

BERKELEY LAB GUEST HOUSE

The Science of Love

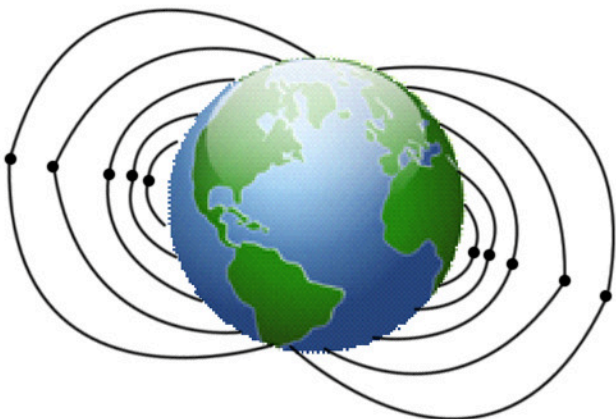


CONTEST WINNER



People fall in love to feel the magnetic pull of a particular compatible human being. This connection de-magnetizes the world's magnetic pull on these humans and creates a diversion for them to enjoy each other in a comforting magnetic field felt only when they are in close proximity or think good thoughts about each other. This diversion continues and gains momentum as their chemistry increases causing an electrical charge when they fuse together in a kiss. That's biology for ya! ;-)

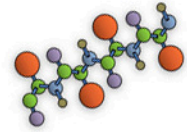
By Marsha Sullivan



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Love between living beings versus Interactions between Proteins

Here, the term 'living beings' are used instead of 'human being'. This is to make 'love' more general, because love in other species has been observed as well as in "Homo sapiens". What is the reason? After reading the following, you will see how love is built-in the living beings. To make it short, the love is happening in every cell everywhere, between the cell machineries-- proteins.

Let's do a few comparisons:

First, not every two can fall in love, neither two proteins can interact. One party has to find the right partner to make the love (interaction) beautiful and productive. Wrong pairs could be dangerous, even lethal. This is valid for both love and protein interactions.

Second, most of the love happens with someone in the neighborhood, so do the interactions between the proteins. Both love and interactions are constrained by the time and space. As the advances of transportation and the information communication technologies, the constraints to human are not as severe as before industrial age. We even developed some 'cyber' loves, in which two people can love each other without physical touching. This is cool. Proteins have similar behaviors. (YES, they do!) There are highways inside the cells, which are called 'cell matrix'. The matrix are formed by various filaments, such as microtubules. Without physical interactions, proteins can communicate with others via signaling pathways. Is it not like an internet?

Third, the love between matched people is enduring, just like the tightly binding protein pairs; the transient interactions between protein is an analogy of 'not that matched' relationship. Both are necessary.

Fourth, love is usually initiated by some attractive points on the each other. Those attractive points can be complementary, i.e., one does not have and the other has; or the attractive can be in common, i.e., the shared hobbies. In protein world, the attractions are often due to hydrophobic interactions (both have hydrophobic surface, so they stick together); or the attractions are from the opposite charges that attract each other. How similar to our world?

At last not least, a healthy love relationship is good to the family, the community, and even the whole society. In protein world, the correct interactions can ensure the functionality of the cell machines, help the growth and the development of the cell, even benefit the life of the organism (including human beings).

Now, convinced? No? Then I have to go further to DNA. If you see the double helix DNA molecules, you will understand the importance of the 'perfect match' to a life. For those who already found their matches, congratulations! For the rest, hurry up. Life is short, love lives forever! And now you know that love is built in every single cell, what are you still waiting for?

By Haiguang Liu