

Free Will, Evolution and Chaos Theory

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Most people's belief falls into one of two categories. Some believe in fate and say that everything is ordained by God and we can hardly change anything. There are others who talk of free will i.e. whatever we are is because of our actions or *Karma*. I think the reality is somewhere between these two beliefs.

[Shri. Ramakrishna](#) the great saint of Bengal used to give a very insightful answer to the question of fate. He gave an example of a cow tethered to a pole with a long rope attached to her neck. He said that the cow feels she is free to roam anywhere but the perimeter of the area in which she can move is fixed. Shri. Ramakrishna said that similarly every human being has a free will, but the length of rope is governed by God.

This example has a great parallel in the modern science of chaos theory.

[Chaos theory](#) shows how life evolves from a seemingly chaotic situation. A classic example is the development of convection currents in water when it is heated in a utensil. Heat provides energy to each water molecule, which darts around at random and in chaotic fashion all over inside the utensil. However, after a certain [time a band of convection currents](#) develop in which the heated water molecules rise up and are replaced by cold water molecules. This band is like a tube or a structure through which the water flows. Thus the seemingly chaotic behavior of water molecules is converted into an orderly structure. If the heat is removed, this structure collapses.

In the same way life which is an ordered structure evolves from seemingly chaotic molecules inhabiting our planet earth.

This analogy can also be applied to humankind where each one of us lead our own separate lives which “darts” randomly depending on the forces acting upon us and yet collectively we go forward in a band which is called human evolution. Thus we have our free will but are tethered to this band of evolution similar to the cow in Shri. Ramakrishna’s example.

Does this mean that whatever we do is meaningless since we will always have to act within this band of evolution which will occur regardless? The answer is no and again the example of water convection will help.

The convection currents are dependent on both the quantity of heat and the speed at which it is transferred to the water. The convection currents do eventually form in heated water but are speeded up by the amount and velocity of heat transfer.

Thus the evolution of mankind will also take place anyway. However by our proper actions we can speed it up. That is the advantage and value of free will.

What is human evolution? I think the goal of all human beings should be to live a long, healthy and emotionally fulfilling life. This type of life can be achieved if we make his planet a very sustainable place to live in. We can do his by our free will and by all of us working towards the goal of planet development.

This earth is the only world we know and have. This is our hell and heaven. Unless we master the technology to leave this planet’s gravitational field on a large scale, this will be the home for majority of people for many generations to come. Thus, the sooner we make it a very hospitable place which is sustainable, environmentally pleasing and where everybody is happy and lives a meaningful

life the better it will be for us and the future generations. Our free will can speed up this process.

The life and evolution on the planet earth (just like convection currents in water) is governed by energy. All our energies either in past, present or future have and will come from the sun. All the biota, fossil fuels etc. are solarly derived. Our fossil fuels are solar energy embedded millions of years ago whereas our green trees and plants are present solar energy. Hence our evolution is governed by the amount and intensity of sun's energy. We get about 16,000 times more energy from the sun than what the mankind presently uses. This energy therefore sets the limit on our evolution.

The ultimate evolution of mankind will therefore be based on using solar energy directly just as life has done through millions of years and to run our industrial lifestyle on it. Thus, the faster we get on the direct solar economy, the faster will be our evolution.

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