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What Sexual Scientists Know about Love

“The greatest science in the world, in heaven and on earth, is love” (Mother Teresa).

What is love? This question has been pondered throughout the ages by artists, poets, songwriters, philosophers, theologians, as well as every-day people in their own lives. Yet there is no absolute definition or sole universal experience of love. Love comes in many varieties depending on the time and place in which one lives. In ancient Greece, Plato believed that love should be based upon seeking an ideal in another person, like truth or beauty—the highest ideal being homosexual love. During medieval times, chivalrous love, in which one loved from afar without ‘impure’ sexual thoughts or actions, was the ideal of the courtly upper classes. Before the 19th century, love had nothing to do with marriage: at all levels of society it was a material, practical matter. In contrast, in the United States today, most people believe that romantic love is the most important reason for choosing a marital partner and should include a fulfilling sexual component.

Some scientists argue that love is necessary for the survival of an individual, as well as the human species. While love seems to defy description, scholars usually distinguish between two kinds of love: “passionate love” and “companionate love,” which are different from one another but often highly related. Both types of love are also highly associated with feeling positive emotions, like joy and contentment, and feelings of sexual excitement and intimacy. Most couples experience both types of love, although both passionate and companionate love seem to grow in the early stages of relationships, peak, and then decline somewhat as time goes on.

Passionate and Companionate Love

Passionate love is an emotion experienced by almost all people, in all historical eras, and in all the world's cultures. It is as old as humankind. Passionate love (sometimes called "obsessive love," "infatuation," "lovesickness," or "being in love") is a powerful emotional state. It has been defined as a state of intense longing for union with another. Reciprocated love (union with the other) is associated with fulfillment and ecstasy. Unrequited love (separation) is associated with feelings of emptiness, anxiety, and despair. Scientists in many different fields consider passionate love to be a pan-human characteristic (an emotion thought to exist in all cultures and in all historic eras) that exerts a profound impact on people's romantic and sexual attitudes, emotions, and behaviors. Passionate love is closely associated with sexual desire, sexual arousal, and sexual motivation. In fact, the distinction between passionate love and sexual desire is often ambiguous.

Companionate love is a far less intense emotion. It combines feelings of attachment, commitment, and intimacy. It has been defined as the affection and tenderness we feel for those with whom our lives are deeply entwined. There is considerable evidence that companionate love is an important contributor to relationship quality and relationship stability. Women are more likely than men to view romantic love, emotional intimacy, and commitment as prerequisites for sexual activity. Men and women's perceptions of the fairness and equity of their relationships have been found to be an important determinant of whom they choose for a sexual encounter, how sexual and satisfying their sexual relationships are, and how likely those relationships are to endure. Specifically, researchers have found that the more socially desirable people are (the more physically attractive, personable, famous, rich, or considerate), the more socially desirable they will expect an "appropriate" mate to be.

Couples are likely to be romantically matched on the basis of self-esteem, looks, intelligence, education, and mental and physical health or disability. Further, dating couples are more likely to “fall in love” if they perceive their relationships to be equitable – that is, if they feel that they and their partners are receiving approximately what they deserve – neither much more nor less. Couples who perceive their relationships to be fair and equitable are more likely to get involved sexually and are most likely to say that both partners wanted to have sex. Couples in inequitable relationships are less likely to claim that sex had been a mutual decision. These people often report pressure to have sexual relations in order to keep the relationship alive.

The Chemistry of Love

When two people feel a strong attraction to one another, it’s often said that there is great “chemistry” between them. This saying may not be far from the truth. Dr. Helen Fisher has proposed that there are separate but interrelated neural systems for lust (or sexual desire), passionate love (or attraction), and companionate love (or attachment) in our brains. These three systems regularly act in concert with one another but they can also act independently. For example, some women or men may engage in intercourse with someone with whom they are not in love, while they are in love with someone with whom they are not having sex, and yet they can feel deeply attached to someone with whom they share little intimacy or passion. Using functional magnetic resonance imaging (fMRI), neuroscientists have concluded that passionate love leads to a suppression of activity in the areas of the brain controlling critical thought. Thus, once we get close to someone, we feel less need to assess their character and personality in a negative way.

How does our brain initiate and respond to love? This happens through the tiny squirts of neurochemicals in the brain (called neurotransmitters). For example, someone who has “fallen madly in love” (passionate love) reports that all his or her thoughts are focused on the beloved one. This is consistent with increased levels of the neurotransmitters, dopamine and norepinephrine, in the brain. Sometimes people who are in love report having intrusive thoughts, meaning that they think about their beloved obsessively. A decreased level of another neurotransmitter, serotonin, may contribute to this intrusive thinking, as it does to other forms of obsessive behavior. Increased levels of dopamine are also associated with the feelings of exhilaration, euphoria, increased energy, sleeplessness, loss of appetite, accelerated breathing, pounding heart, and trembling that people who are in love experience. People who use amphetamines and cocaine often report similar experiences, but love seems to give a person a “natural high.” Over time this high wears off, perhaps because our bodies build up a tolerance to the neurochemicals. On the other hand, if our love affair ends, we may experience a withdrawal similar to that of an amphetamine addict who stops taking drugs.

Other brain chemicals have been associated with companionate love. Two neurotransmitters, oxytocin and vasopressin, are key ingredients to bonding. In humans, oxytocin levels rise during massages, breast feeding, and sexual activity; all experiences where closeness and bonding are enhanced. There is evidence that loving touch of infants, like massaging, cuddling, and rocking, develops neural pathways in the brain that promotes growth and “hard wires” an individual to be able to feel and express love throughout his or her life. This biological and environmental interaction has been expressed as the link from “skin love, to kin love, to in love.”

Love and Marriage

Before 1700, no society ever equated *le grand passion* with marriage. However in recent times, romantic love has come to be considered to be the *sine qua non* of marriage. Since the 1960s, sociologists have continued to ask young American men and women about the importance of romantic love. They have found that young Americans are coming to increasingly value and demand more and more of love. In one study, 86% of American men and 91% of American women answered the question as to whether they would wed without love with a resounding “No!” Obviously, in the West, romantic love is considered to be a prerequisite for marriage. Today, American men and women assume that romantic love is so important that they claim that if they fell out of love, they would not even consider *staying* married. Research suggests that today, young men and women in many other countries throughout the world consider love to be a prerequisite for courtship and marriage as well. It is primarily in Eastern, collectivist, and poorer countries that passionate love remains a bit of a luxury.

Love and Culture

Cross-cultural researchers once claimed that passionate love was a peculiarly Western institution. Americans, they claimed, idealized love and were preoccupied with finding it. Researchers do find that in different cultural, national, and ethnic groups, people often desire very different things in romantic, sexual, or marital partners. For example, researchers who studied three powerful, modern, industrial societies found that men and women in Western, individualistic cultures, like the United States and to some extent Russia, expected far more from their marriages than did couples in a collectivist culture like Japan. Other researchers found that Americans and Italians tend to equate love with happiness and to assume that both passionate and companionate love are intensely positive experiences. In comparison, students

in Beijing, China possess a darker view of love. In the Chinese language, there are few “happy-love” words; instead love is often associated with sadness.

Yet, cultures also seem to share more similarities than differences in the *intensity* of the passionate love that people experience. Anthropologists have found that even in far-flung tribal societies, young lovers talk about passionate love, recount tales of love, sing love songs, and speak of the longings and anguish of infatuation. Currently, in a variety of ethnic groups, young men and women show similarly high rates of “being in love.”

Throughout the world, globalization, the woman’s movement, increasing modernization, urbanization, and affluence have combined to produce more positive views of passionate love and sexual desire, gender and sexual equality, and love matches (as opposed to arranged marriages). Increasingly, societies worldwide are rejecting the notion that passionate love and sexual desire, especially in women, are evil and ought to be punished. There is an increased acceptance of the notion that both men and women are entitled to satisfying sexual lives.

Historical research reminds us that throughout time, people have embraced very different attitudes toward love, have ascribed very different meanings to it, have desired very different traits in romantic partners, and have differed markedly in whether such feelings were to be proclaimed to the world or hidden in the deepest recesses of the heart. In the real world, love and sex seem forever in flux.

Recommended Readings:

Fisher, H. E. (2004). *Why we love: The nature and chemistry of romantic love*. New York: Henry Holt & Co.

Hatfield, E., & Rapson, R. L. (1993). *Love, sex, and intimacy: Their psychology, biology, and history*. New York: Harper Collins.

Hatfield, E., & Rapson, R. L. (1996). *Love and sex: Cross-cultural perspectives*. Boston, MA: Allyn & Bacon.

Hatfield, E., Rapson, R. L., & Martel, L. S. (2007). "Passionate love." In S. Kitayama & D. Cohen (Eds.). *Handbook of Cultural Psychology*. New York: Guilford Press.

Jankowiak, W. (Ed.). (1995). *Romantic passion: A universal experience?* New York: Columbia University Press.