

Nature of White Light during deep meditation

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When Vivekananda first met Shri. Ramakrishna he was thoroughly probed and tested by Shri. Ramakrishna about his yogic karma. One of the things that Vivekananda told Shri. Ramakrishna was that just before he went to sleep he used to see white light.

There are hundreds of examples of advanced yogis who have reported seeing white light in deep meditation and being immersed in it. Similarly there are large numbers of examples of psychedelic drug-takers who have also reported and written about seeing brilliant white light during their “trip”.

Such experiences have also been reported by large numbers of people who have gone through the [near death experience \(NDE\)](#). They have reported, irrespective of their religion and faith, seeing brilliant white light and having out of body experience (OBE).

What is the nature of this light ? Is it an internal manifestation of brain or something external? Recent researches in the science of neuron communication may throw some light on it.

Neurons communicate with each other via electrical signals which pass from one neuron to the other via axons and dendrites (wires of brain). The activity of a large number of neurons firing and sending signals through these brain wires produces thought. Recently scientists have also discovered that information between neurons [is passed by mechanical pulses in axons and dendrites](#) and via light. Nature uses all the forces at its command and since all these three mechanisms exist they are used in neuron information transfer.

It has been recently discovered that [neurons also communicate via light](#). The light or photons are produced when neurons fire. The exact mechanism on how they are produced is still not known but they vary in wavelength from 200-1300 nanometers which corresponds to ultraviolet (UV) to far infrared (FIR) radiation. Thus large number of neurons firing can produce white light.

The light produced by neuron-firing is transmitted through axons and dendrites which behave like optical fibers. Scientists estimate that [they can transmit anywhere between 50-96% of the light incident on them](#). Transfer of information among neurons via light could be the basis of brain's high speed reaction and processing.

There are close to 100 billion neurons in the human brain. These neurons are connected to each other via dendrites, axons and also to glial cells. The total connections [therefore number between 500-1000 trillion](#). Each connection is capable of producing photons during its firing.

Scientists have also estimated the rate of photon production by doing experiments on rat's neurons and then extrapolating the results for human brains. The photon production rate was developed for a very "quiet" neuron. This rate was then multiplied by the total number of connections to give a photon [production rate close to 10 trillion/second](#). In human brain specially during deep meditation the frequency of neuron firing is about 100 times that of "quiet" brain and gives rise to [Gamma brain waves](#). This can produce close to 1000 trillion photons/second and could be the source of the bright light reported by yogis and psychedelic drugs-takers.

Data from brain scans reveal that [psychedelic drugs work by depressing the brain areas which give rise to ego](#). Besides they also help increase the connectivity in other parts of the brain. Thus these drugs allow the whole brain to work together which results in melting of boundaries between self and the world. These effects are very similar to those observed in [Samadhi](#) or deep mediation.

Samadhi also dissolves the ego and focus on a single thought for a long time results in *Sanyam* which allows all parts of the brain to work together. This results in experiences where the yogi feels that he/she has melted into Universal

Consciousness. The major difference between the experiences from psychedelic drug and meditation is that the former cannot be controlled whereas experiences from meditation and *Samadhi* can be.

Advanced Yogis and psychedelic drugs-takers have regularly reported the life changing experiences after seeing and being submerged in white light. They feel a sense of oneness with the world and the universe and a belief in inter-connectedness of everything. Similarly in NDE [scientists have recorded Gamma brain waves](#) indicating a very high level of brain activity similar to that during *Samadhi* and hence the vision of white light and spiritual experiences.

Thus such spiritual experiences are not because of light but because of the production of superfast and powerful brain which produces *Sanyam* and hence gets the knowledge about the Universe. The brain during *Sanyam* and to some extent under drugs is firing on all cylinders. Light is simply a by-product when all neurons are working and firing in unison. It is as if when one reaches the state of *Samadhi* then the light production tells the brain that it has been attained!

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Published as an [editorial article in Speaking Tree \(Times of India\). 17 June 2018](#)