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The Pathology of Love

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Recent studies buttress the unpalatable truth that falling in love is, in some ways, indistinguishable from a severe pathology. Behavior changes are reminiscent of psychosis and, biochemically speaking, passionate love closely imitates substance abuse. Appearing in the BBC series Body Hits on December 4, Dr. John Marsden, the head of the British National Addiction Center, said that love is addictive, akin to cocaine and speed. Sex is a "booby trap", intended to bind the partners long enough to bond.

Using functional Magnetic Resonance Imaging (fMRI), Andreas Bartels and Semir Zeki of University College in London showed that the same areas of the brain are active when abusing drugs and when in love. The prefrontal cortex - hyperactive in depressed patients - is inactive when besotted. How can this be reconciled with the low levels of serotonin that are the telltale sign of both depression and infatuation - is not known.

The initial drive - lust - is brought on by surges of sex hormones, such as testosterone and estrogen. These induce an indiscriminate scramble for physical gratification. Attraction transpires once a more-or-less appropriate object is found (with the right body language and speed and tone of voice) and is tied to a panoply of sleep and eating disorders.

A recent study in the University of Chicago demonstrated that testosterone levels shoot up by one third even during a casual chat with a female stranger. The stronger the hormonal reaction, the more marked the changes in behavior, concluded the authors. This loop may be part of a larger "mating response". In animals, testosterone provokes aggression and recklessness. The hormone's readings in married men and fathers are markedly lower than in single males still "playing the field".

Helen Fisher of Rutger University suggests a three-phased model of falling in love. Each stage involves a distinct set of chemicals. The BBC summed it up succinctly and sensationally: "Events occurring in the brain when we are in love have similarities with mental illness".

Moreover, we are attracted to people with the same genetic makeup and smell (pheromones) of our parents. Dr Martha McClintock of the University of Chicago studied feminine attraction to sweaty T-shirts formerly worn by males. The closer the smell resembled her father's, the more attracted and aroused the woman became. Falling in love is, therefore, an exercise in proxy incest and a vindication of Freud's much-maligned Oedipus and Electra complexes.

Writing in the February 2004 issue of the journal NeuroImage, Andreas Bartels of University College London's Wellcome Department of Imaging Neuroscience described identical reactions in the brains of young mothers looking at their babies and in the brains of people looking at their lovers.

"Both romantic and maternal love are highly rewarding experiences that are linked to the perpetuation of the species, and consequently have a closely linked biological function of crucial evolutionary importance" - he told Reuters.

This incestuous backdrop of love was further demonstrated by psychologist David Perrett of the University of St Andrews in Scotland. The subjects in his experiments preferred their own faces - in other words, the composite of their two parents - when computer-morphed into the opposite sex.

Contrary to prevailing misconceptions, love is mostly about negative emotions. As Professor Arthur Aron from State University of New York at Stonybrook has shown, in the first few meetings, people misinterpret certain physical cues and feelings - notably fear and thrill - as (falling in) love. Thus, counterintuitively, anxious people - especially those with the "serotonin transporter" gene - are more sexually active (i.e., fall in love more often).

Obsessive thoughts regarding the Loved One and compulsive acts are also common. Perception is distorted as is cognition. "Love is blind" and the lover easily fails the reality test. Falling in love involves the enhanced secretion of b-Phenylethylamine (PEA, or the "love chemical") in the first 2 to 4 years of the relationship.

This natural drug creates an euphoric high and helps obscure the failings and shortcomings of the potential mate. Such oblivion - perceiving only the spouse's good sides while discarding her bad ones - is a pathology akin to the primitive psychological defense mechanism known as "splitting". Narcissists - patients suffering from the Narcissistic Personality Disorder - also Idealize romantic or intimate partners. A similar cognitive-emotional impairment is common in many mental health conditions.

The activity of a host of neurotransmitters - such as Dopamine, Adrenaline (Norepinephrine), and Serotonin - is heightened (or in the case of Serotonin, lowered) in both paramours. Yet, such irregularities are also associated with Obsessive-Compulsive Disorder (OCD) and depression.

It is telling that once attachment is formed and infatuation gives way to a more stable and less exuberant relationship, the levels of these substances return to normal. They are replaced by two hormones (endorphins) which usually play a part in social interactions (including bonding and sex) - Oxytocin (the "cuddling chemical") and Vasopressin. Oxytocin facilitates bonding. It is released in the mother during breastfeeding, in the members of the couple when they spend time together - and when they sexually climax.

Love, in all its phases and manifestations, is an addiction, probably to the various forms of internally secreted norepinephrine, such as the aforementioned amphetamine-like PEA. Love, in other words, is a form of substance abuse. The withdrawal of romantic love has serious mental health repercussions.

A study conducted by Dr. Kenneth Kendler, professor of psychiatry and director of the Virginia Institute for Psychiatric and Behavioral Genetics, and others, and published in the September issue of Archives of General Psychiatry, revealed that breakups often lead to depression and anxiety.

Still, love cannot be reduced to its biochemical and electrical components. Love is not tantamount to our bodily processes - rather, it is the way we experience them. Love is how we interpret these flows and ebbs of compounds using a higher-level language. In other words, love is pure poetry.

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