
Guest Essay

Passionate Love/Sexual Desire: Can the Same Paradigm Explain Both?

Elaine Hatfield Ph.D.,¹ and Richard L. Rapson Ph.D.¹

Two decades ago, experimental social psychologists became interested in the emotion of passionate love, "the desire for union with another." Recently, sex researchers have begun to focus on sexual desire, "the desire for sexual union with another," or the loss thereof. In this paper we review what experimental social psychologists have learned about the nature of passionate love in the last two decades and contrast their view of passion with that of sex researchers, especially with regard to the role that anxiety plays in the intensification/dimunition of passion. Finally, we suggest that researchers might profitably use the same paradigm to study these heretofore separate phenomena.

KEY WORDS: passionate love; lovesickness; sexual desire; anxiety.

In 1985, the International Academy of Sex Research (IASR) sponsored a series of invited lectures and symposia on passionate love and sexual desire. Conference participants tended to use the two terms almost interchangeably. This is not surprising. "Passionate love" was defined as "the longing for union," "sexual desire" as "the longing for *sexual* union." Yet, historically, researchers into these two topics have come from somewhat different disciplines. Research on passionate love is generally conducted by primatologists interested in attachment behaviors, experimental social psychologists interested in close relationships, and by neuroanatomists and neurophysiologists interested in emotion. Research on sexual desire has generally been the focus of psychiatrists, sex researchers, and sex therapists. Yet, the IASR meetings made it clear that, in spite of the fact that two dif-

¹University of Hawaii at Manoa, Honolulu, Hawaii.

ferent groups have studied passion, there is considerable agreement as to the nature of passionate love/sexual desire. In only one area did there seem to be striking disagreement—that was in the role of anxiety in facilitating/dampening passion. Passionate love researchers assumed that passion could be fueled by a murky blend of emotions, positive and negative. Researchers into disorders of sexual desire assumed that desire is fueled by positive emotions, dampened by negative ones. As a consequence of this difference in emphasis, therapists using one or the other perspective also came to quite different conclusions as to how couples should behave if they desire to maintain passion in their relationships.

In this paper, we review what is known about passionate love. We then highlight the differences that exist between researchers studying passionate love and those interested in sexual desire, with particular reference to anxiety. Finally, we suggest the implications of these differences for future research.

We begin by reviewing what experimental social psychologists and their colleagues have learned about passionate love in the last two decades.

PASSIONATE LOVE

Hatfield and Walster (1978) defined 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). Other names for this emotion are “mania” (Lee, 1977), “limerence” (Tennov, 1979), “puppy love,” “a crush,” “lovesickness” (Money, 1980), “obsessive love,” “infatuation,” or “being in love.”

The Passionate Love Scale (PLS), which appears in the Appendix, is used to measure this emotion. The PLS taps cognitive, emotional, and behavioral indicants of “longing for union.” (Hatfield and Sprecher, 1986; Greenwell, 1983; Easton, 1985; Sullivan and Landis, 1984; Sullivan, 1985, provide information on the reliability and validity of the PLS.)

What is the relationship between passionate love and desire? Social psychologists, such as those we have cited, assume that the two are tightly linked. Passionate love is the longing for union; sexual desire is the longing for sexual union. Many social psychologists, along with most other participants at the IASR conference, write as if the two terms are virtually interchangeable. If one examines the PLS, it is evident that many of its items measure the longing for sexual union. (See, for example, Items 3, 11, 13, 17, 24, or 27.) Not surprisingly, then, researchers find that passionate love and

sexual desire are closely linked. For example, Sprecher (1985) studied 779 young men and women involved in intimate love relationships. She found that men and women's "passionate love" for their partner correlated 0.49 with the amount of "sexual excitement" felt for him or her.

Some primatologists argue that passionate love is a very primitive phenomenon. Rosenblum and Plimpton (1981; Rosenblum, 1985) pointed out that even nonhuman primates seem to experience something very much like "passionate love." In infancy, nonhuman primates (such as Pigtail Macaques) must be very careful to cling to their mothers. Separation can be deadly. If mother and child are separated, the infant is unlikely to find another caretaker. Thus, he argued, the "desire for union" is necessarily wired into all primates.

As long as mother and child are in close proximity, all goes well. When a brief separation occurs, the primate quickly becomes desperate. He howls and rushes frantically about, searching for her. When she returns, the infant is joyous. He clings to his mother or jumps around in excitement. If she does not return, and his frantic efforts to find her fail, eventually he abandons all hope of contact, falls prey to despair, and probably dies. The experience Rosenblum described certainly sounds much like passionate love's "desire for union"—and its accompanying lows and highs. This, we thought, was the groundwork for passionate attachments.

Ainsworth *et al.* (1978) and Bowlby (1973) described a comparable experience of attachment, separation, and loss in children. Here for example, is Bowlby's description of the way the desire for security and the desire for freedom alternate in a small child:

James Anderson describes watching two-year-olds whilst their mothers sit quietly on a seat in a London park. Slipping free from the mother, a two-year-old would typically move away from her in short bursts punctuated by halts. Then, after a more prolonged halt, he would return to her—usually in faster and longer bursts. Once returned, however, he would proceed again on another foray, only to return once more. It was as though he were tied to his mother by some invisible elastic that stretches so far and then brings him back to base. (pp. 44-45)

When a child's mother is around, he is generally not overly interested in her. He glances at her, sees that everything is all right, and sallies forth. Now and then he sneaks a quick glance to make sure she is still there, or to check whether she still approves of what he's doing, but then he is off again. Should his mother disappear for a moment, it is a different story. The child becomes distressed and agitated. He devotes all his energy to searching for her. New adventures lose all allure. Of course, once she returns, off he goes again. Should she disappear permanently, agitation eventually evolves into despair. Children's reactions in these situations often sounded like the ecstasy/misery we label as passionate love—the longing for union with

another. It appears that the potential for passionate love may well be "wired-in" to the species.

What have researchers discovered about the factors that stimulate/dampen this emotion?

THE NATURE OF PASSIONATE LOVE

Scientists have long been aware that both mind and body shape emotional experience. **Mind:** People's assumptions about 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. Thus, cognitive factors influence how men and women label their feelings. **Body:** People can experience an emotion only if they experience the neurochemical and autonomic nervous system reactions appropriate to a given emotion. Thus, both mind and body make indispensable contributions to emotion. Cognitive factors determine how one perceives, interprets, and encodes emotional experiences. Physiological factors determine what emotion they feel and how intensely they feel it (see Hatfield and Walster, 1978).

For centuries, artists and intellectuals have disagreed bitterly over the nature of love. Is it an intensely pleasurable experience, a painful one or both? Early researchers took the position that passionate love was a thoroughly positive experience. 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) once argued that passionate love could be explained easily 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 Berscheid and Hatfield, 1969, for a review of this research.)

By the mid-1960s, however, social psychologists had begun to develop a far 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 tells 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 downhill skiers experience. Their hearts begin to pound as they wait to catch the ski lift. When they realize they have made it, they are elated. On the easy ride to the top, they are 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 cannot turn back. They struggle to get their feelings under control. They jump off the lift, elated and panicky; it is hard to tell 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, calm tranquility, vulnerability, anxiety, panic, despair. The risks of love merely add fuel to the fire.

Sometimes men and women become entangled in love affairs where the delight is brief, and pain, uncertainty, jealousy, misery, anxiety, and despair are abundant. For example, film critic David Ansen (1985), in his review of Andrzej Wajda's "Eine Liebe in Deutschland" (A Love in Germany) described an affair supercharged by ecstasy/terror:

This hothouse love story is set in Nazi Germany. Hanna Schygulla plays a middle-aged German, who falls in love tempestuously... and illegally, with a Polish prisoner of war many years younger than she. Schygulla's character, Pauline Kropf, runs the town grocery while her husband is away at war. And young Stani, the Pole, helps with chores. *L' amour fou* has rarely been more foolish. Though these lovers know the danger they face, they can't keep their hands off each other and they fail miserably at keeping their secret affair secret. Schygulla plays this love-crazed woman with an almost operatic intensity. She's a woman literally transported by lust and this makes her dangerously out of touch with reality. There are people in her town out to destroy her.

Often, 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 that these men and women love others not *in spite of* the pain 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 and Walster, 1978).

Cognitive Factors

Most people seem to take it for granted that passion is a bittersweet affair. Tennov (1979) interviewed more than 500 lovers. Almost all lovers

assumed that passionate love (Which Tennov labeled “limerence”) generally involves misery/ecstasy.

Liebowitz (1983) provided an almost lyrical description of the mixed nature of passion:

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, that most 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 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, scientists have assembled a wide assortment of information—from neuroanatomical and neurophysiological investigations, ablation experiments, pharmacologic explorations, clinical investigations and behavioral research—as to the nature of love. (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 this research.) Here, social psychologists’ equation of passionate love and sexual desire is quite evident. This research documents the contention that passion is likely to be a bittersweet experience.

The Anatomy of Love

According to Kaplan (1979), the anatomy of passionate love/sexual desire is relatively well understood. Her thesis runs as follows: 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 limbus or rim of the brain. In primitive vertebrates, this system controls emotion and motivation, it insures that animals will act 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.)

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 observed: "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).

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 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. Kaplan acknowledged that cognitive factors have a profound impact on sexual desire. Thus, the cortex (that part of the brain that analyzes complex perceptions and stores and retrieves memories) must have extensive neural connections with the sex center.

The Chemistry of 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 love. He argued that passionate love brings on a giddy feeling, comparable to an amphetamine high. It is phenylethylamine (PEA), an amphetamine-related compound, that produces the mood-lifting and energizing effects of romantic love. He stated 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 speculated that there may be a chemical counterac-

tant to lovesickness: Monoamine oxidase inhibitors (MAOIs) may inhibit the breakdown of phenylethylamine, thereby "stabilizing" the lovesick.

Liebowitz also offered some speculation about the chemistry of the emotions that 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 argument is based on the assumption that nondrug and drug highs and lows operate via similar changes in brain chemistry.

Excitement. Liebowitz proposed that naturally occurring brain chemicals, similar to the stimulants (such as amphetamine and cocaine), produce the "rush" lovers feel. Passionate love is almost entirely dependent on these chemical reactions. A variety of other emotions, and other chemical reactions, may contribute to the subtle shadings of passionate love, however. Liebowitz articulated some of the chemical reactions that may be threaded through the passionate experience.

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 (i) withdrawal from the chemicals that produce the highs (ii) chemicals which in and of themselves produce anxiety, pain, or depression. Research has not yet established whether or not Liebowitz's speculations on the chemistry of love are correct.

Kaplan provided 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 observed:

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 it cannot be inhibited by fear and pain. (p. 14)

Kaplan ended 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 that increase/decrease the receptors' sensitivity), *most emotions have more similarities than differences*. Chemically, intense emotions do have much in common. Kaplan reminded us that chemically, love, joy, sexual desire, and excitement, as well as anger, fear, jealousy, and hate, have much in common: All are 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 pleasure and/or pain; by delight in the other's presence or pain at the other's loss. Other 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 delight/despair. Of course, trying to calibrate our emotions remains elusive. Sometimes it is difficult to tell to what extent your lover stands responsible for the delight you feel or whether the highs you are experiencing are caused more by timing, by the fact that you may be primed for romance. The day shimmers gloriously, and you are simply feeling grand. It can be difficult to tell to what extent your lover's coolness causes your misery. To what extent might it be due to the fact that you are lonely,

that you are afraid to go off on your own, that your period is about to begin, or you are simply low? Often it is hard to tell. In any case, an abundance of evidence supports 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 their definition of love, Hatfield and Walster stated: "Reciprocated love (union with the other) is associated with fulfillment and ecstasy" (p. 9). No one has doubted that love is a delightful experience in its own right – it 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, and Rutstein, 1981), sexual fantasizing (Stephan, Berscheid, and Hatfield, 1971), erotic excitement (Istvan and Griffitt, 1978), or general excitement (Zuckerman, 1979)—can intensify passion.

In one investigation, for example, Istvan, Griffitt, and Weider (1982) aroused some men by showing them pictures of men and women engaged in sexual activities. Other men were shown nonarousing, neutral fare. The men were then asked to evaluate the appeal of beautiful and unappealing women. When the woman was pretty, the aroused men rated her as more attractive than they normally would have. 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 women – for good or ill. Similar results have been secured with women. Sexually aroused women find handsome men usually appealing, homely men less appealing, than usual.

Passion and the Negative Emotions

In defining passionate love Hatfield and Walster (1978) also observed: "Unrequited love (separation) is associated with emptiness, anxiety, or despair" (p. 9). 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), or Weiss (1973) described the panic, despair, and eventual detachment that both children and adults feel at the loss of someone they love.

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 study, the researchers invited men and women 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 was studying the effects of electric shock on learning. Sometimes the experimenter quickly went on to reassure the men that they had been assigned to a control group and would receive only a barely perceptible tingle of a shock. At other times, the experimenter tried to terrify the men: he warned them that they would get some 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-ft-long, 5-ft-wide span that tilts, sways, and wobbles over a 230-ft-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 2 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. 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 and Aron, 1974; Hoon, Wincze and Hoon, 1977; Riordon and Tedeschi, 1983), embarrassment (Byrne, Przybyla and Infantino, 1981), the discomfort of seeing others involved in conflict (Dutton, 1979), jealousy (Clanton and Smith, 1977), loneliness (Peplau and Perlman, 1982), anger (Barclay, 1969); anger at parental attempts to break up an affair (Driscoll, Davis, and Lipsetz, 1972), grisly stories of a mob mutilating and killing a missionary while his family watched (White *et al.*, 1981), or even grief — all these can deepen passion.

Passion and Emotionally Neutral Arousal

In fact, 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, and Bryant (1975) or jogging (White, Fishbein, and Rutstein, 1981).

White, Fishbein, and Rutstein (1981) conducted a series of elegant 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 sec). Other men (those in the low arousal group) ran in place for only 15 sec. The men’s mood was *not* affected 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 soon 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 good-looking 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 excitation transfer.)

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. We have reviewed what experimental social psychologists have learned about passionate love. How does that relate to what sex researchers have learned about the nature of sexual desire?

SEXUAL DESIRE

In many respects the history of research on sexual desire parallels that of research on passionate love. In both cases theorists began with a Reinforcement theory paradigm – they started by assuming that passion is a tidy phenomenon – sparked by delight and dampened by fear, anger, anxiety, or distraction.

For example, Kaplan (1979) has written the most extensively on sexual desire. [Like the social psychologists, she assumed that passionate love and sexual desire have much in common: “Love is the best aphrodisiac discovered so far” (p. 61).]

Kaplan accepted the American Psychiatric Association’s (1980) definition of desire (or rather, of “Desire Phase Inhibition”):

302.71 PSYCHOSEXUAL DYSFUNCTION WITH INHIBITED SEXUAL DESIRE

A. Persistent and pervasive inhibition of sexual desire. The basis for the judgment of inhibition is made by the clinician taking into account age, sex, occupation, the individual’s subjective statement as to intensity and frequency of sexual desire, a knowledge of norms of sexual behavior, and the context of the individual’s life. In actual practice, this diagnosis will rarely be used unless the lack of desire is a source of distress either to the individual or to his or her partner. Frequently this category will be used in conjunction with one or more of the other dysfunction categories.

B. The disturbance is not caused exclusively by organic factors and is not symptomatic of another clinical psychiatric syndrome. (p. 58)

Kaplan assumed that the sex drive (i) depends on the activity of a specific anatomical structure in the brain; (ii) contains centers that enhance the drive in balance with centers that inhibit it; (iii) is served by two specific neurotransmitters—an inhibitory and an excitatory one. (The brain is organized so that pain has priority over pleasure. This, of course, makes sense from an evolutionary perspective); and (iv) has extensive connections with other parts of the brain which allow sex drive to be influenced by and integrated into the individual’s total life experience (pp. 10-12).

Kaplan, too, accepted a basic Reinforcement model: Sexual desire exists best in a context of love, trust, and security. Anger, fear, and anxiety produce sexual dysfunction. Kaplan observed: "The sexual dysfunctions, as well as the sexual phobias, are caused by a single factor: anxiety" (p. 24). The more anxious people are, the earlier in the sexual response cycle [Desire—> Excitement—> Orgasm] problems develop. Patients with the most severe anxiety tend to develop Desire Phase problems.

Kaplan provided a painstaking enumeration of the mild, mid level, and severe sources of anxiety, which lead to sexual dysfunction:

Mild Anxieties include such things as uncomplicated performance anxieties, unrealistic expectations for oneself and one's partner, over-concern for one's partner, transient fears of rejection, mild residues of childhood guilt and shame about sexual pleasure, etc. Clients are usually well aware of their mild anxieties. Such anxieties tend to cause problems in the Orgasm phase of the sexual sequence. They are amenable to treatment.

Midlevel Anxieties include anxieties about success and pleasure, fears of intimacy and commitment, and deeper fears of rejection. Such anxieties are usually not consciously recognized by clients. Such anxiety causes problems in the Excitement phase. They are more difficult to treat.

Profound and tenacious sexual anxieties include such things as intense hostility to one's partner, intimacy phobias, severe performance anxieties, and family messages which have made pleasure, love, or sex dangerous and guilt provoking. These feelings almost always operate on an unconscious level. Such problems are associated with disorders of sexual Desire. They are the most difficult problem to treat.

Kaplan, like most sex therapists, is eclectic, but a large part of her therapy is based on principles of Reinforcement. She (again like most sex therapists) encourages clients to maximize their positive experience and minimize their negative ones; they systematically desensitize clients' anxiety (see Kaplan, 1979; Zilbergeld, 1978; Masters and Johnson, 1970; Apfelbaum, 1984).

In the 1960s and 1970s, passionate love researchers generally accepted a simple Reinforcement model of passionate love (Hatfield and Berscheid, 1969). Then they began to encounter a sprinkling of dissent. The phenomenon of passion began to seem more complicated than it had at first. We detailed these complications in the section "Passionate Love." It soon became evident that Reinforcement principles, maximizing positive and minimizing negative experiences, were not enough. It soon became evident that things were more complicated. Passionate love required excitement; it required one to steer between the Scylla of Boredom and the Charybdis of Terror. Passionate love seemed to flourish when a relationship was exciting; when delight was seasoned with a little unpredictability

and mild anxiety. Today, sex researchers make (or recall) some of the same observations. Some examples:

Therapists observe that passion is most intense when relationships are new and somewhat uncertain. Consider, for example, this report from our own interviews:

J.R. a 50-year-old man, reports that when he was 18 and attending an elite Ivy League school, he dated a Smith girl. He was sexually inexperienced. She was not. In the car, she began to touch him. He panicked. She said, incredulously: "You've never had any experience have you?" Thirty years later, his dreams were still filled with the delicious sexual excitement of this arousing but terrifying experience.

In time, love relationships generally become more secure. Desire usually does not increase linearly with time and security, however. Essentially, security frequently seems to give way to sexual boredom.

Extramarital affairs, with all their attendant anxiety, may revive couples' flagging excitement.

O'Donohue and Geer's (1985) careful research on "habituation" both documents and sheds light on these phenomena.

Freud (1922/1953) argued that the passion must be fueled by uncertainty and frustration. He observed: "Some obstacle is necessary to swell the tide of libido to its height; and at all periods of history whenever natural barriers in the way of satisfaction have not sufficed, mankind has erected conventional ones in order to enjoy love" (p. 213).

Stoller (1979) argued that passion generally has a dark side. He argued:

To me, "excitement" implies anticipation in which one alternates with extreme rapidity between expectation of danger and just about equal expectation of avoidance of danger, and in some cases, such as in eroticism, of replacing danger with pleasure. . . . My theory is as follows: . . . It is hostility—the desire, overt or hidden, to harm another person—that generates and enhances sexual excitement. The absence of hostility leads to sexual indifference and boredom. . . . Two unpleasant thoughts: First, when one tabulates the factors that produce sexual excitement, exuberance—pure joyous pleasure—is for most people at the bottom of the list, rarely found outside fiction. Second, I would guess that only in the rare people who can indefinitely contain sexual excitement and love within the same relationship do hostility and secrecy play insignificant parts in producing excitement.

Excitement—any, not just sexual—is a dialectic, a rapid oscillation between two possibilities (and their affects). One we tell ourselves has a positive, the other a negative outcome: pleasure/pain, relief/trauma, success/failure, danger/safety. Between the two lies risk. (pp. 3-7)

Sex researchers have long known that some individuals can be sexually roused only if attraction is mixed with anxiety—as in people who delight in sadomasochistic practices. Gebhard (1976) found that one in five men and one in eight women find sadomasochistic stories arousing. Recently, Comfort's (1976) best-selling *More Joy of Sex* gave readers explicit scripts for acting out bondage, discipline, and light sadomasochistic themes.

Kaplan (1979) dealt with such disquieting observations by dividing people into two groups: the normal the abnormal. She observed:

Some persons are sexually obsessed with disinterested, rejecting or even cruel partners, towards which they *should* normally experience a loss of desire. The cruelty, the pain, the frustration of such situations should shut down the desire machinery, but in obsessive love this does not happen. The inability to suppress or "give up" an inappropriate and destructive desire thus also constitutes a pathological state. (pp. 68-69)

IMPLICATIONS FOR FUTURE RESEARCH

We argue that passionate love and sex researchers may do better if they join forces. In the 1970s, social psychologists interested in love tried to cling to a simple Reinforcement model of passionate love. We tried to explain away, paradigm-challenging observations (see, for example, Kendrick and Cialdini, 1977). Eventually, we developed the more complicated model of love, which argues that under the right conditions, delight and security, as well as a sprinkling of anger, anxiety, jealousy, or loneliness, can fuel emotion. We think that a great deal would be accomplished if sex researchers would adopt a similar paradigm.

If we accept the proposal that passion is like any other form of excitement, and must glide uneasily between the shoals of boredom and terror, navigating to keep firmly in the current of excitement, a broader perspective opens up to us. The questions then become (i) When is security especially important? (ii) When will a modicum of jealousy, anxiety, or anger intensify passion?

For example: Do people with different personality characteristics differ in the balance of security/danger that is maximally appealing to them? Some people are more responsive to anxiety-producing stimuli than are others, (see Millon, 1981). Some people seek out more excitement than do others (see Zillman, 1984).

Does the partner's appeal effect how important security/anxiety are to enhancing/diminishing desire? Passionate love researchers generally study men and women who are greatly attracted to a dating partner. They generally find that passion can continue to thrive in quite unsettling, even dangerous, circumstances. Sex therapists often must deal with couples who are indifferent to, or may even hate, one another. They work with couples caught in long-term relationships. Such couples might be suffering from the twin problems of boredom with their partners and with anxiety about their own sexual performance. Perhaps it is not surprising that for such couples, sex therapists find that sometimes any additional anxiety is too much!

We might ask: Does the *source* of anxiety matter? For example, anxiety as to whether or not a beautiful woman or handsome man will respond to you may contribute to passion. Anxiety as to whether you will be able to

perform with a coarse and rude partner may destroy all possibility of passion.

Does *amount* of anxiety matter? (A little may go a long way.)

In sum, this more complicated view of passionate love/sexual desire brings to the fore a vast array of intriguing questions inviting a new round of potentially fascinating and valuable research. And, since this new paradigm can be shared by both sex researchers and social psychologists, that next round of research may be aided in some cases by these two groups of scholars, more than they have in the past, working and thinking together.

REFERENCES

- Ainsworth, M. D. S., Blehar, M. C., Waters, E., and Wall, S. (1978). *Patterns of Attachment: Assessed in the Strange Situation and at Home*. Lawrence Erlbaum, Hillsdale, NJ.
- American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.). APA, Washington, DC.
- Ansen, D. (Sept. 10, 1985) Introduction to *A Love in Germany*, Braus, Cable T.V.
- Apfelbaum, B. (1984). The ego-analytic approach to individual body-work sex therapy: Five case examples. *J. Sex. Res.*, 20: 44-70.
- Aron, A. (1970). Relationship variables in human heterosexual attraction. Unpublished doctoral dissertation, University of Toronto, Toronto, Canada.
- Barclay, A. M. (1969). The effect of hostility on physiological and fantasy responses. *J. Pers.* 37: 651-667.
- Berscheid, E., and Hatfield (Walster), E. (1969). *Interpersonal Attraction*. Addison-Wesley; Reading, MA.
- Bowlby, J. (1973). Affectional bonds: their nature and origin. In Weiss, R. W. (ed.), *Loneliness: The Experience of Emotional and Social Isolation*. MIT Press, Cambridge, MA.
- Brehm, J. W., Gatz, M., Goethals, G., McCrimmon, J., and Ward, L. (1978). Psychological arousal and interpersonal attraction. *JSAS Cat. Select. Doc. Psychol.* 8: 63(Ms.#1724).
- Byrne, D. (1971). *The Attraction Paradigm*. Academic Press, New York.
- Byrne, D., Przybyla, D. P. J., and Infantino, A. (1981, April) The influence of social threat on subsequent romantic attraction. Paper presented at the meeting of the Eastern Psychological Association, New York City.
- Cantor, J., Zillman, D., and Bryant, J. (1975). Enhancement of experienced sexual arousal in response to erotic stimuli through misattribution of unrelated residual excitation. *J. Pers. Soc. Psychol.* 32: 69-75.
- Clanton, G., and Smith, L. G. (Eds.). (1977). *Jealousy*. Prentice-Hall, Englewood Cliffs, NJ.
- Comfort, A. (1976). *More Joy of Sex*. Fireside/Simon and Schuster, New York.
- Dienstbier, R. A. (1979). Emotion-attribution theory: Establishing roots and exploring future perspectives. In Howe, H. E. and Dienstbier, R. A. (eds.), *Nebraska Symposium on Motivation*, 26. University of Nebraska Press, Lincoln.
- Driscoll, R., Davis, K. E., and Lipetz, M. E. (1972). Parental interference and romantic love: The Romeo & Juliet effect. *J. Pers. Soc. Psychol.* 24: 1-10.
- Dutton, D. (1979). The arousal-attraction link in the absence of negative reinforcement. *Can. Psychol. Assoc.*
- Dutton, D., and Aron, A. (1974). Some evidence for heightened sexual attraction under conditions of high anxiety. *J. Pers. Soc. Psychol.* 30: 510-517.

- Easton, M. (1985). Love and intimacy in a multi-ethnic setting. Unpublished doctoral dissertation. University of Hawaii at Manoa, Honolulu, HI.
- Freud, S. (1922/1953). Contributions to the psychology of love. A special type of choice of objects made by men. In Jones, E., (ed.), *Collected Papers* (Vol. 4). Hogarth Press, London.
- Gebhard, P. H. (1976). Fetishism and sadomasochism. In Weinberg, M. S. (ed.), *Sex Research: Studies from the Kinsey Institute*. Oxford University Press, New York, pp. 156-166.
- Greenwell, M. E. (1983) Development of the Juvenile Love Scale. Unpublished Master's Thesis. University of Hawaii, Honolulu, Hawaii.
- Hatfield(Walster), E. & Berscheid, E. (1969). *Interpersonal Attraction*. Addison-Wesley, Reading, MA.
- Hatfield, E., and Sprecher, S. (1986). Measuring passionate love in intimate relations. *J. Adolesc.* 9, 383-410.
- Hatfield, E., and Walster, G. W. (1978). *A New Look at Love*. University Press of America, Lanham, MA.
- Hoon, P. W., Wincze, J. P., and Hoon, E. F. (1977). A test of reciprocal inhibition: Are anxiety and sexual arousal in women mutually inhibitory? *J. Abn. Psychol.* 86: 65-74.
- Istvan, J., and Griffitt, W. (1978). Emotional arousal and sexual attraction. Unpublished manuscript, Kansas State University, Manhattan.
- Istvan, S., Griffitt, W., and Weidner, G. (1983). Sexual arousal and the polarization of perceived sexual attractiveness. *Basic Appl. Soc. Psychol.* 4: 307-318.
- Kaplan, H. S. (1979). *Disorders of Sexual Desiré*. Simon and Schuster, New York.
- Kendrick, D. T., and Cialdini, R. B. (1977). Romantic attraction: Misattribution vs. reinforcement explanations. *J. Pers. Soc. Psychol.* 35: 381-391.
- Lacey, J. I. (1967). Somatic response patterning and stress: Some revisions of activation theory. In Appley, M. H., and Trumbull, R. (eds.) *Psychological Stress*. Appleton, New York.
- Lee, J. A. (1977). *The Colors of Love*. Bantam Books, New York.
- Liebowitz, M. R. (1983). *The Chemistry of Love*. Little, Brown, and Co., Boston.
- Masters, W. H., and Johnson, V. E. (1970). *Human Sexual Inadequacy*. Little, Brown, and Co., Boston.
- Millon, T. (1981). *Disorders of Personality. DSM III: Axis II*. John Wiley and Sons, New York.
- Money, J. (1980). *Love and Love Sickness*. Johns Hopkins University Press, Baltimore, MD.
- O'Donohue, W. T., and Geer, J. H. (1985). The habituation of sexual arousal. *Arch. Sex. Behav.* 14: 233-247.
- Peplau, L. A., and Perlman, D. (1982). *Loneliness*. Wiley-Interscience, New York.
- Riordan, C. A., and Tedeschi, J. T. (1983). Attraction in aversive environments: Some evidence for classical conditioning and negative reinforcement. *J. Pers. Soc. Psychol.* 44: 683-692.
- Rosenblum, L. (1985, September). Passion and the nonhuman primate. Observations presented at the International Academy of Sex Research. Seattle, WA.
- Rosenblum, L. A., and Plimpton, L. A. (1981). The infant's effort to cope with separation. In Lewis, M., & Rosenblum, L. (eds.), *The Uncommon Child* (pp. 225-257), Plenum Press, New York.
- Sprecher, S. (1985). Emotions in close relationships. Ph.D. Dissertation. University of Wisconsin, Madison, WI.
- Stephan, W., Berscheid, E., and Hatfield (Walster), E. (1971). Sexual arousal and heterosexual perception. *J. Pers. Soc. Psychol.* 20: 93-101.
- Stoller, R. J. (1979). *Sexual Excitement*. Pantheon, New York.
- Sullivan, B. O. (1985). *Passionate love: A factor analytic study*. University of Hawaii, Honolulu, Hawaii.

- Sullivan, B. O., and Landis, D. (1984, August). The relationship of sexual behaviors and attitudes cross-culturally. Paper presented at the VII Congress of the International Association for Cross-Cultural Psychology. Acapulco, MEX.
- Tennov, D. (1979). *Love and Limerence*. Stein and Day, New York.
- Weiss, R. S. (1973). *Loneliness: The Experience of Emotional and Social Isolation*. MIT Press, Cambridge, MA.
- White, G. L., Fishbein, S., and Rutstein, J. (1981). Passionate love and the misattribution of arousal. *J. Pers. Soc. Psychol.* 41: 56-62.
- Zilbergeld, B. (1978). *Male Sexuality: A Guide to Sexual Fulfillment*. Little, Brown and Co., Boston.
- Zillman, D. (1984). *Connections Between Sex and Aggression*. Lawrence Erlbaum Associates, Hillsdale, NJ.
- Zuckerman, M. (1979). *Sensation Seeking: Beyond the Optimal Level of Arousal*. Erlbaum, Hillsdale, NJ.

APPENDIX

Passionate Love Scale^a

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 long time, I would feel intensively 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 range from:

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

*The * indicates items selected for a short version of the PLS.