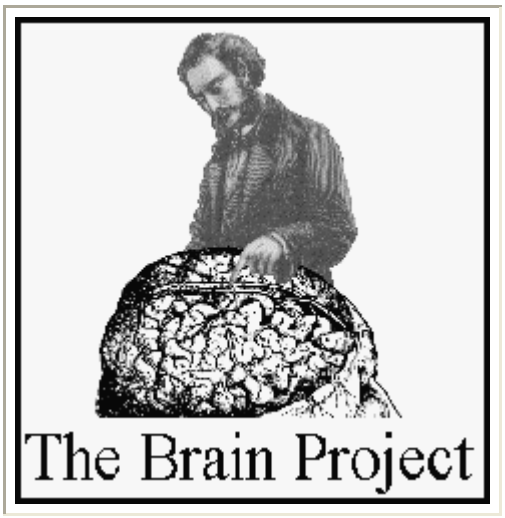

Does Consciousness Exist?

Dr. Jayant Sharad Vaidya MS DNB
Academic Department of Surgery
The Royal Marsden Hospital
Fulham Road
London SW3 6JJ U.K.

Does consciousness exist?

Life is characterised by growth and reproduction, spontaneous actions and possibly, consciousness.

Let us consider action. Action is spontaneous, as observed by a spectator and willful as observed by the doer. Consider your finger. Hold it in front of you and flex and extend it. You just have to 'will' it to move and it moves. Certain cells in the cerebral motor cortex are stimulated in an orderly manner to set up electrical potentials along the specific nerves that stimulate the muscles to move the finger. Who stimulates the nerve cells or starts the machinery for their systematic actions? No such site which can start a particular action at 'will', through connections to the whole brain like an all-covering blanket, has been identified.

Look at it another way. An infant's brain is developed, according to the instructions in the genetic code, with individual variations according to the parents' genes and the environment at conception and in utero. Apart from its other functions, the brain is programmed to learn. Some learn better than others. As the child grows up, the neural networks keep growing, making new connections, inhibiting some old ones, at each instant, modifying itself by the results of its previous actions and environmental events. The learning and actions continue, and a complex reflex, in a brain programmed to learn and respond, starts expressing itself as an individual. The adult brain is in such a state of dynamic servo-electro-chemical activity ready to respond, as if on its own, to a stimulus. Each response or action being invoked by the combination of environmental events and the dynamic status of the programmed brain. In the example given above, the finger was moved in response to reading this article, or in response to the presence of another person you think would respond in some favorable way if you moved the finger, or, if you are alone, in response to loneliness, and previous events.

Then the 'I' as in "I moved the finger" and "willful spontaneous action" lose their meaning, and we wonder whether our every action is a result of a complex reflex. The actions of an embryo are usually considered to be

instinctive. We don't usually ascribe the actions of a 20 week embryo, to its own will. Does consciousness enter the embryo around this time or at conception or at birth or even later? Does it 'enter' at all? Or it is there all the time? Or is it never there?

Suppose we program a computer to learn by giving itself random numerical problems and learn through its answers, and laugh (crackle) whenever it gets the right answers. It is difficult to ascribe the ability to solve problems and laugh to some thought and pleasurable feeling inside the 'machine'. "The computer does what it is programmed to do: it cannot do something on its own!". Can any of us really do anything on our own? As we have said before, spontaneity of action is difficult to defend. Realize that we can be as certain about a computer's feelings as of another human being's. There is no way to really tell the difference.

However, each of us feels within ourselves the existence of an 'I' - I feel, I think, I wish, I walk, I talk, I believe, I act, etc. This can be called I, ego, consciousness; The Indian philosophy classifies it into a hierarchy of three classes, viz., mind, intelligence and soul (Mana, Buddhi, Aatmaa). Is this 'I' only for convenience? It is indeed difficult to deny the existence of 'I'.

What about our emotions of fear, anger, pride, happiness, jealousy, love, sadness, lust, ambition? Some emotions are accompanied by secretion of specific neurotransmitters in the brain. But who perceives the emotion and thought? And where? Are they all non-existent? Just because we cannot measure them or we have yet to develop instruments which can detect them objectively? What about thoughts, new ideas, abstract concepts? The responses accompanied by these emotions and the actions generated by the thoughts are objectively seen but these responses and actions cannot automatically prove the existence of the emotions and thoughts. When you tap 5 x 4 on your pocket calculator and press =, the calculator gives a response, 20; does it automatically mean that it had felt happy though it is not programmed to say "ha ha" ?

We cannot go in circles disproving consciousness by questioning spontaneity of action and disproving spontaneity of action by questioning the presence of consciousness. We must realize that the proof of existence of this 'I' or consciousness is based solely on our personal subjective experience and the assumption that since I am feeling this 'I' it must be present in all those similar to me. Does your dog have consciousness? Yes.. because it is similar to you - it walks, eats, barks, and apparently at its own will. Is it the same with an ant? And what about an amoeba. It also moves, apparently on its own. Finds its prey, eats, reproduces etc. It also must be having an 'I'. Maybe this 'I' is very simple and small. But an amoeba does not have a brain. Is brain essential for existence of consciousness? Do bacteria have consciousness? and do viruses too have an 'I' ?

Natural sleep or induced anesthesia: Even though up to 25% of the sleep time may be occupied by dreams, the remaining time we are not conscious of ourselves. When we wake up, we have the same consciousness as before.

Where does the consciousness go during this time. Does the brain get reversibly disconnected from the 'I' ? Is waking up similar to booting a computer which comes 'alive' with the same memory and software as before?

Electro-chemical activity: In psychiatry, disorders of thought and emotion can be treated with drugs. Drug addicts change their thought content and emotions when they are intoxicated. Does it not mean that physical and chemical compounds can alter the yet abstract emotional and thought content of our mind? In psychosis, there is derangement of perception of self and thought content of the person. And this can be treated by drugs with varying degree of success. These drugs interact with the mind and can alter it. Is this 'I' itself accessible to tangible substances? Or do these 'tangible' substances also have their own 'I's which interact with your 'I'. Is 'I' an emergent property of the electrochemical activities of the brain and not separate from the body?

The privacy of consciousness: The color which you call red, is the color which I call red but we both may not be perceiving it the same way. There is no way in which one person can communicate with another what one feels except by representations which are, at best, only crude images of the perceptions.

The non-destructiveness of consciousness: If one of your fingers is cut off, you don't feel any decrease in your 'I'. Even if an arm or a leg is cut away, there will be a loss of body image, but no reduction in the amount of 'I'; The feeling and thinking will be by the same complete 'I'. The seat of feelings could not be the heart since heart transplant recipients do not have the personality of the donor nor are patients on artificial hearts 'feeling-less'. If the whole body below your neck is cut off, and head is kept alive with an artificial heart, lung, kidney, and alimentation, the person, would probably continue to think and feel the complete 'I'. He would still communicate with us through movement of eyes, or with an artificial larynx, by talking. Only when the brain is cut off, or non-functional, we assume that 'I' ceases. Is it that, even then 'I' is complete and that it cannot communicate with us? Is brain the residence of consciousness or is it a communication center of consciousness to the rest of the world.

Imagine the brain to be a communication center. Like a dish antenna. The more complex the dish, the more channels it can receive. The transmission is continuous and ongoing. It only takes a better brain to receive it and communicate. A simpler dog's brain acts 'spontaneously' and does a few things, a chimpanzee does much more. An ant does much less. An amoeba even less, since it does not have the sophisticated machinery to receive other channels. It is like comparing a single channel, mono, black and white TV with, a 69 channel stereo holographic TV. Now imagine the whole organism to be such a telereceptor. Each is like a television screen. But instead of being only a screen which shows visual pictures, it projects the whole image complete with all the accessories. The more complex the organism the more versatile its actions and 'thoughts'. The question then comes of who is transmitting? Is someone transmitting at all? Or is it just a play of chance and

reflexes?

There seem to arise two mutually exclusive basic governing principles of the universe.
1) the divinity principle which assumes that the whole universe is a result of a design...by God; it is assumed that destiny of the universe and every being in it is decided in advance and is unchangeable. If this I true, there is no role of individual 'I's since they only serve to camouflage the all pervading governing power, themselves not having any will.
2) the principle of causality and chance which to some extent is based on Darwin's theory of natural selection and evolution. This assumes that the whole universe and every being in it has arisen out of random occurrence of events allowing the survival of the fittest. There is no designer God in this principle. However, in the extrapolation of this theory to explanation of consciousness would mean what I referred to earlier: that all supposedly willful actions are actually a result of a very complex reflex.

It is difficult to prove or disprove any of the above theories though we may be on the verge of proving the latter. However, in both of them there is little room for independency and capacity of willful action of 'I'.

The definition of life: Life has been traditionally defined as anything which has a capacity to grow and reproduce. This is the reason why plants have been included as alive; (there are some circumstantial evidences which also show that plants can perceive and think). Viruses just miss to be qualified to be called alive since they require some other life forms to help them reproduce. But they reproduce anyway and that brings them to the borderline. Now we have found Prions: small proteins which can reproduce and could cause havoc (BSE & CJD !) even amongst the most 'superior' species.

For many decades it has been possible to produce identical objects with the help of machines. Today a computer can do almost anything that most living objects can do. A robot can see, hear, have tactile sensations, move, obey taught commands and do most actions which a trained dog can do. Though it may be difficult for the silicon technology to reach the miniaturization of storing information that nucleic acids have achieved in nature, it is theoretically possible to program a computer to reproduce itself, given all ingredients. Will it then qualify to be called alive?

Again, growth and reproduction cannot be the criteria for being alive. Many cells in individual organisms have lost the capacity to grow or reproduce, like the nerve cells. But they are still functional. And it would be absurd to call most of your brain dead because it cannot reproduce.

Can the ability to move spontaneously by itself bestow the label of being alive? A watch moves by itself until it dies when the battery runs out. The earth and all the planets move spontaneously. Shouldn't we call them all alive?

The common factor in all living beings, as classified today, is presence of

nucleic acids arranged in chains (DNA and RNA). Does the presence of nucleic acid alone make an object alive? Does it endow consciousness automatically? Or is it its programmability? What is there in nucleic acids that is not there in every other object we see around us, a table, chair, watch, telephone, hydrochloric acid, water and even space, fire, light, breeze, sound. Why could they not be having consciousness. Inasmuch as we cannot deny the presence of consciousness in ourselves, we cannot refute its omnipresence.

Since times immemorial, our sense organs could allow us to ascertain the presence of light, sound, mass, smell and taste. We have since developed instruments to ascertain the presence of, and measure electricity, electromagnetic radiation, gravity and nuclear forces. Before these parameters and instruments to measure them were developed, their presence could never be proved. It could be only theoretically deduced. Even today the quantification of smell and taste is still in the experimental stage. As we learn more about the chemistry of thought and mechanisms of neural networks, we may develop parameters to measure consciousness and life. We may realize that objective communication, ingrained in the definition of science, may be limiting its progress.

As of today, concepts of spontaneous action, consciousness and life are indeed based on very weak grounds and we could conclude that if you are sure about yourself being alive and conscious, then every material object qualifies to be called alive and conscious, differing only in the quantity of liveliness and quality of consciousness; and vice versa.

Jayant S. Vaidya

email: j.vaidya@ucl.ac.uk

return to Philosophy index

return to overall index

return to Introduction and textual index