

# **Supracortical Consciousness An Opening to Multiple new Doors of Science**

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# **Supracortical Consciousness**

## **An Opening to Multiple new Doors of Science**

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### 1. INTRODUCTION TO THE EXPERIENCE

#### THE FIRST ANALYSIS

In the spring of 1984, on the backdrop of a severe personal existential uncertainties, I happened to go through a profound experience that convinced me that ‘consciousness’ is not merely confined to the brain. It is there also outside the brain and skull. From outside, from the top of the skull, this consciousness works on the brain to use it as an instrument for some purposeful manifestation on this earth. The time when it happened to me was crucial. I had been occupying the post of a registrar (senior resident) in the Dept. of Pathology following completion of my post-graduation at India’s Premier Medical Institution, All India Institute of Medial Sciences, New Delhi. I was not professionally settled. I could not decide at that point of time whether to become a practicing professional or a scientist. A feeling had overwhelmed me that my genetic life certainly reached its terminus and if I were to remain alive, it would be a new beginning. I was also not sure of which one would be better for me, to remain a bachelor and get settled in a *Ashram* or to become a householder and lead a family life.

However, my soul became the battleground of two opposing views. My twelve-year experience in Medicine and the Experience that had already initiated a transformation within me started speaking in two different voices. My all along grooming and educational experience dictates that consciousness is within the brain. The life-changing experience *affirms* that it is also outside, and the purpose of evolution of the organ which we call brain is to harmonize and unify the two, following which the human being becomes an ‘instrument’ of Mother Nature. When I started analyzing the experience, it could see (A) the Experience itself, (B) three elements in the experience and (C) a preparatory background.

*A. The experience:*

Consciousness itself appears an impenetrable entity. It is impossible to penetrate through consciousness. Consciousness manifests as a great leveler. It is a great unifier too. The mechanics of Consciousness always exhibits a purpose. It works with an intention.

Conscious experience is subjective, private. It is unitary. Its elements, although discrete, produce a unified picture. It is intentional. Every conscious experience has a consequence of its intention.

*B. The components of the experience:*

The Components are (i) Brain-confined consciousness, (ii) Brain-independent consciousness and (iii) Awareness of an experiencer, the 'Self', the Self-consciousness.

*(i) Brain-bound consciousness:*

This 'embodied' consciousness could also be called brain-trapped consciousness, brain-confined consciousness, brain-encased consciousness or simply brain-bound consciousness. It has its internal contents like thoughts and feelings and, external contents what the five sensory apparatus provide. It also has a perceiver, the 'self'. A common English Dictionary consensus meaning of consciousness is *awareness of surroundings, awareness of one's thoughts and feeling, and awareness of self*. In addition, all conscious experiences are within the bounds of the brain.

*(ii) Brain-independent consciousness:*

It is the consciousness in the deepest recess of nature, which had been there even before the neurons came into biological existence about 700 million years ago. It is still there as plant-consciousness<sup>1</sup>, consciousness in brain-less organisms. It exists also as unconditional consciousness, as inseparable chum of the deepest recess of nature. This 'disembodied' consciousness in Nature could be identified by the same fundamental criterion, the *responsivity* to an appropriate stimulus. This consciousness is responsible for the phenomenology that has been going on in nature. This consciousness works quite independent of the existence of any brain or brain-like structure in the universe.

Three qualities of brain-independent consciousness namely impenetrability, ability to unify and purposefulness are seen retained in the brain-bound conscious experience as subjectivity, unity and intentionality respectively.

*(iii) Self-consciousness:*

Self-consciousness, traditionally speaking, is the awareness of 'self'. It may remain confined to the brain, as brain-bound. It may also be independent of the brain.

As Brain-independent, the 'self' could be considered as indivisible 'spark' of Unconditional consciousness. It is also an informed *spark*, informed that it is a spark of Unconditional Consciousness, informed that it is to behave this way or that way, informed that it is the bridge between brain-bound and brain-independent consciousness.

Considering 'self' as emergent relationship between the brain and consciousness, self-consciousness could be seen as first successful attempt of consciousness to *free itself* from the confines of the brain, from the entanglement of neural network, from the bounds of field created by this neural conglomerate. John C. Eccles probably realized this from the results of his life long experimental work and probably this reason made him and Karl Popper put the title for their celebrated book, *The Self and its Brain*<sup>2</sup>, as if the brain belongs to 'Self'. In this context, I am also reminded of Canadian Neurosurgeon Wilder Penfield who doubted whether consciousness remained confined to the brain!

### *C. The Background*

The backdrop in which the experience came and blossomed within me was studded with 'discontinuity', 'uncertainty' and 'death traps'. Discontinuity was in professional matter and in life style. Uncertainty was in having a platform or not, having this platform or that platform and likes. Death traps included existential crisis and lyses.

We would analyze the background in details in later part of this paper in Sections 8 and 9. Let us first look into some of the immediate consequences of the experience, which compelled me to revise radically some of the existing concepts.

## 2. THE IMMEDIATE FALL- OUTS

### *Consciousness. One, or Multiple?*

According to this experience, there is no plural for consciousness. Consciousness is singular, homogenous and indivisible. Heterogeneity is introduced by the presence of the brain or a brain-like structure that can trap consciousness. Consciousness works through the brain to produce conscious experience and to generate a sense of an experiencer, the one who experiences. It also uses nature's mechanics to produce natural phenomena and offers the possibility of (?) a cosmic / supracosmic existence/Intelligence (which people might have called God!). The same, single and one consciousness which is seen to work with the nature also uses the mechanics of the brain to result in conscious experience and the Being as the experiencer.

The two facets of consciousness as brain-bound and brain-independent, therefore, appear for the sake of description. Nevertheless, it is an important distinction for research. Consciousness as we understand ordinarily (*as an awareness of surrounding, awareness of 'self' and awareness of one's own thoughts and feelings*) and the conscious experiences are relevant in the context of the brain. It is a recognized frontier for Neuroscience. On the other hand, the working mode of Consciousness in relation to nature is relevant in the context of phenomenology of the world, universe, multiverse (multiple universes) etc. It is a frontier meant for both the philosophers of science and the scientists of Nature.

When consciousness works in concurrence with the working modes of the brain, one experiences it as brain-bound, brain-trapped, brain-confined consciousness. This is the same consciousness in nature working independent of the brain, independent of presence or absence of any brain anywhere, any time, also independent of any interpretation by the

brain. This consciousness is not only brain-independent but also it works quite independent of the universe we inhabit. Big Bang that occurred about eighteen billion years ago, in this sense, may be just one of the stories of birth of one universe we live in.

### *Brain Consciousness Relationship*

Over the year consciousness research have concentrated on what could be described as neurocentric consciousness. However, this experience reveals that the brain consisting of  $10^{11}$  live neurons *does not generate consciousness. It cannot use consciousness either. It is consciousness that uses the brain for its manifestation.*

It seems difficult for a consciousness researcher, who is basically neurocentric, to address the following questions. What when the brain was not there? What is it in brainless animals? What is it in plants? What is it in matter! Should brain/consciousness means an *Intelligent Response* to a stimulus then does Nature not have any 'Brain'? There is another issue in this context. The brain is not "matter"! It is an organ consisting of  $10^{11}$  neurons which are all alive. Individually each and every neuron is conscious at its own functional level. The brain is, therefore, better be treated as an organization of  $10^{11}$  sensitive and responsive individuals having the most extensive and most complex network. Besides, the number of glial cells which support  $10^{11}$  live neurons is about 6-8 times more than that of neurons. These supporting cells not only offer mechanical support but also provide living company to neurons. The 'matters' in this complex organization are neurotransmitters, physical constituents of cells and the quantum particles/energy around the perineural space.

Neuronophilia is certainly one of the characteristics of consciousness. So is consciousness-philia of neurons. This fondness or love of Consciousness for neurons and the love of neurons for consciousness become more evident when the neurons form an organized group. This makes us take a neurocentric view on consciousness. The neuronophilia and in the larger scale, the fondness of consciousness for a neural organization could be the reason for an ever-free consciousness getting trapped into the brain, may be temporarily. There the trapped consciousness is seen to use brain's working mode to produce various manifestations of consciousness. However, consciousness's property of ever-freeness enables it to detach itself from the confines of the brain as 'self'. This is what we observe as self-consciousness, fully blossomed in the human being.

### *Supracortical Consciousness (SCC)*

What is Supracortical Consciousness (SCC) then? There is nothing above or outside the cerebral cortex as far as the present neuroscience is concerned. For a conventional neuroscientist, the cerebral cortex is the last mantle of the brain and there is nothing else to look forward to. On the other hand, that consciousness exists independent of brain is a realization of many accomplished mystics.

It is certainly a paradox that we experience brain-independent consciousness by a brain-bound consciousness. It is time we bring this paradox in science. Let us take the platform where the two opposing views of scientists and mystics meet. Then it could be stated that supracortical consciousness is the first milestone of a stable experience of brain-

independent consciousness by a brain-trapped consciousness. *It is the awareness of existence of brain-independent consciousness by self-consciousness.* It seems to be the first visible result of the effort of an ever-evolving brainstem-limbico-cortical brain to internalize, systemize and rather 'biologize' the universal or even transuniversal consciousness. The milestone is significant in the process of 'materialization' of a possible bridge between brain-bound and brain-independent consciousness and could be the unique interface between 'embodied' and 'disembodied' consciousness.

### 3. MORE ON SUPRACORTICAL CONSCIOUSNESS

SCC<sup>3</sup> could be characterized by its *inexhaustibility* (within the limits of the brain). It is manifested subjectively as an experience of 'love' with objective manifestation as *creativity*, creative emergence or a new creation. Behavioral expression of SCC is Love, manifested as sacrifice for the beloved. Whatever love and sacrifice we see in our daily life is a successful expedition of SCC<sup>4</sup> through numerous obscurities of infrastructure of nervous system.

Could supracortical consciousness be considered as an emergent milestone in the brain-consciousness relationship? Why not? In all probabilities it is! However, it is then a radical emergence of kind (Robert Van Gulick<sup>5</sup>), type II emergence of Searle, where the emergent has the ability to 'control' the base *through* which it emerges. What emerges is a new relationship between the brain and consciousness with necessary and sufficient alteration of the structure and function of the neural associations within the brain. We would see later in this paper that it is also a *death-transcending emergence* of a property characterized by enormous freedom of consciousness from the confinement of the brain while Consciousness still retains the ability to supervene brain's functions in a more comfortable way.

The human brain, as an organ, is seen to evolve both vertically and horizontally. Vertically it is a composite nest of reptilian, mammalian and human brain (Triune brain)<sup>6</sup>. Horizontally it has grown, responding to cultural demand, to have a left and a right cerebral hemisphere. Both horizontal and vertical dimensions of nature could be found to have representative structures in the brain. Accordingly the relationship between the brain and consciousness has also grown. Vertically, the relationship between the triune structure of the brain and consciousness has been responsible for emergence of three levels of consciousness in human being namely, brainstem consciousness, limbic system consciousness and cortical consciousness. For perfect manifestation of these three levels of consciousness, however, the cerebral cortex has been found the most essential component of the brain. Brainstem-consciousness is manifested as wakefulness, alertness and orientation. Limbic system consciousness is a motivation-guided consciousness to seek pleasure and avoid the unpleasant. Cortical consciousness is manifested as the abilities for discrimination, analysis, judgment, unification of various elements present within it as contents of consciousness and then the will that makes a decision and finally its execution. With development of these abilities of cortical consciousness almost co-emerges self-consciousness, the awareness about one's own self. Supracortical

consciousness (SCC), in this sense, is the next vertical step in evolutionary relationship between the brain and consciousness.

CLARIFICATION OF TERMINOLOGY  
SUPRACORTICAL CONSCIOUSNESS, SUPRACOSMIC CONSCIOUSNESS,  
EXTRACEREBRAL CONSCIOUSNESS AND transcortical  
CONSCIOUSNESS

The boundary of the cosmos is determined by the boundary of the cerebral cortex. What is 'supracosmic' in cosmic sense is, therefore, 'supracortical' in the context of the brain. 'Supracosmic' seems placed remote from the brain just like the term 'extracerebral' consciousness, used by Sir John C. Eccles, means it is outside the cerebrum, outside the brain, outside the confines of the skull. The term 'supracortical' connotes an intimate relationship, proximity of 'supracosmic' or 'extracerebral' consciousness with the brain. The term 'supracortical', therefore, adds a tone of proximity of brain-independent consciousness to the cerebral cortex.

While I tried to describe the said experience, I was not struggling for words to express it. I did not choose or think of any terminology. The word 'supracortical' came automatically, spontaneously. The natural expression that came out in the clothing of words was 'supracortical'. Now I see, the term 'supracortical' is more anatomical and indicates more proximity to the cortex. It is more specific, too. It says 'on the cortex' - specific and anatomical in description. It also indicates the possibility of a continued appositional interconnection between the two. It brings home the point that cerebral cortex supports something on it. The term extracerebral, on the other hand, just says, 'out of cerebrum' - no proximity, no specificity, and it is less anatomical in description. The term 'transcortical' describes something that transcends cortex, - with a possible connotation of 'inside becoming out'. The term 'supracortical', on the other hand, could be used in both the ways, from inside to outside and from outside to within. Finally, 'supracortical' consciousness keeps us in tune with the evolution of the relationship between the brain and consciousness in vertical direction.

IS THE USE OF PREFIX 'SUPRA' JUSTIFIABLE IN SCIENCE?

Two questions that are frequently asked are, (i) is the word 'supra' appropriate for a scientific description of a phenomenon and (ii) is supracortical consciousness a supernatural phenomenon? The scientists have used the word 'supra' in various disciplines in different contexts. In the discipline of Anatomy, the word 'supra' is used to indicate the position above. For example, suprarenal gland, the adrenal gland is sitting on the kidney. In the Neuroscience of Consciousness, Daniel Dennett uses the term *super-blindsight*. David Bohm in Physics used the term super-nonlocality. Take another example of supra-molecular chemistry (Nobel chemist Lehn Jean-Marie). According to him when two molecules are engaged in molecular recognition, transduction of signal and cell-transformation one cannot explain all phenomena by mere chemistry i.e., by matter and energy only. There is information transfer between the engaged molecules. He cites example of killing of a cancer cell by the natural killer cell. Prof. Lehn calls it

supramolecular chemistry. Take another example from everyday practice in Medicine, the example of supravital staining in the disciplines of Physiology, Pathology and Microbiology. This is a kind of staining of a cell, tissue, or an organism while it is alive. The stain is an outside agent that stains the cell/tissue/organism exploiting its living chemistry. The 'supra' of supracortical phenomena or supracortical Consciousness, has been used in anatomical, supravital and supramolecular sense. It implies involvement of cortex with its 'supra' domain, through something that is subtle, - may be subtle energy, or may be a kind of information capable of transforming the living chemistry of the neurons.

Simply, 'supra' means 'above', beyond the conventional boundary, deeper than the limits set by reasons. However the boundary or limits are man-made and are not permanent. Human endeavors have, always extended the once set limits and expanded the old boundary. However, the phenomenon 'supracortical' is open-ended and is expected to remain always supracortical and would always be limited by the capacity of the cerebral cortex. When the brain perceives the existence of brain-independent consciousness, it perceives it through brain only. The brain itself is the limit of the 'descent' of the brain-independent consciousness. With evolution of the brain, transformation of the brain, new formation in the brain, this limit of manifestation of brain-independent consciousness expands, extends and becomes apparently limitless. There is nothing supernatural in it. If anything supernatural exists it is consciousness itself. The brain 'holds' this consciousness, supports this consciousness, acts as vehicle of consciousness, and allows this consciousness to express and manifest through its nature. Consciousness, on the other hand, through such continuous interaction gradually *frees itself* from the shackles of the brain, confinement of neural network, entanglement of the neurons.

#### REASON TO DIFFERENTIATE SUPRACORTICAL CONSCIOUSNESS FROM SUPRACORTICAL PHENOMENA

Both supracortical phenomena and supracortical consciousness point towards an "inverted neuraxis"<sup>7</sup> (vide infra) where cerebral cortex plays the role of a 'receptor' in addition to its conventional role as a processor of information and a perceiver.

Perceptions are of three kinds, sensory, extrasensory and nonsensory. We all are familiar with sensory perception. Touch, smell, sound, light and taste constitute elements of sensory perception. While the conventional route for generation of a perception may be the stimulation through skin, olfactory epithelium, retina, organ of Corti or taste buds, in extrasensory perception one perceives similar perception without necessary engagement of these sensory end organs or their connecting pathways to the brain. Extrasensory perceptions are, therefore, perceptions that are sensory in nature but is supposed to happen through an 'extra' or unconventional route. Clairvoyance, clairaudience are examples of this. These could be taken as example of supracortical phenomena. In my view, extrasensory perception comes under supracortical phenomena and nonsensory perception could be related to supracortical consciousness. Nonsensory perception, characteristic of supracortical consciousness, is a perception that is neither 'sensory' in nature nor does it occur through any conventional sensory route. Unlike in supracortical phenomena, the manifestation of supracortical consciousness is a subjective experience



of Love and an objective outburst of creativity, in form of creative emergence, creative resolution or a new creation. We commonly experience this nonsensory perception in the 'Love' between husband and wife, between lover and beloved, or between child and mother, or even between the master and his/her pet.

Both extrasensory and nonsensory perceptions can be experienced without any compromise to the neuropsychological integrity of the brain. However, the extrasensory perception may be associated with conditions where the phenomenal and axiological integrity of the brain could be put to question. In such case, the person does not remain on the 'healthy' portion of the spectrum of defined human behavior and lands up in psychiatry department as a patient. Besides, supracortical phenomenon is always a focal phenomenon in the brain while supracortical consciousness is a global integrated response of the brain. The neurology, physics and neurophysics of the two would be completely different.

### SUPRACORTICAL CONSCIOUSNESS IS A NEW BEGINNING

Experience of supracortical consciousness is not an end in itself. It is a new beginning. This ushers in a new era in the relationship of the brain and consciousness with emergence of new kind of being. The relationship between the brain and consciousness has resulted<sup>8</sup> in Brainstem being, Limbic being and Cortical being so far. Should the process of evolution progress in predictable vertical direction, three more (new) ontological milestones of Being would be visible. They are supracortical being, supracortical Godhead and supracortical autonomy (*Sadguru*).

The higher being comes *through* the lower being, rests on the lower being but does not come *from* the lower being (Ken Wilber). It comes through the process of successive biologization of brain-independent consciousness by the brain, while the self-consciousness in the brain integrates the process of development of the being-hood. According to Wilber, all of the 'lower' being is in the 'higher' being, but not *vice versa*. It is this *not vice-versa*, which makes the hierarchy.

Supracortical being, supracortical Godhead and supracortical autonomy, all three are characterized by three common features; Inexhaustibility (within cortical limits), Love and Creativity. Their difference could be found in their gradation, in addition to their respective uniqueness. One could notice brain's graded accessibility to different depths of voids resulting in graded degree of inexhaustibility and graded manifestation of Love. Self-transparency in behavior is accomplished amidst this complexity of being hood as the brain biologizes various constrains imposed by more and more complex value system and aesthetics. In the direction of supracortical being hood, Creativity and Aesthetic value exhibit a co-evolution. Autonomy is entrusted to the system perfect. Original imperfect brain gains perfection of the highest level at the station of Supracortical autonomy (*Sadguru*).

The following table shows the Great Chain (Nest) of Being in neurological perspective, with characteristic features of each of the six ontological stations.

<b>Great Chain (nest) of Being</b>	<b>Behavioral characteristics</b>	<b>Example</b>
1. Brainstem being	Being is awake, alert and oriented.	A security guard on duty
2. Limbic being	Being motivated to get pleasure and to avoid the unpleasant. To get and enjoy sensory pleasure is his aim.	Most of the common mortals
3. Cortical being	Intellectual, judgmental, rational and self-conscious.	Most of the Policy makers, judge, intellectuals etc.
4. Supracortical being	Personality beyond the polar opposites. Limbic restraint is conspicuous. Love dominated ego is characteristic. Creativity in form of creative emergence. Inexhaustibility within cortical limits.	Visionary, Creative persons like creative scientist, creative artists, creative technologists.
5. Supracortical Godhead	Everlasting ascension of the being. Elevating and Magnetic attractability. Transforming personality and deeds. Creativity in form of creative emergence.	<i>Purushottam</i> Sri Ram, Lord Krishna, (Mythological Gods)
6. Supracortical Autonomy	Inexhaustible ever ness. Melting love. Ananda (SCC biologized at the level of limbic nuclei). Creativity in form of new creation.	<i>Sadguru</i> For example, Sri Ramkrishna, Sri Aurobindo, Guru Nanak etc.

Supracortical Autonomy is stated to be the highest rung of the ladder of the beings. Autonomy is conferred to the system perfect. In the scheme of Supracortical Paradigm, to gain control over the autonomic nervous system has never been considered as an objective of final accomplishment. As the brain evolves, transforms, adapts with its encounter with different depths of nature, it sheds off 'imperfection'. Finally, the cerebral cortical system could achieve so much perfection that it is conferred autonomy in the context of neural transmission of the mechanics of Inter-universal Essence.

### SUPRACORTICAL MOVEMENT

The concept of consciousness being not merely confined to the brain, the brain communicates with outside through the barrier of the skull, is widely held in human culture. In the prehistoric period, people used to make hole in the skull to let the evil spirit out. Even today mother blesses the son kissing his head. The Guru blesses his

disciple by touching his head. The devotee bows down his head to receive the 'Grace'. It is irrespective of his affiliation to any particular religion. Hindus affirm this, Muslim practices it, Buddhists and Jains acknowledge it, and Christian accepts this. In India, a pluralistic society in terms of culture and religion, one could find it embedded in her national ethos.

In response to my communication on supracortical consciousness over the year 1985-1987 Roger Sperry sent to me the signed reprint of his article published in *The Journal of Mind and Behavior*<sup>9</sup> titled, *Structure and Significance of the Consciousness Revolution*. It is a revolution indeed when one considers it on the backdrop of post world war demise of Behaviorism and the cognitive revolution in science. Socio-culturally it was added by the New Age movement and the Transpersonal movement in America in 1960s and 1970s. In India, by that time, Sri Aurobindo's *supramental consciousness*<sup>10</sup> had already become explicit, 'public' and Akhandamandaleswar Sri Sri Swami Swarupananda Paramahansa Dev's (my spiritual master) work on the Multiversity and the ground preparation for the emergence of the divine species (may be called *homo spiritualis*) had been already on the process. One could notice more of this 'supracortical' trend at present. The scientists have been attending the question of the nature of the boundary of the universe. The mystics are deeply involved in delving into the nonlocal Mind. The humanists are trying to strike a balance of universalism with the individualism. Common people have a tendency to break any sort of boundary they come across in their way. They have more of question 'why' than 'how?' All such phenomena point out that the human consciousness has been expanding beyond the bounds of the brain.

Awareness of this supracortical reality has been noted spreading widely within the humanity. That is why one may call it a supracortical movement. It is unique in three senses. (1) It has been found happening in the highest biological plane when the evolution of the human brain has reached a new threshold point. (2) Which in the past was an isolated event, has been happening in massive scale. The awakened persons have started taking note of it. (3) The human beings, bestowed with self-consciousness, are getting *consciously* engaged in this new formation. This certainly adds a new dimension of research for clinical epidemiologists.

#### 4. SCIENTIFIC IMPLICATIONS OF THE ACCEPTANCE OF SCC

Once the science accepts the existence of SCC, the consequences are as follows.

The first fall-out would be a matter of rejoices for human biologists. Should all other organs of the human body have completed their evolution there remains an exception, one organ that has been still evolving, the human brain. The human brain is yet to complete its evolution. This organ with unique conglomerate of a hundred billion ( $10^{11}$ ) of live neurons within its confine has been working to unify consciousness within and consciousness without. In this process, it has successfully passed the phases of reptile, mammals, and human and has been endeavoring towards some higher and more complex

beings. The evolution of the human being is, therefore, seems far from complete. In this sense, ‘the human being is a transitional being’ (Sri Aurobindo).

The second fall out is a matter of concern for neuroscientists. All through, they have known the cerebral cortex to receive information from below, through peripheral nerves, from the sensory apparatus. Should supracortical consciousness is accepted as an existing reality, then the whole neuraxis can be perceived as an inverted tree with its root in the eternity and its branches grown below, the peripheral nerves<sup>7</sup>. Here cerebral cortex acts as ‘receptor’ to receive information/energy/field/force from above, outside the skull. The experience of SCC could be so integrating and intense that even the cells in the sole of the foot realize that their neural representatives in the cerebral cortex have access to the cosmic and supracosmic planes of nature outside the skull. This ‘inverted tree’ concept of the human tabernacle has also been affirmed in the ancient scriptures like *Upanishad* and *Bhagavad Gita*. However, for sciencing this concept in the twenty first century the neuroscientists require collaboration with physicists, particularly those concerned with vacuum physics, particle physics, zero-point energy and the boundary of the universe. Brain-vacuum interaction, therefore, becomes a research frontier. We would discuss this point further towards the end of this paper in Section 13.

The third consequence is a matter of concern for Astrophysicists. The scientists try to figure out a boundary of the universe in accordance with the limitations imposed by their cerebral cortex. For all scientific pursuits so far, there is one and only one universe. English dictionary does not offer a plural for the universe assuming that universe is only one. The theory of supracortical consciousness is an open-ended theory. Practically, it keeps the brain open at the boundary of the universe. Supracortical consciousness co-exists with multiple universe(s). In my earlier work *Conquering the Brain* I have chosen the plural for universe as multiverse. Multiple universe(s) form a system, the “Multiversity”. The theory of multiple universe(s) is, therefore, also an open-ended theory. (Amazingly, this significant word, “Multiversity” could be seen in the letterheads of my spiritual master who used it with capital “M” and with a prefix “The”. He started using it before this author was physically born!). Once we accept the fact that the picture or image of the universe is a cortical construct of the human brain, Supracortical Consciousness and The Multiversity, the system of Multiple Universe(s), appear like monozygotic identical twin. The consequences and the impact of this Reality of ‘Multiverse’ in science are enormous, radical and creative.

The fourth fall out would be on communication theory. In all ordinary circumstances brain-bound consciousness and brain-independent consciousness do not communicate. If they start communication would it be local or nonlocal? This acceptance may help us to explore various types of nonlocal communications; nonlocal communication dissolving the barrier of space (Type I), nonlocal communication dissolving the barrier of space and time (Type II), nonlocal communication dissolving the barrier of space, time and causal intricacies (Type III). The brain through its micro-quantum milieu or as a macro-quantum organ may actively participate in nonlocal communication.

Fifth fallout would be evident on Information Theory particularly in terms of ontological hierarchy of information, informational geometry, information mechanics, and information in neural manifold. Brain-bound and brain-independent consciousness could be reconciled only when the brain is proved to be an informationally open organ. Informationally open brain opens a Pandora's box of chaos and pathos in the brain. How does brain handle such a situation and get used to it would be a new brain-science to learn.

Implications would be more conspicuous when we engage ourselves effectively in 'sciencing' this experience of supracortical consciousness.

## 5. FEASIBILITY OF 'SCIENCING' SUPRACORTICAL CONSCIOUSNESS

*'Experimental' in Latin means putting to test of 'Experience'*

A profound experience has a lasting and life-changing effect on a person. It is well known, how 'personality' and deep-rooted personal experience is reflected in the scientific contribution whenever a theory or a paradigm comes for the first time. Had Einstein not experienced moving with a speed of light we would have not seen the Theory of Relativity! Had Heisenberg not experienced uncertainty, uncertainty principle would not been there. Had J. C. Bose not experienced a unity with plants, plant-consciousness would still remain a myth. My immediate response to this experience was to look for any evidence existing already in scientific literature on communication of the brain with the outside world outside the scope of sensory system. No, I did not get any published scientific paper on such issue. In 1984-85, there was no evidence except in Parapsychology literature on telepathy, planchette, clairvoyance etc. Therefore, I tried to make sense of the experience of my own and I encountered the followings. I was describing an experience, which practically transcended the boundary of the universe. All pictures, scientific descriptions, and mathematics related to functioning of the Cosmos and the Universe are result of cortical constructions. When someone is talking of supracortical, he is meaning supracosmic, transuniversal plane. The whole of present science works with an assumption of existence of one universe only. Multiple universe(s), multiverse, is difficult to comprehend, rest aside to be handled by the scientists. It calls for perhaps a "new" physics. It also involves boundary problem. It requires to 'see through' the total spectrum of uncertainty and several discontinuities in the nature. The frame of nature that we are familiar with and the frame of nature supposed to be in intimate relation with Unconditional Consciousness appear far apart.

Three questions<sup>11</sup> which cropped in my mind were a) Why do we need 'sciencing' of this phenomenal experience? b) Could science in its present form explain these phenomena and c) Is the issue amenable to science at all?

*A. Why do we need 'sciencing' of this phenomenal experience?*

In West, following Descartes, Kant and Hegel, *Science* and *Secularity* became two important features of 'Modernity'. Science started speaking in a *universal common language*. With embedded Accountability and Responsibility scientific expression gained Respectability and Acceptability to the society. A mystical view of consciousness, a

spiritual doctrine on consciousness or a subjective expression on consciousness, therefore, gains *Rationality*, *Legitimacy* and *Power* when conforms to the rules of science.

What is Science? “Science is the attempt to make the chaotic diversity of our sense-experience correspond to a logically uniform system of thought” (Einstein, 1950). This definition includes only sensory experiences. Science of consciousness however encompasses extrasensory and nonsensory perception too. Max Planck is seen to be more forthright in characterizing science. To him, “Science...means unrelenting endeavor and continually progressing development toward an aim which the poetic intuition may apprehend, but which the intellect can not fully grasp.” Intellect’s inability to grasp it fully makes this endeavor unrelenting and continually progressive. Science, as presently understood, is the knowledge gained systematically by human beings through observation and experimentation. The process of 'sciencing' steps through (i) identification of problem, (ii) collection of basic available information (iii) working out a research hypothesis (iv) designing experiment (v) observation (vi) analysis of data to draw conclusion and finally (vii) generalization of the conclusion, if possible. Therefore, the science has every reason to account for these phenomena, may be within its own terms. The humanity too has every right to demand a scientific foundation of their spiritual evolution. And finally the ‘spirit’ has its obligation to get it revealed to those seeking the Truth. Therefore, the science for its own reason, the humanity for its own requirement and the spirit for its own obligation seem to be in need of a science which at least could be related to consciousness and at best could offer an explanation for the mechanics of consciousness.

*B. Could science in its present form explain these phenomena?*

The two pillars of modern science are (i) the Relativity, which is essentially an extension of classical mechanics and (ii) Quantum Mechanics. The science of information, cybernetics and the Chaos theory has proved to be another pillar of modern science. Darwin’s theory of Natural selection in evolution dictates the survival of the fittest in this seemingly chaotic platform.

The present science has been working under the umbrella of three inviolable constants. Those are (i) The constant of Einstein (the velocity of light) (ii) Planck's constant and (iii) Entropy barrier. It is difficult for an explorer to document, describe and publish in the mainstream science journal something that does not work under the umbrella of these three constants. Nothing can move faster than light is the dictum of Einstein and it sets the limit for classical mechanics and its extension in Relativity. There is always a gap between the observer and the observed and, the energy is made up of discrete quanta are the basics of quantum mechanics. This leads us to Planck's constant that sets the limits for describing the events confined to the quantum plane of nature. Cybernetics works under the umbrella of entropy barrier. Information exchange across this barrier is strictly prohibited. Einstein's constant excludes simultaneity of events. Planck's constant excludes continuity of events. Entropy barrier in the process of self-organization excludes the possibility of identity of events. It seems that these three ‘constants’ guard the *Cosmological Pleasure Triangle* (CPT) of the deepest recess of nature! In the domain of

*nature of consciousness*, the events are quite often simultaneous, continuous and even identical. Therefore, it is likely that the nature beyond these three constants could not be explored till we attempt to transcend these constants. Finally, “Nothing in biology makes sense except in the light of evolution” (Dobzhansky). Darwin’s Natural selection is an incredible success. However, Darwin’s nature is confined to classical world/plane of nature. There is no scope for death-transcending emergence in Darwin’s theory. Darwin’s theory is silent about consciousness, brain-bound or brain-independent. All these facts force us to become pessimistic whether this ‘consciousness’ is at all amenable with the present framework of science!

*C. Is the issue amenable to science at all?*

If the science is only ‘measurement’ and only the ‘measurement’ is science then we have to agree that consciousness is not amenable to science. Many orthodox scientists even go to the extent that consciousness is the domain of philosophers, mystics and spiritualists. It does not come under purview of science. However, to me it seems simply denial of existence of enormous number of so-called anomalies that are well within the realm of science. It also almost amounts to betrayal of the trust, reposed on the scientists to fulfill the aspiration for knowledge. It would be like to shut one’s eyes in daytime and deny the existence of Light!

There are two ways to attend the issue. (i) To look for a congenial way for extension of the present science and (ii) to modify our approach and look forward to some new formulation to explore this ‘softer’, ‘wooly’, ‘wet’ part of nature, probably accepting a ‘participatory’ epistemology (instead of remote observer-dependent description) where epistemological pluralism is honored. Reproducibility would still remain ‘sine qua non’ as the validation criterion. However pure objectivity of present science need to be complemented with epistemology of subjective sharing, intersubjective agreeability and ‘inverted’ objectivity (organic objectivity).

In the following two sections we would first describe how we might extend science from its present form (in section 6) and then we would look into some new propositions (in section 7) that came out as creative emergence following the experience.

## 6. LOOKING BEYOND THE PRESENT SCIENCE

There are following three suggestions<sup>12</sup>.

*1. To look beyond the constants set by Einstein, Max Planck, and Entropy barrier*

The question is how? By exploring nonlocal communication Type I, II and III. Nonlocal communication type I dissolves the barrier of space, type II dissolves that of both space and time and type III in addition to dissolving both space and time also dissolves the intricacies of causality. Documentation of nonlocal communications type I, and II, and proposition of existence of nonlocal communication type III pose challenge for velocity of light, Planck's constant and entropy barrier respectively.

<b>Three constants under umbrella of which the present science works</b>	<b>The discipline of Science</b>	<b>Excludes possibility of</b>	<b>Challenged by the phenomenon of</b>
1. Einstein's constant	The classical and Relativistic physics	Simultaneity of events	Nonlocal communication, Type I, dissolving 'space'
2. Planck's constant	The quantum physics	Continuity of events	Nonlocal communication, Type II, dissolving both 'space' and 'time'
3. Entropy barrier	Cybernetics	Identity of events	Nonlocal communication, Type III, dissolving 'space', 'time' and causal intricacies

*2. To look beyond and cross the boundary of the universe*

Assimilation of the concept of the Multiversity dissolves the uniqueness of the universe we inhabit almost the same way Copernican Revolution demolished the unique position of the Earth in the cosmos. But how to get engaged in this assimilation? It is the most difficult job for a seeker, explorer, or an experimenter of consciousness. It demands inside to be out and outside to be in. The only way to survive in this process is to *surrender*, surrender of properties, surrender of clothing of 'self'. It would be an active and total surrender to *Unconditionality*. Multiple universe(s) would be visible only then! The physics in these parallel universe(s) perhaps are different in almost every respect, be it force, charge, mass or dimension. The cosmology and the astrophysics are required to invent new equations of relationship.

While Zero-point Energy Paradigm (ZPE-Paradigm), proposed by some of the eminent physicists (e.g., H. Puthoff from Institute for Advanced Study, Austin, Texas), can lead us to the level of intergalactic space, the view of multiple universe centers us on the *Essence* of the Multiversity.

*3. To learn to see through Death*

The question is how? We would be dealing with this issue in details when we discuss the background context of supracortical experience in Sections 8 and 9 of this paper. The scientists are already familiar with near-death experience. They are required to explore transcendental death experience, transformational death experience and experience of getting reborn within the same body (born again). These profound experiences could be recorded in both first person and third person's perspectives. For near-death experience, it has already been done. For other three phases too it is not impossible to do so. When the brain passes through the entire spectrum of death terrain, creative emergence becomes abundant. This may help to discover the missing pieces of the puzzle.



In this context, *Savitri*<sup>13</sup> of Sri Aurobindo could be a very useful text that could offer guidelines for the scientists to conduct research in this direction. At the cell biology level, study of 'apoptosis' and the mechanics of 'malignant transformation' could be excellent models for unraveling the mystery of death and its transgression. In the discipline of Astrophysics, the path extends from black hole to white hole.

## 7. FIVE NEW PROPOSITIONS TO DEVELOP A SCIENCE FOR CONSCIOUSNESS

While I was trying to comply with the 'felt need' in Science, five new propositions brooded in my mind as creative emergence. All have been although published in my earlier works they could be tabled more crisply in this context. The propositions are: (1) to have Nature and Consciousness as inseparable entity; (2) to accept Nature as a multilevel organization; (3) to look at the 'Elements' of subjectivity at the phenomenal level; (4) to explore the paradigm of uncertainty; and (5) to look into the possibility of existence of a hierarchy/ontology of information. Creative emergence would be difficult to understand clearly unless we go through its contextual background. In the Sections 8 and 9, we would be describing this background context. Let us elaborate on these five propositions in the present section.

### TO DEAL WITH CONSCIOUSNESS AND NATURE AS AN INSEPARABLE CHUM

The Masculine and the Feminine component of the Reality are represented by Consciousness and Nature respectively. All along, throughout the course of history of science (modern science is only 400 years old) the Nature has been identified as the domain for the Scientists while the research on Consciousness remains the prerogative of Mystics, Spiritualists and Philosophers. The spiritualists and the scientists are two broad categories of opinion-makers of the world. However, both the groups in most of the cases have taken one-sided view of the Reality neglecting ignoring and even blaming the other side.

In the *Sankhya* philosophy from India, *Purusha* (Consciousness) and *Prakriti* (Nature) are said to be the opposite poles of the Reality and they are independently infinite. In Sankara's (? sixth century AD) Nondualism (*Kevaladvaita*), the feminine component, the nature, has been discarded as '*maya*'. It is consistent with the view that '*maya*' is only measurable (*maya* and measurement share the same etymological root) and the absolute, unconditional, nondual consciousness is beyond any comprehension of measurement. However, in establishing the primacy of Nondual Consciousness, the proponents are said to have inadvertently 'demonized', this '*Maya*'. In order to get rid of this philosophical problem, four other schools of Non-dualism originated in India namely, Qualified Monism (*Visistadvaita*) of Ramanuja (1017-1137AD), Dualistic Nondualism (*Dvaita-Advaita*) of Sri Nimbarka (?- 1162AD), Pure Monism (*Suddhadvaita*) of Vallabhacharya (first half of sixteenth century) and *Acinta-bhedabhed* (Unthinkable differences in non-difference) of Sri Krishna Chaitanya (1486-1582 AD) which have their respective followers. Whereas Sankar's Non-dualism (*Kevaladvaita*) emphasizes on knowing and Knowledge on the Existence and Bliss and is therefore absolutely non-anthropomorphic, other schools of Non-dualism lay emphasis also on Devotion (and in *Suddhadvaita* also on *Karma*), and accept existence of Personal God.

The first attempt to have both Consciousness and Nature as inseparable entity could be found in *Advaita Saivism*<sup>14</sup> originated in Kashmir, India. The 'Ultimate Reality', there, is *Parama Shiva* (in the present context, Consciousness), indivisible from *Shakti* (in the present context, Nature), at every point of space and/or time or even at no space no time domain and thus they form the **Biune Reality**. As burning ability of fire cannot be studied separately or independently from the fire itself, similarly the mechanics of *Shakti* cannot be completely explored totally detached from consciousness. In the Biune reality of Nondualism, propounded by Advaita Saivites of Kashmir, three primary qualifications of Nondual Consciousness namely, Existence (*Sat*), Knowledge (*Chit*) and Bliss (*Ananda*) are embedded with two aspects of *Shakti* namely, *icchashakti* (Power of Will) and *kriyashakti* (Power of Action).

Finer improvements on this Biune Reality has been made recently by the Philosophy of Sri Ramkrishna, Sri Aurobindo and Akhandamandaleswar Sri Sri Swami Swarupananda Paramahansa Dev.<sup>15</sup> Sri Ramkrishna preferred to replace the phrase *Shakti* by *Mother* and Sri Aurobindo's philosophy elaborated on this Mother (see volume on Mother by Sri Aurobindo<sup>16</sup>). With the Akhanda Worldview<sup>17</sup> one handles the divisions of the Indivisible where *Nature is an indivisible extension of consciousness*. The view upholds the parental Biune concept of *Advaita Saivism* down to the basic and rock bottom, the matter, where any, every and all feminine element is considered as Mother and then goes on to describe three (Triune), five (Pentaune), or nine (Nanoune) essential divisions of an Indivisible Whole. And thus it constructs the *total* (in contrast to the *Ultimate*) reality. In the process of extending consciousness into the matter, the Akhanda metaphysics conjugates the self-transparent unconditional non-anthropomorphic non-dual Consciousness with the evolutionary state regarding perfection of the human brain. The Akhanda philosophy works without any assumption of irreversibility of the pathway from dualism to non-dualism and from anthropomorphic non-dualism to non-anthropomorphic non-dualism. In this sense, the Akhanda State of the Being indicates a much more mature and flexible state of the brain upholding its openness, plasticity and integrating capacity. It has been made possible through evolutionary progress of the human brain. The brain stationed at and functioning in the Akhanda state could be said to have tasted the experience of every individual position of the base camps and also of the apex and, in the process has acquired the ability of having freedom from any territorial imprisonment without losing the capacity to enjoy the richness of every territory in fitness of the proper context. This positioning of the brain is unique to the Akhanda Paradigm. The *Akhanda* concept, therefore, represents the culmination of Indian philosophical thoughts through Materialism (of *Carbaka*), Dualism of *Sankhya*, unconditional non-anthropomorphic Non-dualism of Sankar, four other schools of Non-dualism and the Biune reality of *Advaita Saivites*.

The Ultimate working Reality is Biune. The total working Reality is *Akhanda* (Indivisible). The Akhanda differentiates but does not divide. The vertical depth of the *Akhanda* Metaphysics extends into the Multiversity (the system of multiple universe). In this Worldview, consciousness is the only constant in all equations of relationship. All other constants, man-made or natural are flux in nature. These concepts (one may call it

assumption to start with) are useful in exploration of both Consciousness and Nature, more useful when one explores (i) mechanics of consciousness (ii) Consciousness-Nature relationship and (iii) the deeper recess of Nature.

#### TO ACCEPT NATURE AS MULTILEVEL ORGANIZATION

Nature could not be considered merely what science has explored so far. It itself could be seen as a multilevel organization. Our understanding of nature as space-time bound world perceived by our senses, is the classical world of Nature. Deeper within this Nature, the scientists have come across the Nature where the behavior of energy/particle is that of a quantum. Quantum behavior is characterized by coherent superposition, discontinuity and nonlocality. Quantum energy/particle, although, cannot be seen by senses, their effects are sensible in the classical plane.

In the quantum plane the scientists are stuck in two areas; quantum discontinuity and quantum void. They do not know what happens in discontinuity (the 'sink' of quantum plane) and what is there in nature beyond quantum void (the 'fountainhead' of quantum world). They, it seems, are really ignorant of existence and properties of subquantum plane(s). Interestingly mental 'thoughts' could also behave in a quantum way. This could be the reason for the trend why the modern quantum-psychologists investigate 'thought' taking help from quantum mechanics. However, in the enamor of 'thought' they might miss the 'gap' in between thoughts and thereby fail to penetrate the complete depth of psyche. Similarly, in the enamor of quantum mechanics the quantum scientists have ignored the (i) mechanics in 'discontinuity', (ii) the mechanics involved in penetrating this 'discontinuity' and the mechanics, if any, which is thereafter. *Discontinuity is not merely a metaphysical issue. It is a scientific issue too.*

Penetrating through the discontinuity, while one explores the 'sub-quantum' domain there is all likelihood of a fusion of *Q-language* (quantum language) and *M-language* (metaphysical language). A bridging language here is of utmost importance. This remains a frontier of research for a philologist and consciousness-scientist.

Quantum mechanics cannot account for the phenomena that happen in 'quantum discontinuity' or in the sub-quantum planes of nature. On the superficial aspect this sub-quantum plane is suggested to be studded with elementary phenomena like death, life, rebirth (loss of existing properties and further acquisition of new properties) etc. Deeper still one could find a domain of nature that is in direct contact with the domain of consciousness. This softest, woolliest and wet part of Nature could be called the Nature of all natures, the nascent nature or Mother Nature. This Nature works as the executive front of consciousness. Consciousness executes its mechanics through this part of nature.

We can designate these planes numerically as Plane I (classical plane), Plane II (quantum plane), Plane III (plane of elementary phenomena), Plane IV (the plane of Mother Nature) and the Plane V, the plane of unconditional consciousness. This makes a Pentaune model of the Reality, with *nested* hierarchy in the spectrum of nature-consciousness.

It is possible that every plane of organization has its own mechanics and this mechanics is run by a specific currency. For perpetuation of any event from one plane to another plane of nature, there requires an economically efficient currency conversion system. In this scheme, the terrain of elementary phenomena (Plane III) and the domain of Mother Nature (Plane IV) appear as the missing pieces of the whole puzzle. *Those are the terrain where one can look forward to 'Meaning' and 'Purpose' of events respectively.* Also, the highly revered Quantum Mechanics could be connected with the Mechanics of Consciousness through the mechanics in the elementary terrain and the mechanics of Mother Nature.

#### TO LOOK AT THE 'ELEMENTS' OF SUBJECTIVITY AT THE PHENOMENAL LEVEL

After more than two decades of deliberation on consciousness research the scientists involved have realized that they need a *description* of consciousness at the phenomenal level (Antti Revonsuo<sup>18</sup>).

“Without a systematic description of phenomenal level, however, it does not make much sense to chart the cognitive or neural mechanism of consciousness, for it remains quite unclear what all those detailed mechanisms are supposed to be mechanism of. .... I suggest that the science of consciousness needs to develop a phenomenal level of description that systematically captures the phenomenal level of organization in the brain. This level of description cannot be imported from any other existing branch of science - it must be contributed by the science of consciousness itself.”  
- Antti Revonsuo

Thomas Nagel<sup>19</sup> has pointed out that unless we know the 'elements' in the subjectivity, consciousness remains impervious to the scientists (also quoted by Erik Kandel<sup>20</sup>). Probably the situation is like this. The chemical world is understood meaningfully when hundred odd elements are identified and placed appropriately in the Periodic Table. Probably, we might understand the texture and fabric of subjective experience once we get into the elements of its composition.

“What we lack in a science of consciousness are rules for extrapolating subjective properties (consciousness) from the properties of objects (interconnected nerve cells) .....To arrive at that theory, we will first have to discover the elementary components of subjective consciousness. .... This discovery, Nagel argues, will be of enormous magnitude and implication and one that may require a revolution in biology and most likely a complete transformation of scientific thought.” –Thomas Nagel quoted by Erik Kandel .

Here, my work offers what the process of 'sciencing' is essentially craving for. In 1983, I recognized the phenomenal elements of the 'private' self, the elements in impenetrable subjectivity of consciousness, and their interwoven, common-origin, often indistinguishable and superposed relationship. The five elements were identified as love, sex, ego (conditional existence), life and death. The subjectivity at its heart, at its bottom, at its core, is embedded with these five elemental phenomenal experiences. I am born. I would die. I have this conditioned existence. I exist as I am conditioned to exist identified with some specific fundamental properties, *eigenheit*, in a crystallized space and time

(my egohood). I desire a continuity (sex) of my existence and I wish to share my properties/feelings with others (love). Love, sex, ego, life and death were recognized as phenomenal elements in the private self. They are the five facets of the Private self, I/Me.

The idea got consolidated as a chapter entitled, “*The Five in One. The Biological Integration Center*”, in my work, *The Dynamic Web of Supracortical Consciousness* (1987)<sup>21</sup>. I have a proposition there that when the five elements get realized in the brain it helps as a Stable Value Attractor, the Supreme Biological Homeostatic Center of the Being. In the next chapter of the same work, I discussed the “Theme of Sex Education” on the light of these five private facets of the ‘self’. In the chapter on “Psychology of a cell”, the idea of “*Five in One*” was extrapolated in cell biology as cell membrane grossly representing love, DNA replication apparatus Sex, DNA transcription and protein synthesis Life, lysosome Ego and mitochondrion representing Death while the cytoskeleton acts as mechanical integrator of the cell at the classical level and a unique combination of Photon, Phonon Conformer and Neutrino as integrator of function at the quantum level. This idea was further developed as a concept of *psychic skeleton*, a network of multidimensional pentagons, and was presented as a holistic theory of pathogenesis of psychosomatic disease in the World Congress of Pathology held in Madrid, Spain in 1992. I concluded my presentation by saying that Systemic Lupus Erythematosus (SLE), an autoimmune disease of unknown etiology, might arise out of an unresolved conflict of Sex Love and Ego (S. L. E.) commonly seen in a young lady. It may precipitate following a grievous injury to psyche by an event where a person who is supposed to protect attacked the patient (e.g., incest). This could be the root cause of most autoimmune disease.

When I revisited Nature, in *Conquering the Brain* (1995) in chapters 24, 25 and 26, I tried to develop the conceptual anatomy and physiology of this biological integration center on the highest convexity of the cerebral hemispheres. In August 1997, Telicom, *The Journal of International Society for Philosophical Enquiry*<sup>22</sup> published my idea on complete ontology of mechanics, where the mechanics of elementary phenomena was said to be the bridging link for quantum mechanics and the mechanics of Mother Nature. The idea of respective integration in the brain for the specific plane of mechanics began crystallizing there. Within a year (August 1998), I could develop this idea further in the same journal<sup>23</sup> and published the concept of existence of five phenomenological mechanical tunnels that precisely follows quantum discontinuity. The Theory on Elementary Phenomenology and its mechanics are seen to crystallize there. Five elements are called elements of elementary phenomenology because none or nothing can bypass them, avoid them, or skip them. Everyone and everything has to go through them.

The elements of subjective experience could be traced back, however one by one, i.e. singularly, to each one of the five pioneers in Psychology. Sigmund Freud stressed on ‘Sex’, its oral phase, anal phase and phallic phase. Alfred Adler emphasized on the ‘feeling of inferiority’ (often misquoted as inferiority complex) as the propulsive force for individual’s progress. He, therefore, stressed on the element of ‘Ego’. Abraham Maslow’s hierarchy of ‘needs’ and self-actualization brought into focus the fulfillment in ‘Life’. Carl Jung’s emphasis on collective unconscious and then on synchronicity

highlights the events commonly observed between objects or subjects in 'Love'. Finally, Sri Aurobindo's passage through 'Death' (documented in *Savitri*) conclusively proves that physical conquest of death is humanly possible and its phases could be systematically delineated.

Socio-culturally, the spiritualists have conveyed to the humanity that 'Love is Life', indeed it is heavenly, while the business transaction of the realistic earth goes on with 'Ego' and 'Sex'. The element that bridges the 'heaven' and 'earth' is Death. Five elements of subjective experience, therefore, transcend cultural, religious and social constrains.

The elementary phenomenology also bridges a long-standing gap existing between *surface phenomenology* of the sensory world and the *depth phenomenology* in the realm of Mind and Consciousness. Deep ecology and depth psychology are also seen concurrent in these elements. This elemental plane could help to bridge the deep gap between philosophical and empirical approach to consciousness. This could also be considered as Husserl's "transcendentally reduced phenomena". Having mastered the mechanics in this elemental terrain, a classical and quantum-integrated brain can venture to have a permanent access to the domain of depth phenomenology.

#### TO ACCEPT THE PARADIGM OF UNCERTAINTY

The mechanics of both classical domain of nature and the domain of consciousness are deterministic. In between the two deterministic domains of certitude, exists sandwiched a long terrain of Uncertainty. In between 'simple' classical world and the 'simpler' consciousness there is stratified and extended complexities. This is perhaps the strategy of Nature to hide consciousness from the sensory world. Standing on the space-time bound classical sensory world our strategy would be, therefore, to access the simplicity lying far on the outside of the complexity. It is an important management rule that to get a simple answer to a problem, the thinking must be adequately complex. Simpler the desired answer, more complex is the thinking required. For an observer-dependent reality Heisenberg noted in the course of observation of the conjugal properties of quantum particle that one could not be simultaneously certain of velocity and position of a quantum energy/particle. Extending it further, at the point of formation of black hole, Stephen Hawking<sup>24</sup> points out another kind of uncertainty that is qualitatively different form Heisenberg's uncertainty. At farther stretch he points out that the most profound uncertainty could be observed at the edge of the universe where he in his own way talks of the Mind of God.

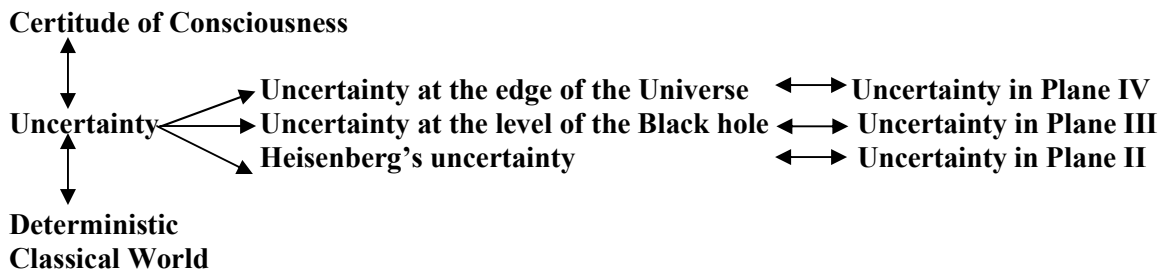


Fig. 1

All descriptions of Reality are perceived realities. We do not perceive uncertainty in the observation of conjugal properties of a particle in the classical plane. Uncertainty is observed and can be measured between two complementary properties of a quantum object (Heisenberg's uncertainty). At a deeper plane of existence, a different kind of uncertainty is perceived where there occurs a conjugation of the *conditioned properties* and the *very existence* of the observed (e.g., uncertainty at the level of a black hole). In a still deeper plane, the perceived uncertainty is between conjugal 'Existence' and 'No existence', between the 'Presence' and the 'Absence' (e.g., uncertainty at the edge of the universe) and finally, the uncertainty oscillates between conjugal 'Nonexistence' and 'A new existence', between 'Absence' and a 'New Presence'. Consciousness, I mean *Unconditional Consciousness* (Plane V) as a perceived reality, either does not exist or it exists as a Reality that is something always new, fresh and novel.

Uncertainty can be measured and it is an issue for Science. Uncertainty is not merely observable, measurable and a concept in quantum physics. Our brain can perceive, conceive and experience uncertainty. And, on the basis of this perceived uncertainty, nature seems to have different levels of organization.

The most primitive emotional response of a living creature is *fear*. If fear is a response, what is the stimulus? Stimulus could be sensory, extra-sensory or non-sensory. However, the common in them is the *perception* of uncertainty. It could be stated that the degree and complexity of this fear is directly linked with the perceived degree and complexity of uncertainty. In an evolved creature, evolved in the sense that it could be neither bogged down easily by sexual desire, nor trapped in the maize of ego nor could be easily hooked by phenomenon of death, the most precious emotional response is *wonderment*, a feeling of the *sense of awe*. The mosaic of this feeling of 'awe' could also be correlated with the grid of perceived uncertainty. And interestingly, an input of *relevant* information surely reduces this perception, conception and experience of uncertainty. It could be suggested that the *perception, conception and experience of uncertainty* by human brain and its *alleviation by input of relevant information* could be tied to the computational, representational and evolutionary capacity of human mind. When brain/mind could integrate this graded uncertainty (may be with the input of appropriate information) then it could play with more and more possibilities, opportunities and chances. In this sense one moves from Plane I to II, II to III, III to IV with more and more freedom. If the brain fails to integrate uncertainty, possibilities of getting into slippery slopes increases more and more. Integration is the key here to go to the domain of freedom.

#### TO LOOK INTO THE POSSIBILITY OF HAVING AN INFORMATIONAL HIERARCHY

The term 'information' is polysemous and has been used too loosely and too generally. Original Claude Shannon's definition that information relates to randomness of a message has worked well in the physical world that information is which reduces uncertainty is a very good definition to start with. Reduction of uncertainty can be measured and so this definition has been acceptable to 'Science'. The implication of this theory was also found in cognitive psychology. However, some cognitive scientists<sup>25</sup> have felt 'frustrated' applying Shannon's theory of information in Psychology. Shannon's

analysis of language is based on Markov's process that is best compatible with behaviorist's approach rather than that of mentalists. Nevertheless, the relation of information with cognition could be looked into from a different point of view.

Information is unique in the sense that it is bipolar. It has an objective pole that is measurable pole and a subjective pole which when introduced into the system, the system can make some sense or meaning out of it. In this sense information occupies a unique position to bridge the domain of energy and field with the domain of mind and consciousness. Without touching the core and the spirit of the definition offered by a genius (I mean Shannon), it is possible to extend the concept of information further by understanding *perception of 'randomness' and 'uncertainty' in the brain*. In this paper we have chalked out a hierarchy of uncertainty and in accordance a nesting hierarchy of nature. Emphasis on the perception of uncertainty by the brain at different ontological station of the being and alleviation of uncertainty with input of relevant information of corresponding ontological level shows us a way for accepting the existence of ontological hierarchy of information.

There is also a broad objective aspect of the ontological gap existing in the life history of information. Content-addressable, context-addressable and location-addressable properties of information prior to the Big Bang, after the Big Bang, and what we observe in information stored in DNA show little similarity! We even do not know when did 'information' appear in the elaborate scheme of the Big Bang! In the post Big Bang scenario, one can accurately spot the origin / appearance of energy, matter, antimatter, unitary quantum macro system (QMS), molecules, amino acid, protein, RNA and DNA. But, alas there is nothing known for information! Was 'information' all along there from the beginning? Or, has the original information faced a process of devolution in the course of journey from the Big Bang to DNA molecule? The information at the time of initiation of Big Bang and the information that DNA carries seem ontologically different! Or, is it that *content* of information has remained unchanged? Only the *context* of the original information has undergone a severe metamorphosis in the course of this long journey from *location-non-addressable* to *location-addressable-situation*! There is no subjectivity in these questions. In front of us is openly spread an objective history sheet of almost everything without the picture of this life sketch of 'information'.

It is still unknown what could be the actual process at the time of that momentous transition; I mean the 'enclosure', the 'localization' and 'encapsulation' of *cosmology into cell biology*. Is it a process of devolution of 'information' or metamorphosis of the context that accompanies this transition? Before this enclosure protein were seen to be self-replicating (protein world). RNA had been self-replicating (RNA world) and then DNA had been self-replicating (DNA world) with an axis extending from protein to DNA molecule. Following 'encapsulation', the axis is reversed. Reversal of axis of flow of information strangely accompanied this 'enclosure'. This 'enclosure' or 'encapsulation' led to centralization of information into the DNA molecule. Following this there began the evolutionary journey of probiotic life. Ongoing information expression by an evolving genotype with selection pressures at various depths of nature had resulted in variation in the form of phenotypes. What could be the ultimate motive behind this? It is



guessed that it might be to arrive probably at the present state of life of human being with an objective to read the original information in its proper context. Starting from that Big Bang ‘information’, one has to account for the ‘information’ stored in the DNA, expressed by DNA and contrast it with the ‘information’ the scientists are considering in the discipline of Neuroinformatics. This information, therefore, cannot be called monolithic. What is just a ‘signal’ in classical world becomes that which reduces perception of uncertainty in quantum world. In the terrain of elementary phenomena, information reduces various phenomenal uncertainties. In the domain of ‘intentionality’/‘purpose’ of consciousness, i.e. in the domain where Mother Nature determines the purpose, information acquires causal properties and may be called causal information (if one likes to retain the term information in Plane IV of Nature). Informational hierarchy, informational geometry, information in neural manifold remains the frontier of research for those engaged in Neuroinformatics. Higher dimensional topology of the brain may join the canvas here.

In the Akhanda Worldview, the relationship between Gene and Information is as follows. Genes neither generate information, nor it can use information. It is information that uses genes as means to achieve their end. In this sense, DNA is a vehicle of live-information.<sup>26</sup> The possibility of measurement of different kinds of information also opens up another new frontier. It is ‘bit’ in classical plane and is based on Boolean logic of dealing with two alternatives, ‘yes’ and ‘no’ in either-or way. It is measured as ‘qbit’ in quantum plane where the measurement shifts to non-Boolean logic capable of dealing with two alternatives ‘yes’ and ‘no’ that are in superposed state. What could be the logic of measuring phenomenal bit or ‘phenobit’? What could be the logic to deal with two alternatives like, ‘non-existence’ and ‘existence’ for plane IV and ‘non-existence’ and ‘a new existence’ for plane V?

## 8. LOOKING AT THE BACKGROUND CONTEXT OF SUPRACORTICAL CONSCIOUSNESS

At the outset, in this paper, it was mentioned that the new experience (of supracortical consciousness) happened on the backdrop of discontinuity, profound existential uncertainties and several death traps. It is to emphasize here that it concurred with gaining ability of the brain to *see through* death. We would be now looking into what could be the science in it?

### THE GREAT TRIO

Supracortical consciousness is a step forward towards brain-independent consciousness. If supracortical consciousness is so natural why then are we not aware of it? The reason is simple. Mind, Time and Death, which I call *The Great Trio*, are the guards at the gate of the terrain of unconditional consciousness.

*The Mind gate*: Mind is the organ of communication between two conscious systems (*Conquering the Brain* p. 262 and *The Millennium Bridge* p. 223). Mind is the organ of communication of a confined conscious system.

The organ Mind could be characterized by following five properties. (i) It could be local as well as nonlocal. (ii) It is simultaneously integral and differential (cf., Gerald Edelman's characterization of fundamental properties of conscious experience)<sup>27</sup>. (iii) It could work in both linear and nonlinear ways. (iv) Some of its properties are algorithmic and therefore are computable. It has a lot more functions that are noncomputable and nonalgorithmic. (v) It actively participates in the evolutionary and the creative activities of the system. It generates the sense of two. It is said in *Upanishad* that the end of mind is the beginning of 'Consciousness'. 'Mononash' or 'monolay' (dissolution of Mind) is essential for entering the domain of consciousness. 'Mind is that which separates God from us' (Swami Sivananda). 'Mind is that which cuts consciousness into two' (Sri Aurobindo). The dualism of Brain-bound consciousness and Brain-independent consciousness is created by the Mind only. It is the Mind that establishes dualism firmly and when the Mind dissolves there is Consciousness only.

*The Time gate:* "Time is what keeps the light from reaching us. There is no greater obstacle to God than time." (Meister Eckhart, the thirteenth-century spiritual teacher). "Past and future veil God from our sight, Burn up both of them with fire" (Rumi, a poet and teacher of Sufism). "Sufi is the son of time present". In ordinary sense, meditation means to live in the 'Present'. In true sense, mediation means to live in 'Timelessness'. Indians are accustomed to worship the Goddess of Time as Goddess *Kali* (*Kal* = Time). A poem of mine connecting Time and Space with Mind is worth mentioning here.

Space and Time  
Are Products of Mind.  
In our brain!

This king and the queen  
Moves with the wind  
In mind's drain.

They are ghosts,  
And, cannot boast,  
When the Mind ends.

They are convoy  
For *the Divine* to enjoy  
The Supracortical trend.

(*Conquering the Brain*, p 209, 1995)

*The Death gate:* Death phenomenon is the opacity, obscurity and separateness placed in between Brain-bound and Brain-independent consciousness. Following death, there is unification of the two. However, physical conquest of Death is humanly possible. *Transcendence means transcendence of Death.* Transcending death, self-consciousness can unify brain-bound and brain independent consciousness. Tagore once expressed, "Death is not extinguishing the light, it is only putting out the lamp because dawn has come." Most often, however, the light is put out long before the arrival of the dawn. Therefore, one has to cross a thick opaque obscure phase of darkness separating the dawn from the light of life. This constitutes actually the 'death gate' to Consciousness.

If the perception of Time is embedded in the existence of Mind (also referred to Benjamin Libet's latest work, *The Mind is in the Timing*, in Press, personal communication, 28 March, 2003), then 'mononash' or 'monoloy' could be the beginning of the passage through Death. When the Mind dies, and a new Mind forms, there happens a shift of awareness from cortical consciousness to supracortical consciousness realm. To gain experience of supracortical consciousness the brain needs to learn to 'see through' this death. Because of this reason, in *Conquering the Brain*, the first chapter happened to be titled, *Experiencing Death Phenomenon, Let the concept of Death die*.

## CONSCIOUS CONQUEST OF PHYSICAL DEATH IS POSSIBLE

Death has been generally accepted as the *grand finale*, the dead end of the show or the terminus of the journey. Death is the ultimate "gulf" that cannot be bridged by any leap of argument, linked by any stretch of theorization, connected by any advancement of inference or filled up by any stride of affirmation. Therefore, death stands as "death" itself.

However, it is humanly possible to *see through* death while one is alive. It is said that a yogi may die several deaths in one life. Recently it has been re-emphasized in Sri Aurobindo's life and literature.

Death is the question Nature puts continually to Life and her reminder to it that it has not yet found itself. If there were no siege of death, the creature would be bound forever in the form of an imperfect living. Pursued by death he awakens to the idea of perfect life and seeks out its means and possibility. (Sri Aurobindo, *Thoughts and Glimpses*, pp. 22-23)

Death is meant for awakening of consciousness in the matter. (Sri Aurobindo)

There are people on this earth who have confronted death and have come out successfully through its tunnel with the guidance of *Light* at the end of it. They could be categorized in the following groups. 1. The mystic, who is ever awake for higher consciousness. 2. The scientist who is genuinely seeking the Truth. 3. The patients in hospital who remained in coma for days or months in intensive care unit, recovered from their ailments. 4. The refugees. "Migrants and refugees on their journeys are found washed up on Mediterranean coasts, frozen on mountain passes, crushed in train tunnels, dehydrated in North African deserts, suffocated in sealed containers or refrigeration units or packed into unseaworthy vessels. The long voyages and rickety boats they use have occasionally meant disaster as they recently did for those who died off Capo Rosssello in Italy and for others who have drowned attempting to reach the United States from Cuba"<sup>28</sup>.

## FIVE PHASES IN THE PASSAGE THROUGH DEATH

While near-death experience is unique to patients on the operation table or in the intensive care unit of a hospital, conscious conquest of physical death remains unique to a highly evolved, normal human being. May be he an ever-alert scientist or an ever-awake mystic. It can be experienced in its entirety while one is alive. In its full form, the entire

spectrum of the passage can be demarcated into five phases; Near-death experience, Transcendental death experience, Transformational death experience, Consummation into 'higher' consciousness followed by the last, but most important one, - the experience of getting reborn in the same corpus.

It is the *near-death experience*<sup>29</sup> that has been addressed so far by the scientific community. First person's narrative from the patients who have come back from prolonged coma is the primary source of this data. However, the details of subsequent four phases of death could be obtained from the account of accomplished mystics. Sri Aurobindo describes it profoundly in *Savitri*.

In the terrain of death<sup>30</sup> what prevails is *Silence, Stillness, Emptiness* and *Nothingness*. In a lighter vein, I call it visiting professorship in Silence, Stillness, Emptiness and Nothingness. However, my observation in this terrain of nature is as follows:

Not all silence is absence of causes,  
Not all stillness is absence of time.  
Not all emptiness is subatomic void,  
Not all nothingness is absence of rhyme!

There is Silence which broods Cause  
There is Stillness, which generates Time with pause.  
There is Void from which this universe is born  
*Ananda* shines when nothingness is torn!

(*Conquering the Brain*, p. 200, 1995; *The Millennium Bridge*, p.118, 2000).

*Transcendental death experience* is an experience of transcending of all these four attributes of nature in this terrain. Two events, (a) purging and (b) creative emergence characterize *Transformational death experience*. Initially, purging overshadows emergence. Later, emergence predominates. This transformation makes one ready for *consummation* in 'higher' consciousness. The next phase, the *experience of getting reborn* in the same body is characterized by appearance of freshening new properties - a new space and a new time on the background of a new context.

#### GREATER PSYCHOLOGY

Sri Aurobindo said, "...the *greater psychology awaiting its time*..." It would be logical to think that it would emerge encompassing the entire terrain of death. It would be built around silence, stillness, emptiness and nothingness encompassing both non-transcendental and transcendental qualities of consciousness. The following table offers a tentative scheme.

To go beyond	One requires	One crosses	One achieves	Nature becomes
Pleasure	Inspiration	Nothingness	Peace	<i>Ananda</i> (Causeless ecstasy)
Space	Devotion	Emptiness	Fearlessness	Infinite
Time	Faith	Stillness	Equanimity	Eternal
Cause	Love	Silence	Bliss	Immortal

One could go beyond pleasure by the call of something inspiring ‘higher’. Initially, however, one lands up into the domain of nothingness. Devotion is useful to conquer Space and Faith to conquer Time. One has to pass through emptiness and stillness respectively. It is Love nurturing of which could help in overcoming the intricacies of causality, although confronted with a stark silence initially. What does one achieve (fourth column in the Table) in the process? Peace, Fearlessness, Equanimity and Bliss respectively. It is important to note their vertical intertwining. Unless one is at peace, one cannot become fearless. Fearlessness strengthens and upholds peace. Unless the person is fearless, it seems impossible for him to remain at the state of equanimity. Equanimity upholds and strengthens fearlessness. Blissful state upholds and strengthens equanimity in turn. Immortality, eternity, infinity and *ananda* are four transcendental attributes of consciousness. To experience these attributes one requires taking stock of the total spectrum of death.

#### HOW SCIENCE OF DEATH IS RELATED TO SCIENCE FOR CONSCIOUSNESS?

It is following death brain-bound consciousness of ours supposedly merge into brain independent consciousness in Nature. Therefore if we could experience the phenomenon of death in its entirety while we are alive, we would be in a position to unravel the relationship between brain-bound and brain-independent consciousness.

Transcendence in its true sense is transcendence of death. The science of transcendence is intertwined with science of embodied journey through death.

Transcendence is the power to be born anew, to make a fresh start, to turn over a new leaf, to begin with a clean slate, to enter into a state of grace, to have a second chance. Transcendence makes no reference to the past, whether your past has been overflowing with victories or filled with defeats. When you enter a state of transcendence you are able to create a new life, unburdened by both the victories and the defeats of the past. Transcendence is more than just the accurate realization that the past is over. It is also a realignment of all dimensions of yourself with the very source of your life. (*Anon: Quoted in Network Review, No 82, August 2003. p. 57*)

Worldly interpersonal transactions are determined by ‘Ego’ and ‘Sex’. In ‘heaven’, as told by accomplished spiritualists, ‘Love’ is ‘Life’. The heaven and the earth are separated by the opacity of ‘Death’. Love, sex, ego, life and death are elementary phenomena which connect the *surface phenomenology* of classical and quantum nature

with the *depth phenomenology* of mind and consciousness. These five elementary phenomena constitute the private facets of ‘self’ and the elements of subjective experience. The complex grid of human experience is based on these five elements. From this point of view, therefore, death phenomena is relevant to understand the totality of phenomenal nature, the entirety of psyche and the relation between two.

Speciation in evolution is a death-transcending emergence. Discontinuities in evolution are nothing but footprints of death. The stress of death, the pressure of uncertainty in death, and the unnerving physical torture in death may be related to ‘evo-devo’ (evolution-development) connection. The selection pressure of death could bring out a sustainable change in the developmental regulatory genes. Transcendence of death is causally related to emergence of *homo spiritualis* from *homo sapiens*.

Once we start seeing depth of uncertainties and discontinuities of nature as a ‘form’ of ‘death trap’, then it appears that what we have labeled as ‘physical nature’ so far could be, in fact, a part of organic nature. The recess of voids, the black hole and the most profound uncertainties described at the edge of the universe are as part of this nature as are ‘life’, creativity, and new emergence. A science of death is likely to guide us in investigating depth of uncertainties, relevant information categories, various nonlocal communication and information mechanics therein. We will not know ‘life’ unless and until we know all about death.

#### HOW DEATH COULD BE BROUGHT UNDER PURVIEW OF SCIENCE?

Death has long been considered as a metaphysical issue and not as an issue for science. However, death is a multidimensional phenomenon having wide-ranging ramifications in social, cultural, political, ethical, legal, anthropological, mystical and spiritual dimensions. If all these dimensions could be expressed in a common universal language, it would be easier to incorporate transcendence of death in the curriculum of science. How this issue could be brought under scientific purview is the concern of this section of the paper. Literature survey reveals record of near death experience in form of books, papers, websites etc. There is no mention of other phases in scientific literature. ‘Sciencing’ of death seems plausible if we consider death as loss of existential properties. For a ‘particle’ in quantum domain, this happens almost regularly. Scientists refer this as ‘discontinuity’. For a complex system like us, where consciousness is centralized in the organ brain, death appears to be a very complex process. The brain most often fails to acclimatize with the process of death that is accompanied by the stress of uncertainties, voids, nothingness and emptiness. The journey usually stops. We call it Death. Occasionally it succeeds. The brain succeeds to overcome the threat and ammunition of death. And there, we are left with the scope for scientific investigation of the phenomenon.

If we visualize death phenomenon as an extreme degree and complex form of stress induced by different levels of uncertainties confronted and overcome by our brain, the handling of death phenomenon becomes easier. Both stress and uncertainties are scientific issues. Stress can be monitored and uncertainties can be measured. We need two more points to consider. First, Nonlocal communications which might offer help

brain to overcome uncertainty, and second, different qualitative levels of information the brain is compelled to handle in the process. Therefore, at this stage, what all do we need to make death phenomenon amenable to science are as follows. 1. Understanding voids of different kinds and brain-void interaction. 2. Understanding different levels of uncertainty. They are related to three different kinds of void. 3. Understanding different types of nonlocal communication effected by the brain. 4. Understanding different qualitative levels of ‘information’. 5. Understanding the brain-phenomena when the brain is challenged with death.

*Cautioning Note:* Both organized religions and the material scientists, who are usually enemy of each other, unite to oppose a genuine investigation on death phenomenon. There is a relevant warning for us from the accomplished mystics not to indulge in horizontal exploration of the plane of death. Lateralisation could lead to tempting adventure on manipulation of ‘soul pool’ in this terrain of nature. This manipulation will have devastating consequences for the entire ecosystem. The mystic’s life guides us to cross the passage straight, vertically, to have an embodied experience of death phenomenon.

*Methodology:* First person’s narrative from the patients who have come out of extended coma is the primary source of data in near-death experience. For other phases, it is possible to record objectively what has been happening in the brain either through subjective-objective transformation i.e. inside-out phenomenon by the person who has the opportunity of experiencing it or, by an alert observer who had already gone through this experience earlier and has been to observe another person going through this experience. The key to this heterophenomenological approach (if I am free to use Daniel Dennett’s phrase) is in trusting the subject who is honest to the experience (Journal of Consciousness Studies brought a double issue on Trusting the Subject? Vol.10, No. 9-10, 2003). Objective recording of brain phenomena by various neuroimaging techniques could add more to this sciencing. There are events that could be easily recorded by fMNR, PET, magneto-encephalography etc., when the brain confronts, overcomes and finally integrates death phenomenon in life. The mystic who does not have access to external technology, trusts on his own intuition and imagination.

*The Problem in ‘sciencing’ Death:* Since it is a complex spiral dynamics and we are looking at it by expanding what is really a ‘moment’, a ‘point’, it is difficult to describe the phases in isolation. Should we extend, expand, stretch dilate this ‘moment’, the ‘point’ of death, we get five distinguishable phases. Sometimes the phases seem to be horizontally disposed and in other times appear vertically related.

*Sciencing the process of transcendence:* To transcend means to make sense across an impassable barrier. Impassable barrier in the quantum domain is surpassed by means of Quantum Mechanical Tunneling. I have used the concept of Phenomenological Mechanical Tunnel in the context of impassable barrier in Plane III of Nature. Metaphor is a mental tunnel that brings out in-depth relation between entities (e.g., two different concepts/percepts), which appear unrelated on the surface. The term transcendence could be used in reference to Space Time and Cause. As Time is supposed to have an

ontological existence independent of Space<sup>31</sup> so the Causal network have an ontological existence independent of Time.

Could information have the ability to transcend impassable barrier? Probably yes! One may not find such properties in all information one encounters! However, there are information, which are transmitted dissolving the barrier of Space (nonlocal communication Type I) and the barrier of both Space and Time (nonlocal communication Type II). Nonlocal communication Type I, II and III could probably represent the mechanics of Transcendence of Space Time and Cause respectively. In essence, Unconditional Consciousness (Plane V) constitutes the real transcendental plane.

*Assumptions in 'sciencing' death phenomenon:* The ability to transcend and then *see through* death, at this stage, is based on the following two assumptions. 1. It is humanly possible to experience the complete spectrum of death phenomenon while one is alive. 2. Confrontation with death is a learning process for the brain. Quite often the brain cannot complete the whole journey successfully. It fails and we all call it Death. However, there are occasions when the brain succeeds to get through the experience completely and we are here to narrate this success story. Our primary concern is an accomplished brain, integrating the experience of death phenomenon in its entirety while one is alive. The present approach is, therefore, an *embodied approach*. With evolution, death phenomenon, like consciousness, has been *centralized* in our brain and this has offered us the unique opportunity to have embodied approach to this complex phenomenon.

#### 9. 'SHAKING UP' OF THE BRAIN WHILE TRANSCENDING DEATH THE PASSAGE TO SUPRACORTICAL CONSCIOUSNESS

To conquer death is equivalent to take a vertical leap from one ontological level of existence to the next. When the brain takes such a leap there occurs a vigorous 'shaking up' of the whole brain. What does this whole brain mean?

At the *horizontal dimension* there are (i) the 'old' brain, with the sympathetic and parasympathetic systems for a response meant for 'fight or flight' and (ii) the 'new' brain with left and right cerebral hemispheres for a behavioural response meant for reconciliation of phenomena to the level of practicality within a time frame in reference to sociocultural, emotional and abstract conceptual co-ordinates. At the *vertical dimension* there is the Triune Brain, a composite *nest* of human brain, mammalian brain and reptilian brain (P. McLean).

The 'shake-up' of the brain is suggested to extend both in vertical and horizontal dimensions. Horizontal shake up is to 'equalize' the differentiated functions of the 'left' and 'right' in both 'old' and 'new' brain. The vertical brain's response while experiencing and conquering death is an integrating response that leads towards development of new integration centers (*cakras*) in the nervous system and probably initiates a process of evolution in the nature of the brain. In the course of this unnerving shake up there are five distinct phases. Those are (i) Emotional and Autonomic shake up followed by a hypothalamic spillover phenomenon. It equalizes the left and right 'old' brain. (ii) Integrated hemispheric transversion and hemispheric flip-flop followed by



hemispheric spill over. It equalizes the left and right 'new' brain. (iii) Redefining axiological hierarchy of the brain: a vertical bootstrapping from the supracortical domain. (iv) Supreme consummation or unification of brain-bound consciousness and brain-independent consciousness, (v) An Integrated inversion of neuraxis, a vertical flip-flop. These five phases described in neurological term respectively correlate well with (i) near death experience (ii) transcendental death experience (iii) transformational death experience (iv) consummation into 'higher' consciousness and (v) experience of getting reborn in the same body. Every phase has research components for Psychology, Neurology and Communication science. Let us describe those five phases.

### NEAR-DEATH EXPERIENCE

*Neurological Equivalence:* Autonomic shake-up followed by a hypothalamic spill over, culminating in 'equalization' of emotional i.e. old brains, left and right

*Psychology:* There is apprehension, fear and uncertainty to start with. Most of the patients report that they pass through a long dark tunnel. There is also report of having sensed an instantaneous holistic review of life.

*'Greater' Psychology:* A sense of 'nothingness' dominates the psychic scenario.

*Psychosomatic Manifestation:* An emotional horror reaction is initiated by thanatophobia. The patient's respiration, heart function, other autonomic activities are in tremendous stress, a result of both ergotropic and trophotropic stimulation. There may be sweating, defecation and even ejaculation.

*Macro dynamics in the brain:* In the 'fight or flight' response, both sympathetic and parasympathetic systems (also called ergotropic and trophotropic) are seriously perturbed. The sympathetic system has extension within the brain as what one sees as lateral hypothalamic region. Together they form the ergotropic system. This hypothalamic region, through medial forebrain bundle is connected with septal nuclei (limbic system). Parasympathetic system, on the same way, has extension on the medial region of hypothalamus and together they form the trophotropic system. This medial region of hypothalamus has rich connections with amygdaloid nuclei and hippocampus. In ordinary circumstances, there is reciprocal behavior of the two systems. In extreme of reaction, they compliment each other. Continued stimulation of one system to its maximal capacity does not lead to inhibition of the other. Nor it stops by complimenting the other. The other system, paradoxically, starts responding by getting more and more stimulated. This is known as *spillover / reversible* phenomenon. Smith et al and R. Joseph<sup>32</sup> have reported this spillover phenomenon in a different context. It happens at the level of hypothalamus and leads to equalization of the left and right 'old' brain.

D'Aquilli and Andrew Newberg<sup>33</sup> have pointed out the occurrence of the spillover phenomenon in the context of profound religious and spiritual experiences. This is also associated sometime in the course of sexual orgasm. And, it might be regular during autonomic shake up in the course of near-death experience.

*Micro dynamics in the cerebral cortex:* The process of ‘deafferentation’ begins in Posterior Superior Parietal Lobules (PSPL) of both right and left brain. The three gating mechanisms (Mind gate, Time gate, Death gate) at the cortical synapses are vigorously shaken up. At the end, ‘Mind gate’ breaks loose.

*Communication:* The connection with space-time world is not available. No communication from the nature beyond space and time could too be recorded.

## TRANSCENDENTAL DEATH EXPERIENCE

*Neurological Equivalence:* An integrated hemispheric transversion, a hemispheric flip-flop followed by an inter-hemispheric spillover

*Psychology:* Space and time are torn. Mind is absolved. An intense feeling of *emptiness* dominates the scenario.

*‘Greater’ Psychology:*

Then to the ascent there came mighty term:  
A height was reached where nothing made could live,  
A line where every hope and search must cease  
Neared some intolerant bare Reality.

Even the spirit that holds the universe  
Fainted in luminous insufficiency. (Sri Aurobindo in *Savitri*)

*Psychosomatic Manifestation:* A horrible and intolerable ‘flutter’ reaction occurs as if one is cut into pieces while alive.

*Macro dynamics in the brain:* This is a situation when in the context of information processing and responsivity of the brain left hemisphere behaves as right, and vice versa, in an integrated way. *She (right/representational hemisphere) becomes categorical when He (left/categorical hemisphere) represents the eternity.* The left horizontal being and the right horizontal being exchange their mutual position. This may also be called integrated hemispheric transversion.

The dangerous, most unpredictable and almost unbearable phase is when complete transversion of hemispheric beings has taken place and the right horizontal (lateral) being and the left horizontal (lateral) being are yet to regain their original position and posture for a spill over<sup>34</sup>. And this regaining of position and posture demands for the Supracortical element to assert and act. An absolutely stable supracortical element (call it universal consciousness, disembodied consciousness, consciousness outside the cortex, extra-corporeal consciousness, consciousness in the transuniversal or inter-universal plane, brain-independent consciousness, Unconditional Being/Consciousness (personified as *Sadguru*) catching hold of the control of the cerebral cortex of both hemispheres remains *necessary* and probably *sufficient* for transcending the most profound existential uncertainties. *Surrender* of the being to Supracortical consciousness largely facilitates the

process. The mediation is *supracortical*. A person *becomes first aware of the existence of supracortical consciousness* at this point of time. Following this, the Left lateral being instead of opposing or complementing, in fact, enriches enhances and inspires the Right lateral being and vice versa. The process results in equalization of the left and right 'new' brains.

The spillover phenomenon that was confined to hypothalamus during near-death phase spreads to hemispheric level in course of real transcendence of death. Hemispheric spillover differs from hypothalamic spillover in certain aspects. (i) It happens at the level of the being. (ii) It could follow only when the transposed beings have regained their original position and posture. (iii) It is essentially supracortical mediation and is not merely confined to local neural commissural systems.

Reversal of function of posterior superior parietal lobule (PSPL) of left cerebral hemisphere (which is normally concerned with *self/other* sense) and that of right cerebral hemisphere (which is normally concerned with *space time* sense) could explain the sense of *emptiness* and *absolve of self-sense* in this phase.

*Micro dynamics in the cerebral cortex:* Information processing in the 'upstairs' of cerebral cortex (roughly upper three layers) gets completely dissociated from the processing in the downstairs (lower three layers) of cerebral cortex. Deafferentation of PSPLs appears complete. In the cortical synapse, 'Time gate' breaks loose.

*Communication:* At this point of dismantled space and time, neuroscience meets three other disciplines of Physics namely, (i) vacuum physics, (ii) astrophysics in the realm of a black hole, a white hole, edge of the universe and (iii) the physics of temporal nonlocality. Nonlocal communication type II, which cracks the barrier of both space and time appears on the scenario here.

## TRANSFORMATIONAL DEATH EXPERIENCE

*Neurological Equivalence:* Axiological re-orientation of the brain, a vertical bootstrapping of the brain-components from the Supracortical domain which may be called a vertical shake up, a kind of bootstrapping of the two hemispheres from the Supracortical domain

*Psychology:* A sense of 'stillness' dominates the psychic scenario. A steely 'will'/'intent' for overcoming death phenomenon seems vital for survival at this stage. The reptilian, mammalian, and the human brain, nested one within another looks 'up'/'deep'/'beyond' for the 'One' which had mediated the hemispheric transversion. The brainstem being, the limbic being and the cortical being begin opening up to the Supracortical being and *redefines* the hierarchical relevance and axiological integrity.

*'Greater' Psychology:*

A huge extinction is not God's last word.

Escape brings not the victory and the crown!  
Something thou cam'st to do from the Unknown.  
But nothing is finished and the world goes on,  
Because only half God's cosmic work is done.

All he had been and all towards which he grew  
Must now be left behind or else transform  
Into a self of That which has no name. (Sri Aurobindo in *Savitri*)

*Psychosomatic Manifestation:* The body, mind and intellect get welded into one functional unit although the body behaves like a living corpse. Multiple selves working in different directions are compelled for polarization towards *surrender*. Cognitive functions get focused on supracortical consciousness.

*Macro dynamics in the brain:* If the brain survives two horizontal shakes namely, autonomic shake up (and spillover) and hemispheric shake up and spillover then the central vertical neuraxis gets the mandate to re-orient itself with the outcomes under direct guidance of supracortical element.

There are reports and thoughts<sup>35</sup> in neuroscience that the cerebral cortex may act as 'Brake' as the functioning of the brainstem (Jesse Hong Xiong in JSE 2000). Taking 'cue' from there one can say that the hemispheric spillover is expected to initiate this vertical shake-up. As mentioned earlier, the process of transformation is a heterogeneous mixture of *purging* and *creative emergence*. This process is associated with purging of vestigial reptilian, mammalian and human imprint-remnants. There is also creative emergence, transcending the barriers of cultures and religions. The movement towards bi-hemispheric equanimity of posterior superior parietal lobules (PSPLs), explains the sense of stillness of Time.

*Micro dynamics in the cerebral cortex:* Supracortico-cortical harmonization begins. Upstairs and downstairs of cerebral cortex get realigned. In the cortical synapse, 'Death gate' breaks loose.

*Communication:* Nonlocal communication type III begins. The "Power center" gradually shifts *from* the brain *to* consciousness. Paradigm shift begins. It also brings up revolutionary changes by minimization of various "divides" within stored information.

#### SUPREME CONSUMMATION

*Neurological Equivalence:* Consummation of brain-bound consciousness into brain-independent consciousness

*Psychology:* An all-pervading 'silence' is conspicuous in the psychic scenario.

*'Greater' Psychology:*

Infinity swallowed him into shoreless trance. (Sri Aurobindo in *Savitri*)

In the abyss of deep blue the sempiternal light is lit. The destined human cerebral cortex faces Infinity's finite front. Hidden asymmetries in the external cosmos are complemented by reciprocal asymmetries in the neurobiology. In cyclic symmetry and in metric plane, the quivering limbs of the cosmic facet embrace the virgin vibration of the dreamy chords of the living biological corpse. The undying love of cosmic integration center impregnates the passionate heart beat of biological integration center. (*Conquering the Brain*, p. 17)

A vast quiescence swallows up all sounds in the voicelessness of utter bliss. (Sri Aurobindo in *Savitri*).

*Psychosomatic Manifestation*: Informational activities in the psyche, although, are in high swing, motivation and intention are yet to build up. Mind behaves as if it is 'frozen' into supracortical consciousness. Inertia of body is remarkable.

*Macro dynamics in the brain*: Reorientation of the axiological integrity of the brain to a new level, as happens in the phase three, is a necessary pre-requisite for this consummation. In this phase occurs fertilization of the brain-bound consciousness by the brain-independent consciousness. There is complete shift of Power *from* the brain *to* consciousness. Consciousness drives the brain by means of 'self' and through informational and phenomenal manipulation.

*Micro dynamics in the cerebral cortex*: The whole cerebral cortex behaves as one block of tissue. In information processing and responsivity, there is no hemispheric bias, there is complete stair-synchrony and there is supracortico-cortical harmony. In the cortical synapse, there is little gating for cortico-supracortical and supracortico-cortical communication.

*Communication*: Nonlocal communication Type I, II, III by the brain.

## THE EXPERIENCE OF GETTING REBORN IN THE SAME CORPUS

*Neurological Equivalence*: Integrated Inversion of Neuraxis: A vertical Flip-flop

*Psychology*: It is an upside-down experience. With this inversion, one becomes aware of the identity of brain-bound consciousness, 'self' and brain-independent consciousness and is able to connect all three. The person is then merely not a part of the picture of the universe. He is indivisible from the Artist, a *co-creator* with all pervading consciousness where silence is engulfed by Immortality, when the sense of time is a perception of Eternity, the feeling of emptiness is replaced by Infinity and nothingness is completely swallowed up by the experience of *Ananda*. A 'Great' hope dominates the psychic scenario. Bubbles of possibilities are seen. The baby within is reawakened.

*'Greater' Psychology*

To fulfill himself was God's desire. (Sri Aurobindo in *Savitri*)

A vastness brooded free from sense of Space.  
An everlastingness cut off from Time. (Sri Aurobindo in *Savitri*)

*Psychosomatic Manifestation:* Decentralization of consciousness begins. It has far reaching implications in choice of method of disposal of dead corpus and also when the subject is a recipient or a donor of organ in transplantation.

*Macro dynamics in the brain:* Mother Nature, the kinetic pole and the executive front of consciousness, executes this process of inversion. It is also to be noted that integrated neuraxis inversion can follow only when integrated hemispheric transversion and axiological integration have been established and stabilized for some period of time by the process of supreme consummation.

Post-consummation events complete the process of transformation that started in the phase III. The cerebral cortex behaves as a transmissive organ, as an inverted tree with its roots in the eternity and the branches down in the peripheral nerves. Supracortical consciousness percolates down through cortex layer by layer, then through subcortical area, and finally through the limbic nuclei. New *emotion* (amygdaloid) builds up to give 'form' to this transcendental consciousness. *Motivation* (Caudate nucleus and Putamen) is directed towards 'biologization' of the transcendental. New *intention* (Frontal cortex) in form of strategy and tact is formulated along this motivational line. *Ananda*, the causeless ecstasy, could be visualized in this context as the supracortical consciousness 'biologized' at the level of limbic nuclei (septal nuclei and amygdaloid).

*Micro dynamics in the cerebral cortex:* The cerebral cortex becomes conducive of information generated from nature of consciousness. Mind acts as vehicle of consciousness. Information from supracortical resource dominates over the input of information from infracortical source. Selective gating mechanism in favor of supracortical information works in the cortical synapse.

*Communication:* Both local and nonlocal communications by brain are seen in complete harmony.

#### NONE OF THE FIVE STEPS IS BY-PASSABLE

In the course of journey from mundane consciousness to supracortical consciousness, encounter with death phenomenon is as inescapable as indispensable. None of the five steps can be bypassed or skipped. It is as true for a death-transcending emergence in evolution as it is a fact for spiritual evolution. To quote Sri Aurobindo,

"The spiritual evolution obeys the logic of a successive unfolding; it can take a new decisive main step only when the previous main step has been sufficiently conquered: even if certain minor stages can be swallowed up or leaped over by a rapid and brusque ascension, the consciousness has to turn back to assure itself that the ground passed over is securely annexed to the new condition; a greater or concentrated speed (which is indeed possible) does not eliminate

the steps themselves or the necessity of their successive surmounting".

- Sri Aurobindo, in *The Life Divine*

In establishing primacy of different phases, the spiritualist may take a position for top-down approach. They may say that unless there is an inversion initially (at least potentially), one cannot survive the emotional shake up, horizontal spill-over and vertical shake-up of the brain. It is the existing reality of supracortical consciousness, which makes a cortical mortal gradually aware of these phases till he himself becomes aware of supracortical consciousness. The scientists on the other hand may prefer to take a position for bottom-up approach. Some of them may prefer to explore the neurology of death in experimental animals designing graded death traps and comparing the brains of animals that die with those which survive. It would not be off the mark to study the brain of the cases those are executed by hanging (following death sentence). We do not mind with either of the two approaches since both groups are likely to reconcile with *the pattern* of phase-transitions described above.

#### INFORMATIONALLY OPEN BRAIN AND CONCOMITANT DEVELOPMENT OF NEW INTEGRATION

The Brain handles death phenomenon by developing new integration within. The brain is suggested to become informationally open during transcendental death experience (Phase Two). The brain handles those newly acquired vital information in the phase of transformational death experience (Phase Three). The results are creative emergence. This new information helps the process of new creation in Phase Four and Five. While the brain undergoes integration, the 'self' gains access control over corresponding depth of the nested nature and thus get readied for enjoying more and more freedom.

When a *classical* neurophysiologically *integrated* brain succeeds to go through the autonomic spillover several times, there develops a stable *quantum integration* of the brain. A successful hemispheric flip-flop and spillover is responsible for developing the *phenomenal integration* of the brain. In the survivors of successful redefinition of the axiological hierarchy, consolidates the axiological integration within the brain. This situation is very much conducive for fertilization and new creation.

The brain in the state of stable classical, quantum, phenomenal and axiological integrations could be described as in the '*State of Grace*'. To be filled with the *Grace* the brain need to be at the *State of Grace*.

#### PRACTICE OF CONQUERING DEATH POSES DIFFICULTIES IN DYING

Since consciousness has been centralized in the human brain, the person does not ultimately die till his brain dies. In case of failure of the supporting organs like heart, lungs, liver and kidney the process of the physical death of the being is inevitably routed through death of the brain. To put it succinctly, in the language of the Paradigm of Consciousness, death comes when consciousness no longer shows neuronophilia or love

for the brain. The relationship between the brain and consciousness breaks down completely following an irrevocable divorce!

The brain that regularly practices meditation on Brain-independent Consciousness, the brain that has experience of the passage through death, does establish a stable relationship with consciousness. However, the physical death is inevitable for every one of us. Therefore, if we happen to have a death-accustomed brain, a brain that is used to facing and combating death phenomenon, we are likely to have difficulties at the time of dying. In such situation, quite often, the physical body continues to suffer while the brain keeps itself engaged in overcoming onslaughts by death phenomenon. This has been observed in cases of death of several mystics, sages and gurus. However, it is said, a person having supracortical orientation bears smilingly these difficulties/sufferings (the feelings of sufferings is said to be due to incompleteness of surrender) in the course of dying only to transform people who are in contact with him at that period of time. In case of a *Sadguru* (the topmost in the ladder of the ontology of Being) the Brain-Consciousness relationship seems uncompromising, formidably stable. Death for such an individual is a transition to a new existence of the body. Peripheralization of consciousness begins in such body.

For this reason, it is often said that the physical conquest of death makes only the half way to the Grand success. To gain the ability to die at one's own will make its other half. In the story of the epic *Mahabharat* of India, the great *Bhisma* was such a character who won't die till he wishes to die. The epic tells that this ability he gained as a return gift for his uncompromising promise of practicing celibacy with unbroken sexual abstinence (*Brahamacharya*) since the period of adolescence and he kept his promise all through his life.

## 10. THE SYNTHESIS

What are the expectations from a scientist's journey that follows a profound experience? To name, they are analysis, literature survey, identification of lacunae in the scientific literature, intellectual means to extend the present form of science, creative emergence (new propositions). It culminates in some kind of Synthesis which is intelligible and from which research hypothesis could easily be made out.

Such synthesis demands that Nature is extended into transcendental realm and the Transcendental is naturalized. Both should be done in a way that is intelligible. The origin and the terminus for both of the processes remain within the human brain. The passage of the human brain through an unnerving stress experience like death churns and prepares it for perception, conception and experience of the Reality and its expression in a common universal language.

In this section, we would make such a synthesis that merits detail scrutiny for making research hypothesis. We would be looking into the following models.

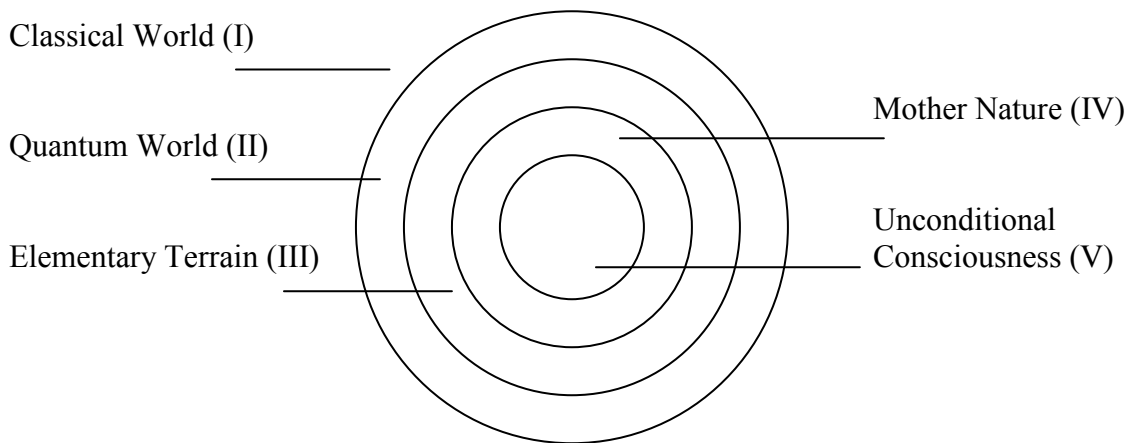
## THE PENTAUNE MODEL OF NATURE AND CONSCIOUSNESS<sup>36</sup>



Beginning in the world of classical mechanics (the world where classical mechanics holds true) we have drawn a picture of Nested hierarchy of Nature designated numerically from Plane I to Plane V. Plane I is the plane of classical mechanics and Plane V is that of unconditional consciousness.<sup>37</sup> The basis of division of the indivisible Biune reality of Nature and Consciousness is expansion of every point of it, and then to look into the perceived uncertainty for description of the conjugal properties for an observer-dependent reality. The division depends on the kind, level and degree of uncertainty. Uncertainty is not just a philosophical or metaphysical issue. It is a scientific issue. It is measurable, and “measurement is science and science is measurement”. Further, uncertainty is not just ‘measurable’ in an objective sense; it is also perceivable in subjective sense.

In this ‘pentaune’ model of nature every plane can be defined in terms of its anatomy with an apparent boundary, an entrance and an exit and a few subplanes. Every plane also observes its own physiology meaning organismic participation of various components for specific function and the currency (energy/field, information, causal currency etc.) with which it works. The planes normally function independently. However, different planes get interconnected at the time of crisis to correct any anomaly happening in the phase-specific consciousness for the plane (*The Millennium Bridge*, 2000). Further, this ‘pentaune’ model of nature and consciousness is able to accommodate both linear and non-linear mathematics, deterministic and probabilistic mechanics, algorithmic and non-algorithmic causal modes, local and nonlocal modes of communication.

Following is a diagrammatical representation of the spectrum, with a preliminary equation on respective uncertainty.



**Five Nests of Nature-Consciousness**

**Fig. 2**

In Plane I: There is no perceived Uncertainty in the mechanics of observer dependent Reality

In Plane II:  $\Delta Q \times \Delta P$  is of the order of  $h$

( $\Delta$  stands for uncertainty, Q stands for Velocity, P for Position and  $h$  is Planck’s constant)

In Plane III:  $\Delta$ Conditioned properties  $\times$   $\Delta$ Existence is of the order of Mother Nature

In Plane IV:  $\Delta$ Existence  $\times$   $\Delta$ Non-existence is of the order of Mother Nature-Consciousness

In Plane V:  $\Delta$ Non-existence  $\times$   $\Delta$ A new existence is of the order of Consciousness

Since these uncertainties are not measurable, these equations for planes III, IV and V appear intellectually absurd. This type of equation seems to be the product of a brain incompletely surrendered to *Unconditionality* of Nature. With total active conscious surrender, the uncertainty itself suffers existential crisis. *An equation of surrender replaces the equation of uncertainties.*

### *Surrender*

Education is defined as a process to effect desirable change in the behavior of learner in reference to *Knowledge* (Cognitive aspect of brain function), *Skill* (Psychomotor aspect of brain function) and *Attitude* (Affective aspect of brain function). Imparting Knowledge and Skill is not that troublesome. It is to effect the desirable change in the Attitude, which is most difficult. Here comes the important role of Surrender. Only *the process of surrender in the desired direction could effect a change in the Attitude.* The objective of surrender is to accept gracefully the situation one is put in. What follows is Growth.

‘Surrender’ is an essential step for the transition of a religious devotee or a scientist (both of them work within an organized and structured premise) to a spiritualist/spiritual scientist who essentially expresses from a *No-Boundary Zone*. Surrender is the process necessary for phase transition from ‘Form’ to ‘Formless’. In self-metamorphosis of nature, one could notice this process in the passage of any event/object/entity from plane III to plane IV of nature. In Science for Consciousness, therefore, ‘*surrender*’, I mean surrender at the highest/deepest level, *may be defined as a process by which one’s nature (properties) becomes Mother Nature (properties).*

The scientist too has started using the word ‘surrender’ in explaining phenomena. Robert Jahn from the University of Princeton, USA, says, “Surrender of properties by quantum object is followed by resonance which may be responsible for anomalous phenomena.” Extending the view, it may be said that the surrender of properties to Unconditional Consciousness may be responsible for generation of new information, new context and new goal. By surrendering the properties to Consciousness, Photon is suggested to become Photon-Equivalent of Consciousness (Phot-E-C), Phonon is suggested to become Phonon-Equivalent of Consciousness (Phon-E-C), Conformon is suggested to become Conformon -Equivalent of Consciousness (Conf-E-C), Neutrino is suggested to become Neutrino-Equivalent of Consciousness (Neut-E-C). In my earlier works I have designated them as phenomenal hands of Mother Nature.

One could easily see this serial surrender of properties, layer by layer, and sheath after sheath till the nakedness, and then the nakedness beneath nakedness is completely exposed. A competent mathematician may try to measure these phenomena with Equations of Surrender.

*Equation of Surrender:*

Conditioned Properties  $\mathbb{G}$  UC  $\longrightarrow$  In, Cn, Gn

$\mathbb{G}$  = Surrender

UC = Unconditional Consciousness

In = Information, new. Cn = Context, new. Gn = Goal, new.

The equation of surrender reflects a higher dimensional topology. (Topology is a branch of mathematics which delve into qualitative questioning from a geometric structure). The results of such an effort are illuminating to a mystic. All measurements then appear trivial, a fabrication of the act of illusion or *Maya* (compare the etymology of *maya* and measurement). Which can be measured is *maya*. Or, only the *maya* part is measurable.

However, the feelings of uncertainty may persist for sometime in Plane IV, minus the desire or the capability of measurement. Since the Plane IV is also the plane for ‘Purpose’ and the Plane V is also the Plane for ‘Will’, uncertainty here, if any, appears to be a willful and purposeful illusion created by Consciousness-Mother Nature. As one continues to dwell within the plane IV and plane V, the *equation of surrender* is seen to grow. Concomitant feeding of relevant information clears all uncertainties and doubts.

### *The Values System*

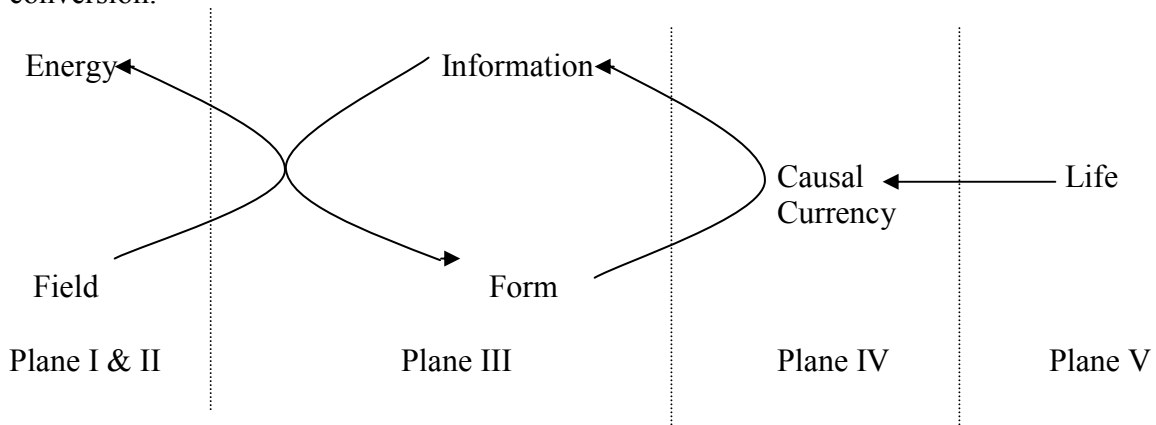
As we explore the spectrum of Nature and Consciousness, we are confronted with contradiction between various values systems. We are obliged to follow these phase-specific values, no matter whether we explore the spectrum as Scientist or a Mystic. We may be giants in term of scientific, technical and economic framework but many of us turn out to be an ethical dwarf at the time of such necessity. The reason is that we have not experienced and mastered the passage through nature in its entirety.

But, how do we define ‘values’? Values system in every level of organization of Nature is nothing but the rules of its mechanics. Values, simply, are the set rules of the game or a function. If one does not follow the rules, there is no play. If there is no game, no play, no function, the question of value does not arise. The absolute unconditional state is value-free. The functionless state is value independent. Gerald M. Edelman defines ‘value’ in the context of neural organization very lucidly. “What do I mean by value? Value is fundamental and we assume evolutionarily determined bias of the organism, something that says, ‘Light is better than no light’ or ‘touch is better than no touch’ or ‘heavy touch is terrible’ etc.” Prof. RK Mishra, the eminent scientist from India, is very emphatic to say, “value is something with which the ‘self’ is extremely comfortable”.

## THE DYNAMICS IN THE MECHANICS OF NATURE AND CONSCIOUSNESS

Dynamics in Nature and Consciousness is proposed to be carried out by a system of currency conversion from one level of organization to another. Within each stratification of Nature, there is a unique mechanics run by a specific currency. An event or a phenomenon to perpetuate from one level to another level of Nature requires conversion of this currency appropriate for that level. To make this system economically efficient, Nature must have a ‘banking system’ for this currency exchange. The following diagram

from *The Millennium Bridge* could represent the simplified scheme of this currency conversion.



**Fig. 3**

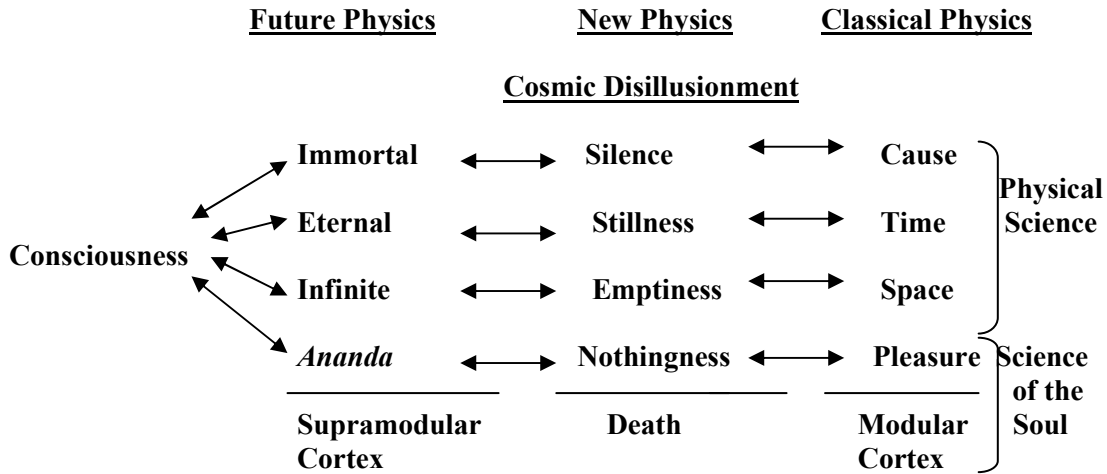
The words 'Form' and 'Information' came from same etymological root. For every information there is a 'form' but every 'form' cannot serve or behave as 'information'. In the scheme presented in this figure, information acts on a 'field' to generate energy and is itself left as a 'form' only. By 'surrendering' its properties, a 'form' enters plane IV of Nature, interacts with the 'causal currency' there and comes out *with inside being out and outside in*, as information. *Inverted* 'form' comes out of plane IV as information. In the context of the brain, the 'Form' is equivalent to an 'Idea' (Carl Jung's Archetype). We do not think with information. We think with ideas. Ideas could, however be altered by appropriate information. A 'form'/'idea' interacting with Plane IV consciousness generates information in the brain. The brain ordinarily, likes any system, works by staying informationally closed. It still can generate new information from manipulation of its 'ideas' within its very depths of consciousness.

This scheme brings *causality* (causal currency of Plane IV) and *creative feat* (generation of new 'form' and information in Plane III and IV respectively) into sharp focus. Here causal currency' or 'life' could not be considered as cheques which cannot be cashed. Implicit in this model is the probable existence of banking system at different boundaries of nature to execute this currency conversion.

#### CONSTRUCTION OF A SELF-TRANSPARENT MODEL OF CONSCIOUSNESS FROM THE BACKGROUND OF DEATH EXPERIENCE

Can we construct a model of consciousness that is self-transparent and overcomes the opacity of death experience completely? Probably Yes. Death stands in between non-transcendental and transcendental qualities of consciousness. Non-transcendental qualities of consciousness are Cause, Time, Space and Pleasure. The former three are physical attributes and the latter is a biological attribute of consciousness. When one passes through 'death', one passes through Nothingness, Emptiness, Stillness and Silence. Those are death-equivalents of Pleasure, Space, Time and Cause respectively. Transcending death one experiences Immortality, Eternity, Infinity and *Ananda*, four

transcendental qualities of consciousness. They are transcendental equivalence of non-transcendental Cause, Time Space and Pleasure. Consciousness, therefore, could be intuitively reconstructed with twelve reasonable words pregnant with intense perception and feelings. In the process, we get *four elementary strings* of Consciousness.



**A self-transparent model of Consciousness**  
**Consciousness expressed in Twelve Pregnant words**

**Fig. 4**

The above construction could be done also in the following way. Let us accept the fact that consciousness in its absolute sense, is difficult to define. It can, however, be qualified. It has transcendental and non-transcendental attributes. In the transcendental sense, it is Immortal, Eternal, Infinite and is perceived as creative ecstasy or *Ananda*. Immortal but not Eternal, Immortal Eternal but not Infinite, Immortal Eternal Infinite but does not lead to *Ananda* is not Consciousness. However, Immortal, Eternal, Infinite and *Ananda* are transcendental counterparts of Cause, Time, Space and Pleasure respectively. Immortal is that in which all Cause is embedded. Eternal is that which transcends all Time. That is infinite, to which everything else is finite, limited by Space. *Ananda* may be labeled as transcendental pleasure. In the gaps between Cause and Immortality one could find ‘silence’, between Time and Eternity ‘stillness’, between Space and Infinity ‘emptiness’ and between Pleasure and *Ananda* ‘nothingness’. Unable to bridge these large gaps between transcendental and non-transcendental attributes of consciousness, one senses it as a cosmic disillusionment or ‘death’.

Putting the above statements together, consciousness *self-generates* its model. In this model, consciousness is, therefore, both *a-posteriori* and *a-priori* depending on the position one takes to look at it. It is consistent with both the processes, transcendentalization of Nature and naturalization of the Transcendental.

## FOUR NANOUNE MODELS OF CONSCIOUSNESS AND CONSCIOUS EXPERIENCE

a) *From mundane consciousness to non-dual consciousness. Nanoune Model for the states of consciousness:*

There seems to be nine phases from mundane Consciousness to Brain-independent Consciousness. We ordinarily come across consciousness with large amount of external contents, the contents delivered by sensory apparatus. Brushing aside those contents one sees consciousness with internal contents e.g., thoughts and feelings. Those are qualitatively more complex and quantitatively more enormous than the external contents. One goes deeper and asks who is the observer of these contents of consciousness? This consciousness is 'self'. It is also not impossible for human being to observe *contentless* consciousness, which is devoid of any external, internal and even intentional contents. One commonly comes across contentless consciousness in dreamless (NREM) sleep. However, it is also possible to experience contentless consciousness while one is awake through intense meditation.

Next in the path between contentless consciousness and supracortical consciousness, there lie several discontinuities, existential uncertainties and death traps. To experience supracortical consciousness it requires transcendence of these phenomena. Transcendence really means transcendence of death. Complete transcendence is impossible to accomplish without the 'touch' of the universal *life force*, the plane of nature what we have described as *Mother Nature*. Mother Nature is the kinetic pole and mobile facet of Unconditional Consciousness.

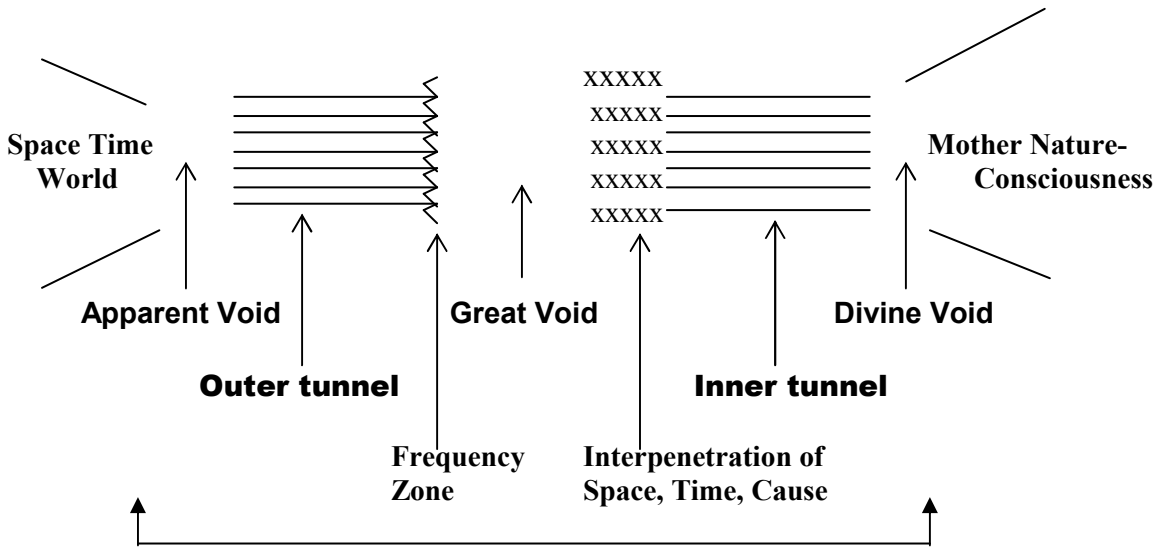
In this scheme one could delineate nine successive unfolding, beginning at mundane consciousness and ending in brain-independent consciousness. To summarize, those are consciousness with external contents, consciousness with internal contents, contentless consciousness, consciousness in the course of near-death experience, transcendental death experience, transformational death experience and the experiencing consciousness while getting reborn within the same body system, finally the consciousness at the terrain of Mother Nature and the plane of Unconditional Consciousness.

b) *The Nanoune Model of Brain-independent Consciousness and the Model for the Mind:*

In *Conquering the Brain*, p.199, Fig. 27.2, it was mentioned that there are seven universal shields around Consciousness-Mother Nature. From outside inwards, those are (i) space time bound world (ii) apparent void (iii) outer tunnel (iv) frequency (space/time) zone (v) great void (vi) the zone of interpenetration of space time and cause and finally (vii) inner tunnel that lead to (viii) divine void, the zone of Mother Nature and (ix) zone of Consciousness. These seven shields, Mother Nature and Consciousness constitute the Nanoune Model of Brain-independent planes of Consciousness.

In fact from this proposition it is possible to derive, in an abstract sense, the structure of the *mind* (*Conquering the Brain* p. 19, Fig. 1.3) that separates Nondual, Absolute,

Unconditional Consciousness from mundane, sensory consciousness of the space-time world. In fact, it is the ‘mind’ of nature, a ‘mind’ that is independent of the brain as a biological organ. One could find seven strata in it. There are three voids and two tunnels. There are two important signposts, one each on either side of the great void namely, the frequency (space/time) zone proximal to ‘great void’ and the zone of interpenetration of space time and cause following it. Following diagram shows the seven strata Model of Mind connecting classical consciousness with Nondual consciousness.



*Classical Consciousness*-----**Seven Strata of Mind**..... *Nondual Consciousness*  
**Fig.5**

*c) Nanoune Model of Perceptual planes:*

In *The Millennium Bridge*, p.182, Fig.10.2, we have drawn nine-strata model of perception that includes nine landmarks in the spectrum of brain-bound consciousness overarching superconscious, conscious and unconscious planes. If we place the classical consciousness in the center, there are four subconscious planes beneath it and four superconscious planes above it. The planes of subconscious includes (i) Fringe consciousness (ii) Consciousness for implicit processing (iii) Unconscious ‘Fringe’ and (iv) Rock-bottom Unconscious. Four corresponding planes in the superconscious realm are (i) Consciousness in the quantum plane (ii) Consciousness in the realm of elementary terrain (iii) Consciousness in Mother’s plane and (iv) Crystal Consciousness that is Unconditional and Nondual.

*d) Nanoune Model for conscious experience:*

In the Great Nest of Being, in Section 3 of this paper, we have seen six nests of consciousness. Namely they are brain-stem consciousness, limbic system consciousness and cortical consciousness and then supracortical consciousness, consciousness at the station of supracortical Godhead and consciousness of supracortical autonomy. In all these existence of the Being, consciousness remains brain-bound. One can call this brain-bound consciousness as *Jivatman*. In the English language, it is '*soul*'. As brain-bound

consciousness could be called *Jivatman*, so the 'self', in its absoluteness may be what the *Upanishad* might have called *Atman*. Brain-independent consciousness in this sense, is non-anthropomorphic, unconditional, nondual consciousness that *Upanishad* might have described as *Paramatman*. The experiences of *Jivatman*, *Atman*, and *Paramatman* are, therefore, additional experiences independent of *Being-experience* occurring at six ontological levels. In this sense one gets six plus three i.e., nine kinds of conscious experience in the total spectrum. This makes a 'Nanoune' model for the spectrum of conscious experience, experiencer, and the brain-bound consciousness.

## EVOLUTION, DARWIN AND SUPRACOTICAL CONSCIOUSNESS

When the system remains informationally open or a finite system is seen to communicate with the Infinity, the interesting process that begins is *Evolution*. A closed system rarely evolves. In the process of evolution locality and nonlocality work together. Today's human being is the outcome of such process continuing over millions of years. The only organ of the human being where evolution is yet to be completed is the brain. The brain is an organ that acts locally and can communicate nonlocally. I have suggested a possible connection between nonlocality and evolution in one of my recent papers<sup>38</sup>, published by Indian Council of Philosophical Research as *Consciousness Series-5* in 2002. It would not be out of context to quote a relevant poem from this paper.

Buddha said that he was not God, nor Angel,  
Nor a Saint. He is "Awake."  
Darwin saw only struggle and struggle  
In all existential quakes!

Lamarck emphasized an internal vital force.  
'Appetency' to change with environment.  
Hugo's mutation. Or, genetic isolation and drift,  
Clonal proliferation and unpredictable recombination.

The common in them, is a *locally acting system*  
*Communicating in a non-local way.*  
Overcoming uncertainty in all its fitness  
Integrating information in its biological bay.

Oh! The traveler! There are several death traps.  
I wish you get through, with a feather in your cap!  
Conscious advance, a little, through Nature's complex recess.  
A death-transcending emergence, Evolution is the Process.

It is possible to examine the process of natural selection of Darwin through the entire nested hierarchy of nature, considering the respective 'uncertainty' as the selection pressure within a particular nest. Three different nonlocal communications could also be considered in the context of how do they help in overcoming those uncertainties.



The competence of the brain in terms of classical, quantum and phenomenal integration appears crucial in this process. Simply stated, nonlocal communication type I follows quantum integration, type I & II follows phenomenal integration, and type I, II and III follows when the brain remains in the State of Grace. Getting aware of Supracortical consciousness is a landmark in the terminal part of the tree of evolution. However, as far as nonlocal communication type II and type III are concerned, it can be seen down the evolutionary tree in the mammalian and avian brains, in the dogs, cows, in the mice and even in some birds. As far as nonlocal communication type I (which is associated with macro-quantum behavior of the object) is concerned, one can trace it far down to the level of rudimentary brain or even brain like structure. However, the ability to become 'aware' of supracortical consciousness is probably human characteristic. Therefore, awareness of supracortical consciousness is a landmark in the terminal part of the tree of evolution.

## 11. WHY THE PROPOSED MODELS MERIT FURTHER ATTENTION OF THE RESEARCHERS

### *A. The self-transparent model of Consciousness described in twelve words*

It is the model that connects the Transcendental with the Material (naturalizing the Transcendental). The reasons I wish consciousness-researchers to examine this model further are as follows.

First, the model accommodates both transcendental and non-transcendental attributes of consciousness. This is where lies its robustness. Second, the clear statement in the model that transcendence really means transcendence of death reflects its courage. Third, it also shows a connection how space-time physics could be related to the science for consciousness. The model unfurls four elementary strings of consciousness. This is where lies its future. Fourth, there is enormous flexibility in this *consciousness-convergent four-helix model*. Drawn, although, in one plane of this paper it could be multi-planer and multidimensional, accounting for both horizontal and vertical parameters around and along its four helices. Five, an all-engulfing capacity of the model could be found in the zone of silence, stillness, emptiness and nothingness. Here, in real *complexity* of nature, one can look forward to investigating (i) properties of different depths of voids, (ii) corresponding uncertainties, (iii) various nonlocal communications (iv) different ontological quality of information and (v) the brain phenomena related to its evolutionary accomplishment. It occurs to my mind that the manner in which these four helices are held together as they diverge from consciousness could be found out of such investigations. Sixth, if one chooses to examine the model further, one could see that ontology, epistemology, axiology and phenomenology of consciousness coherently cohabit here. Seventh, consciousness appears here both as *a-priori* and *a-posteriori*. Here where emanates its beauty. Finally, when consciousness and energy (*shakti*) are inseparable, it is possible in this scheme, to replace the words like immortal, eternal, infinite and *ananda* with four kinds of non-physical energy and other four pairs of qualifying words in the scheme with physical energy.

### *B. The Pentaune Model of Consciousness-Nature*

It is the model that connects Material with the Transcendental (Transcendentalizing the nature). The reasons I wish consciousness-researchers are to examine this model further for the following reasons.

First, “Consciousness is evaluated clinically as the ability of the individual to respond appropriately to environmental stimuli” (Erik Kandel). Unless one knows the depth of this environment and therefore, of the origin of the stimuli how it is possible to judge the appropriateness of the response? With a stimulus from the depth of Plane II, Plane III or Plane IV of Nature, the response judged by another brain stationed at Plane I (or an instrument which have access to Plane I), may not seem appropriate. A brain stationed at Plane IV or Plane V of Nature may not respond to a stimulus from Plane I. Therefore, for evaluation of complete spectrum of consciousness, it is mandatory that we understand the environment in its entire depth. Deep ecology and depth psychology form an embedded pair and exploration of their interaction would help in unraveling consciousness.

Second, this model of Nature extending into Consciousness is consistent with and further extends the Multi-Revolutionary view propounded by Roger Penrose, Colin McGinn and Michael Lockwood which for resolution of the problems of consciousness demands at least one revolution on the ‘mind’ side, another on the ‘matter’ side, and a third revolution to join the two. In the scheme presented here, the plane of matter has been extended to plane III and the plane of consciousness has been unwounded to plane IV and a connection between the two has been met.

Third, with this five-strata scheme of nature we are also able to address the question why three great theories of Physics like Theory of Relativity, Quantum theory and Quantum field theory face respectively the problem of Singularities, the problem of Measurement and the problem of Infinities? Simply, it is because the physicists are trying to by-pass the intermediate planes of Nature and directly jumping into the domain of consciousness.

#### **Three great theories of Physics and their Problems**

	<b>Three great theories of Physics</b>	<b>Their fundamental problems</b>	<b>The Reason</b>
1.	General Theory of Relativity	Problem of Singularities	An effort to connect plane I to plane V
2.	Quantum Theory	Problem of Measurement	An effort to connect plane II to plane V
3.	Quantum Field Theory	Problem of Infinities	An effort to connect plane I & II/III to plane V

Fourth, this model may offer a new insight into the so-called ‘hard problem’ in Neuroscience since it extends the spectrum of nature from matter to consciousness through a ‘currency’ conversion. How the ‘soft’ currency like energy or a field is

converted to 'hard' currency like, 'causal currency' and 'life' through an 'intermediate' currency of 'information' determines the real frontier of research. The efficiency of handling a particular currency determines its specific position in the spectrum that extends from 'matter' to 'consciousness'.

Fifth, the model offers an explanation for the difference existing between first person's experience and third person's perspective by positioning the brain in different terrain of nature. The communication of the brain with Nature depends on state-specific consciousness of the brain and which plane of Nature the brain is in. It seems never possible to look into the first person's perspectives from the Third person's position unless there is a preparation on the part of Third Person too. To perceive the *Grace*, the brain requires to be elevated to the *State of Grace*. On the other side of the spectrum, the communication skill demanded from the First person is to 'invert', to execute an 'inside-out and outside-in' phenomenon for putting across the First person's experience into Third person's perspective. As the brain, as part of nature, moves through different terrain of nature the being in the brain may play as first person in one plane and communicate to second person and third persons in the planes superficial to it. Consciousness, unconditional, would remain always impenetrable and unexpressed. Mother Nature, plane IV, could be brought best into perspective of second person. It is not possible to present this plane completely in third person's perspective. I mean to say that plane V remains always 'subjective' and plane IV could be experienced and expressed in 'objective' way only by those who have surrendered their existential properties to Her. *When one's nature becomes Mother Nature, one is consciousness.*

Sixth, this model could be also extended to social philosophy. Once one accepts this five-plane scheme of nature it becomes easier to understand two important pathologies in the *values* system, - Corruption and Terrorism. These are the two major menaces of the human civilization. These could be labeled as 'disease' of civilization. The disease originates in lack of integration or in breakdown of integration of the system. During the passage of 'self' from plane I to plane II, if there is lack of integration or during passage from plane II to plane I if there is breakdown of integration one generates financial/energy corruption. Similarly, the lack of integration during passage of self from plane II to plane III or, breakdown of integration in the course of passage from plane III to plane II, results in system corruption. The genesis of terrorism is deep further. To a terrorist, life and death mean the same and one. It is to achieve a purpose that he thinks is right. The terrorists are not afraid of self-immolation (e.g. suicide squad) for executing a purpose that they think is correct. It results from lack of integration in the course of passage from Plane III to Plane IV or breakdown of integration in the course of journey from Plane IV to Plane III. Life and death are events in plane III while Purpose in this model is decided in plane IV. The model assumes that lack of integration or breakdown of integration is the cause of 'disease'/ailment/sickness. It asserts that Corruption (and Terrorism) starts at the highest level, although the recruitment of working hands occurs exploiting *Intolerance, Jealousy Greed* and the *Poverty* of common mortals at plane I, II and III.

Seventh, through this model it becomes easier to look at the whole spectrum of Time. All equations (relationship) in classical and quantum worlds are time-reversible ('Reversible time'). 'Branching time' has recently been observed in the context of quantum computation. In Plane III, Time could be perceived in many different ways, e.g., 'Irreversible time' (arrow of time) 'Circular time', 'Circo-linear (spiral) time' and 'Inverted time'. At the meeting horizon of Plane III and Plane IV, perceptions are of 'Stilled time' and 'Surrendered time'. Pre-temporality and Timelessness are characteristics of Plane IV of Nature and a-temporality is characteristic of *Unconditional consciousness* (Plane V). The brain perceives 'Time' according to its station in different depths of nature.

Eighth, according to Indian Philosophy *Mononash / Monolay* (dissolution of Mind) is a prerequisite for entering the domain of consciousness. Space and Time are also believed to be construction of Mind. In this model of Nature, plane III is carved out by dissecting through the intrinsic bond of Mind and Matter. In this scheme, the matter begins/ends at the junction of plane II and III. It begins with transition to plane II and ends in transition to plane III. The gap between Mind and Matter has been expanded here as Plane III, the plane of elementary phenomenology (like Death). While plane III lies between Matter and Mind, plane IV is in between Mind and Consciousness.

Ninth, having understood this stratification of nature, one can account for different degrees of death in the entire spectrum and also the process of evolution of the Being as discussed in section IX of this paper.

The final and Tenth point why I insist on examining this model is to recast Darwin's Natural selection theory in the present context. Although Darwin was silent on 'consciousness', it is unlikely that consciousness of the animal does not participate in evolution while the animal undergoes process of natural selection. However, 'natural selection' of Darwin is confined to the classical plane of Nature and Death is supposed to bring a full stop in the Journey. There is no hint on the possibilities of transcending death in the course of evolution and emergence. It is possible to extend this 'natural' selection process through the entire nested hierarchy of nature, considering the respective 'uncertainty' as the selection pressure within specified nest.

### *C. The Model of Currency conversion in Nature*

It is a unique concept to understand the nature's dynamics. The reasons I wish consciousness-researchers to examine this model further are as follows.

First, keeping the information at the center, it connects field, form and energy on one side with the 'causal currency' and 'life' on the other side. Second, the model offers us a possibility of looking into the origin of information from plane IV of nature. Third, the model could offer explanation for the self-consistency maintained in nature and also for varying outcome of the process of self-organization involving one, two, several or all planes of nature, one, two, several or all currency mentioned above. Fourth, this currency conversion scheme might be applied to the mechanics of non-chemical synapses in the brain. This at least offers us a scope to look into the mechanism of those synapses again.

Fifth, this model might be of use in explaining both small and large scale brain dynamics - large scale involving even the cortico-supracortical communication.

#### *D. The Seven strata Model of Mind*

This is again unique in several senses. First, it concurs with the definition of Mind that states it as an organ of communication between two conscious systems. Second, it offers us a scope that mind could be both local and nonlocal. Third, the model may be used both in micro and macro scale, at micro-phenomenological and macro-phenomenological levels. Fourth, the model could explain the possibility of existence of several strata of Mind in nature and even within the brain. Fifth, it could be applied to the details of the biophysics in the nonchemical synaptic transmission in the brain. Sixth, this open-ended model of nature's mind could be connected with the natural selection theory of evolution. Seventh, the model is at the heart of meeting point of cosmology, particle physics and neuroscience. Eighth, this model says that meeting of all minds takes place at the level of the 'great void' and in the planes deeper to this. Ninth, this model can accommodate five paradoxical properties of Mind. Mind is simultaneously local and nonlocal, differential and integral, linear and nonlinear, algorithmic and nonalgorithmic, evolutionary and creative. Tenth, with this model we find a similarity between the construction strategy of birth canal (I mean uterine canal) and the strata of mind. The 'mind' of a spermatozoon to meet the 'mind' of an ovum has to pass through three voids (vaginal space, uterine cavity and ampulla of tube) and two tunnels (cervical canal and the isthmus of the fallopian tube). The fertilization takes place in the third void and the ovum comes from outside.

## 12. HOW THE 'PHILOSOPHY OF MIND' CULTIVATED IN THE WEST GETS ALONG WITH THE *AKHANDA* WORLDVIEW?

*We all know the story of the blind men and the elephant.  
No body is wrong but offers a grotesque and an incomplete description of the reality*

One clarification is worth mentioning at the very outset. Unlike what is in Western 'Philosophy of Mind', 'Consciousness' and 'Mind' are not synonymous in the present paper. Same is the case for 'Body' and 'Matter'. In Western Philosophy 'Body' means 'Brain' and Brain/Body is 'Matter'. In the Akhanda worldview the brain is a co-operative of  $10^{11}$  live neurons and is certainly not equivalent of 'Matter'. And, the 'mind' – as defined in this paper, is the organ of communication between two conscious systems. Therefore, the approach of West to the Mind/Body problem lacks an appropriate definition of the issue itself.

The advantage of the *Akhanda* philosophy is that it does not work under umbrella of any man-made constant. Only constant in this worldview is Consciousness-Mother Nature. The vertical depth of this paradigm stretches up to the level of multiple universe(s). Its expression in human language, however, is limited by the state of the brain involved in the description of the theme. Nevertheless, tentatively it has an infinite accommodative power.

We may start our discussion on the Philosophy of Mind as originated in the West with Copernicus, Galileo and Descartes. They took leave from the earlier philosophy prevalent there by advocating a '*substance dualism*' meaning Mind (Consciousness) and Matter (Body) are two different substance altogether. The observation is practically relevant in the sense that the matter is amenable to senses and is in the objective realm. On the other hand, Mind/Consciousness appears beyond the realm of senses and better comes under subjective realm. However, should we remain 'open' to only our 'senses' we land up becoming an advocate of *Material Monism* and in the extreme stage become an *eliminative materialist* (e.g. Patricia Churchland)<sup>39</sup>. On the other hand should we ignore the senses, the space time bound classical world, and ponder on 'Mind' only, we become a *panpsychist*. Both groups collapse the hierarchy on the side they are biased with. In fact, those who eliminate 'consciousness' do it by their brain consciousness! And a panpsychist is able to exclude matter only by the activity of the 'matter' in his brain!

It is Leibniz who emphatically propounded the view of a *pre-established harmony* between the two. However, the 'harmony' between the two substances could not be effected unless there exists a connection and interaction between the two. Mind (Consciousness) and Matter (Body) are connected to each other (*Connectionism*, John Searle)<sup>40</sup>. And, they do interact (*Interactionism*, e.g. Descartes). Their connection is already established (pre-established). However, common mortals like us are not aware of this connection and interaction. As monkey's brain is not in a position to understand quantum physics, so the human brain is not equipped enough to understand consciousness (*Cognitive closure hypothesis* of Colin McGinn)<sup>41</sup>. Correct! But only partially! Continued *evolution* of the brain (*Evolution* of Charles Darwin modified as described in the earlier section), however, rescues us from this blinding pessimism.

Mind and Body do interact, may be occasionally (*Malebranche's Occasionalism*), may be in the realm of *phenomenology* (Husserl's *psychologism*). Whether they do or do not, it would be better not to abandon *positivism* (Comte) and *behaviorism* (B.F. Skinner)<sup>42</sup> where one is able to quantify the stimulus/response by yardstick that is measurable. In fact this was the rationale adopted following the 'behaviorist's coup' in 1913. The approach seems most practical so long as the picture of mind is not very clear. However, the scenario has changed considerably, particularly following 1980s. With ongoing evolution in the brain of the concerned population of the scientists (and also we take into account of the *Process philosophy* of Whitehead) this interdependence and interaction of the two become more and more transparent, so also their independence within their respective domain.

The gap between two different 'substances' of Descartes is now found to be filled with interacting *field*, *energy*, '*form*' and different kinds of *information*. In the course of processing of this variety of information Mind do resemble 'computer', but only to a certain extent (*computational models of mind*). That is to say that the Mind, whether it arises out of function of the neurons (*Functionalism*, Putnam, Neisser) or is a combined product of consciousness and functioning neurons, it do possess computable properties. The computational function of the mind, it seems, could be externalized as *Artificial Intelligence* or *Expert system*. Mind/Consciousness, however, has far more

aspects/functions other than those mimicked or simulated by a computer or an expert system. The probability remains high that in future far more and probably hitherto unknown and quite new aspects of Mind/Consciousness could be externalized as new adventure in information technology (*Neuroinformatics, Informational geometry in the context of neuronal manifold* and different types of *Nonlocal communications*). It is expected to come out through deep introspection (*Introspectionism*) and more in-depth phenomenological research. This is likely to unveil the most private aspects/facets of 'self' (Thomas Nagel's the *elements of subjectivity*). This may warrant us to consider critically the state of informational openness of the brain. When the information exchange between 'inside' and 'outside' of the brain achieves *harmony* (Leibniz's ideal), Mind and Matter may look identical (*Identity theory*). The outcome is a kind of Divine Materialism with an explicit layout of integration of Mind and Matter. If not exactly 'identical', Mind and Matter might at best be considered as two facets of one coin. We are reminded of Spinoza's *Double aspect theory*, which states that Mind and Matter are two facets of the One and the same. It is also acceptable changing a bit of its context. Consciousness and Nature represent the two facets of the One and the same Biune Reality.

Therefore, in the *Akhanda* metaphysics holding the brain as the meeting point of Consciousness Mind and Matter, it is possible to construct the 'Whole' as an ensemble of various partial and phase-specific truths.

### 13. SUGGESTED NEUROPHYSICS IN 'SCIENCING' SUPRACORTICAL PHENOMENA AND SUPRACORTICAL CONSCIOUSNESS

#### *Absence of Evidence is not the Evidence for Absence*

In this section we are to address the interface, the connection, the link between 'embodied' and 'disembodied' consciousness, the communication between the nature of Brain-bound consciousness and the nature of Brain-independent consciousness through the cerebral cortex. This relevant neurophysics of Supracortical consciousness could be described from two definite perspectives.

#### *A. Suggestions to look at the brain while journeying through different planes/nests of nature*

Look into the process where the brain has been surpassing, transcending and integrating different depths of uncertainty associated with different plane/nest/recess/terrain of nature. When the brain travels through the different recess of nature, it has to face different grade of uncertainties. The brain, as an evolving organ has the ability to overcome, transcend and eventually integrate these uncertainties. In this journey the brain may fail miserably at any time. The process may stop and is manifested as death of the being. Also it is possible for the brain to integrate, internalize, 'systemize', rather 'biologize' those planes of uncertainty and evolve further into a more complex being.

New integration is necessary to handle new uncertain situation. In the pathway of Ascent one comes across four kinds of uncertainties as described above. Reduction of

uncertainty happens with appropriate input of information. The brain, in fact, stems the tide of uncertainties by biologization of relevant information. Biologization, functional and structural, leads to corresponding integration. According to biologization of four levels/depths of uncertainty, there could be four levels of integration in the brain. Namely those are quantum integration, phenomenal integration, axiological integration and finally the integration of the Being. Every integration, in turn, elevates the Being to a higher ontological plane. Should the scientists wish to engage in developing a science for consciousness, it would be worthwhile to work on these integrations in the brain in the course of *brain-void* interaction.

On the ground, neural substrate for developing these integrations does exist in the brain. They offer the logistic support. The process calls for a widespread ‘tension’ in three areas of the brain namely, (i) the cerebral neocortex, (ii) the reticular system in both cerebral and spinal regions and (iii) the stem cell pool in the paraventricular region. The process includes demolition, regeneration, migration, differentiation and realignment of neurons and its circuitry. There remains a possibility of ‘renewal’ of some sensitive areas of the neocortex from the proliferating stem cell pool. Stem cell proliferation, a rare phenomenon in adult human brain, is a possibility while one has been successfully transcending death. There could also be resetting of molecular hierarchy in the synaptic transmission. The process cannot continue without co-operation from glial cells. If everything proceeds on schedule, what one observes is the eventual development of a ‘new’ brain over the convexity of the cerebral hemispheres. This has been suggested as the *sine-qua-non* of the new species emerging from the existing human species on this earth (*The Millennium Bridge, 2000*).

#### *B. The ‘Receptor’ property of the cerebral cortex: The Inverted Neuraxis*

The present paper is built up with the notion that the purpose of evolution of the brain as an organ is to unify consciousness within and consciousness without. In this process, the *nature within* the brain and the *nature outside* the brain do interact and communicate. That makes the *brain naturally an open organ*.

Brainstem consciousness, Limbic system consciousness and Cortical consciousness all need a cerebral cortex for their genesis and manifestation. The cortical mantle over the cerebrum, so far, is the highest evolutionary accomplishment in human biology. It is also this cerebral cortex of the brain that, in spite of its ultramodern evolutionary sophistication, has retained its evolutionary primitiveness. In the broad lay out of this paper, it has been proposed that the nature of brain-bound consciousness and the nature of brain-independent consciousness communicate through this cerebral cortex. In this cerebral cortex the electrophysiology predominant in upper layers is different from that in lower cortical layers. In dendrite-rich upper cortex there are constantly shifting dipoles. In long axon rich lower layers, there are propagating action potentials mostly running parallel to each other. May be there exists an electrophysiological watershed in the region of mid-cortex. Another interesting paradox of the cerebral cortex is that the neurons in the cerebral neocortex, although, structurally organized in form of six horizontal laminae, are recruited functionally as vertical modules.





*In the classical plane (Plane I) of nature:* (i) Scalar field interaction remains a possible way of communication between this superficial dendritic mat of cerebral cortex and the nature outside. (ii) Secondly, one has to seriously consider the electromagnetic field within the brain, over the cortex and outside the meninges, skull and scalp. As an extension of this interaction one may like to go to the deeper level of brain for *transcranial magnetic interaction* between inside and outside of brain. Glial cells, I think, have the potential to get involved in this transcranial magnetic interaction.

*In the quantum plane (Plane II) of nature:* Here there are three possible ways of communication. (i) Bose-Einstein condensation at the level of the spines of the apical dendrites of the cortical neurons. It is worth to look at the work of Mari Jibu<sup>46</sup> (1997) that suggests, “the existence of the dynamically ordered region of water realizing a boson condensation of evanescent photons inside and outside the cell can be regarded as the definition of life. A cell is living if there exists boson condensates of evanescent photons in the perimembranous region and dead if not.” (ii) The quantum streams of events at the perineural and synaptic spaces of the brain working in dynamic communication with ‘Quantum Sea’ of nature outside the brain. (iii) The brain behaving as a macro-quantum object and communicating nonlocally (type I). It is a kind of EPR Paradox in the brain<sup>47</sup>. One is also required to consider the interaction amongst many-body quantum systems (MBQS) in the brain, in the context of existing suggestions in physics (Jain, 2002)<sup>48</sup> regarding cross over from fermionic to bosonic behavior and vice versa.

*In the plane III of nature:* In this Plane there are seemingly three ways of communications.

- (i) Brain, behaving as a macro-quantum object and nonlocal communication type II may prevail.
- (ii) There could be ‘information’ exchange between ‘inside’ and ‘outside’ of the brain. The brain becomes supposedly ‘open’ informationally while voyaging through plane III of nature.

*Conscious electromagnetic information (cemi) field* theory of Johnjoe McFadden (2002)<sup>49</sup> is worth exploring in this connection. This theory “identifies consciousness with only that component of brain e m field that is capable of downloading its information to motor neurones”. As McFadden has been exploring consciousness that is brain-trapped, he is emphatic in his theory to exclude the possibility of communication between extracranial electromagnetic field and intracerebral electromagnetic field. I am of the opinion that he is right for all ordinary circumstances. If outside information bombards the brain one can imagine the chaos and the pathos the brain has to combat with. However, there could be situations when extracranial electromagnetic field and intracerebral electromagnetic field do communicate. Information exchange precisely occurs in those situations that bear evolutionary potential, namely Love, Sex, Ego, Life and Death, Plane III phenomena. For example, when one is in the course of choosing a mate in life-death situation. The brain while passing through elementary phenomena becomes informationally open. McFadden’s theory, although in its present form, does not consider the possibility of any supracortical extension, bears the potential for helping

exploration of the issue of cortico-supracortical communication. There is one more area to be considered in this context. We require to concentrate on the synapses of an informationally open brain and possible inter-conversion of energy, field, information and causal currency there. Higher dimensional topology of the brain, informational geometry in neural manifold and geometric configuration of information outside the brain, I guess, could be connected within a matrix of “time”.

(iii) Neutrino-bombardment on the cerebral cortex

Finally, the omnipresent neutrinos, in connivance with the ‘weak force’ of nature, may successfully bombard on the photon-phonon signaling system of neurons of the brain while the brain voyages through plane III. Neutrinos, photon, phonon and conformon have been labeled in our canvas (*Conquering the Brain* and *Millennium Bridge*) as *phenomenal hands of Mother Nature*. Neutrinos that have been ceaselessly bombarding on the brain can get a hand of photon/phonon signal transduction system situated in the neuronal membrane. Left-handed neutrinos can influence Weak Force (Klauber, R. D<sup>50</sup>) and through Electro-weak interaction they may influence the electromagnetic field where photon and phonon form the substratum. Neutrinos are, therefore, in a position to alter the *conformity* (function of *conformon*) of the photon-phonon patterns in signal transfer (information transfer) between cortical neurons. The free ‘spine’ of apical dendrites, which are yet to get involved in formation of synapse, could be the best probable target to effect the neutrino action. It is also very much likely that more vulnerable to neutrino bombardment would be the electrical synapses as compared to chemical synapses of the cerebral cortex. In the electrical synapses there is continuity of cytoplasm between pre and post-synaptic cell membrane through gap junction channel. Here the agent of transmission is ion current, synaptic delay is virtually absent and the direction of transmission is bi-directional.

It is also worth investigating whether the shower of neutrino has anything to do with 40 Hz oscillations recorded in the neocortex. As mentioned earlier, these oscillations could be the corresponding points of a classical and macro-quantum brain.

There is immense scope and radical implications of the mechanics in this area of neurophysics. The silver lining seen in the future of psychotherapy is contributed by ‘Being therapy’ and ‘Information therapy’. In both the cases, the therapist would be able to manipulate the ‘elements’ of subjective experience by appropriate input of information in an informationally open brain. Photon, Phonon, Conformon at the level of Neurons, their interaction with all pervading neutrino(s) and the resulting neural process in the brain in the course of elementary psychic experience could therefore be linked up (see the Front Cover picture of *The Millennium Bridge*). This is the area where quantum particles could manipulate the ‘elements’ (Love, Life, Ego, Sex and Death) of ‘psyche’ (mind, consciousness and brain processes).

The possible role of the Bootstrap Theory of Jeffrey Chew could also be explored in bootstrapping the cortex of both hemispheres from a Supracortical domain at the Top.

*In the plane IV of nature:* One additional way of communication between brain-bound and brain-independent consciousness in Mother Nature's plane could be nonlocal communication type III that happens without any barrier of space, time and causality.

These are the ten suggested mechanisms for an "open" brain depicting ten ways of communication between nature related to brain-bound consciousness and the nature pertaining to brain-independent consciousness.

### THE CRUX OF THE PROBLEM IN 'SCIENCING' SUPRACORTICAL PHENOMENA / CONSCIOUSNESS

The crux of the problem for a scientist in exploring supracortical consciousness is to show that a specific pattern of some kind of physical (or nonphysical) force/energy/field/information, effective outside the cranium can act transcranially through the scalp, skull and meninges and lead to some kind of subjective experience that are characteristics of supracortical phenomena or supracortical consciousness. Subjective experience often is generated independent of sensory stimulation, even without the presence of any sensory stimulation, as a direct effect of 'thought' as shown by recent PET and SPECT studies. The question is, could the subjective experience be produced by any specific pattern of some kind of force/energy/field/Information acting on the cerebral cortex from outside the cranium? In other words, this is to show whether the cerebral cortex can have properties of 'receptor'!

The 'receptor', in such case, would be for transcranial physical/nonphysical force/energy/field/information. If no known physical force is found to be involved, could it be an action of some nonphysical force/energy/field/information? If it is a nonphysical force/energy/field/information in nature, then at the present stage it seems to be only speculative. Should nonphysical force/energy/field/information exist, there could be two possible ways of this interaction. The first one includes a nonphysical-physical connection (transformation), following which the physical force acts on the cerebral cortex. Here, the receptor in the cerebral cortex would be meant for physical force/energy/field/information only. As a second possibility, the nonphysical force is supposed to act directly on the cerebral cortex without prior transformation into physical force/energy/field/information. The receptor on the cerebral cortex in this case is meant for non-physical force/energy/field/information only.

Nonphysical force/energy/field/information meant here may be the part of nonlocal communications of various types, or may be of some kind of ontologically higher level of *information*. Physical force/energy/field could be electromagnetic force/energy/field, weak force, and/or gravity. Walter Freeman<sup>51</sup>(1999), Susan Pockett<sup>52</sup> (2000 and 2002) and Johnjoe McFadden have already made the case for electromagnetic field, although none of them has thought of any supracortical relevance of their respective theory.

The connection between physical and non-physical could be established by tracing Neutrino, Photon, Phonon and Conformon respectively through Neutrino equivalent of consciousness (Neut-E-Cons.), Photon equivalent of consciousness (Phot-E-Cons.), Phonon equivalent of consciousness (Phon-E-Cons.) and Conformon equivalent of consciousness (Conf-E-Cons.) as suggested in *Conquering the Brain* and in *The Millennium Bridge*.

#### BENJAMIN LIBET'S EXPERIMENT AND THE OPEN BRAIN

We have an excellent piece of experimental record from the work of Benjamin Libet<sup>53</sup>, describing the neural processes in the production of conscious experience. The result of his experiment offers us the sequence of a self-initiated act. When the act is not pre-planned, about 350 millisecond (ms) before the human subject becomes aware of intention to act, specific electrical changes start in the brain which could be recorded by an electrode placed on the scalp over the vortex region. This is what he calls Readiness Potential (RP). About 200 milliseconds after the subject becomes aware of his 'will', the act actually happens. When the act is pre-planned, then the time gap between RP and action potential in the lower motor neuron is more. Instead of 550 ms in case of not-preplanned will, it is about 1000 ms in pre-planned will.

From this finding, the conclusions drawn are as follows. (i) Volitional processes are initiated unconsciously long before one becomes aware of the Will. (ii) One becomes conscious of his intention for volition, about 350 ms after the RP is recorded. (iii) Conscious function can still alter the outcome of this subconsciously initiated act of volition, 350 ms after its initiation and about 50 ms before it is converted into action potential in lower motor neuron of spinal cord. Therefore, the question is, do we really have Free Will? 'Yes', says Libet, 'conscious will can altar this unconsciously initiated act by vetoing the act and thus aborting it.' Here comes the freedom of choice for selectively allowing something to pass from the background of multiple 'bubbling' up in the brain as unconscious initiations. Libet also extends this process in the context of ethical implications, giving example from 'Sermon on the Mount', explaining why a person may be called to have committed adultery with a woman if he had looked at her with lust even when he vetoed not to commit the act in actual.

We are to look into the possibility of relating this piece of evidence from experimental neurophysiology, to the present model of supracortical consciousness in an open brain. The open brain concept does not anyway contradict this experimental evidence. On the other hand, this basic experiment can be extended backwards in time and space (e.g., pre space), which may come out as support for the existence of supracortical consciousness.

1. If we trace these unconscious activities in the brain that happen prior to volitional awareness further backwards (Libet also thinks that the activities started earlier than when it surfaced as recordable RP), we could certainly reach the platform where supracortical joins the cortical. What we require to do is: (a) refinement of recording instrument, increasing its sensitivity to hundred or thousand fold; (b) to relate scalar-field interaction, nonlocal interaction, Bose-Einstein's condensation and phenomenal hands from plane IV (Photon, Phonon, Conformon and Neutrino) in the function of

this involved area. Most of the scientists from classical, quantum and self-organizing paradigms are obsessed with the boundary. For them, everything should happen within the boundary. However, this is the time to have a re-look into the *science of a boundary*. If genes can pick up information from outside and assimilate it in a heritable way<sup>54</sup>, if Nobel Chemist Lehn Jean Marie can advocate supra-molecular chemistry, if nonlocal communication can be accepted in physics as part of science, then it would also be wiser to accept the cerebral cortex of the brain as a sub-system within the supracortical domain (universe) and universe, in turn, as a sub-system within the system of the Multiversity.

2. We have several clinical examples where there is no concurrence between volitional process and will. Motor epilepsy, I consider, is a supracortical outburst, limited by physical resources in the cortex. Parkinsonism, involuntary actions in cerebral palsy, 'alien-hand syndrome', are also good models to study the relationship between volitional process and will. Another model to study these time-separated milestones of a self-initiated act in physiological state would be a meditating brain.
3. The preliminary goal of the act of meditation is to reduce this 350 ms of time, into as minimum as possible so that the initiation and 'will' are not separated by time. The ethical implications, as mentioned above, are therefore taken care of. Further goal of the act of meditation is to minimize the distance of time between recordable initiation (RP) and its genesis. Final goal of meditation is to achieve cortico-supracortical harmony, unification of consciousness within and consciousness without. The brain is naturally an open organ. And, it is transmissive as well. The purpose of the act of meditation or yogic practice is to elevate this self-awareness (the point of 'Will') to the highest possible level. As the process of meditation advances, the position of execution of Free Will would be seen to be shifting backwards. Readiness Potential and Awareness Potential then would be closer in time. Finally, the person's 'Free Will' can be executed in complete harmony with cosmic or supracosmic 'Will'.

The experiment in this direction can start with an objective to record whether with initiation of meditation, this 350 ms time is reduced or not. However, it should be noted at the outset that the result would be action-specific depending on the ethics of the meditator. Some actions, he may prefer to perform as automaton (cf. Supracortical autonomy, *Sadguru*). Others he may want to veto or abort. Time lag between RP and Will may be increased instead in those actions that the mediator does not wish to perform!

#### 14. CONCLUDING REMARKS

Instead of pondering on the question what is consciousness, I have chosen in this lengthy essay to focus on the questions, what does consciousness do? Does it have a mechanics? Could this mechanics be connected with the known mechanics of the world, the classical and quantum mechanics? Rather than taking an approach of matter-based study of consciousness, I have preferred a consciousness-based study of matter. Consciousness is known by what consciousness does! I have tried to connect this unknown with what is so far known in science. It is the reader to judge the success.

In the discussion of Foundational issues and Conceptual problems in the book entitled “*Neural correlates of Consciousness*”, Thomas Metzinger<sup>55</sup> points out, “We are presently witnessing what in theory of science would be called a “preparadigmatic stage. There is no one coherent theory of consciousness that could serve as the unified background for criticism and systematically organized further development.” In the same publication, under the heading of *Prospects for a Scientific Research Program on Consciousness*, Antti Revonsuo mentions, “the metaphysical integrity required by progressive scientific research program on consciousness is still missing” (p.62). At the end of this long paper it may be humbly submitted that the situation is no longer the same. Now those lacunae are filled up. The issue pointed out by Thomas Nagel has also been addressed squarely. The possible ‘elements’ of subjective experience has been highlighted so that an objective phenomenology could be built up. Finally, the most important lacuna, what could be the interface between ‘embodied’ and ‘disembodied’ consciousness has been addressed by suggesting ten possible mechanisms of cortico-supracortical and supracortico-cortical communication. Here is thus a wide canvas, “*The Big Picture*” that accommodates reasonably large number of ideas relevant in consciousness research. The proposed metaphysics is rooted in the Akhanda Philosophy, which differentiates but does not divide. The outcomes are Models, which could be said *Integral* in totality and *Real-Ideal*<sup>56</sup> in expressing the Ultimate. It could, therefore, be confidently concluded that *the effort of ‘sciencing’ this experience of supracortical consciousness has opened up a number of new doors for Science.*

Supracortical consciousness shifts the “Power Center” *from* the brain *to* consciousness and builds up a new “Power Structure” on the basis of inverted neuraxis. Therefore, it initiates a “Paradigm shift”. It seems to be revolutionary too, since the various “divides” like rational-intuitive divide, science-spirituality divide, natural-supernatural divide, science-theology divide, ethical-scientific divide and creation-evolution divide etc. are expected to be reduced to insignificance as we develop a concrete mechanism of cortico-supracortical and supracortico-cortical communication.

One can not be sure whether the exploration of nests of Nature, graded uncertainty therein, nonlocal communication and information mechanics proposed in this paper could eventually lead us to create *homo siliciens* i.e., consciousness in a computer (to use the language of Rodney Cotterill)! However, it is a universal observation that when a conscious cortical being tries to explore Nature beyond plane III, he is left with no alternative but to become spiritual. In this journey of *homo sapiens sapiens* to *homo spiritualis* supracortical beinghoods are important landmarks. Supracortical beinghood could grow in the presence of a stable *Value attractor*. Continued experience of supracortical consciousness leads to the growth and development of a Biological Integration Center (BIC) in the region of the vortex of the brain. This development gets initiated in the course of conscious and successful passage of the brain through uncertainty, discontinuity and death. The Center gets consolidated with integration of five elementary phenomena in the brain. The logistic support to this development initially comes from the cerebral cortical neurons in and around the vortex of the brain and eventually might be enriched by recruitment of cells from the stem cell pool. This center

forms the Supreme Biological Homeostatic Center, the Stable Value Attractor of the new brain, the Brain of a brain (*The Millennium Bridge*, chapter 8).

Supracortical consciousness leads us to a new creative threshold. The opening offers five right conditions necessary and probably sufficient for creativity: (i) The masculine (Consciousness) and the feminine (Mother Nature) components: personified as 'independence' and 'sensitivity' in the person's behaviour (ii) abundant creative space (iii) a stable value attractor, (iv) positioning of self at the 'boundary', at the edge (cortico-supracortical interface) which is far from equilibrium and (v) sufficient operational freedom. An optimal combination of above factors offers an unprecedented advantage to human nature to manipulate its creative broth.

## 15. FRONTIERS OF RESEARCH

Supracortical consciousness is experienced following passage of cortical consciousness through Mind Gate, Time Gate and Death Gate. In the mystical traditions the Mind Gate is tackled by various meditation techniques and Time Gate by the practice of surrender of brain-bound consciousness to brain-independent consciousness. The Death Gate is opened up by enlivening information ('voice from the unknown'), information that is alive, information that radically changes life. In neuroscience, in this context one may focus respectively on the higher dimensional topology of the cerebral cortical neurons, time gating in cortical synapses and informational geometry in neuronal manifold. These are some of the important frontiers of research in cortical and synaptic dynamics in the brain.

Another important frontier is relationship between the Brain and Consciousness. There is an extraordinary liking for each other, an unusual fondness what may be called consciousness-philia of the neurons and neuronophilia of consciousness. What could be the reason? Why do neurons love consciousness? Why does Consciousness love neurons? In 1987, I emphasized that neocortical neurons could be characterized by (i) *serenity* of *genes* and (ii) *polarity* of *membrane*. This serenity of genes perhaps has been achieved gradually over the millennia in the course of cellular evolution, partially by relinquishing sexual promiscuity, the tendency for continuous multiplication and thereby gaining a kind of sexual serenity. Development of one-pointed polarity of the neuronal membrane could be considered as an evolutionary leap towards consciousness, in comparison to other cells in biology. Neuronal membrane differentiates in a specific direction probably with the aim to make connections with the phenomenal hands of consciousness.



“Who can say?

What we are!  
One, or two?  
Near or far!”

“All you write  
Is futile guess!  
Simple love, please  
Don’t make mess!”

(*The Dynamic Web of Supracortical Consciousness*, p. 106, 1987)

It is as simple as Love. It is as complex as Love. If we understand Love (in spiritual, psychic, genetic and gonadal levels) we may make a dent in the privacy of the conjugal relationship of the brain and consciousness. On the other hand, when we understand the relationship between the brain and consciousness in classical, quantum, phenomenal and Mother’s nest we begin to learn what Love is.

Our exploration, therefore, may proceed step by step in this open-ended cascade. We require exploring: (1) organization of the brain in a classical neurophysiological plane for *realization of consciousness* and may succeed to identify ‘neural correlate / correspondence / constituent of consciousness’ (NCC); (2) Organization of the brain at the quantum plane of Nature both in its quantum micro-milieu and the brain as a macro-quantum object for further *realization of consciousness*, and may succeed to identify ‘quantum correlate / correspondence / constituent of consciousness’ (QCC); (3) Phenomenal organization of the brain while passing through the terrain of elementary phenomena (e.g., death tunnel) and subsequent *realization of consciousness* at that level. We may succeed to identify ‘phenomenal correlate / correspondence / constituent of consciousness’ (PCC) in Plane III (which are ‘surfaced’ in classical plane as Love, Sex, Ego, Life and Death); (4) Organization of the brain as a transmissive organ for consciousness, where and when there is little or no difference between inside and outside consciousness. We may succeed to identify ‘intentional correlate / correspondence / constituent of consciousness’ (ICC) in Plane IV (surfaced in classical plane as Axiological integrity, Devotion, Magnetic charm etc.); (5) Organization of the brain as an organ of the Being as a *First-Person-Universal* swimming comfortably in the *interuniversal essence*.

If we succeed to get the script straight, then we are not far away from the biochemical laboratory correlate/correspondence/ constituent of consciousness.

Most likely, those correlate / correspondence / constituent of consciousness are not merely so. In all probabilities, the discovery of a causal connection is in waiting. We are to search for and recognize those *footprints* of consciousness in different nests of organization of nature. To make sense of this we do not have any alternative but to trace the footprints backward to the level of *a posteriori*, what for many appear as *a prio*.

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  26. What made me make statement like this? Most of the molecular biologists at present are of the opinion that genes contain all information *necessary* and *sufficient* to account for evolution. The genes, however, are not informationally closed. Organic evolution is algorithmic, but not always ateleological. Evidence to favor this has started coming from A-Life experiment. Teleology plays a role specially when the organism transcends Plane III of nature. Besides, the central dogma of molecular biology was established only following that *Momentous transition*, the enclosure and encapsulation of cosmology into cell biology. Prior to that, the axis of information flow was precisely the opposite. In addition, sheer number of genes and enormous number of noncoding DNA sequence conforms to the *principle of redundancy* in the language of genes. The genes also jump (Gene-jumping theory of Barbara McClintock). Why? Probably the mobile genetic elements, the transposons, reshuffle the genomic system to set it in conformity with the desired information, to set the proper context, to conform to the grammar of the desired Goal of its expression.
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31. The event of space-time warp is the cornerstone of Einstein's general theory of relativity (1916) and was convincingly observed by Sir Arthur Eddington, as a part of British expedition team in West Africa in 1919. The finding is confined to the interstellar plane that there was a slight shift in the position of stars near the sun during an eclipse. The light of the stars, as predicted in the theory, did bend as it passed the sun. It is a direct evidence of warping of space and time. To emphasize again, the observation is in the interstellar plane. However, if it were possible to observe an equivalent event in the intergalactic plane, Time would be seen to have an independent ontological existence. Penetration of 'ghosts' of space, time in the realm of *cause* could be similarly observed near the boundary of the Universe. However, in the inter-universal plane, the Cause would be found to have an ontological existence independent of both Time and Space, real or virtual, actual or 'ghost'. Observation of space-time warping was found not to have much relevance in biology. However, the understanding of independent ontological existence of Space, Time and Cause is relevant in biology since this is the basis of communication in life.
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34. While I was discussing this spillover phenomenon with our academic residents in the Dept. of Laboratory Medicine, Dr. Niladri Mal, MD, came up with a brilliant analogy. "Sir, it is very interesting to note that some kind of this spill-over phenomenon is also life-saving at the level of the heart. Complete transposition of great vessels (a congenital anomaly of the heart where the Aorta arises from right ventricle and the Pulmonary artery from the left while superior and inferior vena cavae continue to drain in the right atrium and pulmonary veins in the left atrium thus making two parallel independent circuits), is incompatible with life unless there is a 'spill-over' of blood through Patent Ductus Arteriosus (PAD) or Ventricular/Atrial Septal Defect (VSD/ASD). There are situations when the ductus is not patent and to keep it so, the doctor often injects prostaglandin I.V in the newborn baby as a life-saving measure." An insightful analogy is indeed!
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56. I will site two examples of application of this Real-Ideal. (i) The system of multiple universe(s) or The Multiversity. It may be idealistic in nature, but it has a realistic background too. "At the beginning, at the time of random fluctuations, near infinite number of universe(s) were existing in *potentia*, in probability mode, out of which  $10^{223}$  or more came into actualities. Those who believe in Anthropic principle add, out of these  $10^{223}$  universe(s) at least one, i.e., ours, succeeded to acquire the essential requirements for emergence and sustenance of life". (ii) "Love is cortical manifestation of supracortical consciousness." It may look like an Idealistic statement. However, it is the only realistic philosophy that could give neuroscience a giant leap. Take the extension of the statement on Love. "Love has a genetic basis. One cannot love music or flower unless one has genes for it. Biochemistry of love is intimately connected with molecular biology of gene expression'. The philosophy here is Real-Ideal – idealistic, for the brain is ideally and is firmly rooted into the "supracortex", and realistic, since it has far-reaching implications for molecular biology, neuroscience and depth psychology.

### **Acknowledgement**

In the year 2003 my father was inside the passage of death for almost twelve months and my father-in-law for four months. Father-in-law passed away on 1st of November and my father on the Christmas Eve. I had the opportunity to observe them closely over this period both as a doctor and as a close kin. The section on death in this paper was refined during this period. My regards remains for their departed souls. I thank J. Andrew Ross, for having stimulating correspondence with me in the spring of 2003. I acknowledge my wife Chitrali for her smiling co-operation during this period. Of course, children too had heir own moments. I also thank Mrs. Pooja Taneja, my secretary, to sit with the computer to correct the revised drafts so many times. Finally, I appreciate Prof. R. Balasubramanian for offering me the opportunity to present my views on Supracortical Consciousness in this coveted Volume.

## Abstract

Profound human experience often initiates a new worldview. Supracortical Consciousness is an experience of Brain-independent consciousness by Brain-bound consciousness. It reflects a realization in the brain that Consciousness is not merely confined to the brain (brain-bound consciousness), also it works independent of any brain, anywhere, any time (brain-independent consciousness). This paper leads us intelligibly from such an experience to many new frontiers of Science. Following a short Introduction to this Experience, preliminary analysis has been stated in Part I of this paper focusing on the components of the experience and its background. Part II deals with the immediate fall-outs of such experience in the conceptual realm of Consciousness and brings out what we may call supracortical consciousness (SCC). In part III, we would be discussing more on SCC, clarifying meaning of various related terminology, whether prefix 'supra' be allowed in scientific literature. It is followed by characteristic and behavioral aspect of SCC. Then, how does supracortical consciousness differ from supracortical phenomena and how supracortical movement could be a new beginning? We draw the Great Chain (Nest) of Being from behavioral neurologist's perspective. Part IV deals with what could be the implications in Science, once we accept the existence of SCC, in the discipline of Evolution, Neuroscience, Astrophysics, Communication theory and Information theory. In Part V, we deliberate on the feasibility of 'sciencing' supracortical consciousness with a discussion on why do we need 'sciencing' of such phenomenal experience? Is it possible to handle the problem with scientific knowledge available at present and finally, is the issue amenable to science at all? While Part VI deliberates on how could we extend science beyond its present form, Part VII brings forth five new propositions. The propositions are (i) to have Nature and Consciousness as inseparable 'Biune Reality'. Advaita Saivism originated in Kashmir originally propounded it. The *Akhanda Philosophy* (Indivisible with Divisions) accepts Nature as an indivisible extension of Consciousness and zooms on the Total reality. It is unlike Advaita Saivism which focuses on the Ultimate reality, (ii) to accept Nature as a multilevel nested organization, (iii) to look at the 'elements' of subjectivity, the private facets of 'self' at the phenomenal level, (iv) to explore the paradigm of Uncertainty sandwiched between certitude of classical world and a deterministic consciousness and (v) to look into the possibility of existence of a hierarchy/ontology of Information across the spectrum of Nature. In Part VIII and IX, the paper is engaged to thrash out the *background context* of the experience, the Discontinuity, Uncertainty and Death. We look at the Great Trio, *Mind, Time* and *Death* that guard the gate of the terrain of supracortical consciousness. This paper holds the view that physical conquest of death is humanly possible. Part IX focuses on the brain-phenomena in the course of physical conquest of Death. Following this long journey transcending even the death phenomenon Part X, as expected, concentrates on a Synthesis. Three models have been put forward overarching the process of transcendentalization of Nature and naturalization of the Transcendent. It is suggested that the dynamics of nature from one level of organization to another is maintained by a system of 'currency' conversion. A probable structure of Mind has also been suggested here. Darwin and Evolution have been recast in the context of changing scenario. Part XI states the reasons why the proposed models merit attention for further exploration. In Part XII we discuss how the Philosophy of Mind cultivated in the West since the time of Descartes gets along with the *Akhanda* Worldview. In Part XIII, the paper concentrates on the interface between 'disembodied' and 'embodied' consciousness, and suggests nine possible mechanisms of cortico-supracortical communication with possible role of scalar field hypothesis, quantum mechanics, non-local communications and classical electromagnetic field. In the concluding part, Part XIV, the paper points out our limitations and the way out in inculcating supracortical being hood. Finally it envisages the Herculean task that has been waiting ahead for the neuroscientists if they feel serious in developing a science for consciousness.