

PASSIONATE LOVE: NEW DIRECTIONS IN RESEARCH

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Recently social psychologists have begun to learn a great deal about the nature of passionate love. We will begin this chapter by reviewing what social psychologists have learned about love in the last decade. In the remainder of this contribution, we will describe the research we are now conducting into the antecedents of passion.

THE NATURE OF PASSIONATE LOVE

For most people, love is the sine qua non of an intimate relationship (Berscheid & Peplau, 1983). "Love," however, comes in a variety of forms. (See Hatfield, 1982; Hatfield & Rapson, 1987; Lee, 1977; Kelley, 1979; Sternberg, 1986). In this chapter we will discuss only one form of love—the emotion of passionate love. This emotion has sometimes been labeled "puppy love," "a crush,"

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"lovesickness," "obsessive love," "infatuation," or "being in love." Hatfield and Walster (1978) define passionate love this way: "A state of intense longing for union with another. Reciprocated love (union with the other) is associated with fulfillment and ecstasy. Unrequited love (separation) with emptiness, anxiety, or despair. A state of profound physiological arousal" (p. 9).

The Passionate Love Scale

The Passionate Love Scale (PLS), shown in Figure 1, is designed to measure this emotion. Its taps contain cognitive, emotional, and behavioral indicants of "longing for union."

Cognitive Components:

1. Intrusive thinking or preoccupation with the partner. (In Figure 1, items 5, 19, and 21 tap this component).
2. Idealization of the other or of the relationship (Items 7, 9, and 15 measure this component.)
3. Desire to know the other and be known. (Item 10 measures the desire to know. Item 22 measures the desire to be known.)

Emotional Components:

1. Attraction to other, especially sexual attraction. Positive feelings when things go well. (See items 16, 18, and 29.)
2. Negative feelings when things go awry. (See items 1, 2, 8, 20, 28, and 30.)
3. Longing for reciprocity. Passionate lovers not only love, but they want to be loved in return. (Item 14.)
4. Desire for complete and permanent union. (Items 11, 12, 23, and 27.)
5. Physiological arousal. (Items 3, 13, 17, and 26.)

Behavioral Components: A passionate lover's desire for union may be reflected in a variety of behaviors:

1. Actions toward determining the other's feelings. (Item 24.)
2. Studying the other person. (Item 4.)
3. Service to the other. (Items 6 and 25.)
4. Maintaining physical closeness: We had hoped to include some items designed to measure lovers' efforts to get *physically* close to the other, but lovers did not endorse such items, and they were dropped from the final version of the scale.

A series of studies indicate that the PLS is highly reliable. For example, Hatfield and Sprecher (1986) gave the PLS to 120 men and women at the University of Wisconsin. They attempted to determine whether the PLS is (1) unidi-

In this section of the questionnaire you will be asked to describe how you feel when you are passionately in love. Some common terms for this feeling are passionate love, infatuation, love sickness, or obsessive love.

Please think of the person whom you love most passionately *right now*. If you are not in love right now, please think of the last person you loved passionately. If you have never been in love, think of the person whom you came closest to caring for in that way. Keep this person in mind as you complete this section of the questionnaire. (The person you choose should be of the opposite sex if you are heterosexual or of the same sex if you are homosexual.) Try to tell us how you felt at the time when your feelings were the most intense.

All of your answers will be strictly confidential.

1. Since I've been involved with _____, my emotions have been on a roller coaster.
- *2. I would feel deep despair if _____ left me.
3. Sometimes my body trembles with excitement at the sight of _____.
4. I take delight in studying the movements and angles of _____'s body.
- *5. Sometimes I feel I can't control my thoughts; they are obsessively on _____.
- *6. I feel happy when I am doing something to make _____ happy.
- *7. I would rather be with _____ than anyone else.
- *8. I'd get jealous if I thought _____ were falling in love with someone else.
9. No one else could love _____ like I do.
- *10. I yearn to know all about _____.
- *11. I want _____—physically, emotionally, mentally.
12. I will love _____ forever.
13. I melt when looking deeply into _____'s eyes.
- *14. I have an endless appetite for affection from _____.
- *15. For me, _____ is the perfect romantic partner.
16. _____ is the person who can make me feel the happiest.
- *17. I sense my body responding when _____ touches me.
18. I feel tender toward _____.
- *19. _____ always seems to be on my mind.
20. If I were separated from _____ for a long time, I would feel intensely lonely.
21. I sometimes find it difficult to concentrate on work because thoughts of _____ occupy my mind.
- *22. I want _____ to know me—my thoughts, my fears, and my hopes.
23. Knowing that _____ cares about me makes me feel complete.
- *24. I eagerly look for signs indicating _____'s desire for me.
25. If _____ were going through a difficult time, I would put away my own concerns to help him/her out.
26. _____ can make me feel effervescent and bubbly.
27. In the presence of _____, I yearn to touch and be touched.
28. An existence without _____ would be dark and dismal.
- *29. I possess a powerful attraction for _____.
- *30. I get extremely depressed when things don't go right in my relationship with _____.

Possible responses to each item ranged from:

1	2	3	4	5	6	7	8	9
Not at all					moderately			Definitely
true					true			true

*Note: The * indicates items selected for the short version of the Passionate Love scale.

Figure 1. Passionate Love Scale

mensional, (2) reliable, as indicated by a measure of internal consistency, (3) uncontaminated by a social desirability bias, and (4) correlated with other indicators of love and intimacy. They found that the PLS is highly reliable scale. Coefficient alpha, a measure of internal consistency, was .94. The shorter version of the PLS had only a slightly lower coefficient alpha—.91. The PLS appears to be unidimensional. The responses to the PLS were subjected to principal factoring with multiple correlations used as communality estimates. After rotation, one major factor explained 70% of the variance (Eigenvalue = 12.24). The results suggest that the scale is uncontaminated by a social desirability bias. The correlation between the PLS and Crowne and Marlowe's (1964) Social Desirability scale was nonsignificant ($r = .09$).

If the PLS is valid, it should be related to other variables in ways expected by past theoretical and empirical work. The PLS was highly correlated with other measures of love and intimacy. (See Hatfield & Sprecher, 1986; Easton, 1985; Hatfield *et al.*, 1987; and Sullivan & Landis, 1984 for additional information on the reliability and validity of the PLS.) In sum, the PLS is a reliable, valid, unidimensional measure of passionate love reflecting cognitive, emotional, and behavioral components.

Passionate Love: A More Complicated Vision

Scientists who explore emotion have long been aware that both mind and body interact in shaping emotional experience. *Mind*: People's semiconscious assumptions as to what they should be feeling have a profound impact on what they do feel. People learn (from society, parents, friends, and their own personal experiences), who is appealing, what passion feels like, and how lovers behave. Such cognitive factors influence how men and women label their feelings. *Body*: People can experience an emotion only if they have some feelings (i.e., they must be aroused physiologically.) Neurochemical factors shape both what emotion people experience and how intensely they feel (see Hatfield & Walster, 1978, or Carlson & Hatfield, in preparation).

While agreeing on the importance of mind and body, theorists have, for centuries bitterly disagreed over the nature of love. Is it an intensely pleasurable experience, a painful one . . . or both? Early researchers focused on the bright side of love. Such a vision is often depicted in contemporary films. For example, in Diane Kurys' *Cocktail Molotov*, 17-year-old Anne falls head-over-heels in love with Frederic after he declares his love for her. Scenes of their wild, exuberant coltish love remind us of the delights of passion.

Theorists such as Kendrick and Cialdini (1977) argued that passionate love could easily be explained by reinforcement principles. They thought passionate feelings were fueled by positive reinforcements and dampened by negative ones. Byrne (1971) reported a series of carefully crafted studies to demonstrate that

people love/like those who reward them and hate/dislike those who punish them. (See Berschield & Hatfield, 1969, for a review of this research.)

In the 1980s, social psychologists began to develop a more complicated concept of love. Sometimes passionate love *is* a joyously exciting experience, sparked by exciting fantasies and rewarding encounters with the loved one. But that is only part of the story.

Passionate love is like any other form of excitement. By its very nature, excitement involves a continuous interplay between elation and despair, thrills and terror. Think, for example, of the mixed and rushed feelings that novice skiers experience. Their hearts begin to pound as they wait to catch the ski lift. Once they have made it, they are elated. On the easy ride to the top, they are sometimes still a bit unnerved; their hands shake and their knees still tremble, but they begin to relax. Moments later they look ahead and realize it is time to jump off the lift. The landing looks icy. Their rush quickly turns to panic. They can't turn back. They struggle to get their feelings under control. They jump off the lift, elated and panicky; it is hard to tell which is which. Then they start to ski downhill, experiencing as they go a wild jumble of powerful emotions. Eventually, they arrive at the bottom of the hill, elated, relieved. Perhaps they feel like crying. Sometimes, they are so tired they are flooded with waves of depression. Usually, they get up, ready to try again. Passionate lovers experience the same roller coaster of feelings—euphoria, happiness, vulnerability, anxiety, panic, despair. Sometimes, the risks of love add fuel to the fire. Occasionally men and women become entangled in love affairs where the delight is brief . . . and pain, uncertainty, jealousy, misery, anxiety, and despair are abundant. Reviewer Blake Lucas (1984) describes just such a passionate relationship, in his review of Rainer Werner Fassbinder's 15 ½ hour film *Berlin Alexanderplatz*:

From his first low-angle close-up in a bar in the opening minute of the episode, Reinhold . . . the man who will become the key individual in Franz's destiny, is a mesmerizing figure. Lean and intense, with features that are a cross between the reptilian and the hawklike. [Reinhold] immediately becomes a figure who arouses contradictory emotions. Fassbinder suggests through camera placement and dramatic emphasis that there is something dangerous, perhaps evil, about him; but John's skillful projection of vulnerability by means of a subtly underplayed stutter . . . makes the character strangely pitiable, often in the moments that his behavior is most unpredictable and frightening. Franz and Reinhold are drawn to each other almost immediately. . . . (pp. 61-62).

In many affairs, passionate love seems to be fueled by a sprinkling of hope and a large dollop of loneliness, mourning, jealousy, and terror. In fact, in a few cases, it seems as if men and women love others, not in spite of the anxiety they experience, but because of it.

Recent social psychological research makes it clear why passionate love, which thrives on excitement, might be linked to a variety of strong, related emotions—both positive and negative (see Hatfield & Walster, 1978).

Cognitive Factors

Society describes love in mixed ways. Tennov (1979) interviewed more than 500 passionate lovers. Almost all lovers took it for granted that passionate love (which Tennov labels "limerence") is a bittersweet experience.

Liebowitz (1983) provides an almost lyrical description of the mixed nature of passionate love:

Love and romance seems [*sic*] to be one, if not the most powerful activator of our pleasure centers. . . . Both tend to be very exciting emotionally. Being with the person or even just thinking of him or her is highly stimulating. . . . Love is, by definition, the strongest positive feeling we can have. . . . Other things—stimulant drugs, passionate causes, manic states—can induce powerful changes in our brains, but none so reliably, so enduringly, or so delightfully as that "right" other person. . . . If the relationship is not established or is uncertain, anxiety or other displeasure centers may be quite active as well, producing a situation of great emotional turmoil as the lover swings between hope and torment (pp. 48–49).

It is clear, then, that people assume it is "appropriate" to use the term "passionate love" to label any "intense longing for union with another"; regardless of whether that longing is reciprocated (and thus is a source of fulfillment and ecstasy) or it is uncertain or unrequited (and thus is a source of emptiness, anxiety, or despair.)

Physiological Factors

Recently, psychologists have assembled information—from neuroanatomical and neurophysiological investigations, ablation experiments, pharmacologic explorations, clinical investigations and behavioral research—as to the nature of love. This research documents the contention that passionate love is likely to be a bittersweet experience. (See Kaplan's [1979] discussion of the neuroanatomy and neurophysiology of sexual desire, and Liebowitz's [1983] discussion of the chemistry of passionate love, for a lengthy review of existing research.)

The Anatomy of Passionate Love

According to Kaplan (1979), the anatomy of passionate love/sexual desire is relatively well understood. Kaplan acknowledges that cognitive factors have a profound impact on sexual desire. The cortex (that part of the brain that analyzes complex perceptions and stores and retrieves memories) has extensive neural connections with the sex center.

The brain's sex center consists of a network of neural centers and circuits. These are centered within the limbic system—with nuclei in the hypothalamus and in the preoptic region. The limbic system is located in the limb or rim of the brain. In primitive vertebrates, this system controls emotion and motivation; it insures that animals will act so as to insure their own survival and that of their species. In man, this archaic system remains essentially unchanged. It is here that men's and women's most powerful emotions are generated, their behavior most powerfully driven. In the sex centers, scientists have identified both activating and inhibitory centers.

The sexual system has extensive neural connections with other parts of the brain. For example, it has significant connections, both neural and chemical, with the brain's pleasure and the pain centers. All behavior is shaped by the seeking of pleasure (i.e., seeking stimulation of the pleasure center) and the avoidance of pain (i.e., avoiding stimulation of the pain center.)

(a) The pleasure centers: Chemical receptor sites, located on the neurons of the pleasure centers, respond to a chemical that is produced by the brain cells. This has been tagged an "endorphin" because it resembles morphine chemically and physiologically (i.e., it causes euphoria and alleviates pain.) Kaplan observes: "It may be speculated that eating and sex and being in love, i.e., behaviors which are experienced as pleasurable, produce this sensation by stimulation of the pleasure centers, electrically, or by causing the release of endorphins, or by both mechanisms" (p. 11).

(b) The pain centers: Sexual desire is also anatomically and/or chemically connected with the pain centers. If sexual partners or experiences are associated with pain, they will cease to evoke sexual desire. A chemical mediator for pain, analogous to endorphin, may exist. Our brains are organized so that pain takes priority over pleasure. This, of course, makes sense from an evolutionary point of view.

The Chemistry of Passionate Love

Psychologists are beginning to learn more about the chemistry of passionate love . . . and a potpourri of related emotions. They are also learning more about the way that various emotions, positive and negative, interact.

Liebowitz (1983) has been the most willing to speculate about the chemistry of passionate love. He argues that love brings on giddy feelings, comparable to an amphetamine high. It is phenylethylamine (PEA), and amphetamine-related compound, that produces the mood-lifting and energizing effects of romantic love. He observes that "love addicts" and drug addicts have a lot in common. The craving for romance is merely the craving for a particular kind of high. The fact that most romances lose some of their intensity with time, may well be due to normal biological processes.

The crash that follows a breakup is much like amphetamine withdrawal. Liebowitz speculates that there may be a chemical counteractant to lovesickness: MAO (monoamine oxidase) inhibitors may inhibit the breakdown of phenylethylamine, thereby "stabilizing" the lovesick.

Liebowitz also offers some speculations about the chemistry of the emotions which crisscross lovers' consciousness as they plunge from the highs to the lows of love. The "highs" include euphoria, excitement, relaxation, spiritual feelings, and relief. The "lows" include anxiety, terrifying panic attacks, the pain of separation, and the fear of punishment. His speculations are based on the assumption that nondrug and drug highs and lows operate *via* similar changes in brain chemistry.

Excitement: Liebowitz proposes that naturally occurring brain chemicals, similar to the stimulants (such as amphetamine and cocaine), produce the "rush" lovers feel. *Relaxation:* Chemicals related to the narcotics (such as heroin, opium, and morphine), tranquilizers (such as Librium and Valium), sedatives (such as barbiturates, Quaaludes, and other "downers"), or alcohol, which acts chemically much like the sedatives, and marijuana and other cannabis derivatives, produce a mellow state and wipe out anxiety, loneliness, panic attacks, and depression. *Spiritual peak experiences:* Chemicals similar to the psychedelics (such as LSD, mescaline, and psilocybin) produce a sense of beauty, meaningfulness, and timelessness.

Physiologists do not usually try to produce *separation anxiety*, *panic attacks*, or *depression*. Such painful feelings may arise from two sources, however: (1) withdrawal from the chemicals that produce the "highs"; (2) chemicals which in and of themselves produce anxiety, pain, or depression.

Research has not yet established whether or not Liebowitz's speculations as to the chemistry of love are correct.

Kaplan (1979) provides some information as to the chemistry of *sexual desire*. In both men and women, testosterone (and perhaps LH-RF) are the libido hormones. Dopamine may act as a stimulant, serotonin or 5-HT as inhibitors, to the sexual centers of the brain. Kaplan observes:

When we are in love, libido is high. Every contact is sensuous, thoughts turn to Eros, and the sexual reflexes work rapidly and well. The presence of the beloved is an aphrodisiac: the smell, sight, sound, and touch of the lover—especially when he/she is excited—are powerful stimuli to sexual desire. In physiologic terms, this may exert a direct physical effect on the neurophysiologic system in the brain which regulates sexual desire. . . . But again, there is no sexual stimulant so powerful, even love, that is cannot be inhibited by fear and pain (p. 14).

Kaplan ends by observing that a wide array of cognitive and physiological factors shape desire.

Finally, although passionate love, and the related emotions we have described, may be associated with specific chemical neurotransmitters or with chemicals which increase/decrease the receptors' sensitivity, most emotions have more similarities than differences. Finck (1891) made an interesting observation. He observed that

Love can only be excited by strong and vivid emotion, and it is almost immaterial whether these emotions are agreeable or disagreeable. The Cid wooed the proud heart of Diana Ximene, whose father he had slain, by shooting one after another of her pet pigeons. Such persons as arouse in us only weak emotions or none at all, are obviously least likely to incline us toward them. . . . Our aversion is most likely to be bestowed on individuals who, as the phrase goes, are neither "warm" nor "cold"; whereas impulsive, choleric people, though they may readily offend us, are just as capable of making us warmly attached to them (p. 240).

Negative emotions, Finck thought, could enhance, if not incite, the positive emotion of love. Chemically, there is some support for Finck's contention: intense emotions do have much in common. Kaplan (1979) reminds us that chemically, love, joy, sexual desire and excitement . . . as well as anger, fear, jealousy and hate, have much in common: they are all intensely arousing. They all produce a "sympathetic" response in the nervous system. This is evidenced by the symptoms associated with all these emotions—a flushed face, sweaty palms, weak knees, butterflies in the stomach, dizziness, a pounding heart, trembling hands, and accelerated breathing. (The exact pattern of reaction varies from person to person [see Lacey, 1967].)

Recent neuroanatomical/neurophysiological research suggests that the various emotions probably have tighter links than psychologists once thought. This is consistent with the recognition that in a passionately exciting encounter, people can move from elation, through terror, to the depths of despair . . . and back again in a matter of seconds. Excitement may be confusing, but at least it is arousing. Such observations led Hatfield and Walster (1978) to conclude that passion can be ignited by fulfillment and ecstasy and/or emptiness, anxiety, or despair; by delight in the other's presence or pain at the other's loss.

Recently, researchers have begun to examine the exact nature of these interlinkages (see, for example, Zillman, 1984).

Behavioral Evidence that Both Pleasure and Pain May Fuel Emotion

Passionate love is such a risky business. Success sparks delight, failure invites despair. We get some indication of the strength of our passion by the intensity of our ecstasy/misery. Of course, trying to calibrate our emotions is an elusive business. Sometimes it is difficult to tell to what extent your lover is responsible for the delight you feel *versus* the extent to which the highs you are experiencing are due to the fact that you are ready for romance, or the day is a glorious one, or you are simply feeling good. It is difficult to tell to what extent your lover's coolness is responsible for your misery. To what extent is it due to the fact that you are lonely? Or that you are afraid to go off on your own? Or that your period is about to begin? Or you are simply "low"? Often it is hard to tell. In any case, there is an abundance of evidence to support the contention that, under the right conditions, a variety of intensely positive experiences, intensely negative ones, or neutral but energizing experiences, can add to the passion of passion.

Passion and the Positive Emotions

In our definition of love we stated: "Reciprocated love (union with the other) is associated with fulfillment and ecstasy." No one doubts that love is a delightful experience in its own right . . . passion is such a "high" that the joys of love generally spill over and add sparkle to everything else in life.

What has been of interest to psychologists is the converse of this proposition: that the "adrenalin" associated with a wide variety of highs can spill over and make passion more passionate. (Sort of a "Better loving through chemistry" phenomenon.)

A number of carefully crafted studies make it clear that a variety of positive emotions—listening to a comedy routine (Steve Martin's *A Wild and Crazy Guy*, [White, Fishbein, & Rutstein], sexual fantasizing (Stephan, Berscheid, & Hatfield, 1971), erotic excitement (Istvan & Griffitt, 1978), or general excitement (Zuckerman, 1979)—can intensify passion.

In one investigation, for example, Istvan, Griffitt, and Weidner (1983) sexually aroused some men by showing them pictures of men and women engaged in sexual activities. Other men were shown nonarousing, neutral fare. Then they asked men to evaluate the appeal of beautiful and plain women. When the woman was pretty, the aroused men rated her as more attractive than they normally would. When the woman was unattractive, the aroused men rated her as less attractive than they normally would. It seems as if the men's sexual arousal spilled over and intensified whatever it was they would normally have felt for the woman—for good or ill. Other studies with women reveal the same "cross-magnification" effects. Sexually aroused women find handsome men unusually appealing, homely men less appealing, than usual.

Passion and the Negative Emotions

In defining passionate love, we also observed: "Unrequited love (separation) [is associated] with emptiness, anxiety, or despair." Psychologists have long observed that the failure to acquire or sustain love is an extraordinarily painful experience. Theorists such as Bowlby (1973), Peplau and Perlman (1982), and Weiss (1973) describe the panic, despair, and eventual detachment that both children and adults feel at the loss of someone they love.

By now, psychologists have amassed considerable evidence that people are especially vulnerable to love when their lives are turbulent. Passion can be intensified by the *spillover of feeling* from one realm to another. A variety of negative experiences have been found to deepen desire. For example, Dutton and Aron (1974), in a duo of studies, discovered a close link between fear and sexual attraction.

In one experiment, researchers invited men to participate in a learning experiment. When the men showed up, they found that their "partner" was a strikingly beautiful woman. They also discovered that, by signing up for the experiment, they had gotten into more than they had bargained for. The experimenter claimed to be studying the effects of electric shock on learning. Sometimes the experimenter quickly went on to reassure the men that they'd been assigned to a control group and would be receiving only a barely perceptible "tingle" of a shock. At other times, the experimenter tried to terrify the men: he warned them that they'd be getting some pretty painful electric shocks.

Before the supposed experiment was to begin, the experimenter approached each man privately and asked how he felt about the beautiful coed who "happened" to be his partner. He asked the men to tell him in confidence, how attracted he was to her (e.g., "How much would you like to ask her out for a date?" "How much would you like to kiss her?"). The investigators predicted that fear would facilitate attraction. And it did. The terrified men found the women a lot sexier than did the calm and cool men.

In another study, the investigators compared reactions of young men crossing two bridges in North Vancouver. The first bridge, the Capilano Canyon Suspension Bridge, is a 450-foot-long, five-foot-wide span that tilts, sways, and wobbles over a 230-foot drop to rocks and shallow rapids below. The other bridge, a bit further upstream, is a solid, safe structure. As each young man crossed the bridge, a good-looking college woman approached him. She explained that she was doing a class project and asked if he would fill out a questionnaire for her. When the man had finished, the woman offered to explain her project in greater detail. She wrote her telephone number on a small piece of paper, so the man could call her if he wanted more information. Which men called? Nine of the 33 men on the suspension bridge called her; only two of the men on the solid bridge called.

This single study, of course, can be interpreted several ways. Perhaps the men who called really were interested in ecology. Perhaps it was not fear but relief at having survived the climb, that stimulated desire. It is always possible to find alternative explanations for any one study. But by now there is a great deal of experimental and correlational evidence for the more intriguing contention that, under the right conditions, a variety of awkward and painful experiences—*anxiety and fear* (Aron, 1970; Brehm, et al., 1978; Dienstbier, 1979; Dutton & Aron, 1974; Hoon, Wincze, & Hoon, 1977; Riordon & Tedeschi, 1983), *embarrassment* (Byrne, Przybyla, & Infantino, 1981), the discomfort of seeing others involved in conflict (Dutton, 1979) *jealousy* (Clanton & Smith, 1977), *loneliness* (Peplau & Perlman, 1982), *anger* (Barclay, 1969); anger at parental attempts to break up an affair (Driscoll, Davis, & Lipsetz, 1972), grisly stories of a mob mutilating and killing a missionary while his family watched (White, Fishbein, & Rutstein, 1981), or even grief—all these can deepen passion.

Passion and Emotionally Neutral Arousal

Recent laboratory research indicates that passion can be stirred by "excitation transfer" from such emotionally neutral, but arousing experiences as riding an exercise bicycle (Cantor, Zillman, & Bryant, 1975) or jogging (White, Fishbein, & Rutstein, 1981).

White, Fishbein, and Rutstein (1981) conducted a series of elegant "cross-magnification" studies to demonstrate that passion can be intensified by any intense experience. In one experiment, some men (those in the high arousal group) were required to engage in strenuous physical exercise (they ran in place for 120

seconds). Other men (those in the low arousal group) ran in place for only 15 seconds. The men's mood was not effected by exertion. A variety of self-report questions and heart rate measures established that these two groups varied greatly in arousal.

Men then watched a videotaped interview with a woman they expected to meet. Half of the time the woman was attractive; half of the time unattractive. After the interview, the men gave their first impression of the woman. They estimated her attractiveness and sexiness. They also indicated how attracted they felt to her—how much they wanted to kiss and date her.

The authors proposed that exertion-induced arousal would intensify men's reactions to the woman—for good or for ill. Aroused subjects would be more attracted to the attractive confederate and more repulsed by the unattractive confederate, than would subjects with lower levels of arousal. The authors found just that. If the woman was beautiful, the men who were aroused via exertion judged her to be unusually appealing. If the woman was unattractive, the men who were aroused via exertion judged her to be unusually unappealing. The effect of arousal, then, was to intensify a person's initial "intrinsic" attractiveness. Arousal enhanced the appeal of the pretty woman as much as it impaired the appeal of the homely one. (See Zillman, 1984, for a review of this research on "cross-magnification" or "excitation (transfer)" [Zillman's term].)

In sum: The evidence suggests that adrenalin makes the heart grow fonder. Delight is one stimulant of passionate love, yet anxiety and fear, or simply high arousal, can often play a part.

RESEARCH IN PROGRESS

For the last two years we have focused on a single research question—How universal is the experience of passionate love?

We had always conceived of passionate love as a very primitive phenomenon. Primatologists such as Leonard Rosenblum (1985) and Rosenblum and Plimpton (1981) argue that even non-human primates experience something very much like "passionate love." In infancy, primates cling to their mothers. As long as mother and child are in close proximity, all goes well. If a brief separation occurs, however, the young primate becomes desperate. He howls and rushes frantically about, searching for her. When the mother returns, the young primate is joyous; he clasps her, then bounds about in excitement. If she does not return, and his frantic efforts to find her fail, eventually the infant will abandon all hope of contact, despair, and probably die. The experience Rosenblum and his colleagues describe certainly sounds much like passionate love's "desire for union"—and its accompanying lows and highs. This, we think, is the groundwork for passionate attachments.

From the start, then, we took it for granted that all people, regardless of age,

gender, ethnic group, or the historical era in which they live are capable of passion . . . and are likely to experience passionate obsessions intermittently throughout their lives. How frequently and how intensely they experience such emotions, we thought, probably is shaped by the extent to which society rewards/punishes such expressive displays. It also seemed that for some people, passionate love could be transformed into an obsession with other "ultimate concerns" (Tillich, 1952). Rapson (1978) has observed that in various eras, people have sought meaning in a variety of places. For at least a millennium before 1750, Europeans passionately sought salvation in God. In the nineteenth century, partly as a result of the Scientific and Industrial Revolutions, the passion of many turned to business and money. In much of our century, marriage and the family have lain at the heart of the pursuit of meaning. When we review diaries from these eras, the emotions that people express for God, money, or family, sound much like passionate love . . . only the object of the love is transformed.

It was surprising to us, then, to discover in discussions that almost all of our colleagues thought of passionate love quite differently. They saw the passionate experience as very limited—an emotion which first appeared at puberty (possibly fueled by the emerging sex hormones). They thought passionate love was a phenomenon limited to a few cultures (primarily Western), and to certain eras (primarily our own). We disagreed.

Thus, in 1983, we began a number of interlocking research projects, with a single goal—to give us some idea of how universal passionate love is. That information will allow us to settle a number of thorny theoretical issues as to the nature of love. In the next section, we will report on a series of studies. These studies ask: *Study #1*: Do even the youngest of children experience passionate love? Is such love most powerful at adolescence? Is it fueled by hormonal changes? *Study #2*: Are men and women equally capable of passionate love? Are members of all ethnic groups capable of falling in love . . . or must the culture teach you to love? *Study #3*: Has passionate love existed throughout history?

We predicted that we would find evidence of passionate love at all ages, in both genders, in all ethnic groups, and throughout history. An interesting question, of course, is the extent to which social factors shape the frequency and intensity with which members of these groups experience passion.

Study #1: How Early Does Passionate Love Begin?

How early are children capable of falling passionately in love? Theorists disagree. Emotions researchers have long assumed that passionate feelings are "wired in"; they appear in early childhood. As we saw earlier, Rosenblum has pointed out that even non-human primates seem to experience something very much like passionate love. Ainsworth et al. (1978) and Bowlby (1973) describe a comparable scenario of attachment, separation, and loss in children. Watson

(1919) studied the emotional reactions of newborn infants. He reported three basic patterns in infants that he called x, y, and z, which he believed resembled reactions called fear, rage, and love in adults.

In 1886, Bell (1902) interviewed teachers attending normal school in Indiana and observed 800 children. He assembled over 2500 cases of childhood passion. Bell concluded that sex-love appeared in children as early as 3 ½ years of age. He observed:

The presence of the emotion in children between three and eight years of age is shown by such action as the following: hugging, kissing, lifting each other, scuffling, sitting close to each other; confessions to each other and to others, talking about each other when apart; seeking each other and excluding others, grief at being separated, giving of gifts, extending courtesies to each other that are withheld from others, making sacrifices such as giving up desired things or foregoing pleasures; jealousies, etc. (p. 330).

Children were most likely to admit to being in love either between 4-8 or 12-15 years of age. Between 8 and 12, children were extremely shy and were reluctant to admit to feeling sex-love. Since 1902, however, there has been virtually no research on the development of passionate love.

We, too, have interviewed many men and women who could recall falling passionately in love early in life—sometimes as early as three or four years of age (see Hatfield et al., 1987).

The foregoing has led emotions researchers to assume that passionate love begins in early childhood, even though there is only sparse evidence to support that contention (see Lazarus, Kanner, & Folkman, 1980 or Panksepp, 1986).

Disconcertingly, however, social psychologists and sex researchers have come to quite a different conclusion. Most assume that passionate love/desire first appears at puberty! Ofrit (1977) argues: "We do not fall in love until we suspect we are ready to leave our parents." Some neuroanatomists and neurophysiologists assume that passionate love is fueled by adolescent hormonal changes and thus necessarily appears after puberty (see Gadpaille, 1975; Kaplan, 1979; Liebowitz, 1983; or Money, 1980). Farber (1980), in his review of research on the subject, discounts early love attachments as mere "crushes" and places the onset of romantic passion during early adolescence.

Unfortunately, there is little research available to settle this dispute as to when passionate love begins. The subject of childhood love appears in neither the table of contents nor the index of over 50 of the current textbooks in child and developmental psychology. A search of Psychological Abstracts has proven equally fruitless. Spock (1968) and Gesell (1946) do not give advice to parents about the passionate attachments of young children. Freudians do discuss childhood passion, but only as Oedipal attachments to be outgrown (see Freud, 1953; Schafer, 1977; or Tyson, 1980). Recently, some authors have begun to explore the impact of childhood experiences on adult passion (see Hindy & Schwartz, 1984; Shaver, Hazen, & Bradshaw, 1984; and Shaver & Rubenstein, 1980).

However, no one has addressed the phenomenon of "puppy love" directly. Study #1 will attempt to remedy that omission. The process of studying the development of love is necessarily a long and difficult one. This study is, of course, only a beginning . . . but a necessary one.

Method

Subjects. Subjects were 114 boys and 122 girls, ranging in age from four to 18, who were systematically selected from 24 grade, intermediate, and high schools in Honolulu, Hawaii. Four children were black, 83 were Caucasian, 21 were Chinese, three were Filipino, seven were Hawaiian, 47 were Japanese, six were Korean, one was South Asian, and 64 were of mixed ancestry. Such a distribution is typical of Hawaii's multi-ethnic setting.

Procedure and measures. Our first step was to contact parents, explain the study to them, and secure consent to interview their children. Eventually, more than 96% of them agreed. The experimenter interviewed children individually, in private rooms at the children's schools.

The JLS is a child's version of the PLS (which, of course, measures passionate love in adults). The JLS, like the PLS, comes in a short form (15 items) and a long form (30 items). Greenwell (1983) provides statistical evidence that the JLS/PLS are unidimensional, reliable, and produce comparable results when taken by children or adults. She also provides evidence that both scales reflect a real-world experience called "being in love."

She argues that the JLS/PLS do measure a single entity—passionate love. (A principal-components factor analysis revealed that one major factor accounts for most of the variance. In various samples, the first factor accounted for between 38% to 53% of the variance [see Greenwell, 1983 for Tables of Eigenvalues].) The scales are internally consistent and reliable. (In various samples, coefficient alphas were found to range from .94 to .98). Children and adolescents receive virtually identical scores on both scales. (This is not surprising since the scales are designed to be identical, differing only in the difficulty of their language. In various populations, the JLS and PLS were found to correlate .88 for children and .87 for adults.)

Greenwell also provides information on item-by-item correspondences. She found items highly intercorrelated. She also correlated each item with its own scale total, the other scale total, and the combined total of all 60 items (i.e., she used the long version of both the JLS and the PLS). All items correlated highly with all totals, with 67 items in the .25 to .50 range, 221 in the .51 to .75 range, and 59 in the .76 to 1.00 range. It is clear from these analyses that the JLS and the PLS are virtually equivalent measures of passionate love.

Finally, Greenwell provides evidence that both scales reflect the real-world experience of "being in love." For example, she asked children and adolescents to describe their feelings for a person whom they currently love, had loved in the

past, or (if they had never been in love), who was as close as they had come in being in love. She found that people who had experienced passion did score higher on both the JLS and the PLS than did those who had never been in love. (For more information on the JLS see Hatfield et al., 1987).

The first step in administering the JLS was to make sure the children understood the concepts of "boyfriend" and "girlfriend," the 15 JLS test items, and how to use the 9-point response scale (for detailed information on these procedures, see Hatfield et al., 1987). Once the experimenter was assured that they did, he then proceeded to administer the JLS. Children indicated their responses on a 9-point scale, which ranged from (1) "Agree very little" to (9) "Agree very much."

Responses on the 15-item scale were summed to form a Total index of passionate love. (Scores ranged from 18 to 135, with a mean of 95.75 and a S.D. of 24.61. This is virtually identical to scores secured in studies of mainland adults [see Easton, 1985, or Hatfield & Sprecher, 1986].)

Not surprisingly, researchers have developed a variety of scales to measure physical maturity (see Brooks-Gunn & Petersen, 1984). We assessed physical maturity *via* Greenwell's (1983) measure. We asked experimenters to rate the physical maturity of children on the following scale: (1) "The subject is physically mature. (Female has menstruated; has breasts. Male has ejaculated; has beard.)" [94 subjects fell in this category.] (2) "I cannot determine if the subject is physically mature or not." [18 subjects fell in this category.] (3) "The subject is not physically mature. (Female has not menstruated; does not have breasts. Male has not ejaculated; does not have beard.)" [123 subjects fell in this category.]

Results

Gender. We explored the impact of gender and age on the experience of passionate love. The question as to whether or not there are gender differences in the readiness to love, has long intrigued scientists. A number of studies suggest that almost everyone is capable of loving passionately. Adult men and women, of widely varying ages (Traupmann & Hatfield, 1981), of varying intellectual capacities, mentally ill or healthy, seem capable of falling in love. (See Peplau, 1983; Hatfield, 1982; and Hatfield & Rapson, 1985, for a review of this research.)

Although everyone can fall in love, men and women may not do so with equal frequency or intensity. Society encourages men and women to have somewhat different attitudes toward love, sex, and the desire for intimacy. Women are socialized to be more loving, expressive, and to sacrifice more in order to maintain their love relationships than are men. Men are encouraged to be more logical, in control, and to put the bulk of their energies into work. They are allowed to be more sexually expressive. There is some evidence that men and women do react

as they are "supposed to." When gender differences are found to exist, it is generally women who seem to love more passionately (see DeLamater, 1982; Peplau, 1983).

What about gender differences in children? Apparently gender differences in passionate love begin early. In Table 1 and Figure 2 we see that, from six years of age on, girls generally secure higher JLS scores than do boys. The correlation between gender and JLS score is significant though low, however (see Table 2).

Table 1. The Impact of Gender and Age on JLS Scores

Gender	Age	(N)	M	(S.D.)
Male	4	6	121.00	(13.61)
	5	6	107.33	(31.84)
	6	9	97.44	(27.02)
	7	9	86.78	(18.51)
	8	8	90.88	(16.31)
	9	7	82.43	(19.90)
	10	8	85.50	(38.47)
	11	8	71.75	(31.99)
	12	3	33.00	(14.93)
	13	7	94.00	(10.86)
	14	9	97.56	(21.44)
	15	8	92.00	(17.57)
	16	8	74.50	(20.05)
	17	12	101.33	(23.31)
	18	6	111.17	(14.50)
		114	91.58	(26.75)
Female	4	8	109.50	(22.44)
	5	10	93.70	(25.12)
	6	7	114.14	(11.19)
	7	7	114.00	(15.36)
	8	7	79.29	(23.58)
	9	8	86.75	(24.45)
	10	7	101.14	(20.42)
	11	8	104.38	(7.84)
	12	12	94.92	(22.41)
	13	8	105.13	(21.05)
	14	10	94.30	(27.21)
	15	8	99.38	(10.25)
	16	8	92.13	(19.71)
	17	3	121.33	(13.05)
	18	11	103.27	(23.50)
		122	99.65	(21.84)

Main Effect Gender: $F = 10.73$ $p = .001$ 1/235 d.f.
 Main Effect Age: $F = 3.08$ $p = .001$ 14/235 d.f.
 Interaction: $F = 2.67$ $p = .001$ 14/235 d.f.

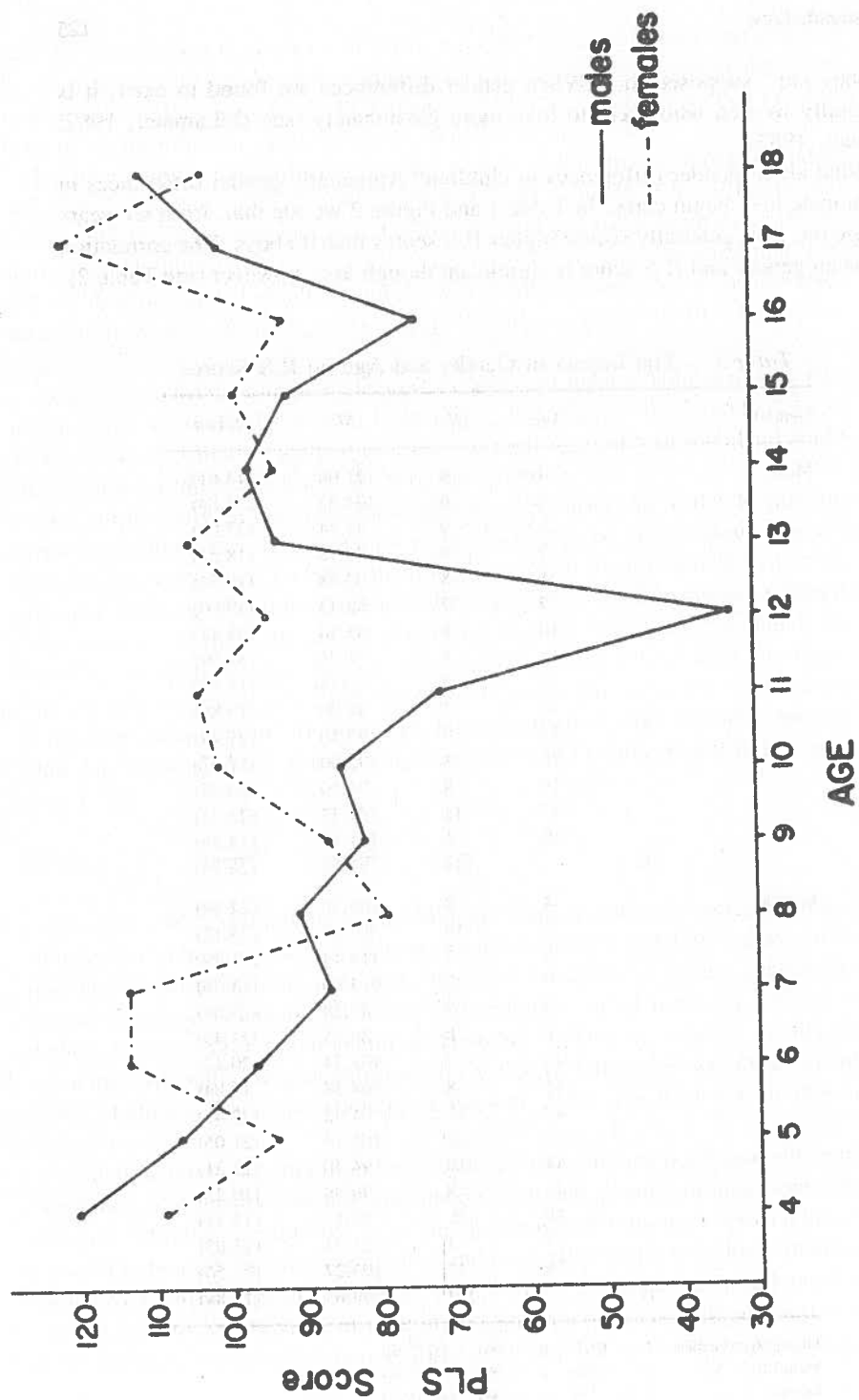


Figure 2. The Relationship Between Sex, Age, and Passionate Love.

Table 2. The Relationship Between Gender, Age, Physical Maturity and Passionate Love (as Measured by the JLS)

Variable	(N)	JLS Total	p =
Gender	236	.16	.01
Age	236	-.05	.47, n.s.
Physical Maturity	235	-.03	.62, n.s.

Age. The question with which we are primarily concerned, of course, is whether or not there are age differences in the ability to love. We proposed that even very young children should be capable of loving passionately. Traditional theorists, on the other hand, have argued that people are not capable of such love until puberty. It is difficult to decide just how to measure puberty. Theorists, from different disciplines, define "puberty" in very different ways (see Brooks-Gunn & Petersen, 1984). Nonetheless, if puberty is a critical variable, we should find that at the age of puberty—defined as endocrinologists define it (i.e., seven or eight years of age), as physical anthropologists define it (i.e., nine in girls and 10–11 in boys) or as social psychologists define it (i.e., 12–13 in girls and 13–14 in boys)—children's JLS scores should increase. If they are correct, children's JLS scores should be extremely low until the hormonal changes of puberty begin. The the JLS scores should begin a steady (or dramatic) ascent.

The interviews we conducted with children convinced us that at least some very young children love with great passion. Two of the experimenters who conducted this research started out as skeptics. By the time we finished interviewing, all of us had been convinced that children do experience passionate love. It is very touching to interview children in love. They are often very shy. They blush and hide behind their hands. One five-year-old girl talked about a boy she loved at the pre-school she had once attended. When asked the question: "If I could, when I grow up I'd like to marry _____" —she began to cry. "I will never see Todd again," she said. She may well not, since her parents have no idea of the depth of her feelings. Anecdotes are not data, however.

We tried to test, more formally, just when passionate love appears (early in childhood vs. at the onset of puberty) in two ways:

(1) First, we examined the effect of age on the JLS scores. Tables 1 and 2 and Figure 2 make it clear that there is no evidence to support the contention that passionate love is fueled by the hormonal changes of puberty. Age effects are significant, but they are not in the form of an S-curve. It is the youngest children and the oldest children who secure the highest scores. Twelve-year-old boys secure the lowest scores. (The interaction of gender and age is significant.)

(2) A second way to determine what contribution age and physical maturity make on passionate love is to examine the correlation between these three vari-

ables. In Table 2 we see that neither age nor physical maturity have a significant effect on passionate love! The correlation between JLS score and Age is $-.05$ and between JLS and Maturity score is $-.03$.

Summary

The Juvenile Love Scale was administered to children/adults from 4–18 years of age. Even the youngest of children reported having experienced passionate love. In fact, children and adults received surprisingly similar JLS scores. There was no relationship between physical maturity and the ability to love. This strengthens our belief that the predisposition to love passionately may be "prewired" into primates. When we attempt to articulate the neurochemistry of passionate love, we should take this fact into account. Passion can certainly be supplemented by the sex hormones that arise at puberty, but it is obviously not dependent upon them.

Study #2: The Effect of Gender and Ethnic Group on Passionate Love

Our second study was designed to determine to what extent gender and ethnic group shaped passionate love. According to the folklore, women are obsessed with love; men with work. For example, Firestone (1970) argued, "Men can't love." She comments: "That women live for love and men live for work is a truism . . . Men were thinking, writing, and creating, because women were pouring their energies into those men; women . . . are preoccupied with love" (pp. 126–127).

Many sociologists agree (see Dinnerstein, 1977; Langhorn & Secord, 1955; or Parsons & Bales, 1955).

Recent research, however, suggests that researchers should reexamine the question of whether *marked* differences in men's and women's readiness to love in fact exist. There are hints in recent review articles (see Hatfield, 1982; Peplau, 1983; and Hatfield & Rapson, 1985) that differences are marginal. (These studies were handicapped by the lack of a measure to assess passionate love, however.) Some studies found *weak* gender differences in the frequency and intensity of passionate love. Most studies secured no differences. (Now, researchers possess both the JLS and the PLS.) The results from our studies seem in accord with earlier research. In Study #1 we found weak differences in boys' and girls' passion. What about in adults? Study #2 was designed to find out.

There is equal debate as to whether or not various ethnic groups differ in the emotions they feel/express in close relationships. Most theorists assume that all humans feel the same basic emotions. (From Darwin [1872] on, scientists have assumed that there is a continuum of expression from lower animals to human-kind [Andrews, 1962; Chevalier-Skolnikoff, 1973; and Scherer, 1979].) For example, Rosenblatt, Walsh, and Jackson (1976) observe: "At least in dim outline,

the emotional responses of people in almost any culture resemble those of people in almost any other." Studies of preliterate and literate cultures suggest that people probably do feel the same basic emotions and express them, at least facially, in much the same way (Easton, 1985; Ekman, 1982; Izard, 1972; Rapson, 1980; or Yamamoto et al., 1969).

Other theorists insist there are marked ethnic group differences in what people feel and express. They contend that different ethnic groups possess genetic, structural, or hormonal differences that influence the intensity of their emotional experiences. Others argue that diverse cultural values powerfully shape people's willingness to experience or display strong emotions (Pilkonis & Zimbardo, 1979). Anthropologist Ralph Linton (1936) made this rather harsh observation:

All societies recognize that there are occasional violent emotional attachments between persons of the opposite sex, but our present American culture is practically the only one which has attempted to capitalize on these and make them the basis for marriage. The hero of the modern American movie is always a romantic lover, just as the hero of an old Arab epic is always an epileptic. A cynic may suspect that in any ordinary population the percentage of individuals with capacity for romantic love of the Hollywood type was about as large as that of persons able to throw genuine epileptic fits (p. 175).

Some theorists have speculated that Filipinos feel comfortable with unusually intense emotional expression or that the Japanese feel more muted expressions of emotions are appropriate (see Pilkonis & Zimbardo, 1979; or Simmons & Shimizu, 1985). In Study #2 we set out to find out how much of a contribution gender and ethnic group make in shaping men and women's passionate love experiences.

Method

Subjects. Ethnic researchers who use scales standardized on a U.S. population face the dilemma of whether to translate the scale and take it abroad to native-language-speaking cultural groups, thereby losing linguistic comparability, or keep the original language and seek an English-speaking multi-cultural population on which to test the scales and lose the distinctness of geographically separate groups. For this study, we decided to use the untranslated scales in the English-speaking multi-cultural society which Hawaii provides (see Easton, 1985, for the pros and cons of this decision). Subjects were 71 men and 130 women from the University of Hawaii and Hawaii Loa College. Subjects came from 10 different ethnic groups; we selected three major groups for analysis—the Caucasians ($N = 49$), Filipinos ($N = 64$), and the Japanese ($N = 56$). We also assessed how acculturated to American society individuals were. Subjects were asked whether they, their parents, or their grandparents had been born in the United States. On the basis of this information, an acculturation score was computed for each subject. If subjects were born in the United States, they were

given three points. Each U.S.-born parent contributed two points; each U.S.-born grandparent one point. Subjects could receive scores ranging from 0–11 on this measure of acculturation to American culture. The three ethnic groups differed significantly on this acculturation score. Caucasians and Japanese achieved acculturation means of 8.96 and 7.43, respectively. Filipinos, Hawaii's newest immigrant group, had a mean score of only 1.88.

Procedure. The 30-item Passionate Love scale was administered in small groups of 8–10 students. Subjects were given either academic credit or paid for their participation.

Results

Gender differences. Men and women did not differ in their PLS scores. (This finding is consistent with results from many other studies [see Hatfield & Rapson, 1985, for a summary of this research].) Generally, males and females are found to love with equal passion. On rare occasions, gender differences are secured. In these cases, it is generally the women who secure the highest PLS scores.

Ethnic differences. To our surprise, we secured no ethnic differences on the PLS (see Table 3). Caucasians ($M = 6.91$), Japanese ($M = 6.84$), and Filipinos ($M = 6.94$) all secured similar scores on the PLS.

Table 3. The Relationship Between Ethnic Group and PLS Score (Long Version)

<i>Ethnic Group</i>	<i>(N)</i>	<i>PLS Score</i>	<i>S.D.</i>
<i>Caucasian</i>			
Male	(15)	6.70	1.3
Female	(34)	7.00	1.3
Total	(49)	6.91	1.3
<i>Filipino</i>			
Male	(24)	7.07	0.9
Female	(38)	6.86	1.2
Total	(62)	6.94	1.1
<i>Japanese</i>			
Male	(16)	6.60	1.4
Female	(40)	6.93	1.0
Total	(56)	6.84	1.1

Analysis of Variance

Main Effect Gender.	F = .26 n.s.
Main Effect Ethnic Group.	F = .15 n.s.
Interaction.	F = .95 n.s.

Table 4. The Correlation of Acculturation Scores with the PLS Score for Caucasians, Filipinos, and Japanese

<i>Ethnic Group</i>	<i>(N)</i>	<i>PLS Score</i>
Caucasians	(49)	.07*
Filipinos	(62)	.21
Japanese	(56)	-.07
Total	(201)	.06

*All correlations are non-significant.

When we checked to see if degree of acculturation or Americanization made a difference on how passionately one loved, we found that it did not. Members of the various ethnic groups loved with equal intensity regardless of whether they were newly arrived in America or their families had been here for generations. The correlations between acculturation and PLS score is low (see Table 4).

The fact that members of both ethnic groups and all the ethnic groups we contacted is both encouraging and discouraging. On the one hand, it gives us confidence that passionate love is far more universal an experience than we had expected. We had expected to find some differences in Filipinos and Japanese experiences, as reflected in the PLS. On the other hand, we were disappointed. We thought the differences we would secure would give us some hints as to the importance culture has in shaping passion. Possibly we would have found larger differences had we translated the scales and taken them to the Philippines and to Japan (our next project). Of course this procedure has problems of its own. Or, perhaps we would have found larger differences had we not looked at emotional experience but at emotional expression.

In our next study, we decided to go even further in our exploring, however, and attempt to examine aspects of passionate love in the past and, more generally, the changing ways in which people have bonded emotionally in various historical epochs.

Study #3: Love in Various Historical Eras

It is hard to imagine research more valuable to students of emotions than would be investigations into the private side of life in the past. Historians have shied away from this huge territory and have concentrated on the public arena instead because of the problem of documentation. How does one find out about the inner life of pre-twentieth-century ordinary people when most of these people not only left little in writing but could not in fact even write? The history of the inarticulate, extraordinarily important as it is, has presented enormous evidential difficulties.

Historians have, in consequence, generally focused on the story of power: of kings and presidents, of constitutions and laws, of famous people and wars.

Changes have been afoot, however, in the last 25 years as new interests and methodologies have given birth to the "new social history"—history, that is, "from the bottom up."

Much of the new history analyzes such areas as marriage, the family, sex, and love as well as the general experiences of women and children. Some of it, aided by computers, and using census data to tell us about family sizes, ages at which people married, number of children in the family, divorce, mortality rates, and the like, have yielded insights upon which we will briefly report. Other work, such as our own, has concentrated on the context in which these private activities have taken place, using some of the more familiar techniques of intellectual and cultural history.

It is evident, for example, in our work, that passionate love, sex, and companionate love are not inventions of the twentieth century. Famous love tales, whether of Odysseus and Penelope, Dante and his Beatrice, Romeo and Juliet, or Tristan and Isolde remind us of the long history of passion. Yet, many of these love affairs, fictional or otherwise, seen in the context of their times, were frequently regarded as neurotic and taboo. In the Western world, for the 1,500 years since the birth of Christ, it is necessary to see issues connected with love in a Christian context. For Europeans with a life expectancy of 30 years, believing without question in God's existence, certain that life on earth was followed by an afterlife in which, for eternity, one would live either in felicity in the Heavenly City or else one would suffer agony forever, tortured in the most terrifying ways in Hell—for these Europeans temporal love (especially if regarded as sinful by the Church) could be a problematic pleasure! Earthly, let alone fleshly, joys were costly. Expressions of passionate love frequently had to be funneled into acceptable and safe forms, such as in the Cult of the Virgin in the Middle Ages.

Most cultures since the beginning of time have explained the workings of the world in supernatural ways. The most profound challenge to theistic thinking in history came to a head in the second half of the seventeenth century with the so-called Scientific Revolution. By the nineteenth century in the West, speeded by the technological advances made possible by scientific thinking, more people came to expect gratification in their lives on this earth, not in the beatific life after death. Religion was not dead, but the earthly pursuit of gain and pleasure was made to seem compatible with religion. Family structures underwent powerful changes. By the second quarter of the nineteenth century, particularly in the middle classes, such innovations as marriage for love, the child-centered family, and the doctrine of the two spheres (defining the specialized roles of husbands and wives) were becoming commonplace. The "protestant ethic" justified the pursuit of money (based on hard work and virtue) as a moral activity. Passionate love in the context of marriage was regarded as a high duty by the time of the Victorian era; sex outside marriage was not. Obviously inner lives were taking on different shapes in the nineteenth century from previous pre-Industrial Revolution eras.

By the twentieth century, with the further erosion of Christian faith, fulfillment in the affectionate marriage and family has increasingly, in itself, come to define the good life. Marriage for love is less frequently seen as an adjunct to religious life; it has, for many in the middle classes, come to be religion itself. Since the end of World War II, however, faith in marriage has been undermined as individuals pursue personal fulfillment. Families have traditionally been hierarchical, have placed loyalty to the group higher than individual gratification, and have not required membership to be earned. In these respects the family resembles traditional institutions like religion, nationalism, and ethnic affiliation. But the great modern movements have been based on equality, individualism, and meritocracy. Democracy is one of those modern movements; so are capitalism and the women's movement, and in the face of these latter movements faith in marriage and the family has weakened. Divorces, individualism, and the desire for more immediate gratification have led increasing numbers of people, rightly or wrongly, to equate marriage with the shackling of personal growth. Self-gratification and the desire for personal freedom form a larger part of the new context within which we must try to understand passionate love and intimacy.

Major historians, such as Lawrence Stone (1979), Peter Gay (1984), and Carl Degler (1980), have turned their attention to these same topics in detailed, richly textured studies. Stone (1979), for example, in *Family, Sex and Marriage in England, 1500-1800* uses demographic data plus impressionistic material to describe some of the ways in which changes in family structure have shaped the affectional life of ordinary people. Referring to high mortality rates before 1500, he notes:

... few marriages outlasted the childbearing period. On the average, they endured for only about twenty years at most, because of the early death of husband or wife. This meant that grandparents were relatively few in number, either as a support to help in child care or as a burden in their old age. The omnipresence of death coloured affective relations at all levels of society, by reducing the amount of emotional capital available for prudent investment in any single individual, especially in such ephemeral creatures as infants. One result was the neglect of infants by their parents, which in turn reduced the former's prospects of survival. This was a situation which encouraged the concept of the family as a group of replaceable surrogates, both spouses and more particularly children (pp. 407-408).

It was a situation which hardly encouraged much intimacy.

There was no sense of domestic privacy, and inter-personal relations within the conjugal unit, both between husbands and wives and between parents and children, were necessarily fairly remote, partly because of the ever-present probability of imminent death, partly because of cultural patterns which dictated the arranged marriage, the subordination of women, the neglect and early fostering out of children and the custom of harsh parental discipline (pp. 408-409).

The object of childrearing was little more than to suppress the supposedly

sinful will of the child by the use of brute force in the early years. Stone speculates that these practices tended to create special psychological characteristics in adults: "Suspicion towards others, proneness to violence, and an incapacity to develop strong emotional ties to any one individual" (p. 409).

The bulk of historical studies look to the sixteenth and seventeenth centuries in Europe and America as the seedbed of changes leading to the rise of affective individualism. The changes seemed to come slowly and primarily among but two classes of society—the bourgeoisie and the landed gentry. Further, they were limited to a small geographical portion of the planet, and the change was neither linear nor inevitable. Only technology, among all history's forces, has moved in a consistently linear, unchanging direction over the past five centuries.

Though occurring slowly, in stops and starts, in a small geographical area, and limited to a small slice of the social stratum, historians nevertheless tend to agree that by the eighteenth century, a new family type playing a new role and experiencing "new internal relationships" was emerging (Stone, 1979, p. 413). This family type served fewer practical functions, but it carried "a much greater load of emotional and sexual commitment" (p. 413). This family type was

... more conjugal and less kin and community oriented; more bound by ties of affection or habit, and less by ties of economic or political partnership; more morally and religiously sanctified and less utilitarian; more internally liberal and less patriarchal and authoritarian; less responsible for the helpless who were now looked after by public authorities, but more concerned for their well-being; more sexually liberated, preferably within marriage, and less sexually repressed; more concerned with children and their needs and less adult-oriented; more private and less public; and finally, more desirous and capable of controlling procreation, and less willing to leave such matters to the will of God" (pp. 413-414).

Many of these trends were slowed or even reversed in the nineteenth century, reminding us that however universal might be the feelings of passionate love and of intimacy, the cultural and historical context plays a mighty role in determining how these emotions ultimately will take shape and be expressed in real life. Historians are working vigorously and productively to fill in these contexts and to describe, among other things, the odd and changing history of passionate love. This emotion is being studied also by anthropologists, neurologists, primatologists, psychologists, and a host of others in what looks to be an exciting and productive multi-disciplinary enterprise.

SUMMARY

In this chapter, we began with a definition of "passionate love" and a review of what ethologists, neuroanatomists and neurophysiologists, and social psychologists have learned about the nature of this intense emotion in the past decade. In the remainder of the chapter, we described the research we are now conducting on the antecedents of passion. These early studies tend to suggest, from a variety

of perspectives, that passionate love is a "universal" phenomenon. It appears across cultures, ages, and genders. But they equally point to the power of cultural, demographic, economic, social, and historical factors in the shaping the manifold ways in which that emotion is expressed, repressed, and suppressed.

In Study #1, we found that even children as young as four years of age experience passionate love. In fact, children and adults receive surprisingly similar passionate love scores. This strengthens our conviction that the predisposition to love is probably "prewired" into primates.

In Study #2, we found that, although according to the folklore, women are obsessed by love and men with work, gender differences are, in fact, less than one might suppose. Study #1 did find small differences in the intensity of boys' versus girls' feelings of passionate love. In Study #2, however, we found no differences in men's versus women's feelings.

Members of all the ethnic groups we sampled—Caucasians, Filipinos, and Japanese—seemed to love with equal frequency, intensity, and passion.

Study #3 makes it clear that passionate love, sex, and intimacy are not inventions of the twentieth century. yet, it is also clear that historical changes in ideology and family structure can and have shaped the affectional life of ordinary people.

In sum: Critics such as Senator Proxmire used to worry that if scientists prodded and poked into the fragile mysteries of love they would destroy them. It is clear that the voluminous research of the past decade has just added to scientists' fascination with the topic. As Daniel Perlman (personal communication) has observed: Passionate love may be "a biologically based process that can occur from childhood onward. We are not, however, all constantly in love. Thus, a key question would appear to be: what triggers the arousal system?" Our next step must be to explore more fully the factors which release love versus those which cause it to wither away and die.

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