

Love Code: The Chemistry of Intimacy



An audience member poses questions of the heart

With the possible exception of, “It’s not you, it’s me,” no other phrase represents a more crushing blow to the impassioned lover than, “I love you, but I’m not *in* love with you.” Ouch! How do we explain the different gradations of love, and how do we understand the chemical responses that constitute the myriad pathways of intimacy, with all of its fulfillments and disenchantments? The panelists who gathered for the September 27 roundtable, *Love Code: The Chemistry of Intimacy*, attempted to crack a cipher that has mystified the smitten and the spurned for millennia.

People who have a lot of anxiety as children tend to be more desperate in their feelings toward their lovers, making them more prone to a reckless choice of mate.

Panelist **Elaine Hatfield**, Professor of Psychology at the University of Hawaii and past President of the Society for the Scientific Study of Sexuality, noted that in the early days of social psychology there was almost no work being done on passionate love. Advances in technology and theory, however, have spawned a cohort of evolutionary psychologists, biochemists, and neuroscientists to home in on that very phenomenon. Historically, the Greeks talked about love in passionate terms, but it wasn’t until 1500 that the idea of love as a basis for marriage came to the fore. **Stephen Porges**, Professor of Psychiatry and Co-Director of the Brain-Body Center at the University of Illinois at Chicago, pointed out that “predator love,” which was focused on securing safety in a hostile environment, predominated in earlier times.

In seeking a connection between idealized states of love and the purely biological function of sex, **Dolores Malaspina**, Professor and Chair of the Department of Psychiatry at New York University, proposed that the passions, including creative portrayals of love, actually serve the primal, biological part of the brain. Professor Porges concurred, noting, “We share old stuff with the primates, but the cortex has all this creativity that tries to relate and rationalize primal drives”

Addressing the ways in which the nervous system channels these primal urges, **Stephanie Brown**, Assistant Professor in the Department of Internal Medicine at the University of Michigan, remarked that reciprocity, or mirroring, a vital component in intimacy, is actually good for one’s health. In other words, there is a survival benefit

for those who fall in love. Unconditional love allows people to suppress self-interest and, for example, provide care for a helpless infant. Brown concluded that we engage in long-term love in order to enhance physiological wellbeing, and thereby live longer to potentially procreate and care for our offspring.

If an individual is prone to anxiety and the fight-or-flight response, they will have a harder time forming this kind of bond. **Sue Carter**, Professor of Psychiatry and Co-Director (with Porges) of the Brain-Body Center at the University of Illinois at Chicago, studies how people are able to create permanent bonds. While there are benefits to intimacy in terms of physical chemistry, Carter explained, “You want to be careful who you release these chemicals with.” Forming a bond with the wrong person can be the basis of a pathological relationship. Professor Hatfield added that people who have a lot of anxiety as children tend to be more desperate in their feelings toward their lovers, making them more prone to a reckless choice of mate. On the other hand, if they find a suitable person, they tend to calm down.

While amorous prairie voles would seem to offer respite from the storm and stress of human romance, they in fact offer insights about how and why couples stay together, because like humans they form life-long pair bonds. In her experiments with these rodents, Professor Carter discovered that oxytocin plays an important role in sustained bonding. It is the most abundant chemical in the brain, and its primary function, along with its partner hormone vasopressin, is to allow humans to feel safe, to override the fight-or-flight response.

Although hormones like oxytocin can dampen anxiety responses, making it easier to bond with an appropriate partner, Center Co-Director Edward Nersessian posed a compelling downside to this adaptation. What happens when a woman can’t tap into the aggression needed to protect herself from an abusive husband, and ends up staying in the marriage? Carter conceded that this was a danger, explaining that animals in defeat show heightened levels of oxytocin, which puts them in a state where they can withstand a stressful experience. Unfortunately, it also mutes the aggressive response needed to extricate oneself from a threatening situation. While oxytocin assists in child care, it can be coopted to paralyze the fight-or-flight response. “We have to get past the idea that oxytocin is good. More is not better,” Carter warned, noting that it’s now possible to purchase oxycontin as a nose spray. “Emotional regulators create states that we don’t understand,” concluded Carter, highlighting the delicate chemical connections behind feelings as seemingly diverse as love and pain. *A.L.*



Elaine Hatfield