

Mind Matter Interaction - A Conjecture

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Introduction

Throughout the history of human civilization there have been large number of instances where so-called “miracles” have been performed. These have included levitation, production of material things from thin air, physical healing, etc. The nature of these miracles is the same, irrespective of religion and different civilizations. Some of their accounts have been exaggerated but a large body of information shows remarkable consistency in their nature and reporting though the [producers of such miracles always claimed that God or higher forces and entities use them as medium.](#)

However I feel that these events have come because of the interaction of human thought with gravity and material surroundings. After all, a thought produced by the physical brain must be physical in nature and hence governed by certain scientific laws. Thus, curiosity arose about which laws of science operate to make these things happen. This essay is my humble attempt in trying to understand them.

I have been exploring and writing about these issues since 1977 though the desire to [understand them started from my childhood.](#) These ideas since 1977 were initially written in a [diary form](#) and then distilled in my first book, [“Nature of Human Thought”](#) which was published in 2004 and its second edition in 2010. Recently I have written another book [“Exploring the Mind of God – How Technology Guided by Spirituality Can Produce Happiness”](#) which extends and explores mind-matter interaction issues further. This essay puts most of the material from these books together.

Most of the times scientists scoff at these conjectural ideas and term them pseudo-science. However if in early 1800s somebody had told mankind about [Einstein's relativity theory and the space-time continuum](#), people would have had the same reaction as today's so called hard-core scientists have about mind/matter subjects. *The black magic of today is often the science of tomorrow!*

The spirit of science encourages our imagination to flower and to conjecture and the only validity of such conjectures is the proof from the experiments. It is my firm belief that we should have an open mind about mind/matter interaction and try to figure out how it could be possible.

Why Study Mind -Matter?

Curiosity is one part, but a major reason is that it may lead to a quantum jump in the evolution of mankind.

As we will show in subsequent sections mind-matter interaction only happens when the brain becomes extremely powerful, so it can produce a deep thought. This deep thought or [Sanyam](#) according to [Patanjali Yoga Sutras](#) helps us get enlightenment and gives us great happiness and joy and leads to liberation from the cycle of birth and death. This is a major step towards removal of pain.

And the second reason is that mind-matter interaction may provide a mechanism for us to get out of the gravitational field of the earth and could make us an intergalactic travelling civilizations. I firmly believe that [our origins are extraterrestrial](#) and we long to go back to our roots in distant galaxies and planets. These other worlds were our heavens of mythology. Mind-matter interaction may provide a possible mechanism to do so as we will see in the sections below.

Genesis of the Idea

In late 1977 I was walking through a thick pine-grove in Gainesville, Florida, USA when suddenly a thought came out of blue that gravity and human thought may be related.

I was doing [my Ph.D. in solar thermal utilization](#) and was not thinking about this relationship, or anything connected to gravity at that time, and hence was taken aback by the suddenness and intensity of this thought. *I also felt that it must be true since it came with such a force.* The power of this thought was such that I spent next 3-4 months researching it and, in the process, neglected my Ph.D. research. I also felt that the thick [pine-grove acted as an antenna](#) for getting such a thought.

This event also propelled me to start investigating the area of [mind-matter interaction](#) and other aspects of [spirituality](#). In fact, whatever little I have thought of and written on this subject in the last 45 years was triggered by this single thought.

Though I understood intuitively the import of this thought at that time but even today, somehow the relationship between deep human thought and gravity has remained elusive. However it now appears that there may be a light at the end of the tunnel! And this essay is my humble attempt to show how human thought and gravity may be related. But first of all we will try to understand the nature of human thought.

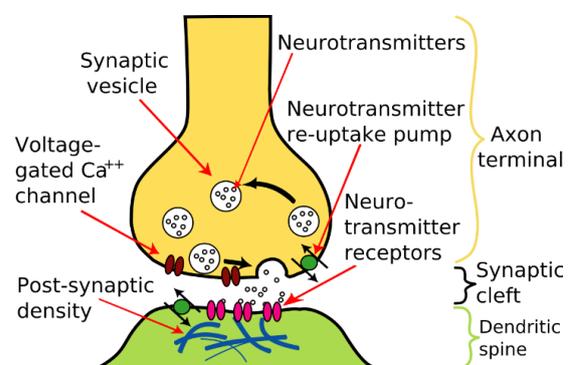
Nature of Human Thought and Memory

It is an accepted fact that a thought is produced when brain neurons fire. [There are close to 80-100 billion neurons](#) in the brain (the exact figure is not known). For a simple thought like what is the colour of a flower, open the door, etc. a small portion of the neurons fire but in deep concentration leading to [Samadhi](#) and [Sanyam](#) (combination of concentration and contemplation on a single subject or an object for a long time) almost all the neurons fire to

produce a deep thought. Thus, the difference between deep and shallow thought is its intensity and duration.

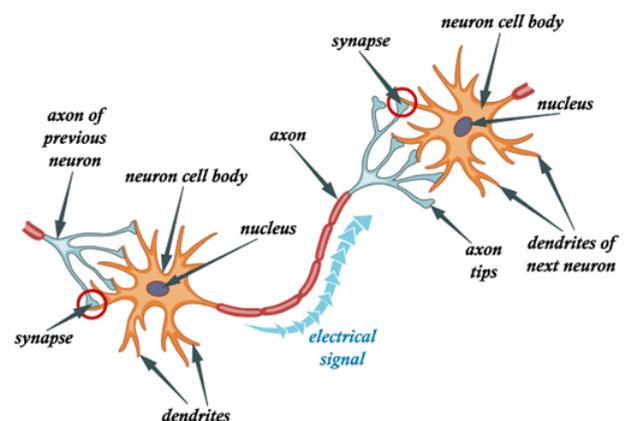
Activation of neural pathways triggers firing of neurons. This activation is triggered either by signals from sense organs or stimulation of certain memory space in the brain. Firing neurons help them to communicate with each other. During this communication electrical signal from a neuron is converted into chemicals ([neurotransmitters](#)) and transmitted across the synaptic cleft to another neuron where it is again converted to electrical signal for the onward journey.

[Synaptic cleft](#) is a tiny space of about 20 nanometers (nm) between an axon and a dendrite and is the place where two neurons exchange information via neurotransmitters (NT).



A neuron has three parts (shown below). At one end is dendrite which accepts NT from other neurons; the central nucleus which is the heart of neuron and a long nerve fiber called axon whose end (synapse) releases the NT for transmitting to another neuron. Large number of neurons connected like this form a neural pathway.

Why did nature produce this type of diode-based communication system where the electrical signal from the neuron is first converted into chemicals (neurotransmitters), and transmitted through synaptic cleft and again converted back into the electrical signal?



A possible answer could be that during this conversion in synaptic cleft, photons are produced which are the signature of thought. Anytime a chemical reaction takes place (production of NT is one such reaction) it produces weak photons. This is the nature of the chemical bond.

Weak photon production (in far infrared region) [was experimentally observed in the brain in the late 2010s](#) when scientists detected them being emitted during the firing of the neurons and transfer of neurotransmitters across the synaptic cleft. Scientists are still not sure in what way brain uses these photons but speculate that somehow, [they may help in increasing communication between various parts of the brain.](#)

I conjecture that these photons from large number of neural pathways synchronize via a non-linear process to form a three-dimensional hologram which we can call a thought. Hence the origin of thought probably occurs in synaptic clefts!

Each thought, however, is the result of activation of a unique set of neural pathways though we still do not know how many neural pathways are needed for it. ***In fact the formation of such unique neural pathways is the memory.*** So neural pathways are the memory and neuron firing in these pathways produces a thought. With practice and constant flow of electrical signals through these neural pathways, memory of that particular object also gets strengthened.

Brain Complexity and Synchronization of Thought Photons

Just to give a sense of complexity of brain let us look at the numbers of possible neural pathways in the brain. There are close to 80-100 billion neurons in the brain. Each neuron has many dendrites and axons which connect it to other neurons. Recent scientific evidence also suggests that besides neurons another type of cells called [glial cells](#) take part in communication.

Glial cells outnumber neurons by nine to one and can modify the signals transmitted by each neuron. There are therefore [estimates that 10¹⁵ synapses in the brain](#) maybe involved in communication. Thus, the number of different combinations for neural pathways and thought production are mind-boggling. That is the reason why the human mind can generate millions and zillions of thoughts!

However, the photons from each synapse must be synchronized with others to produce a stable thought structure. This synchronization takes place via the [positive feedback type mechanism](#) so that each photon is influenced by others and is guided by an entity called 'I' (ego, will, sense of identity, etc.).

[Ego acts like a symphony director](#) and helps provide the necessary energy and focus to maintain a given thought for a certain time. It also constantly compares it with signals from outside (those we receive through the senses) to give us a sense of reality.

We still do not completely understand how [ego, or 'I'](#) can influence this process, but just like the music conductor who determines which part of the orchestra plays for how long, 'I' decides how long a particular thought will remain in the "vision" field. *This process is called concentration and seems to also exist in other animals.*

With practice, concentration becomes stronger till a person can nearly make all the 80-100 billion neurons fire in a laser-like fashion for a long time on a single thought. This is the [genesis of meditation or Samadhi](#) and results in [Sanyam](#) according to Sage Patanjali. According to him *Sanyam*, done on any subject results in its complete knowledge. This is also the basis by which all [great discoveries in science, art, and any other human endeavor](#) are made.

In fact the whole basis of [Patanjali Yoga Sutras is to produce a powerful mind](#) capable of producing a deep thought on any subject or object. Such a mind

produces enlightenment for a yogi and helps in his/her liberation from the cycle of birth and death.

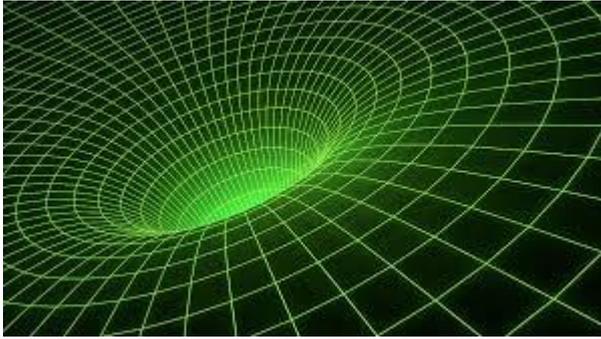
*This deep thought produced continuously also helps dissolve memory knots of the brain since this activity requires increased number of neural pathways and hence the loosening of existing memories. Patanjali says that removing memory knots or *sanskars* makes the mind like a crystal so that any object or subject occupies the whole brain. Or in other words when memory knots are resolved the processing power of the brain increases exponentially and allows the brain to focus on a single object or subject in a laser-like manner. Hence the reference to crystal-like clarity of the brain.*

The production of weak photons for thought formation could also be the reason why many Yogis have [experienced seeing white light during intense meditation](#). Similarly the observation of white light by persons during [near death experience \(NDE\)](#) could be an outcome of nearly all the brain neurons firing during the final exit.

Thought and Gravity interaction

How can thought and gravity be correlated? According to Albert Einstein [gravity is nothing else but a curvature of space-time continuum](#) and hence geometric in nature. *It is my conjecture that the structure of thought is also geometric and hence it is possible that both gravity and thought are related at a deeper level.*

The relationship is based on the idea that [deep human thought is a very stable hologram](#) and may interact with gravity. This idea is explored in greater detail in the sections below.



According to the general theory of [gravitation, light bends around massive bodies](#). This is because massive bodies distort the space-time matrix and the shortest path for light travel is geodesic. Hence light appears to bend when it passes

heavy bodies like sun. This was one of the great triumphs of Einstein's theory of gravitation.

Since gravity bends light, we can conjecture by principle of equivalence that light should also bend the space-time matrix! This is the line of thinking we will employ in our quest to find the relationship between deep human thought and gravity.

Deep Thought Hologram as a Soliton: Interaction with Gravity

It is possible *that a deep and extremely focused human thought, which leads to Samadhi, may act like a laser, and could interact with space-time matrix in a non-linear manner to [produce a soliton](#).*

[Soliton is a wave](#) which can remain stable for almost infinite time and can travel to great distances without dissipating. These waves arise because of the non-linearity of the wave phenomenon and have been observed in liquids, gases, optics and even in space. The word soliton is apparently derived from solitary wave which being stable almost acts like a particle. Hence soliton rhymes with electron!

When the conditions are right, and a critical threshold is achieved then according to [Catastrophe Theory](#) soliton type structure is formed. *Thus, it can be conjectured that a thought which is an outcome of tremendous concentration for a long time can form a soliton.*

Since thought solitons are very stable it is tempting to think that they may form stable memories and may reside in [Knowledge Space](#). These memories could also be the basis of [Karma](#) that is talked about in the Indian Philosophy.

Einstein's general relativity and gravitation theory has shown that [light \(photons\) is bent by heavy bodies](#). Since gravity field interacts with light, by principle of equivalence, light should also change it.

Gravitation theory also shows that a combination of energy and momentum can curve space-time matrix. Though photons are massless particles, they have energy and momentum – two important attributes for bending space-time matrix. Hence light travelling through it should be able to change the matrix shape.

However, the effect is miniscule and is extremely difficult to measure since photons have very little energy and momentum. However, it could be possible that high intensity light should be able to deform it. Recently [some theoretical studies have shown the effect of lasers on space-time matrix](#) deformation.

Extrapolating on this idea one can conjecture that laser-like *thought-hologram soliton may deform the space-time matrix just like a mass would do and produce mechanical effects*. This could be the [basis of mind-matter interaction](#). However, the mechanical effect may be very feeble.

Nevertheless, these mechanical effects under certain conditions might be amplified, allowing the mind-matter interaction to become visible. This amplification could be explained by the [science of resonance](#).

All systems in the Universe possess natural frequencies and when those frequencies are reached large scale mechanical effects are observed. A classic example is the child on a swing. A slight push at the right time to the swing can make it go higher and higher.

Similarly, [certain notes played on musical instruments can shatter wine glasses](#). In the same manner some of the modern bridges were destroyed when the marching steps of the soldiers matched the natural frequency of the bridge.

All these effects show that an exceedingly small force can create large mechanical changes when the natural frequencies of the system are reinforced by a small mechanical force. This is the genesis of [Butterfly effect](#) generally described in chaos theory and is an outcome of non-linear dynamics of the system.

Thus, a deep thought-hologram soliton may somehow interact with the space-time matrix in a non-linear way to effect large scale mechanical changes. We still do not know how this takes place.

This process however may be able to explain the movement of physical objects by thought ([psychokinesis](#)) and [poltergeist phenomenon](#) where the presence of a troubled person brings in abrupt movements of the physical objects like stones, furniture, etc. Generally, the troubled person is capable of very strong emotional thoughts.

Thought Transmission

This interaction of thought hologram with space-time matrix may also explain how thought could be transmitted. For example after their formation shallow thoughts dissipate rapidly within the brain. However, a focused thought may have enough energy to be transmitted.

Once the threshold energy of thought is reached (by intense concentration) it can form a soliton and can be transmitted outside the brain. Also depending on the energy of thought it may form [dissipative solitons](#) and be stable for some time. This is the basis of signal we receive when somebody thinks about us or there is a danger to us. However only the deep thought soliton stays

stable in space-time matrix for long time and could be a part of the permanent memory in [knowledge space](#).

Soliton, being a powerful signal and a product of very focused thought, also has an effect on minds of people who interact with it. This results in mind bending experience that people have when they came in contact with powerful minds.

That could also be the reason why [most abductees](#) felt very frightened when they encountered alien beings. They felt as if their whole life was sucked out of them. Such [encounters with alien beings](#) is also able to wipe out the memories of encounters in the abductees since they interact with recipient brains in a powerful manner.

This is what [Patanjali has said that a Yogi not only can read others mind but can also take command of his/her body](#).

I also feel that it is this soliton thought wave that may be responsible for [Mahasamadhi](#) of great rishis and enlightened souls which enabled them to leave the body at will guided by the gravity of celestial bodies like sun and stars.

Naturally production of a soliton for final exit requires a tremendous concentration and energy on the part of a yogi. We still do not understand how this happens. In modern times there is an example of [Swami Vivekananda who left his body by will during Samadhi](#).

Sometimes it seems that the physical structure of brain and the body is required to reach the stage of highly non-linear thought and once the soliton is achieved the body's function is over and the liberation of a being from the cycle of birth and death results. Sage Patanjali says that this stage could be achieved by [Dharmamegha Samadhi](#) (Section IV.29).

It is also very tempting to speculate that production of thought like soliton artificially and its interaction with space-time matrix may provide a possible mechanism for teleportation and propulsion for overcoming gravity and help in intergalactic space travel!

[HOME](#)

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Expanded and modified February 2024.

An earlier version of this article was published in [Thrive Global, March 22, 2021](#) and [South Asia Monitor, 24 March 2021.](#)