

## **Addicted to your love**

By Subhashin Pillay

Have you ever wondered why it is that we fall in love? Why is it that we experience such euphoria and spend much time obsessively thinking about the new objects of our desires to the point that we feel sick to our stomachs? This article aims to expose this totally neurotic yet extremely addictive experience.

Romantic love is one that became popular in Western society during the middle ages. It was first widely expressed in the myth about Tristan and Isolde and has since been a key theme in several artistic works throughout history. It is no wonder why we were, and still are enchanted by this experience. It is interesting to note that the experience of romantic love in humans is almost a universal one. Anthropologists suggest that there are very few cultures that do not identify with romantic love.

Although the study of love would not always be regarded as scientific in nature, many researchers have recently delved into the mysteries of this condition. This new research has been largely accepted due to the fact that researchers have identified a biological basis for its existence.

Romantic love is a complex process. One that affects us on a physiological, neurological and psychological level. According to some, it is a phenomenon that has resulted from the evolution of the way that people mate and experience romantic relationships. These researchers suggest that the primary reason we fall in love is to further our own species. Romantic love is said to be responsible for selecting a genetically superior mate to reproduce. The function of love is then to keep a couple together not only for reproduction, in terms of the conception and delivery of the offspring. It is said that romantic love is also supposed to form a bond that exceeds this initial time period and extends into the lives of the young to provide a healthy, rich and fulfilling life for them.

This idea then leads to idea of hormones. Several hormones are responsible for these processes. On a psychological level, sexual desire is the primary driver for reproduction. The hormone testosterone is responsible for this sexual desire in humans. Romantic love itself is associated with increased levels of neurochemical dopamine and reduced levels of neurochemical serotonin. These are responsible for the way one feels when in love, like a drug addict. The dopamine is responsible for feelings of increased energy and exhilaration, whereas serotonin is responsible for feelings of being depressed. Reduced serotonin is also present in individuals with obsessive compulsive disorder, hence the relationship between love and obsessive behaviour. Oxytocin in women and vasopressin in men are responsible for the process of attachment which leads to couples bonding. These are more popularly known as the “cuddle chemicals” which promote affection and cause a deeper relationship.

How then can one prove that being in love is like being addicted to drugs? Modern brain imaging techniques have been developed to see what happens in the human brain with no harm to the subject. One of these techniques is known as functional magnetic resonance imaging (fMRI). There is a particularly interesting paper entitled “Reward, Motivation, and Emotion Systems Associated with Early-Stage Intense Romantic Love” dealing with both love and fMRI's. This study chose participants who were recently in love, specifically between 2 and 17 months. Basically, the subjects were shown pictures of their lovers and were asked about their relationship experiences whilst their brain was scanned by a fMRI. Guess what they found? The right ventral midbrain was being activated by the external stimuli, which usually is associated with primeval instincts and emotions, with fear being the most obvious example. What this part of the brain is also responsible for, is the reward system which is responsible for drug addiction.

Therefore the early stages of love is actually like being addicted to drugs, as these images produced from the fMRI closely resemble those of people who are addicted to cocaine, heroine or opium. It is this addictive behavior that may be the cause of wanting to keep our relationships going strong and remaining in love.

Its interesting to know that we are not crazy for feeling the way we do when in love. Instead these feelings are a result of purposeful mechanisms that have evolved over our human time span. Hopefully these few insights have shown that there is some method to this madness everyone calls love.

#### References:

Aron et al.2005. Reward, Motivation, and Emotion Systems Associated with Early-Stage Intense Romantic Love. *Journal of neurophysiology* 94: 327-337.

Diamond, L. M. 2004. Emerging perspectives on distinctions between romantic love and sexual desire. *Current directions in Psychological Science* 15 (3): 116-119.

Fischer et al. 2006. Romantic love: a mammalian brain system for mate choice. *Philosophical Transactions of the Royal Society* 361: 2173-2186

Helmuth, L. 2010. Caudate-Over- Hells in love. *Meeting Society for Neuroscience*.

Marazziti, D., Canale, D.2004. Hormonal changes when falling in love. *Psychoneuroendocrinology* 29:931-936.

Marazziti et al. 2009. Biological correlates of romantic bonding: facts and hypothesis. *Clinical Neuropsychiatry* 6 (3): 112-116

Preda, C. 2005. Love and Romance: a biochemical approach.