblat, 1983; Kinsey *et al.*, 1953; Lindau *et al.*, 2007), decreased interest in sex with a long term partner (i.e. habituation effects; Huston and Vangelisti, 1991; James, 1981), and major life events such as childbirth/infant care (Call *et al.*, 1995). In the words of a well-known blues song, after the initial excitement of passionate love winds down, *the thrill is gone*.

Companionate love

In contrast to passionate love, **companionate love** is experienced less intensely. It combines feelings of intimacy, commitment, and deep attachment toward others, romantic or otherwise, who occupy an important part of our lives (Walster and Walster, 1978). If you ask individuals to list all the types of love that come to mind, companionate types of love will dominate the list (Fehr and Russell, 1991). For example, maternal love, parental love, friendship, and sisterly love were rated as the top four best examples of love by a large sample of University students in Fehr and Russell's research.

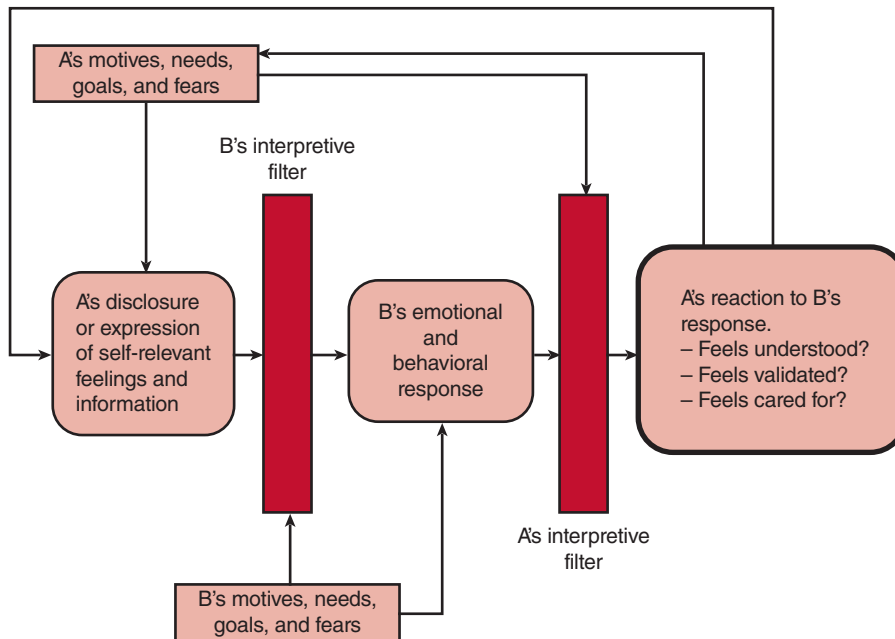


Figure 7.6 Interpersonal process model of intimacy
 Source: From Reis and Shaver, 1988. © 1988 John Wiley & Sons

Romantic love, or love between people who are not family members or friends, came in as the fifth best example of love. Friendship-based love therefore develops across a wide spectrum of important relationships in our lives, and is rooted in trust, caring, mutual affection, supportiveness, and friendship (Fehr, 1988). Grote and Frieze (1994) have developed a friendship based love scale incorporating these qualities (see Figure 7.5).

Reis and Shaver's (1988) interpersonal process model of intimacy focuses on the role of self-disclosure, or sharing personal information with another person, and how interaction partners respond to such self-disclosures, during the development and maintenance of intimacy (see Figure 7.6). According to this perspective, self-disclosure alone is not sufficient for intimacy to grow. An additional process – crucial to building intimacy – is the perception that the relationship partner reacts to self-disclosure with warm and sympathetic responses. This, in turn, should make the discloser feel validated, understood, and cared for, setting the stage for increasing levels of connectedness and intimacy to develop within the relationship. In other words, feeling close and intimate with someone is based at least in part on how close and intimate you perceive that person feels toward you (see also Reis *et al.*, 2004; Reis, 2007).

In one longitudinal study testing these ideas, Laurenceau *et al.* (1998) asked individuals to report on interactions lasting more than 10 minutes they had with others each day for a one- or two-week period. Consistent with Reis and Shaver's model,

participants felt closer and more intimate with interaction partners when the interaction involved more self- and partner disclosure, and when the participants felt that his or her interaction partner responded positively to his or her self-disclosures.

Links between Passionate and Companionate Love

Take a moment to think of the people in your life you consider as your close friends. If you are in a romantic relationship, you probably feel that your partner is one of your best friends, someone with whom you share a close intimate bond. When participants in a study conducted by Hendrick and Hendrick (1993) were asked to list the name of their closest friend, almost half of them wrote down the name of their partner. The links between companionate and passionate love were also probed in a study that asked people to write down the names of people they love, the names of people they were currently *in* love with, and names of people they were sexually attracted to (Meyers and Berscheid, 1997). They found that individuals generally felt love for people whom they were *in* love with, but were typically not in love with people whom they felt love toward (see Figure 7.7). Additionally, as Figure 7.7 shows, participants generally reported being sexually attracted to people they were in love with, but said they were in love with only about half of the people they were sexually attracted to. Clearly, telling someone you are *in* love with them may convey a very different meaning than simply telling them that you love them.

Romantic relationships typically contain a mix of both passionate and companionate love, but the absence of companionate love in particular can spell trouble for the long-term stability of a relationship. For example, in samples of both older married couples and dating couples recruited from a University population, Grote and Frieze (1994) observed that relationship satisfaction in both samples was more strongly related to perceptions of companionate than passionate love. John Gottman's work led him to conclude that a solid friendship between spouses is the strongest possible foun-

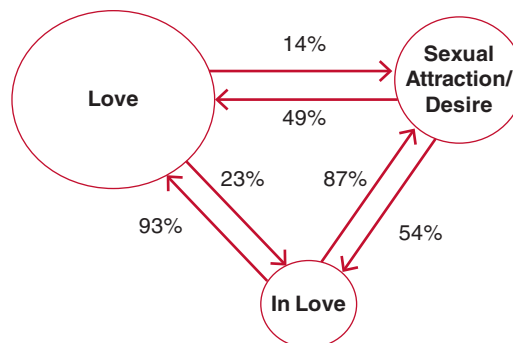


Figure 7.7 Links among love, being in love, and sexual attraction
 Source: Adapted from Hendrick and Hendrick, 1993

ation for successful marriages (1999). Therefore, even though sexuality is an integral part of most romantic relationships, and societal norms emphasize that sex should occur within committed relationships (Sprecher *et al.*, 2006), developing a strong friendship with a romantic partner may ultimately be more important for the long-term success of the relationship (see also Chapter 12).

Baumeister and Bratslavsky (1999) (see also Vohs and Baumeister, 2004) intriguingly proposed that the link between companionate love and passion can be caused by changes in intimacy over time. Thus, when intimacy shows relatively large and rapid increases, levels of passion will surge higher. Likewise, when intimacy levels remain unchanged over long periods of time, passion should dip lower. In the early stages of relationships, when partners are falling in love and passion at its apex, there are often frequent escalations of intimacy as partners get to know each other and participate in novel activities. As relationship partners gain an understanding of each other's innermost thoughts and feelings over time, the rate of intimacy growth typically tapers off as they have less and less to learn about each other. The rate of engagement in novel relationship activities also diminishes, as individuals return to lying on the couch, watching TV, reading books, or surfing the web.

Some research has demonstrated that perceived increases and decreases in perceived intimacy with a romantic partner are linked to positive and negative emotions in a manner suggested by Baumeister and Bratslavsky's model (Laurenceau *et al.*, 2005). More directly testing Baumeister and Bratslavsky's model, Rubin and Campbell (2012) tracked romantic couples over a 21-day period and found that day-to-day increases in intimacy were indeed associated with heightened feelings of passion and sexual activity over time.

Love styles

Around the same time that theory and research were beginning to explore the nature of passionate and companionate types of love, John Alan Lee (1977) developed a typology of six different **love styles** characteristic of a diversity of relationships. Even in 1977, Lee clearly shared Berscheid's (2010) recent concern over the broad use of the word "love," beginning his paper as follows: "Perhaps the reader will expect me to begin by defining my terms. What do I mean by 'love' or 'loving'? There's the rub! The fictional and non-fictional literature of the western world for twenty centuries is strewn with conflicting definitions of love." (p. 173). A primary goal of Lee's typology, therefore, was to derive a coherent system of classifying different types of love believed to exist.

Lee's typology of love contains three primary styles of love: eros, ludus, and storge. Eros, or erotic love, involves a lover who has a clear and inflexible ideal image of the physical form his or her partner should conform to. This type of lover develops strong feelings for others quickly, and prefers rapid self-disclosure and the quick escalation of intimacy. With a ludus style of love, the ludic lover does not have a fixed image of an ideal partner, and prefers not to commit to any one relationship. While remaining emotionally distant from partners, the ludic lover feels comfortable ending relationships,

often after having already formed another, when it no longer suits his or her interests. Storge, compared to the first two styles of love, seems more mature and stable. A storgic lover is attracted to individuals who share common interests and are affectionate rather than individuals who conform to a physical ideal. Storgic lovers are very trusting and not overly needy or dependent, and are comfortable with the slow development of sexual intimacy.

The typology also contains three secondary styles of love: mania, pragma, and agape. Manic love is a combination of eros and ludus, meaning a manic lover has the desire to act on his or her intense feelings for a love object, but simultaneously does not want to commit emotionally to the partner. The result is a type of love characterized by an obsessive preoccupation with the beloved, with little expectation that the relationship will last. Pragma, or pragmatic love, involves a combination of ludus and storge. The pragmatic lover searches for a partner who is a sensible choice, someone that would likely make a good friend. It is hoped that from friendship, love will bloom with time. Lastly, the love style agape is characterized by a sense of duty and selflessness. Love is not governed by feelings of attraction, but by the will, and can be given to anyone regardless of his or her appearance or personal qualities.

A scale developed to measure individual differences in the endorsement of each of Lee's love styles was created by Hendrick *et al.* (1998). Research using these scales has found that men tend to report higher levels of ludus compared to women, whereas women tend to report higher levels of storge and pragma (Hendrick and Hendrick, 2003). Empirical research directly focusing on Lee's typology is relatively limited, but many of the themes highlighted in his typology are captured by other approaches to the study of love.

Sternberg's triangular model of love

According to Sternberg (1986, 1987), love has three fundamental components: intimacy, passion, and commitment. Intimacy includes feelings of closeness or connection to another person, and is considered an affective (or emotional) component of love. Passion includes physical attraction and a drive for sexual expression with another person, and is largely a motivational component of love. Lastly, commitment encompasses the decision to remain in the relationship over both the short and long term, and is largely a cognitive component of love. The type of love that exists in a relationship is determined by how much intimacy, passion, and commitment individuals feel toward their partners. Sternberg invokes a visual representation of love, with the three components of love forming one side of a triangle (see Figure 7.8). The shape of the triangle therefore changes as the relative amount of each component increases or shrinks. Different shapes therefore represent unique experiences of love. In his influential model, Sternberg discusses eight distinct types of love.

Nonlove Nonlove reflects the complete absence of intimacy, passion, and commitment. This type of (non) love applies to casual acquaintances, or people we have superficial relationships with (e.g. someone we met and casually talk to at the gym). We may like

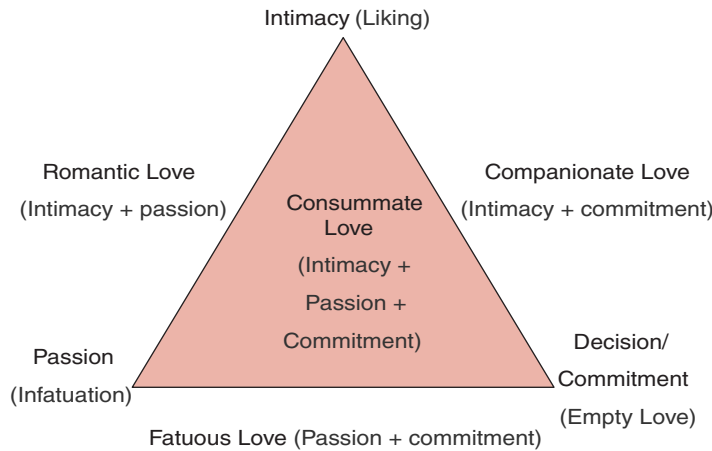


Figure 7.8 Sternberg's (1986) triangular model of love

these people and enjoy our conversations with them, but a true relationship with them does not exist.

Liking The presence of a high degree of intimacy coupled with the absence of passion or commitment results in liking. Liking, or the feelings of closeness and warmth, are typically experienced in friendships.

Infatuation When strong feelings of passion exist, but without intimacy or commitment, **infatuation** is the product. Infatuation is often experienced as “love at first sight,” and is linked with strong feelings of passionate arousal for someone that can arise spontaneously and almost instantaneously (e.g. increased heartbeat, sexual arousal).

Empty love Being committed to a relationship partner, but lacking any feelings of intimacy or passion, results in empty love. **Empty love** is not uncommon in relationships that have lasted for many years and have become something of a yawn, but can also be present in abusive relationships where one partner has few perceived options to staying in the relationship. Individuals may also experience empty love in the initial stages of arranged marriages, where there is pressure for the partners to be committed to the marriage but intimacy and passion have not yet had the opportunity to take root and flourish.

Romantic love Romantic love, according to this model, results from the combination of high levels of intimacy and passion, but not necessarily commitment. With this type of love, individuals have both a physical and emotional bond, but are not yet completely committed to each other or the relationship. Holiday romances or extra-marital flings may fit this pattern. However, from an evolutionary angle, we (the authors) believe this is a difficult state of affairs to maintain. Once the sexual activity and oxytocin are

flowing liberally, pressure will build to make more long-term arrangements. Short-term sexual flings can all too easily and unexpectedly turn into full-blooded love.

Companionate love The combination of intimacy and commitment toward a partner with low levels of passion is known as companionate love.

Fatuous love Marriages that begin in Las Vegas may be based on **fatuous love**; that is, a high degree of passion and commitment in the absence of intimacy. In a whirlwind courtship, partners probably base their commitment to each other on the high degree of passion they experience in the early stages of the relationship. The problem with this type of love is that the passion can taper off as quickly as it soared, not leaving enough time for intimacy to develop. Relationships built on fatuous love (as the name implies) can have a short life.

Commitment and (frustrated) passion can also attain astronomical levels, even in the total absence of behavioral interaction, such as in the (usually painful) cases of **unrequited love**. In one infamous case of unrequited love, John Hinkley shot President Ronald Reagan in 1981 in an attempt to impress Jodie Foster. In a bizarre twist, Jodie Foster had starred in a movie (*Taxi Driver*) in which an older male (played by Robert De Niro) planned an assassination attempt on a local political figure to impress the figure played by Foster in the movie. Hinkley became obsessed with both the movie (which he reputedly watched more than a dozen times) and also the actress Jodie Foster whom he stalked for some time. He scrawled the following letter 2 hours before he shot Ronald Reagan (Caplan, 1984, pp. 46–48):

Dear Jodie,

There is a definite possibility that I will be killed in my attempt to get Reagan. It is for this very reason I am writing you this letter now.

As you well know by now I love you very much. Over the past seven months I've left you dozens of poems, letters and love messages in the faint hope that you could develop an interest in me. Although we talked on the phone a couple of times I never had the nerve to simply approach you and introduce myself. Besides my shyness, I honestly did not wish to bother you with my constant presence. I know the many messages left at your door and in your mailbox were a nuisance, but I felt that it was the most painless way for me to express my love for you . . .

Jodie, I would abandon this idea of getting Reagan in a second if I could only win your heart and live out the rest of my life with you, whether it be in total obscurity or whatever.

I will admit to you that the reason I'm going ahead with this attempt now is because I just cannot wait any longer to impress you. I've got to do something now to make you understand, in no uncertain terms, that I am doing all of this for your sake! By sacrificing my freedom and possibly my life, I hope to change your mind about me. This letter is being written only an hour before I leave for the Hilton Hotel. Jodie, I'm asking to please look into your heart and at least give me the chance, with this historical deed, to gain your respect and love.

I love you forever.

John Hinkley

Hinkley's letter illustrates the yearning and frustrated passion that can accompany a virtual relationship. It also embodies the timeworn strategy of attaining status through some intrepid act and, thus, attracting the attention (and perhaps love) of the desired person. The only real madness in Hinkley's case was his decision to attempt an assassination of the president, in order to demonstrate his love and prowess. If the plan of assassinating Ronald Reagan was replaced (in the above letter) with joining the foreign legion or becoming a missionary, then the letter might strike one as foolishly romantic rather than insane.

Consummate love Sternberg suggested that **consummate love** results when lovers feel a high degree of intimacy, passion, and commitment for each other. Consummate love represents the pinnacle of an ideal love.

One important aspect of Sternberg's model concerns the way in which the three components vary in the way they develop. As we have already discussed, intimacy often starts slowly and builds over time, then levels off. Passion, in contrast, may often start with a hiss and a roar, but tapers off as intimacy (and perhaps commitment) grow. The tendency for passion to fade is not only true in western cultures, but is probably widespread across cultures. While watching a recently married couple from the !Kung culture horsing about together, another !Kung man commented spontaneously to the anthropologist Marjorie Shostak, "When two people are first together, their hearts are on fire and their passion is very great. After a while the fire cools and that's how it stays . . . They continue to love each other but it's in a different way – warm and dependable." (Shostak, 1981, p. 268).

The Maintenance of Love and Intimacy

From the moment in which a man and a woman have pronounced together these sweet words: *I love you*, they unconsciously become the priests of a temple in which they must guard the sacred fire of desire. To keep it alive is the great secret of loving eternally.

Paulo Mantegazza (1894, p. 319)

Any fire, even the sacred fire of desire referred to by Mantegazza, requires fuel to continue burning. Perhaps that is why intimate partners, after having been together for a long period of time, wonder aloud how to keep the spark in their relationship, or even maintain intimacy and warmth. How do couples keep the magic alive?

One answer is in terms of maintaining interpersonal trust, which a key ingredient of love and for the maintenance of successful relationships (Fehr, 1988; Simpson, 2007). Trust captures the degree to which individuals can count on current partners to meet fundamental needs and to facilitate important goals. Will my partner arrive on time to pick me up from work? Will my partner comfort me when something bad happens? Will my partner be faithful while I am away at a conference? Someone who trusts their partner would answer "yes" to these questions, whereas someone who does not trust their partner would answer "no" or "not sure."

The cardinal features of trust center on a partner's dependability (i.e. being able to count on the partner for comfort and support during difficult times) and faith in the partner (i.e. being confident that the partner will always be available and supportive in the future). Trust is a complex construct, however, in that it involves three components: person A trusts person B to engage in behavior X (Simpson, 2007). The development of trust in a relationship therefore involves the personalities of both partners (i.e. the general inclination of each partner to trust others), as well as the shared experiences between partners (i.e. partners demonstrating that they are trustworthy).

Holmes and Rempel (1989) argue that relationships suffer when individuals are uncertain about trusting their partners. During daily interactions with their partners, individuals with uncertain levels of trust look closely for cues of possible rejection and acceptance from their partner. These individuals may also actually create situations to test for evidence of their partners' love and commitment (Simpson, 2007). Individuals with uncertain levels of trust experience more extreme emotional highs and lows over time in their relationships, partly because they evaluate their partners and relationships based on daily cues of perceived rejection and acceptance (Campbell *et al.*, 2010).

In addition, individuals who report higher levels of trust hold more optimistic and benevolent expectations about their partner's motives, make more positive attributions about their partner's behaviors, and have more integrated and well-balanced perceptions of their partners that remain open to assimilating new information (Simpson, 2007). More trusting individuals also disregard or downplay what could be construed as negative relationship actions by their partners, minimizing the potential negative impact of minor partner indiscretions (Rempel *et al.*, 2001). When attempting to resolve relationship conflicts, more trusting individuals report that they display more positive and less negative affect (Holmes and Rempel, 1989), and their evaluations of their partners and relationships are less strongly tied to the emotions they experience during these discussions. More trusting individuals also view their partners more positively, especially when they think of negative (yes, negative) relationship experiences (Holmes and Rempel, 1989). That is, when more trusting individuals ponder relationship-threatening events, they step back and consider their partner's positive qualities and if anything feel more confident about the long-term success of their relationship (Holmes, 1991).

When individuals are uncertain about whether they can trust their partners, however, they can become trapped in approach/avoidance conflict situations in which positive partner behaviors are viewed as hopeful signs of possible relationship improvement, but any hint of negative behavior is taken as clear evidence that relationship difficulties are imminent. This hypervigilance can lead to self-fulfilling prophecies; namely, their angst-ridden perceptions may create the very relationship outcomes they wish to avoid (cf. Mikulincer, 1998; Murray *et al.*, 2006). Moreover, when such persons recall positive relationship events, they claim to judge their partner's behavior charitably, yet make cynical attributions regarding their partner's hidden motives (Holmes and Rempel, 1989; Rempel *et al.*, 2001; also see Chapter 3).

Another way of maintaining love is provided by Arthur Aron and colleagues, who suggest that relationship partners should participate together in novel and arousing

activities (Aron *et al.*, 2000). In one of their experiments, couples were escorted to a large room where gymnasium mats had been set up to create a large soft surface. Couples were randomly assigned to complete a mundane task or a novel and arousing activity. The mundane task involved some boring repetitive ball rolling. For the novel and arousing condition, partners were bound together with Velcro straps at the wrist and ankle and asked to complete some challenging timed problem-solving tasks involving barriers and pillows. As predicted, the fun-filled, novel task led to a surge of positive evaluations of the relationship, but no change in relationship satisfaction for those completing the boring task.

The explanation for these findings, according to Aron and colleagues, is that engaging in novel and arousing experiences with a partner essentially recreates experiences more typical of the early stages of relationships where intimacy grows fairly rapidly. Breaking out of a routine by doing something new and different with a partner therefore provides the opportunity for increasing intimacy with your partner. Stoking the sacred fire of desire can potentially be as simple as making an effort to seek out new and exciting adventures with your partner.

Berscheid's (1983) emotion model also helps explain why people report heightened feelings of relationship satisfaction after experiencing novel activities with their partner. According to her model, both positive and negative emotions are experienced when individuals are faced with disruptions to their normal routines. As relationships mature, partners tend to develop routines for their daily interactions. For instance, George may always be the first to wake up in the morning to make coffee, let the dog out, and get the paper from the doorway. His partner Mary, on the other hand, may always select some clothes for George to wear to work and make his lunch. Their behaviors are helpful to each other, but they are also stereotyped, mundane, and unexciting.

According to Berscheid's model, George and Mary should feel relatively low levels of intimacy in their relationship over time as they play out this routine morning after morning. If George forgets to make coffee, or if Mary does not do laundry, however, the routine is interrupted in such a way to arouse negative feelings. If George wakes up early to buy Mary a specialty coffee from her favorite coffee shop, or if Mary lays out a new outfit she bought for George's big presentation at work, the routine is interrupted in a positive manner that is likely to arouse positive feelings. Only when the routine is interrupted in a positive manner will couples feel a boost of positive emotions, and thus increased intimacy in their relationships. In Aron and colleagues' research discussed above, it is likely the case that each couple's routines were interrupted in a positive manner (i.e. they did something together that was new and slightly weird), resulting in a boost to their relationship satisfaction.

Shelly Gable and colleagues (Gable *et al.*, 2004) provide another simple suggestion for how to maintain love and intimacy in relationships – when good things happen share the positive news with your partner. They call this process **capitalization**. But why should capitalization foster relationship wellbeing? Sharing positive experiences with partners requires self-disclosure and open communication, creating both an opportunity for reliving the event as well as for partners to respond joyfully to each

other's positive disclosures, thus enhancing perceptions of the partner's responsiveness. In a series of studies testing the positive effects of capitalization attempts in relationships, Gable *et al.* (2004) found that individuals felt uplifted when they shared positive events with their partners. Additionally, close relationships in which partners respond to capitalization attempts enthusiastically (e.g. being genuinely joyful for the partner's success rather than jealous or indifferent) are more likely to experience high levels of relationship wellbeing (e.g. more intimacy and higher levels of daily relationship satisfaction).

Finally, in a similar vein, recent research suggests that the expression of gratitude to relationship partners can provide booster shots for the relationship (Algoe *et al.*, 2010). Tracking couples over a short period of time, Algoe and colleagues asked partners if they expressed gratitude toward their partner each day (e.g. planning a celebratory meal for a partner's recent success, or doing something with the kids so the other partner has some quiet time), and they asked partners how satisfied they were with their relationship each day. Expressing gratitude toward a partner predicted increases in relationship connection and satisfaction the following day, for both recipient and benefactor. A little gratitude, expressed often, may go a long way toward maintaining love and affection in relationships.

Summary and Conclusions

In this chapter we reviewed evidence for the evolutionary thesis that romantic love is a commitment device to keep parents together long enough to help infants survive to reproductive age. The evidence can be concisely summed up. First, romantic love is a universal. Second, it has a distinct suite of behavioral and biological signatures (characteristic of specific evolutionary adaptations) that have a shared evolutionary history with other species. Third, long-term pair bonded relationships promote reproductive success. Fourth, romantic love shuts down or dilutes the search for mates.

We also examined some challenges to the commitment-device thesis raised by the common existence across cultures of arranged marriages, divorce or separation, and polygyny. We argued they do not do serious damage, but they do suggest that romantic love is a non-perfect, jury-rigged solution to a problem, but one that nevertheless gives a potent motivational push to provide the massive investment involved needed to support a mate and raise children. A caveat – we are not arguing that pair bonding love is necessarily enough on its own to provide the sufficient resources and care needed for the successful raising of children over the stretched childhood of large-brained humans. This daunting task also typically involves the family (siblings, grandmothers, fathers, uncles, and aunts), and even non-kin in the village, band, or local community.

In the next section of the chapter we analyzed the nature of love, arguing that it comes in two main forms – passionate love and companionate love. Passionate love usually comes first in a romantic relationship and – as the term implies – is passionate. Lots of sexual activity (or frustrated sexual activity) and obsessional thinking, along

with liberal excretions of the arousal and cuddle hormones, characterize this phase. Generally, however, there is a slow slide into a less frenetic relationship phase characterized by commitment and a deep form of affection – companionate love. Alas, in both forms, love often fades, and many sexual relationships eventually cease to be. Keeping long-term sexual relationships ticking over nicely, we argued requires the maintenance of trust, and perhaps also finding ways of introducing some novelty and excitement from time to time (we go into considerably more detail on the causes of relationship dissolution in Chapter 12 and return to relationship maintenance strategies in both Chapter 9 and Chapter 12).

As a supremely astute observer of human nature, Shakespeare understood the power and subtleties of romantic love, as revealed in his plays and sonnets, including *Romeo and Juliet*. However, as this chapter indicates, over the past few decades science has gone much further than any lay psychologist could possibly go in explaining why and how romantic love wields such influence over human affairs.