

Can Mind Interact with Matter? – 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 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.](#)

To my mind these events have come because of interaction of human thought and material surroundings. After all, a thought produced by physical brain must be physical in nature and hence governed by certain scientific laws. Thus the 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](#). They 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 [“Spirituality + Technology = Happiness”](#) which extends and explores mind-matter interaction issues further.

Most of ideas written in this diary are however intuitive in nature and hence not exact in the formal sense. So about 5 years ago I [posted the complete diary on the web](#) for wider circulation in the fond hope that some bright reader might be inspired by the ideas and help in providing a rigorous and scientific proof to some of them.

Since 2002 I have also been writing on these issues quite regularly in [Times of India \(Speaking Tree section\)](#); [Huffington Post](#) and recently in [Thrive Global](#). All these essays are also available [in my writings](#). However they were scattered all over the place so I felt it appropriate to put the salient features of mind-matter interaction in this essay.

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. When large numbers of people throughout the history of mankind have reported strange phenomena, they were not fools but were simply reporting events about which they did not understand. We owe this much to ourselves to at least make an attempt to understand these phenomena, try to explain them with the present laws of science and in the process even extend the laws of science. Science makes progress only when it helps develop theories which explain the existing experiential facts. To deny the existence of these facts in the mind/matter realm is to rob the science of its jewels and to retard its progress.

A great joy results when we look deeply at anything. It is the nature of human mind that when it is [working at its full capacity on something positive then great contentment and happiness results](#). I feel understanding mind-matter interaction process falls in this category.

Mind matter interaction can only happen when human thought and gravity can be correlated. Matter and gravity are interlinked and as the famous theoretical physicists [John Wheeler had stated “Matter tells space-time how to curve and space-time tells matter how to move”](#). 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.***

We will try to explore this relationship later. But first we will try to understand the structure of thought and explore the possible mechanism on how it could be related to gravity.

Thought structure

There is a consensus that a thought is produced when the brain neurons fire. How many neurons fire for a single thought nobody knows? We can further conjecture that firing of neurons produces a ***hologram structure*** which can be called a thought.

Firing of neurons takes place when [neural pathways](#) are activated. This activation is triggered either by signals from our five sense organs or stimulation of certain memory space in the brain. Neural pathways help neurons 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 onward journey.

Synaptic cleft is an extremely small space (~ 20 nm) between two neurons as shown in Fig. 1.

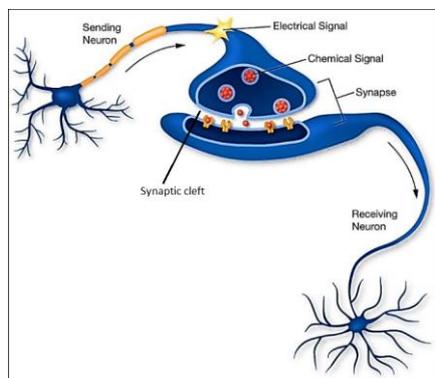


Fig. 1. Neuron communication

The process of conversion of electrical signal to chemicals and then again to electrical signal produces weak photons - possibly in synaptic cleft. ***It can be conjectured that these photons from large number of neural pathways combine to form a hologram which we can call a thought.***

As this thought-hologram is three dimensional it could be the reason why most of our thinking is geometric in nature and we seem to visualize everything in terms of shapes and geometry.

How does such a firing of neurons produce a thought? Emerging science of synchronization might help to explain it. This field emerged when it became possible to explain successfully how a very large number of fireflies after their random initial firing, started glowing in a synchronous manner in a short time. Thus synchronization of fireflies glowing, heart cells beating (pace maker), etc. are all outcome of a spontaneous order by which a large number of similar objects or oscillators start working or firing in unison.

These oscillators synchronize spontaneously since they are influenced by each other via a positive feedback-type mechanism. For example, in case of fireflies this feedback is through their light signals whereas in heart cells it is through mechanical coupling. The feedback allows the oscillators to adjust their phases so that they synchronize to produce the desired intended result. ***In a similar way it is possible that the weak photons produced during firing of neurons synchronize and form a thought-hologram.***

Each thought is a result of activation of a unique set of neural pathways though we still do not know how many neural pathways are needed for it. 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 100 billion neurons in the brain (the exact number is unknown). Each neuron has many dendrites and axons which connects it to other neurons. Recent scientific evidence also suggests that besides neurons another type of cells called [glial cells takes part in communication](#). Glial cells outnumber neurons by nine to one and can modify the signals transmitted by each neuron. Thus the number of different combinations for neural pathways and thought production are mind-boggling. That is the reason why human mind can generate millions and zillions of thoughts!

However the photons for each thought signal has to be synchronized to produce a stable structure. This synchronization is guided by an entity [called 'I' \(ego, will, sense of identity, etc.\) which acts like a symphony director](#) and helps provide the necessary energy and focus to maintain a given thought for a certain time. It also synchronizes random signals emanating from different parts of the brain to form a stable thought-hologram and constantly compares it with signals from outside to provide us a sense of reality.

We still do not understand completely how '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 animals.

With practice, concentration becomes stronger till a person can make nearly all the 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* on any subject results in its complete knowledge.

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.

I also conjecture that with practice the deep thought-hologram can be made so intense that it can ***transform suddenly from 4-dimensional space-time to higher dimensions and may reside there as a very stable memory and possibly interact with gravity***. We will explore this idea further.

Thought in Higher Dimensions

Our world that we see and feel is four-dimensional (three dimensions of space and one of time). However, [theoretical physicists have recently suggested that there could be 10 dimensions of space and one of time to make our universe 11-dimensional](#). Cosmologists and physicists invoke these extra seven dimensions in order to relate electromagnetic, nuclear and other forces with the all-pervasive gravity field. Unfortunately we cannot see these higher dimensions but at best can conceptualize them through higher mathematics. Even [Einstein in late 1930s dabbled in higher dimensions](#) to create a unified theory of everything but gave it up later on.

Interestingly our present universe has only 5% ordinary visible matter and [the rest 95 % consists of "dark matter" and "dark energy"](#) which we cannot see and know very little about. It is quite possible that [this energy and matter may exist in higher dimensional space](#).

An interesting aspect of higher dimensional reality could be that a being residing in it will be able to predict events in our four-dimensional world since he/she will have a “better view”. Some yogis get this power through *Sanyam*.

According to *Sankhya* and *Patanjali* yoga systems Universal Consciousness is even more ancient and pervasive than gravity and it is quite possible that our universe may be multi-dimensional and substantial part of it exists in higher dimensions. It is also possible that the four-dimensional space-time continuum, which we can visualize and feel, could be a “crystallization” or “shadow” of multi-dimensional reality.

Our ancient Rishis and Yogis seemed to have some knowledge of this cosmic process. For example there are few sutras in [Patanjali Yoga which describes about space and time on similar lines as the present theories](#). Similarly in Bhagwad Gita Lord Krishna showed Arjun the [“Virat” form \(Virat means huge\) or the birth of cosmos](#). The description of “Virat” form in Chapter 11 of Gita is very similar to that of destruction of matter by a black hole! For Arjun to see this form Lord Krishna gave him a divine vision since with the existing vision it was not possible to show him the multi-dimensional reality. Maybe for us also it might not be possible to see the higher dimensions till we remain in the present four-dimensional world.

The four-dimensional space-time continuum is slightly flexible and thus it can be bent by massive bodies. The bending of this continuum results in deflection of light when it passes near these bodies. Einstein predicted this bending of light in his [famous paper on General Theory of Relativity published in 1915](#). This prediction was confirmed experimentally in 1919 by the British physicist Arthur Eddington when he showed that the light from a distant star bent as it passed the sun during the total solar eclipse.

We can conjecture that as the space-time dimensions increase and become greater than four it is possible that the **rigidity of space also increases** and it is this rigidity that we are interested in looking at how deep thought may interact with gravity. We will explore later how the space-time dimensions could be increased by a novel concept of “Thought Engine”.

One aspect of this rigid space could be that the loss of information from a signal is very little. In the existing four-dimensional space-time world, the attenuation of signal is via $1/d^2$ law i.e. the signal strength reduces from the source by inverse of distance squared. As the space dimensions increase and the space gets rigid, it is possible that the signal attenuation may follow the path as shown in Fig. 2. With increasing rigidity the velocity of signal also increases and in higher dimensions it could be many times the velocity of light!

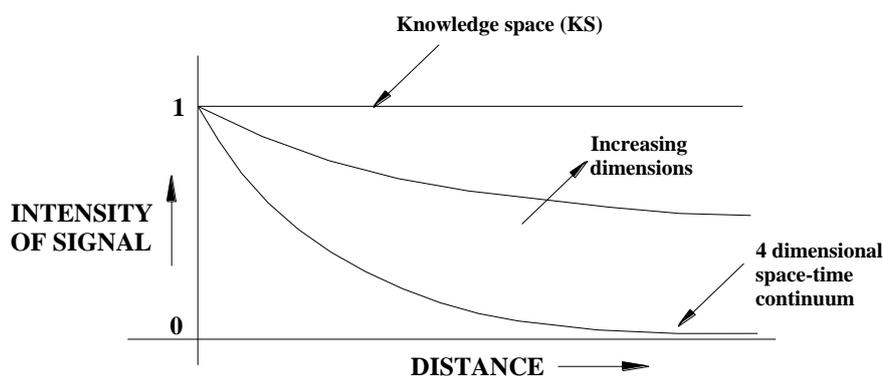


Fig. 2. Rigidity of Space

Another aspect of rigidity of space could be its anti-gravity properties. The bending of regular space-time continuum allows the mass to move and be “attracted” to another body as shown in Fig. 3. With rigidity of space there is a possibility that **space-time continuum could become inverted so as to give it an antigravity property**. This idea is very speculative though worth pursuing.

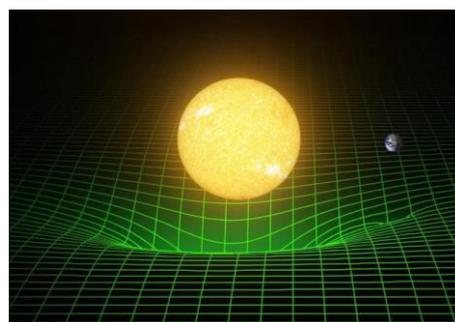


Fig. 3. Bending of space-time by mass.

Knowledge Space

Since the signal loss is reduced drastically in higher dimensions, it is possible that this space may contain structures [or memories](#), which are very stable, and thus an information or knowledge structure will remain there forever. I think a deep thought - hologram structure may occupy this space. In the absence of any better word we can call this space as **Knowledge Space (KS)** and it may contain fundamental knowledge produced in the past and is continuously fed by the ever-increasing knowledge from various civilizations.

A prepared and focused human mind can access knowledge from this space and [I feel that the great discoveries of mankind have come from such access](#). It is also possible that as earth moves around the sun and the solar system revolves around the center of the Milky Way galaxy, periodically we may come across various Knowledge Spaces which may help the mankind to evolve. Similarly, a younger civilization than ours may come across KS developed by us and thus the evolution continues.

The movement of earth and the sun around the Milky Way galaxy is time-dependent ([it takes about 226 million years for the solar system to make one round of the Milky Way galaxy](#)) and so could be the earth's encounter with KS. Thus our **discoveries are time-dependent and not person-dependent**. Any prepared mind encountering the KS at a particular time can get that knowledge.

There are many instances in the history of mankind when several people had similar ideas and thoughts at about the same time. Prepared minds encountering KS react in the same manner. Interestingly this also raises the possibility that there may be knowledge cycles since the movement of earth in space is cyclic. We are not sure what may be the period of such cycles, but in ancient texts there are references that it may be anywhere

from few hundred to tens of thousands of years. Periodic appearance of great souls on this planet earth may be an outcome of these cycles.

Thought Engine and Production of Matter

It is possible that the transformation of thought from one space-time dimension to another takes place via a **“Thought Engine”**. This is similar to a reversible heat-engine, where energy flows from higher temperature (source) to lower temperature (sink) and in doing so the engine produces work.

Similarly, in the “thought-engine” when a certain dimensional space transforms into a lower-dimensional space, energy or mass comes out and by application of energy and mass, a lower-dimensional space can be transformed into a higher-dimensional space. The transformation from one space-dimension to other is via a quantum jump and hence is not a continuous transition. Fig. 4 shows a concept of thought engine.

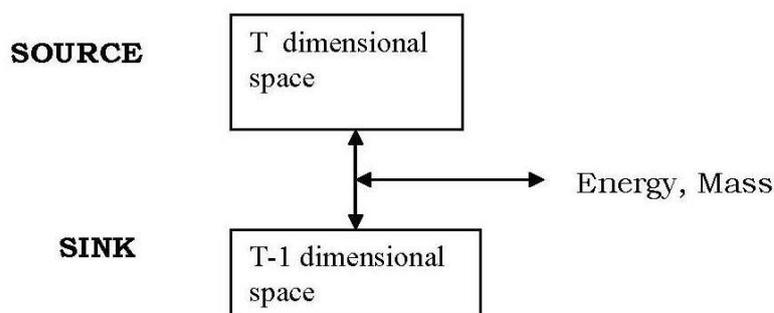


Fig. 4. Concept of a reversible “Thought Engine”

If we take this analogy further, then we can conjecture that at the highest space-time dimensional transformation, even the ***time gets sucked in and only space remains***. This is a novel concept which shows that time can be introduced and removed from the universe and hence the possibility that total time in the Universe could be constant. This concept is schematically

shown in Fig. 5. The origin and evolution of Universe as depicted in this figure is very much in line with that given in [Sankhya philosophy](#).

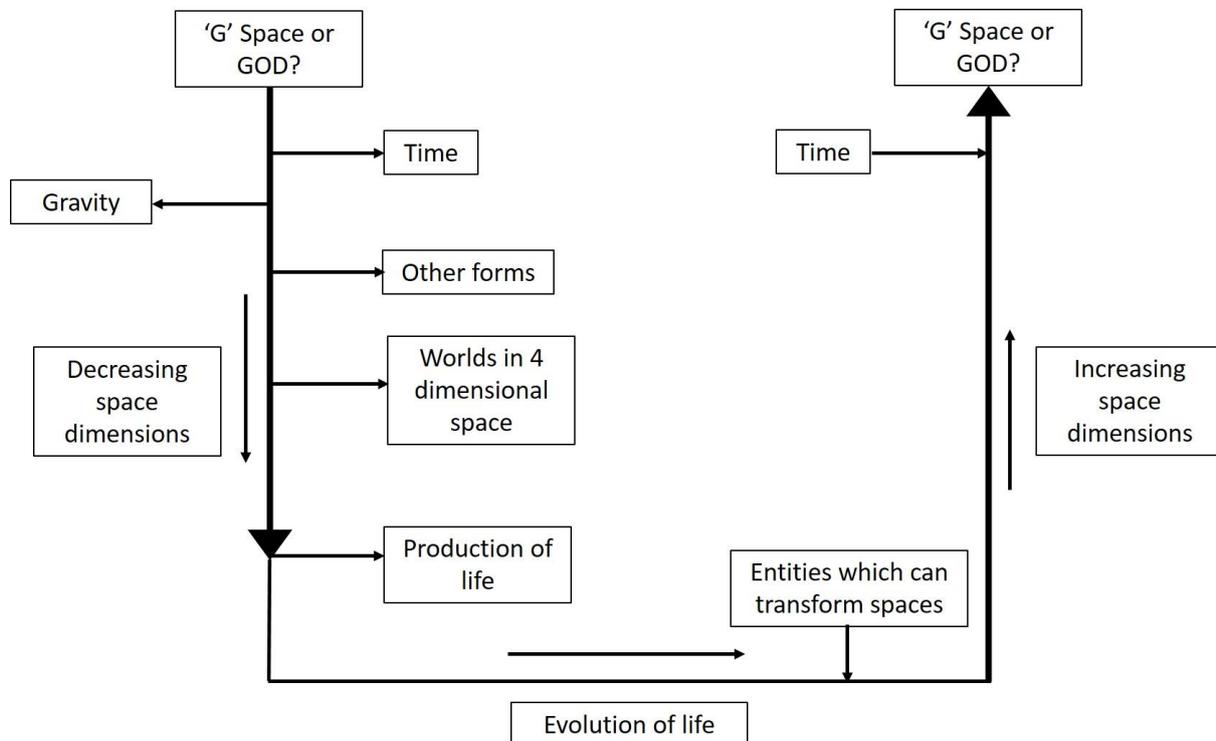


Fig.5. Possible evolutionary model of life

Maybe the final dimension (which we can call 'G') is GOD. Probably it is 'Akash' (Sanskrit word for space) or the final entity as discussed by the ancient Indian philosopher Adi Shankaracharya in his famous book Vivekachudamani. This 'G' space has always existed with no past, present or future.

We can also conjecture that as time is used (sucked in) for transforming lower dimensions into ultimate 'G' dimensional space it is equivalent to energy and since it devolves into ultimate space it may have geometric properties. Thus it is possible that **TIME** \Leftrightarrow **ENERGY** \Leftrightarrow **SPACE**. Since time is the last thing to devolve, it is possible that our present world may have time dimensions. We are however not sure what those dimensions are. Also

as time is the last thing to be absorbed, ***it is theoretically not possible to go back in time!***

Another outcome of this idea is that as ***our minds are the product of Universal time frame it is theoretically not possible to fully comprehend the “Mind of God” (which is beyond time) and get the theory of everything!***

Thought engine also provides a possibility of annihilation and production of matter and I feel that it is at this level that deep thought and gravity could be related. This could also be a mechanism by which some Yogis claim to produce material from thin air and could explain the poltergeist phenomenon! This is similar to what modern physics describes as [production of matter from vacuum!](#)

Similarly the concept of thought engine also opens up a possibility of higher dimensional-based form-templates being transformed into matter and hence creation of completely new designs and inventions. Besides, it also provides a mechanism by which personal consciousness is connected to Universal Consciousness since we can reach space 'G' through deep thought. ***Thus deep thought, matter, space, time and Universal Consciousness are all related.*** With this relationship it may be possible to find out how we can get Universal knowledge and may progress towards understanding the Mind of God.

Thought and Gravity

We have conjectured that deep thought is geometric in nature. So is gravity and hence it is possible that they may be somehow related. ***Thus deep thought may bend the space-time continuum similar to that done by gravitational mass.*** This interaction might take place in higher

dimensional space. Also as mass could be produced and annihilated via a thought-engine during transformation of spaces, it is possible that deep thought and gravity maybe related at a deeper level.

As was stated earlier there is a large body of psychokinesis data from all over the world attesting to the interaction of mind and matter. Thus [production of materials from thin air; changing their property by application of thought only; levitation; etc.](#) have been reported by people throughout the ages and from all different civilizations. Sage Patanjali in his [Yoga Darshan](#) states that with Sanyam on various objects, a Yogi gets power to master nature so that he can fly, become invisible, move objects by thought and make the human body a very powerful instrument for knowledge gain. All these things can take place only when deep thought and matter are interrelated and hence can interact.

Deep thought is a product of almost 100 billion neurons firing in a laser-like fashion. Similarly it may be possible that gravity manifests only when a very large number of particles are involved. ***Both gravity and deep thought therefore could be an outcome of large-number mathematics.*** The exact nature of how it takes place is presently not known.

We can only measure gravity with [masses of the order of milligrams.](#) According to physicists below this mass it is extremely difficult to measure gravity since gravitational forces are very weak. Nevertheless, even a milligram of substance contains billions and billions of atoms and it is possible that these large numbers produce (possibly through the movement of electrons and atoms, etc.) a signature called gravity. This concept is very conjectural in nature. However, it is quite possible that ***movement produces the necessary structure which could be either thought (firing of neurons) or gravity (movement of electrons etc.).***

Movement is an outcome of time and as we saw in Fig. 5. [gravity itself resulted when space started flowing](#). Without time there is no movement and ultimately everything devolves into ‘G’ space.

Gravity Antennas

That the ancients knew about the effect of gravity on human soul is also attested to by the superstructures built for kings and queens’ burials. It can therefore be conjectured that the Egyptians built the massive pyramids as gravity antennas for passage of soul. The biggest Giza pyramid is estimated to weigh [6 million tons and the King’s and Queen’s burial chambers are close to and equidistant from the center of gravity of the pyramid](#). It is quite possible that the ancient Egyptians understood that localized gravity might help the [passage of soul through intergalactic space](#). Alternatively, it is also possible that a pyramid might act as an antenna for deep thought or Universal Consciousness to help resurrect the King and the Queen! I feel the same laws may have been used by the Yogis when they meditated inside deep caves in mountains. The mountains could have acted as antennas for reception of universal knowledge.

Similarly there are many instances in Indian Yogic tradition where highly evolved Yogis and enlightened individuals left their body with full knowledge of conjunction of planets and stars. Thus in Mahabharata it is mentioned that [Bhishma Pitamah](#) stayed on the prickly arrow cot for six months before he left his body during “Uttarayan” (Sanskrit word for sun rising from north) when the sun was closest to earth in winter. Similarly [Vivekananda and Shri Ramakrishna](#) - two great Yogis of India in the 19th Century left their body by will, after detailed understanding of planets’ conjunction through the almanac. In ancient Indian text of “Brahma Sutra”, it is stated that the soul guided by Sun’s gravity reaches a space called heaven.

At another level, the earth’s gravitational field might have helped in evolution of life on this planet. The molecules of a certain size became

“living” when they resonated with the gravitational field of the earth. Since movement is an outcome of time, it is quite possible that at this juncture the concept of time also got embedded in the "living" systems. These could be the “critical size” molecules, which were essential for evolution of life. We do not know what this critical size was, but these molecules effectively became gravity antennas.

In nature all the forces acting on a living entity help in its evolution. Gravity forces are the largest force acting on any organism on this planet earth. Hence it is natural and quite possible that gravity helped in life’s evolution. It may be interesting to test this hypothesis by taking the “critical size” molecules in the zero-gravity environment of outer space and to see whether they replicate and transfer the genetic information-the basic prerequisite for life.

Alpha Waves

The interaction of deep thought and gravity can also be seen in the interaction of [alpha waves](#) with earth. Alpha waves are produced in the brain when we are in meditation or relaxing. These waves are generally in the range of 8-12 Hz frequency. The earth diameter (~12,800 km) is such that it can have a standing half-wave of 11.7 Hz (close to 12 Hz). Is it therefore possible that our brain evolved in such a manner that the earth’s geometry influenced the alpha wave production?

Incidentally scientists have also discovered that before [major earthquakes an electromagnetic wave of 0.01-10 Hz comes from deep inside the earth.](#) This wave is sometimes sensed by animals and could be the basis of reported earthquake prediction by them. In some other habitable planet the living beings may have different alpha waves depending on the geometric shape and size of that planet. Similarly, life on other planets may evolve according to their gravity field besides the effect of other environmental variables.

Interestingly the relationship between alpha waves and earth's geometry may have other implications. Practitioners of *Bhakti Yoga* and Buddhist traditions have always stressed the need to allow full flow of thought waves without any interference [from ego or sense of identity ' I '](#) for achieving *Samadhi*. *Bhakti Yoga* says that one should completely sublimate ' I ' by abandoning oneself to God or Universal Consciousness.

Similarly Buddhist lamas of Tibet suggest that one should try to relax so that the ego stops interfering in thought production. I feel both these practitioners are intuitively trying to allow the mind to follow the alpha wave pattern. Thus when mind gets tuned to the gravitational field of the earth, meditation and *Samadhi* results!

Besides gravity, [earth's magnetic field may also affect the thought process](#). A human brain produces a small electromagnetic field. The measurement of this field by [EEG](#) shows the activity levels of the brain; whether it is producing alpha or other waves. Any weak or powerful magnetic field may therefore affect its working and hence the thought. Our present age is an electric age and thus we cannot help being engulfed in electromagnetic (EM) fields. Whether they are from our cell phones, or overhead high voltage wires, or microwave ovens, MRI scans, etc., we are continuously being bathed by them and cannot escape them. These man-made fields together with the fluctuations in earth's magnetic fields created by solar storms provide a large number of possibilities of affecting the human thought process.

Both gravitational and magnetic fields, all around the world, vary slightly from their mean values. Since [they can affect the working of the brain, it is possible that some places maybe more conducive to creating deep thought and creativity](#). This could have been one of the basis of setting up temples and holy places all over the world.

Our present science is based on reductionist principles. We believe that once we find the basic building block then we can construct the whole universe around it. Thus the physicists all over the world are building bigger and bigger atom smashing machines to smash the matter and discover that ever elusive building block. I feel we are looking at the wrong end of spectrum. ***Interaction of large number of variables producing their unique signatures may provide a mechanism to link all the various forces of nature.*** Hence our thesis of deep thought and its relationship with time, mass, space, Universal Consciousness, and knowledge maybe a step in the right direction.

In the annals of human civilization, quantum jumps in our understanding and knowledge have taken place when a great thought has been produced by persons like Buddha, Christ, Kepler, Newton, Einstein, etc. It is quite possible that a similar quantum jump may take place when a relationship is discovered between human thought, consciousness, and matter. It might help explain two of the major mysteries of our times – consciousness and gravity. Then we might progress on the path of [knowing the mind of God](#).

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[Published in Thrive Global 7 October 2020.](#)