

## Benedict Carey, *The Brain in Love*

Benedict Carey writes about psychology and human behavior for *The New York Times's* weekly science section. He wrote "The Brain in Love" in 2002 while working as a staff writer for the *Los Angeles Times*. Like David Rothenberg's "Come Up and See My Bower" (p. 299), this selection explores questions about the role of attraction in love. But while Rothenberg focuses on the roles of art and beauty in attraction, Carey focuses on the role of biology. In the following essay, Carey presents several studies by scientists who argue that romantic attraction is a biologically based human drive, like hunger.

### Mapping Your Reading

Throughout this essay, Carey cites a range of different scientific studies. As you read, use the margins to take notes about these scientists' claims. Do they agree with each other? Where don't they agree? Do you agree that biology drives attraction?

For generations scientists have studied the peacock feathers of human mating, the swish and swagger that advertise sexual interest, the courtship dance at bars, the public display. They've left the private experience—what's happening in the brain when we fall for someone—mostly to poets.

We know there's an inborn human urge to mate, after all. Love is a mystery, a promise, an arrow from Cupid's bow.

Yet recent research suggests that romantic attraction is in fact a primitive, biologically based drive, like hunger or sex, some scientists argue. While lust makes our eye wander, they say, it's the drive for romance that allows us to focus on one particular person, though we often can't explain why. The biology of romance helps account for how we think about passionate love, and explain its insanity: why we might travel cross-country for a single kiss, and plunge into blackest despair if our beloved turns away.

This view of romantic attraction rests on observations of passionate behavior across cultures, studies of animals during courtship and, most recently, findings by scientists studying the human brain. Using magnetic resonance imaging, or MRI, machines to peer into the brains of college students in the throes of early love—that crazed, can't-think-of-anything-but-stage of romance—scientists have developed some of the first direct evidence that the neural mechanisms of romantic attraction are distinct from those of sexual attraction and arousal.

"What we're seeing here is the biological drive to choose a mate, to focus on one person to the exclusion of all others," said Helen Fisher, an anthropologist at Rutgers University in New Jersey, who spells out the

biological basis for romantic attachment in the journal *Neuroendocrinology Letters*. "Let's say you walk into a party and there are several attractive women or men there. Your brain is registering this attraction for each one; then you talk to the third or fourth one, and whoosh—you feel something extra."

### Unique Brain Activity

Fisher's group is analyzing more than 3,000 brain scans of 18 recently smitten college students, taken while they looked at a picture of their beloved. She expects the results to build upon the findings of English researchers who recently completed a similar study of young men and women in love. When shown a picture of their romantic partner, their brain activity pattern was markedly different from when they looked at a picture of a close friend, reported neurobiologists Andreas Bartels and Semir Zeki of University College London. The pictures showed that the experience of romantic attraction activated those pockets of the brain with a high concentration of receptors for dopamine, the chemical messenger closely tied to states of euphoria, craving, and addiction.

Biologists have linked high levels of dopamine and a related agent, norepinephrine, to heightened attention and short-term memory, hyperactivity, sleeplessness, and goal-oriented behavior. When they're first captivated, Fisher argues, couples often show the signs of surging dopamine: increased energy, less need for sleep or food, focused attention, and exquisite delight in the smallest details of this novel relationship.

Bartels and Zeki compared their MRI images to brain scans taken from people in different emotional states, including sexual arousal, feelings of happiness, and cocaine-induced euphoria. The pattern for romantic love was unique. But there was some overlap with and close proximity to other positive states. "This makes sense," said Zeki. "These were young people who were practically willing to die for their lover. You would expect that the images would reflect many strong emotions all at once."

MRI machines can't read people's minds, psychiatrists say. The pictures are not nearly sensitive enough to separate and measure each of the emotions that comprise romantic feeling, as if they were on a color-by-numbers map. Yet the images' emotional complexity itself reflects how many people think about being in love, some psychologists say.

In one recent study, University of Minnesota researcher Ellen Berscheid asked a group of young men and women to make four lists: of all their friends; of the people they loved; of everyone they thought sexually attractive; and finally, of those with whom they were "in love." As expected, the last list was the shortest, usually just one name. That same person, however, appeared on all the lists. "It's this combination of friendship, affection, and lust," Berscheid said, "that makes it so powerful."

**The neural mechanisms of romantic attraction are distinct from those of sexual attraction.**

This power is enough to warp judgment in otherwise sensible people, just as a spike in dopamine activity might. As psychologists have demonstrated in several studies, newly smitten lovers often idealize their partner, magnifying the other's virtues and explaining away their flaws: She is the funniest person I've ever met. He's moody because of his job. This behavior, sometimes called the "pink lens effect," is often sharply at odds with the perceptions of friends and family, psychologists say. New couples also exalt the relationship itself. "It's very common; they think they have a relationship that's more special, closer, than anyone else's," said Berscheid, a leading researcher on the psychology of love.

Yet some idealization may be crucial to building a longer-term relationship, said Pamela Regan, a researcher at Cal State L.A. and author of the recently released *The Mating Game*, a book about relationships. "If you don't sweep away the person's flaws to some extent, then you're just as likely to end a relationship or not even try," she said. "This at least gives you a chance. If you think of romantic attraction as a kind of drug that alters how you think, then in this case it's allowing you to take some risks you wouldn't otherwise."

Passionate love's euphoria is certainly enough to push many people through the first two stages of courtship: self-disclosure, the up-all-night storytelling; and interdependence, when lovers are continually together, often contentedly doing nothing. But that pink lens effect might also help people through stage three: conflict, when tension and doubts about the couple's future prompt arguments and soul-searching.

### Healthy Romanticizing

In a 1996 experiment, psychologists at the State University of New York at Buffalo followed a group of 121 dating couples. Every few months, the couples answered questionnaires designed to determine how much they idealized their partner, and how well the pair was doing. The researchers found that the couples who were closest one year later were those who idealized each other the most. The idealizing seemed to help carry these couples through the inevitable rough spots. "Intimates who idealized one another," concluded the researchers in the paper, "appeared more prescient than blind, actually creating the relationships they wished for as romances progressed."

Short-term studies of courtship mean little for the issue that most people confront: What are the ingredients of a long-term, loving relationship? Psychologists at the University of Texas in Austin have been looking at the subject for more than a decade, following 168 couples who were married in 1981. What they're finding is that idealization of a kind can keep people happily married. "Usually, this is a matter of one person putting good spin on the partner, seeing the partner as more responsive than he or she really is," said Ted Huston, the study's lead investigator. "People who do that tend to stay in relationships longer than those who can't or don't."

But the findings are mixed. Huston's research also has identified three paths through early courtship: fast and passionate, slow and rocky, and in-between. The fast-track group, about 25 percent of the total, usually were

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interdependent within weeks, tended to ignore or forget their initial problems, and were committed to marriage within several months. By contrast, the slow-motion group took an average of two years to reach a commitment, spending up to six painstaking months in each stage.

Yet when it came to success at the 13-year mark, the tortoises won out. “The more boring and deliberate the courtship, the better the prospects for a long marriage, I’m afraid,” he said. “People who had very intense, Hollywood-type romances at the beginning were likely to have a big drop-off later on, and this often changed their view of the other’s character.”

That’s the rub. If passionate romance is like a drug, as the MRI images suggest, then it’s bound to lose its kick. Studies of dating and engaged couples find that feelings of passionate love and infatuation tend to fade quickly in the first year, and a year or two later often are all but gone, said Regan. What’s more, simply having a strong romantic drive says nothing about how wisely you’ll use it—or on whom. “The drive is there simply to focus your energy on one person,” said Fisher. “People make wrong choices all the time.”

The emotional fallout from that kind of decision is no less awful for its being wrong, of course. But seeing romance as a biologically based, drug-like state can at least provide some balm for a broken heart. “Like a drug addict would tell you,” said Regan, “the highs don’t last, but neither does the withdrawal. With time the craving and pain go away and the brain returns to normal.”

#### ▶ Analyzing the Text

1. According to Carey’s essay, what have scientists discovered to be the effect of love on the brain? Does this news surprise you? Why or why not?
2. Although philosophers, poets, and writers have speculated on the nature of love through the ages, the topic of love only recently has begun to gain the attention of scientists. What do you think might account for this?
3. Do you think the attention of the scientific community has helped or hindered our understanding of love and romantic attraction? Draw from Carey’s essay to support your view.
4. **Connecting to Another Reading.** Compare Carey’s argument with the argument posed by David Rothenberg (p. 299). Both writers investigate assumptions about the origins of romantic attraction. What are the intersections of these arguments? In what ways do they support each other?

#### ▶ Writing about Cultural Practices

5. Working in groups, locate the studies that Carey cites. Each group should summarize and analyze the findings of one study and present what they’ve discovered to the class. As you prepare your oral presentation, consider these questions:
  - How was the study conducted? What questions were the researchers investigating? What, if anything, does the study conclude?

