



Axiology of Nature-Consciousness Reality: Relevance in Consciousness Study, Psychology and Psychiatry

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Abstract

Perception cannot change the fundamentals. The fundamentals of the reality across the nature-consciousness spectrum have been described without any filter, and use of any methodological reduction orchestrated or otherwise. Consciousness-as-such, consciousness-as-experienced, and consciousness-as-articulated have been laid bare to accommodate respectively the spirit, humanities, and science. The Multiversity-inspired proposed Worldview takes care of multiple universe(s), our universe, and the four-dimensional world respectively in terms of nondual reality, biological reality and material reality, and in the process constructs an unbroken wholeness of the Akhanda reality. The relevance of the Worldview in consciousness study and the impacts on psychology and psychiatry has been discussed.

Keywords: Multiversity-Inspired Worldview; Akhanda Worldview; Nondual Reality; Biological Reality, Material Reality; New Kind of Complexity

Introduction

Axiology of the nature-consciousness reality takes care of material reality, biological reality, and nondual reality, which form the vertically nested spectrum with feedback and feed-forward two-way communications. Nondual reality is the ultimate reality in both individualistic and universal sense. Biological reality is a creation of nondual reality. We see its consequence in the biological reality always seeking its source and its deeper connections to remain immersed in the nature-consciousness reality. Within biological reality, one of the important properties of "life" is homeostasis. The homeostasis in the interaction between the non-dual reality and the material reality is maintained by this biological reality. The biological systems include cognitive faculty, which cognizes this non-dual reality and transmits it down to the senses in the materialistic language. Bottom-up, the feedback is transmitted from the material expressions of nature to the cognitive system through the sensory system and therefore, in turn, is fed back to the nondual reality. Biological reality is connected with both nondual reality and material reality through cognitive reality (Figure 1).

The reality of consciousness is the most fundamental. All realities are within consciousness. There are four aspects of consciousness namely ontology of consciousness, the epistemology of consciousness, the phenomenology of consciousness, and axiology of consciousness. Ontologic, epistemic, and phenomenal consciousness operate with a spine of firm axiology of consciousness. Since consciousness is not a biological creation, no stream of philosophy or science, which are creations of the human mind, seems more fundamental than consciousness! Holding consciousness as the fundamental reality, different streams of science are expected eventually to transform themselves. That is what is expected from a genuine science for consciousness. The author seriously doubts the claim of any new science as the science for/of consciousness, which is not capable of transforming materialistic and biological disciplines of science.

Consciousness is not a man-made construction. The reality of consciousness is scale-invariant, ineliminable in local brain-sense as well as in nonlocal universal/multiversal sense. Consciousness is the source of multiple universe(s), the *Essence* of the Multiversity, which is intellectually the largest comprehensible system. Consciousness is irreducible fundamental. Consciousness is non-negotiable, and is an inviolable invariant. Consciousness is undivided and singular. The division is created by the imposition of the brain or mind, or brain-like or mind-like structure and operation. Consciousness is the ground without any background. This is not inert but an active ground. Consciousness is supporting, participating, intervening, creative, and a will-making ground. Consciousness does not operate directly with any field, force or kind of energy, or information. Consciousness is absolutely non-violent. Rather, consciousness is absolutely disarming because it

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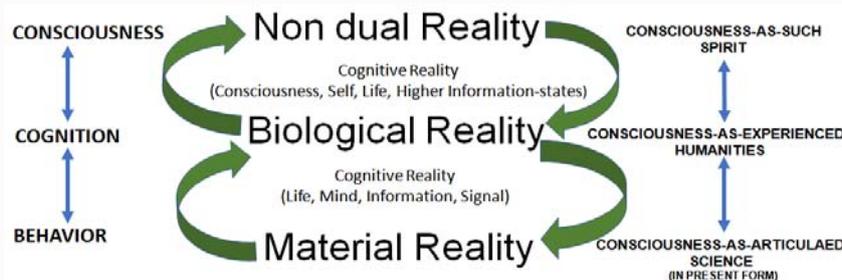


Figure 1: The figure shows the hierarchy of material reality, biological reality, and non-dual reality. There are feedback and feed-forward communications between the three. Cognitive reality connects gross biological reality with non-dual reality as well as material reality. Consciousness-Cognition-Behavior axis is shown on the left side. On the right side, is the axis of consciousness-as-such, consciousness-as-experienced, and consciousness-as-articulated. Consciousness-as-articulated is theorized in science and is expressed in behavior.

operates through its will and intention. That is why consciousness is generally slow in operation except in an emergency situation when it often finds a biological medium for urgent and even instantaneous transmission of its will as a signal. Consciousness has the organizing power. It organizes multiple universe(s), systems psyche, the organ brain, and even systems cell.

In the context of the science of consciousness, the axis of axiology is constituted by non-dual consciousness, cognitive consciousness bound to the systems (brain), and the physical behavior expressed from the systems (brain)-bound consciousness (Figure 1). In other words, this is a two-way communication in the consciousness cognition and behavior axis [1]. Consciousness feeds forward cognition. Cognition feeds forward behavior. Behavior feeds back cognition, cognition feeds back consciousness. Their relationship is not on flatland but extends vertically across the depth of nature. To state in other words, this is the axis of consciousness-as-such, consciousness-as-experienced, and consciousness-as-articulated (Figure 1) accommodating Spirit, Humanity, and Science.

Nonmaterial and non-biological reality is often best expressed in science by mathematics and is often called mathematical reality. According to many great mathematicians, the universe and even the multiverse could be a mathematical construct! The mathematical expressions could be in arithmetic, geometry, and symmetry, manifold and often as the point of the first beginning, and also the point at the final terminus. Many mathematicians consider the operation of consciousness as mathematical!

For quite a few decades mathematical expression of the material universe, the space-time universe, and the multiverse Type I, II, III, and IV have been in human endeavor [2], and are on the discussion table. There are also efforts for discovering whether there is any underlying mathematics in nature [3], the underlying natural mathematical rhythm of the primordial vibration of consciousness-mother nature! However, in spite of much success and triumph, mathematics has so far not been successful to express biology in the context of invariant symmetry (which life science is not!) or as error-free calculation! Biological processes are full of unexpected non-algorithmic errors! How the belief in beauty has triggered a crisis in physics is also being discussed [4]. Marriage of mathematics and art is yet to happen [5]. In science, we have encountered difficulty to express in mathematical language three fundamental functions of consciousness namely cognition, emotion/feeling, and 'will', although some of the consequences of these three functions in behavior could be expressed in mathematical language! The problem would continue to remain so till such time we discover the rules of operation of

the cognitive faculty. Can we, in science, approach the underlying mathematics for those three operations of consciousness at the level of the multiverse? Are the universe and the multiverse conscious? We also get stuck on the mechanism that connects the mathematical integration of different orders of nature with the integral relationship in biology! If the universe is entirely mathematical and hence nonmaterial, the issue is where do we, as organisms, stand? Are we then non-entity? Or, might we remain merely like an observable 'point' on the entire canvas, not ever lost in silence and stillness, nothingness and emptiness, but engaged in doing mathematics or neuroscience, or non-science or philosophy! Is so futile our existence! On the other extreme, we might also behave like the universe in our own way! We are co-creators with our universe, we have the ability to cross all boundaries to move towards the Multiverse as First-Person-Universal as an expert in swimming in the *Essence* of the Multiversity.

Thus, the issue of mathematical reality as the only reality remains a subject of great debate. In connecting mathematical and biological realities, we suggest a definite role of life, in a subtler form. What miracle the subtle part of life supposedly plays to connect mathematical reality with biological reality (Figure 2)!

We, anchored at the *Essence* of the Multiversity, are at the threshold of formation of a new worldview that is yet to begin and take shape in science with three fundamental questions; what is this universe/multiverse? Who am I? What is that others have called God? What is that Mathematics that connects Multiversity, Me, and Matter? Based on this inquiry, an entirely new narrative begins from the Top/Depth! Science grows encompassing humanity and spirituality! The biological reality comes at the center of focus.

The biological reality itself is a complex harmony of non-dual reality, cognitive reality, and material reality. The biological reality, in fact, is a holographic representation of this three-tier reality as a whole. Within the biological reality, we find the representation of non-dual reality as systems (brain)-bound consciousness, which is hard to crack. What seems verifiable in the organism with a brain are the Neural Correlates of Consciousness (NCC), considered as the achievable ultimate in empirical neuroscience [6]. Scientists are looking for a deeper relationship between cognitive ripples and metabolic processes. The essential part of the biological reality is "life", which operates with gross observable parts, and a subtle non-observable part. The latter is called Prana in eastern literature and Elan vital [7] in western literature. We will call it life-principle [8]. Within the biological reality, the subtle portion of life operates as a nonlocal player, a non-observable influential member of the cognitive family. Within the biological reality, the material reality is constituted

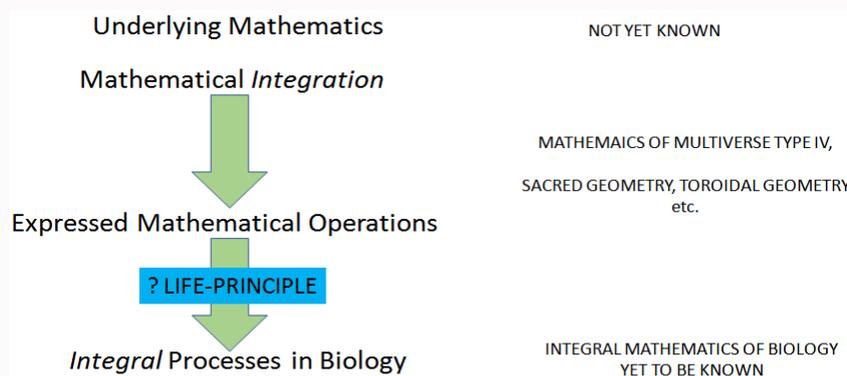


Figure 2: Mathematical integration is the integration of expressed mathematical operations. There is also a supposition (not yet known) of underlying mathematics in nature. Biological systems consist of *integral* processes. It is not known how the mathematical integration of nature is transformed into a biological *integral* process in life. In contrast to word integration, which is masculine, the word *integral* connotes femininity. The suggested factor for the transformation of integration into integral is an operation by life principle. Integral mathematics of biology is thus yet to be discovered.

How the Reality of Life shapes Spiritual Reality and Material Reality!

On the right, Sundar Pichai is Google CEO, and one of the leading personalities of the Material world. On the left is Gauranga Prabhu of ISKCON (International Society for Krishna Consciousness), one of the leading personalities of the Spiritual world. Both graduated from the Indian Institute of Technology (IIT) in the same year 1993, Pichai from IIT Kharagpur and Prabhu from IIT Bombay.

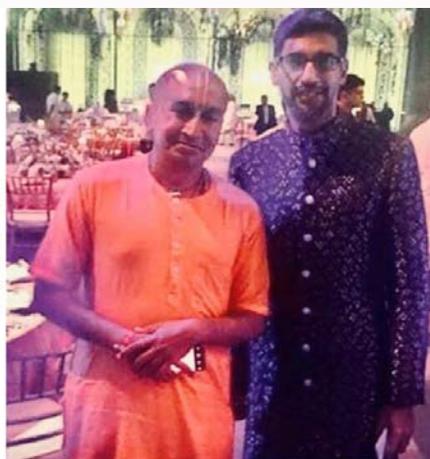


Figure 3: Example of how the reality of life shapes spiritual reality and material reality! The picture together of these two highly adorable personalities had been in the public domain for a considerable period in the WhatsApp group before it is picked up from there for this paper.

by the local players, observable as life-processes in the genome, metabolome, and cell envelop and membrane-bound organelle, run by the signal network of the cell for the biochemical and molecular processes. In addition to quantitative integration of material reality, the biological reality integrates three qualities, freedom, autonomy, and automation; freedom characteristic of nondual reality, autonomy, characteristic of the members of the cognitive family, and automation in the patterned cell signaling and subcellular molecular robots. It is stated to emphasize that hygiene of the cognitive systems is a necessity for making biological reality conducive for the nondual reality to the material reality and vice versa. The example of how biological reality can shape material reality and spiritual reality is shown in Figure 3. Material reality is constituted by matter, energy, space, and time. In a 4-D world, space-time warping is gravity and $E=mc^2$. These are examples of mathematical expressions of a part of material reality. This inanimate reality ranges from ordinary matter to exotic matter, dark matter, and neutrinos [9]. In the emerging Worldview, the material reality is considered a creation of biological reality. The statement is similar to, “matter comes from life” by Louis Pasteur (from the science stream) [10], and Srila Prabhupad (from the spiritual stream, perpetuated by his disciple Dr. T D Singh [11].

“I have been looking for spontaneous generation for twenty years without discovering it. No, I do not judge it impossible. But

what allows you to make it the origin of life? You place the matter before life and you decide that matter has existed for all eternity. How do you know that the incessant progress of science will not compel scientists to consider that life has existed during eternity, and not matter? You pass from matter to life because your intelligence of today cannot conceive things otherwise. How do you know that in ten thousand years one will not consider it more likely that matter has emerged from life?”- Louis Pasteur, quoted by Koestler, A, in the Act of Creation, p 702.

The author has proposed the view that space time and energy are children of mind and information. The majority of information is sourced from life [12,13].

The material world, since its creation from the element of “life”, has been in demand for its own transformation by means of interaction with the nondual reality. The material world looks forward to the biological world for such homeorhetic existence in plastic flexible equilibrium. I am quoting from my earlier paper [9], the suggestion of matter correlates of cognitive faculty.

“Does any relationship exist between exotic matter states and cognitive processes? “Yes” and “may be”! Yes, for nature-consciousness! Nature has intelligence, emotion, self-organization, and various information states which we suggest to have a relation

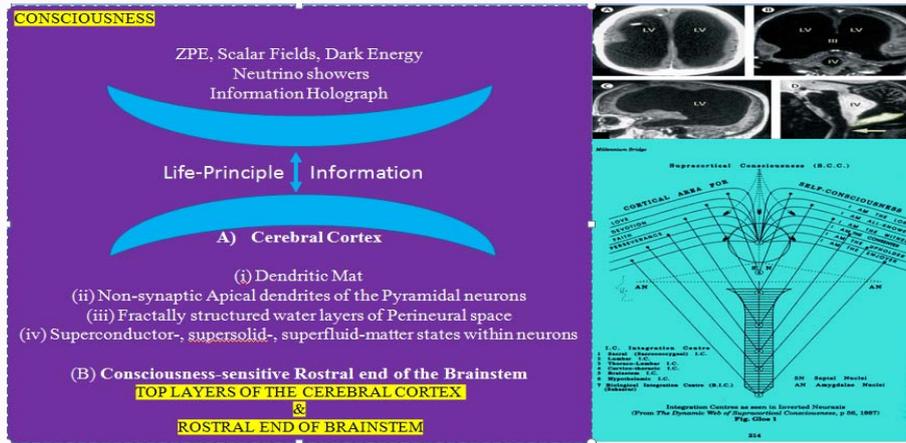


Figure 4: The figure shows the possible ways how the nature of consciousness above (outside) the brain and the nature of consciousness within the brain communicate. ZPE states of the brain, scalar fields, dark matter, dark energy, neutrino shower, information holograph are the possible natural factors involved from the outside of the brain. Within the brain two areas are relevant; the upper layers of the cerebral cortex around paracentral lobules and the rostral end of the brainstem. The latter is consciousness-sensitive and senses content less non-dual consciousness. The dendritic mat at the top layers of the cerebral cortex and the non-synaptic spines of the apical dendrites possibly operate as “receptors” for such activities. Fractally structured water layers in the perineural space could be non-neuronal antennae! Whether at body temperature, superconductor-, supersolid-, and superfluid-states of matters within the neuron play any role in homing the cognitive faculty also merits investigation. On the right side, the figure is reproduced from the author’s book, *The Millennium Bridge* (2000), p. 214. The upper right picture of CT scan of the brain has been taken from a case report published in *Lancet*. 2007;370(9583):262, of a 44 yr old civil servant who has lost more than 90% of his brain tissue due to hydrocephalus, but lives almost a normal life with two children, having verbal IQ 84 and performance IQ 70. The scan picture supports the view that for conscious activities, minimal neural structures required are the upper layers of the cerebral cortex and the brainstem.

with exotic matter states. ‘May be’ for the brain-states! At this stage of science, this could be tentatively expressed in a language of poetic prose! It may be said that at the level of consciousness, which if leaves its signature on the mind as a super solid state of matter, information surfaces as crystal (wisdom) with fluctuating ‘magnetic moment’ that is independent of environmental influence. The signature of super-cool ‘self’ could be searched on the superconductor state of matter! ‘Life’ following bath in neutrino-shower glows and entangles ‘web of matter’ in expressing its ‘love’ with the universe. Her signature/ footprints could be discovered as correlates/correspondences on the super fluid state! Therefore, in psychology too, all at the observable level are matters occupying space and have the effect of mass! The toughest question that stares at us for the brain, is how phase transition of systems physics into systems psychology at near absolute zero temperature works in compatibility mode with systems biology of neuroscience at 37°C? We know no other device beside the brain which could make to do this. How dark matter, neutrinos, information mechanics, quantum mechanics, and myelin sheath of nerves can help us to sort out the issue? This less traveled terrain of material science, life science, and neuroscience has real interdisciplinary research potential with translational value”.

The author holds the view that physics and psychology are connected across Zero Point Energy (ZPE) in nature. Most likely they are connected through the matter correlates of cognitive faculty! The matter correlates of self could be in the superconductor state of matter, of mind in the super solid state of matter, and of life in the super fluid state of matter.

The understanding of the axiological issues and further research on them are supposed to come better if we have a research hypothesis with the binding concept, and we look for a climbable ladder that could be the guiding steps for doing science across the ladder! We are to examine how relevant are the prevalent different schools of non dualism for psychology, psychiatry, and science for/of consciousness.

With this kind of attempt, could we reconcile local reality with nonlocal reality? What could be the layers and the gaps in covering the entire spectrum! The problem is certainly complex! How does this complexity at the cognitive level differ from the known complexity of material science? The rest of the paper addresses these issues. The possibility of demonstration of the ladder, the layers, the operators, and the operations by means of any available equipment seems remote at this stage. However, conceptually and logically we could proceed to stitch the gaps.

The Binding Concept, Pentaune Model, and the Ladder

The one single concept that binds nondual reality with conscious biological reality and the material reality of signal patterns within the cell and neural network, and informative molecules and neurotransmitters inside the brain, and can describe their relationship including the gaps in between is the concept of supracortical consciousness. This term and the concept have been coined in 1985 by the author [14,15], which states that consciousness asserts its operation on the neural machinery of the brain from above, precisely “seated” on the organ brain with wide contact points through the cortical dendritic mat, non-synaptic spines of apical dendrites, the cortical perineural space, and the fluid (fractally structured water layers) around, and lower down, the consciousness-sensitive rostral end of the brainstem. Whether at body temperature, superconductor-, super solid-, and super fluid-states of matters within neuron play any role in homing the cognitive faculty members also merit further examination. Scalar fields, Zero-Point Energy (ZPE), dark energy, neutrino showers (some of the neutrinos are considered darkest matter), and information hologram are a few suggested candidates operating to connect the top of the brain with consciousness (Figure 4). That the top of the brain works as an event horizon has recently been suggested by Meijer [16].

There are feedbacks to brain-independent consciousness from

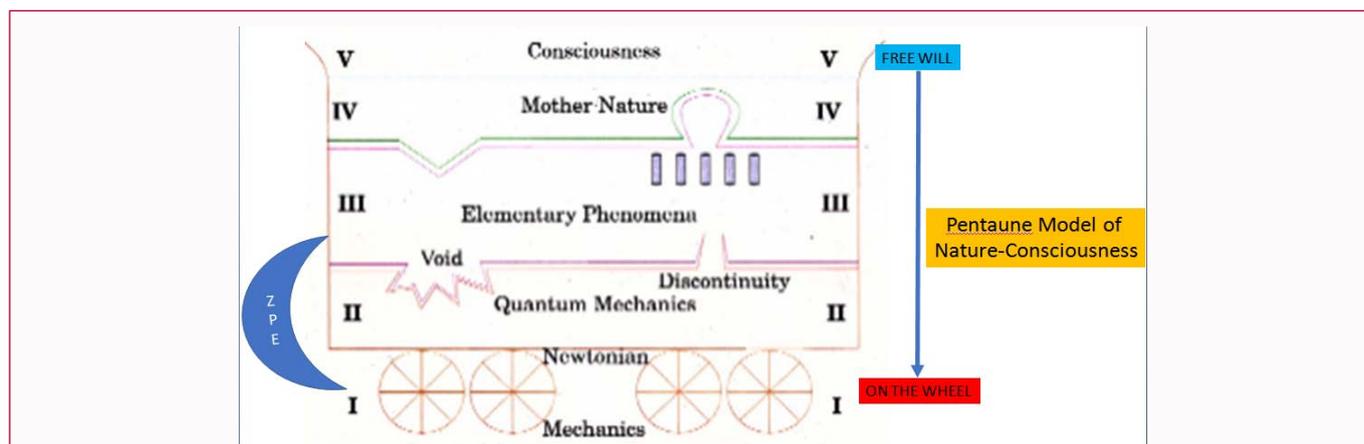


Figure 5: The Figure has been reproduced from the author's book, *The Millennium Bridge*. It shows five nests of nature-consciousness, which are involved in the realization of Free Will on the Wheel (classical mechanics). Nest II could be bypassed in nest I and III communication through ZPE.

these appositional points at the top of the brain (cerebral cortex and the rostral end of the brainstem). This disorganized terrain of science merits a workout for concretization of the suggested communication between the non-observable with those which are observable measurable and quantifiable. For a stepwise approach, we have a pentane model (Figure 5) of nature-consciousness [17]. Where consciousness (nest V), sub-sub Planckian nature (life and self) (nest IV), and sub-Planckian nature (mind and information) (nest III)-inspired connectivity operate on the 4D world of space time energy and signal in quantum (nest II), and classical (nest I) domain of nature. The phenomena of inside-out and outside-in happen at the transition of nest IV into nest III and vice versa respectively. The entry from nest II to III is through quantum discontinuity and from nest III to nest II is through the quantum void. The nest I and nest III can, however, communicate with each other directly through ZPE (Figure 5).

The ladder

Science at the present stage works with signal/data.. However, data/signal, for sure, is not information. Information is also not knowledge and the knowledge is not experience. Experience is not wisdom. To reach every milestone from number one to the next, one requires a process, an operation by an operator, which might be non-observable but understandable and predictable. To state the issue in the language of information; the signal is a space-time-energy construct of information. Information-as-such works on the non-material plane with its content and intent and reduces uncertainty in the 4-D plane. Knowledge is represented by the build-up symmetry by a group of meaningfully similar information-aggregates, which can be used for a purpose without further deliberation. Knowledge could also be called Gödelian information. Experience is that knowledge, which has withstood the symmetry-breaking and symmetry-making processes in real life. In terms of information, the experience, which could be described as information-manifold. Experience remains systems-confined. The concurring point of multisystem experiences is wisdom, could be described as information crystal. We get a ladder of cognition [18].

Any "will" of consciousness which is to be translated into a signal is to cascade down this ladder of various information states. The 'will' is generally constructed on the basis of wisdom. Wisdom percolates through information manifold (experience) as knowledge of the whole, presented in form of information, which by the event-making

entity, i.e., the mind is translated into a signal.

The ladder, however, can prop us up to the boundary of the systems (here, the universe, the cerebral cortex of the brain). The boundary is the usual site of wisdom, also called crystal information, holographic information, beyond which one encounters the multiverse, the beginning of the non-dual reality. No room for any information is there.

The science across the ladder

Information states: We have described various information states; signal as space-time construct of information, information-as-such, Gödelian information, information manifold, and information crystal. The milestones in the ladder are constituted by these various information states.

Inter-conversion: Signal-information inter-conversion requires an operation by an ontological entity what in popular language has been called the mind. Information-knowledge inter-conversion requires operation by another ontological entity, which in a common sense has been designated as "self". Inter-conversion of knowledge and experience requires exposure to the operation of "life", while inter-conversion of experience and wisdom requires operation of none other than consciousness. Mind, self, life, and consciousness are all non-observable "influential", the cognitive/faculties in the cognitive organ.

Operational currency: What is the currency for inter-conversion of different information states? Since these inter-conversions are possible only in living organisms, the currency is something special, only available at the intersection of life. The currency is not any conventional energy, field or force. The author has proposed [19] dark energy as the currency of such movement up and down the ladder. During ascent along the ladder, conventional energy is consumed by "life" and is converted into dark energy. That explains why the brain constituting about 2% of the body weight, consumes about 15% to 20% of cardiac output! During descent along the ladder, dark energy is converted back into visible energy. Homeostasis of visible energy and dark energy within the systems is a function of "life".

Specific Operators

In the present science, the assumption is that the brain decides. The author works with the assumption that the decision-making ability is not with the brain or its operations. The decision-making

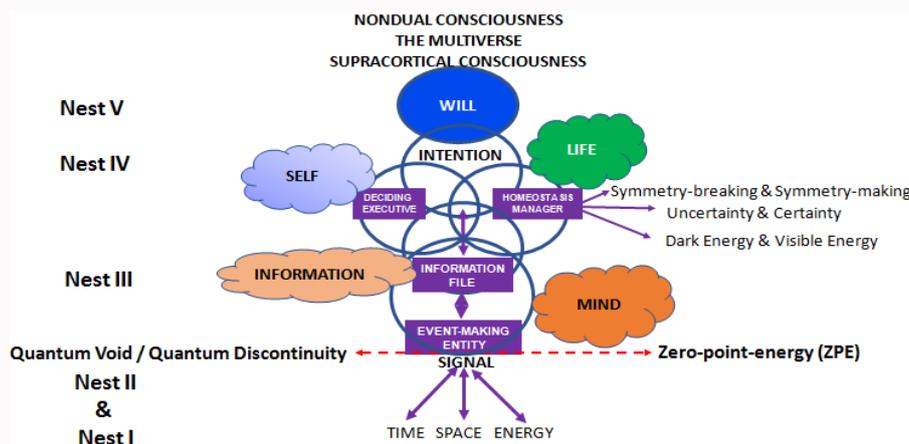


Figure 6: Consciousness operates through will and intention. Consciousness is the event manager. Life is the homeostasis manager. Self is the decision-executive for the system. The mind operates as the event-making entity across ZPE. All operations are inter-looped in the process of conversion of will into the signal (space-time-energy construct of information). The signal directs the behavior.

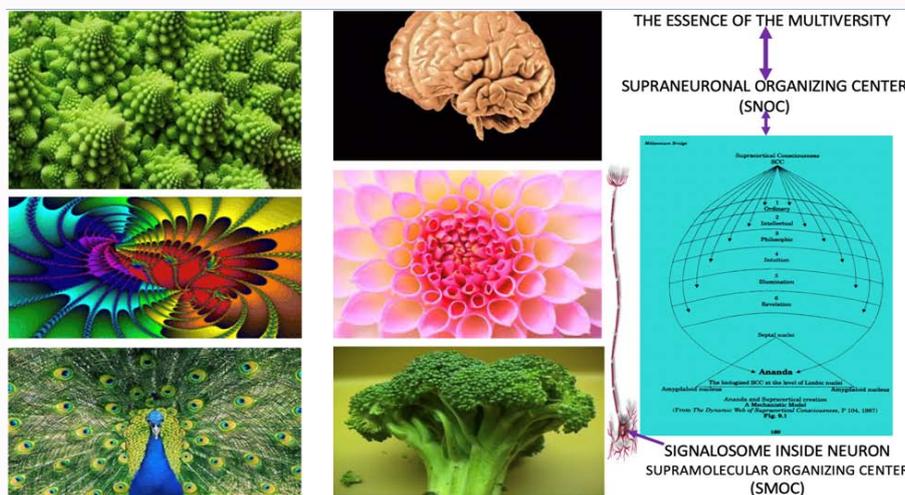


Figure 7: On the left side are examples of fractal nature. For consciousness study, one has to be cautious to choose that self-similar pattern that is close to the conscious cosmos. The brain has 10^{11} neurons. There are 10^{11} stars in a galaxy, 10^{11} galaxies in our universe. The patterns of gyri in the brain resemble corrugations observed in hyperspace. On the right side is the picture reproduced from the author's book, *The Millennium Bridges* (2000), p.160. It shows how SupraNeural Organizing Centre (SNOC) channels the supracosmic flow through the brain to manifest in behavior as intuition, illumination, revelation, and eventually as *Ananda*, when operating on neurological pleasure triangle constituted by septal nuclei and the pair of amygdaloid nuclei! SNOC operates in the direction of EM (The *Essence* of the Multiversity). The final organizer connecting biological with the material is the signalosome of the neuron, SMOC, SupraMolecular Organizing Centre.

ability is with the cognitive faculty. In science, however, one can designate them either as entities (ontological) or as operations (epistemic). The operators that participate in converting 'will' into signal are cognitive faculty, namely consciousness, mind, self and life, as said earlier. Consciousness, mind, self, and life are all multi-meaning words. The reason; those cannot be defined, cannot be brought under a specific boundary. All of them are boundless. All are, by nature, nonlocal. Also, none of them is observable and reducible. So are their operations! All of them are autonomous. Since science works with a definition, how is it possible to make the science of which cannot be defined? A daunting challenge is ahead.

We could begin making a science of the cognitive family by not dumping them as external agencies. Rather, in science we should own them since they all 'own' our brain! They inhabit our brain. They are part and parcel of our individuality, personality, and attitude expressed in our behavior. Each one of them has specific characteristic

properties and unique operations. They maintain a hierarchical inter relationship in their ontological status and so do their operations! The connection between physics and psychology is across ZPE. The matter correlates of cognitive faculty have been suggested.

Consciousness is the will-making entity. The self is the entity that takes decisions for the systems on behalf of consciousness. Mind is the event-making entity. Consciousness is the event manager; life is the homeostasis manager (Figure 6). No energy, force or field is required for their operation. They operate on the basis of will and intention, in contrast to various information states that work with the currency of dark energy. Together, they constitute the systems psyche [20].

Openings in the systems

There are two hierarchical openings in the systems: at ZPE and at the boundary of the systems universe/brain. Cognitive faculty operates across space empty of matter, the Zero-Point Energy

(ZPE), the first gateway towards the essence of the Multiversity! The openness of signal systems of a biological cell (say, neuron) to ZPE is responsible for the ability of the cognitive systems to carry forward the “will” of consciousness across a complex cellular operational network and translate it into a signal of behavior.

Operational Definition of the Cognitive Faculty and Information

Mind

- Mind is the organ of communication between two (or more) conscious systems.
- Mind is that which can make information out of signal and can convert information into a signal. That happens across ZPE.
- Mind is the event-making entity that conceives information and delivers space, time, and energy. That happens across ZPE.
- Mind is the thought-forming machine with the fodder of information.
- Mind behaves as sterile without consciousness, and promiscuous for its material connection.

Self

- Self is the representative of consciousness within the systems where it operates as Chief Executive Officer (CEO).
- Self is that takes the decision for the systems (decision-making entity).
- Self is which creates operational logic for the systems.
- Self is that, which compartmentalizes information according to their class and connectivity, and thus creates different knowledge domains.
- Self is that which looks after law-and-order issues and, therefore, is responsible for the harmony and peace of the systems.

Life

- Life is the homeostasis manager of the living system; asymmetry-symmetry homeostasis, uncertainty-certainty homeostasis, and dark energy-visible energy homeostasis across ZPE.
- Life operates as the core principle of Supramolecular Organizing Center (SMOC) and Supraneural Organizing Center (SNOC).
- Life is that, which connects self with the mind, and therefore, cognition and phenomenology. Life is the repertoire of feelings, emotions, and experiences. Experiences are stored in its fabric as information manifold.
- Life is that, which creates the attitude of the systems combining conscience with values, aesthetics, and ethics.
- Life is the binding link between conscious reality and material reality. Life is an organization that is feminine in character, and is based on non-digitized information, is interested in creating self-similar patterns.

Consciousness

- Consciousness is the will-making entity. Consciousness is absolutely free but its will get bound to the rules of the systems.
- Operationally, consciousness is that which transforms the

experience into wisdom.

- Consciousness is the fundamental ground without any background and as a ground it is a supporting ground, participating ground, intervening ground, creative ground and will-making ground.
- Consciousness is that which is independent of any force, field, energy, and information, but operates with will and intention.
- Consciousness is the one single non-violent entity that can disarm anything and everything.

Information

- Information is the unit of communication between two conscious systems.
- Information has content, intent, and the ability to reduce uncertainty.
- Information is the source of thought for the mental world, and of space, time, and energy for the material world.
- Nature and the character of information defies observable, positivistic, and reductionist science, yet Information connects physical science of space, time, matter, and energy with the cognitive science of Consciousness, self, life, and mind.
- In the ladder of cognition, different information states operate as the currency in the process of ascent and descent.

Challenges to Nondual Reality. Evolution of Multiversal Worldview

Absolute non-dualism is not for everyone in the population to practice. Neither could it be prescribed for the mass. So far the knowledge and attitudinal aspects of nondual reality are concerned, fair, and enough! The problem comes with the skill of practice. Kevaladvaita (Absolute Nondualism) of Acharya Sankara is the achievable ultimate in human cognition. The school of Kevaladvaita came into existence in Indian civilization to resurrect the original Upanishadic non-dualism on the backdrop of the then prevalent ritualistic behavioral spiritualism.

The absolute nondualism was difficult in practice since different populations dwell at different percentile levels of the axiology of reality. Their cognitive hygiene, too, at any given point of time belongs to different grades. According to many sources in social science, the philosophy of “Brahman is real. World is unreal” did contribute to the peril of Indian civilization, followed by an invasion of India by the Muslim rulers (who are also non-dualistic, might be in a different sense, without ignoring the biological and the material reality; sex and weapons), Subsequently, India had been ruled by the British who, totally banished the original Upanishadic spirituality from Indian cultural and educational syllabus in name of secularism through Macaulay’s systematic policy for production of a sub-servile class of employees at different levels of governance. Indians are now realizing how important had been this spiritual education for the mass striking the sensitive chord of its collective psyche for the sustenance of such great civilization and its growth in the world.

Debating pros and cons of this issue of absolute nondualism, born are schools of Vishista-advaita (qualified monism of Sri Ramanuja), Shudhadvaita (pure monism of Vallabacharya), (Dualistic non-dualism of Sri Nimbark) and, finally the school of Dvaita (Dualism of Madhavacharya).

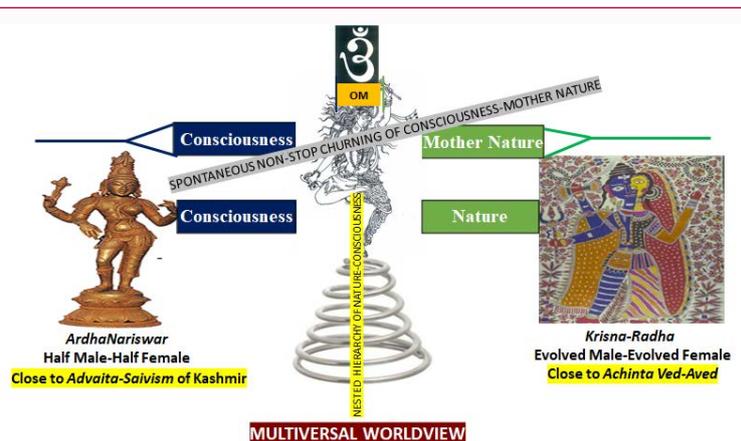


Figure 8: Consciousness and nature are indissolubly wedded as One. Mental faculty projects this as a half-male and half-female deity (Ardhanarishwar), which is closest to Advaita Saivism, or as a unity of two, one evolved male and another evolved female, closest to Achinta-Ved-Aved. A more appropriate description of the former is, however, of the inseparable unity of the fire and its burning power. A more appropriate description of the latter is One 'self' and One 'life' with two separate bodies. When nature dives deep into Mother Nature, one is deep into the Essence of the Multiversity. Out of spontaneous non-stop churning of consciousness-Mother Nature emerges an outstanding vibration, that becomes perceptible from the nest III of nature, and is heard as supercelestial sounds, like Om, Om, Om.... In the 4-D world. The Source of Music Therapy is this primordial vibration at the Essence of the Multiversity.

The science of absolute nondualism is the science of non-qualifiable, non-speakable and even non-conceivable! It looks practically impossible to pursue! The obvious resonance of qualified monism has, however, been seen recently with the science of qualia [21], where the interactive operation of quality in the context of consciousness has been a transcendental counterpart of the science of quantum (quantum physics). Consciousness cannot be defined but can be qualified. Cracking this science of quality, i.e., how quantity is transformed into quality and in reverse how quality is fragmented into quantity is a completely new frontier.

The resonance of Shudhadavita (pure monism) could be found with the science of divinity [22-24]. Nondual reality is the Divine, and therefore, its created world is also divine, - this is the essence of Shudhadavita. Many universities (e.g., the University of Cambridge) have a school of Divinity.

The essence of Dvaita-Advaita is the creation of self-similar patterns! Science has also found out the universal patterns in fractal nature (Figure 7), e.g., self-similar patterns in peacock's feathers, cauliflower, snowflakes, scale-invariant torus geometry, etc.

This self-similar pattern, as seen in nature is a behavioral expression of the Dvaita-Advaita school of philosophy locally focally or globally, supported in science by a holographic principle with mathematics, and geometry ("God geometrizes" - Aristotle, God's operation is mathematical, rotational torus geometry, information holograph [25]). The self-similar patterns those are most close to the conscious cosmos would sure be more relevant in the context of consciousness study (e.g., human brain, patterns of thoughts etc).

Do mental and social processes have a self-similar structure? Is there a fractal affect-logic [26]. During deep hypnosis, many psychiatrists have discovered self-similar patterns of thoughts within the psyche of the subject. Some of those patterns are beneficial. Others appear harmful because of broken symmetry.

Since such patterns have universality and scale-invariance, those often bring a sense of "divinity" to many, may not be to all philosophers and scientists, psychiatrists included. Why? Because Dvaita-Advaita philosophy has a Dvaita component! Such population in their

sensing attitude have developed not only the cognitive intellectual part of the brain, but also the emotional and attitudinal aspects of brain function towards the universe/multiverse, which in the popular sense is expressed as devotion, bhakti. The sense of divinity comes through bhakti. Devotees prefer the physical contact with the Divine rather than asking questions on the mechanics of operation of consciousness. In fact, the devotee is the one who chooses to dwell within the Divine. The science of how tactile sensations alleviates the sense of uncertainty, releases anxiety, and makes life calm and grow is not known yet! However, taking a cue from this fact, healing techniques such as Therapeutic Touch (TT) of a spiritual healer, tactile toys for alleviating anxiety, and the tactile massage that helps children with cerebral palsy have been developed. Immersive neuroscience is a top-down approach to how the essence of the Multiversity could be healing various neurodegenerative and neuropsychiatric disorders.

Most of the world population belongs to the percentile related to Dvaitism in its various forms that propounds cultivation of faith, devotion (bhakti), and love towards the Divine during the course of their uphill journey in life. Dualists in science, on the other hand, work intellectually for finding out the yet undiscovered operations and mechanisms in nature-consciousness. For such engagement, one requires a sharp and clean cognitive apparatus. To prevent cognitive apparatus in churning out the "magic lie" (using Deepak Chopra's language) on reality, Lord Buddha emphasized neither the material nor consciousness. He concentrated on cognitive hygiene, on cleaning the cognitive apparatus of humanity that led to the upheaval of a psycho spiritual movement throughout the Globe.

Schools of Advaitism, however, did not stop there. A very relevant revolutionary non-dualism came as Achinta-ved-aved (Unperceivable dualism of the nondual by Sri Chaitanya), which simply states that when your nature becomes Radha-Nature, you are in Krishna consciousness. Radha drinks water and Krishna's thirst is quenched. When Krishna takes food, Radha's hunger is satisfied. One might find a similar relationship between yang and yin in Chinese culture. The author finds a similar relationship between "self" and "life" in the cognitive organ. In mathematical language, this is an example of tangled hierarchy. When one's nature becomes Radha-nature, one is Krishna as self. When one's nature becomes Mother

Table 1: As shown in the left vertical column, the terminologies used could be found in the description of nature, femininity, conjugal relationship, and in the subject like physics. As one moves from the left to right along every row of the table, there is a higher grade of adorability, regard, and respect in the description of nature.

In addressing in nature	Prakriti	Shakti	Mother Nature
In addressing the Feminine	Female	Woman	Madam
In describing the conjugal relation	Wife	Better-half/Fairer-half	She is my strength" behind every successful man there is women
In terminology of physics	Energy	Power works on another object	Strength is within, and what can withstand power

Nature, one is consciousness.

In all such schools, nature has been considered as Prakriti in contrast to consciousness, which has been considered as Purusha. It is in another non-dualism that originated from Kashmir, India, Advaita-Saivism of Kashmir, the nature was conceived not as Prakriti but as creative Shakti indissolubly wedded to consciousness (Figure 8).

To many scholars, this is more practical. As fire cannot be isolated from its burning power, so consciousness cannot be distinguished from its Shakti, its power. In the science of consciousness, consciousness is seen inseparably wedded with its will, intention, power, and operational mechanics. Underlying our informational, mental, intellectual, and emotional pursuits within the nest III of nature, our divine nature within the nest IV operate as an inextricable blend of the masculine and the feminine, the self and, the life respectively!

Sri Ramprasad and Sri Kamalakanta, two sadhakas from undivided Bengal, replaced the shakti concept of nature with the concept of Mother. Nature becomes Mother Nature, which is indivisibly related to consciousness (Table 1). The notion of Mother for nature had been formalized in the recent Indian tradition, by three subsequent schools; Ramakrishna-Vivekananda School, Sri Aurobindo School, and the Akhanda School of author's Gurudev Akhanda Mandaleswar Sri Sri Swami Swarupananda Paramahansa Dev. It is reported that Sri Ramakrishna even worshipped his married wife as the biological incarnation of Mother Nature, banishing sexuality completely from the conjugal life.

For Sri Aurobindo, Mother's blessings operate from the top of the head. The mind is the vehicle of consciousness. Mind is sterile without consciousness. Consciousness is Supramental. Since the material world, according to Sri Aurobindo, is in the process of transformation towards the Divine, he coined the concept of Divine-Materialism. Materialism, for him, had never been an illusion! Swami Swarupanada propounded the Multiversal Worldview, which in science, corresponds to type IV Multiverse as classified by Max Tegmark [2], where the free will of consciousness is converted into a signal instantaneously. The Akhanda worldview brings down consciousness to senses, uniting sensibly the divisions of the indivisible, connecting sensibly the differentiated entities of the undifferentiated! Consciousness peddles wisdom while the senses cognize signal. Motherhood extends from the Top as consciousness-Mother Nature down to all feminine components of the world. Every girl, lady, or a woman of this world is Divine Mother in flesh! According to the author, even within the cognitive family members, there are feminine members. Mother mind conceives information and delivers space, time, and energy! Mother "life" is engaged in the homeostasis of the axiology of the systems. Her organization is distinctly different from the organization by self, a masculine member of the cognitive family. This universal motherhood offers unbreakable strength to one's a-khanda (non-breakable) nature, which could

practice non-breakable celibacy that builds the individual's total non-begging attitude. Mother bestows the strength. Even in cell biology, we find mitochondrial DNAs descend in all of us from the ovum of the first mother in flesh. The same conceptual mother in flesh is Mother Nature in scientific imagination! This kind of adoration and regard is very much essential for the emerging multiversal Worldview. To materialize this Consciousness-Mother Nature-inspired Akhanda worldview the brain, according to the author, requires integration at several levels; classical level, quantum level, phenomenal level, and the final integration at the level when the brain becomes conducive of Mother Nature. In the multiversal science, we can characterize the mind as the organ of communication between two conscious systems. Information is the unit of communication between two conscious systems. In this worldview, there is a prediction of the emergence of divinity in the human race by both the Sri Aurobindo School and the Akhanda School of spirituality, which in science could be described as the emergence of Homo spiritualism from Homo sapiens [27].

Local Reality and Non-local Reality

We are faced with a complex issue of local reality and nonlocal reality. The distinction between what is local (contact-addressable) and what is nonlocal (contact-nonaddressable) is understandable. The author has wondered several times and asked the question, how does nonlocal become local within the systems? Is there any mechanism that connects nonlocal to local? How does nonlocal manifest locally? How the will, wisdom, and experience come down in the observable, localizable biological and material plane as a signal and then get manifested in the behavior of the systems irrespective of whether the system is having a brain or not! The answers boil down to "information". Therefore, the author thinks that the nature and science of information are the immediate flashpoints.

Space, Time, Matter, and Energy are four principal players in local science. Consciousness, Mind, Self, and the subtle part of Life are four principal nonlocal players. Information is the connecting link between the players in two domains of science. The classical world gets into the world of information through ZPE. The quantum world gets into the information world through quantum discontinuity.

Nonlocal players are autonomous. Local players are mostly programmed to exhibit automated behavior. Not only do they coexist, but local players also influence nonlocal players and vice versa! The phenomenon of how autonomy and automation coexist in living organisms starting within a single cell and extending into a complex organism like us merits scientific investigation. This is a two-way nested communicative connection between our intellectually-made divisions (Figure 9). The phenomenon draws the attention of cell biologists to the critical functions of SIGNALOSOME, Supra Molecular Organizing Centre (SMOC) within a smart cellular laboratory.

An entity or organism that is protected locally with shelter, nutrition, and oxygen, acts locally and, has the ability to communicate non-locally reserves the capacity to evolve [28].

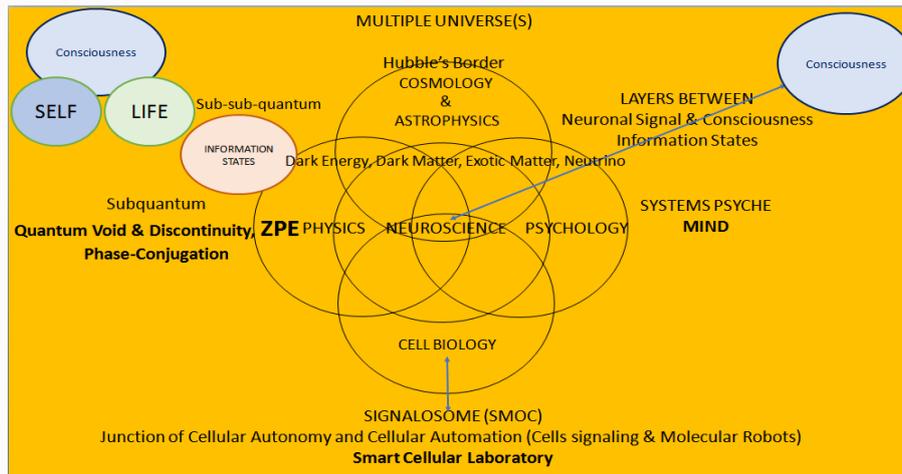


Figure 9: The layers between the multiple universe(s) and the signalosome at the smart cellular laboratory are shown. This is nested communicative connectivity. ZPE is supposed to be the meeting site of Systems Physics and Systems Psychology, Systems Cosmology and Systems Biology. Consciousness, self, life, mind are all encased within the life-form across ZPE. In the animals like us, all are embedded within our brains across ZPE. The autonomy and automation of cell biology meet at ZPE through signalosome (SMOC). Also, see the right side of Figure 7, extending from SNOC to SMOC. Also see Figure 5, how free will come on the wheel through the nested hierarchy of nature-consciousness.

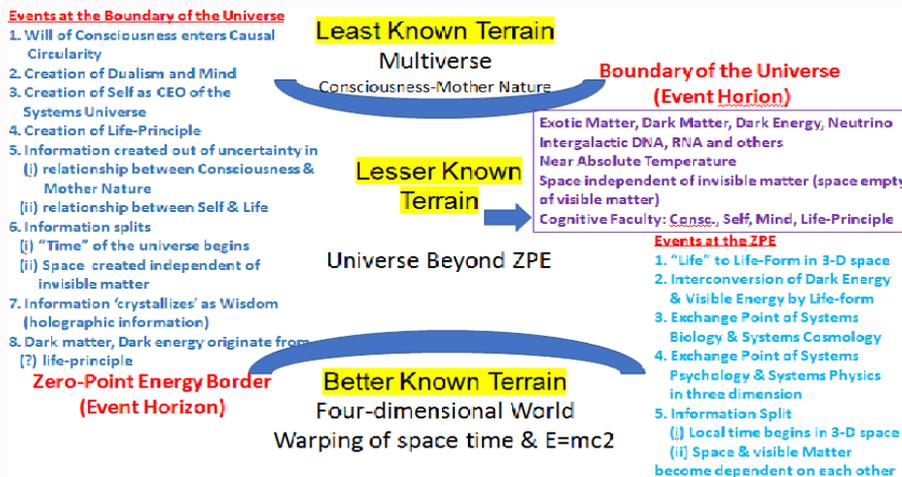


Figure 10: The figure shows three terrains of cosmology; better known, lesser-known, and the least known. Possible contents of lesser-known terrain have been listed in the box. The events at the boundary of the universe and at the zero-point energy level are listed in the respectively labeled boxes.

Let me quote from my own poetry, published in 2002

"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 the 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."

Imagination is a process, which attempts to unite nonlocal reality with the local reality, finite reality with the Infinite. Imagination is a state of the brain when the cerebral cortex has been trying to catch the right information hovering above the brain in the supracortical domain! Once caught, imagination, like lucid dreaming (dreaming in an awakened state), creates its own reality! Done repetitively, or even once but intensely, the mechanism is potentiated in neural infrastructure, helping neural memory formation.

Intuition is another example of concrete localization of nonlocal

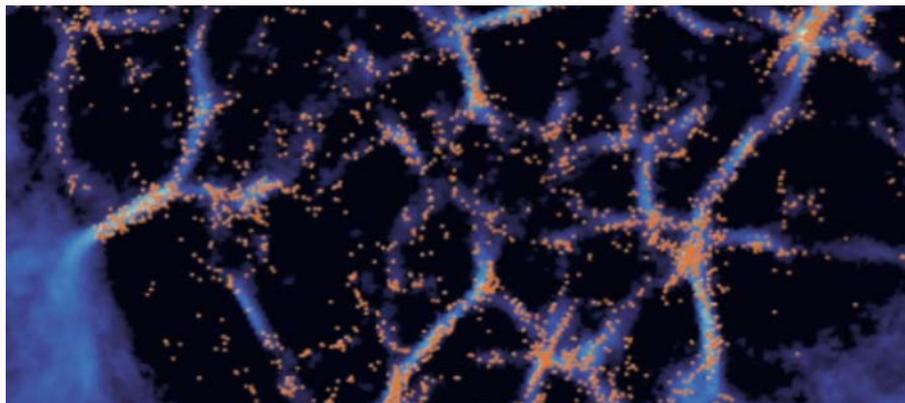


Figure 11: The image taken from Google shows the vast network of dark matter. They link the galaxies together and connect important galactic phenomena.

reality in terms of ideas. An artist expresses his intuitive ideas through his expertise (infrastructure) in Art. A scientist with his science background (infrastructure) expresses intuitively his intuited knowledge as a research question, theory, or a hypothesis. The mechanism of intuition has been described in the author's earlier paper [29].

Three Terrain of Cosmology

The Multiverse, the Universe (beyond ZPE), and the four-dimensional world constitutes a three-tier cosmological reality (Figure 9). Least known is the terrain of the multiverse and the systems multiversality, the domain of nondual consciousness and its executive operational front as Mother Nature. Better known is the four-dimensional world we live in, where $E=mc^2$, and there is gravity with warping of space and time. The events at the boundary of the universe, events at the ZPE border, and the contents of the sandwich terrain are listed in Figure 10.

Excluding the multiversal essence, which is intellectually comprehensible, the science misses the third transcendence [23], and therefore does not gain the capability of transforming the existing science! The consciousness of each of us (brain-bound consciousness) is embedded within this multiversal consciousness.

Lesser known is the sandwich terrain of intergalactic space, which is in continuity with interstellar space on one hand and open to inter-universal space on another hand. Near absolute zero temperature, dark energy, dark matter (Figure 11), operations of cognitive faculty etc. prevail there. The contents of this terrain operate as an irreducibly-associated folks, which is ever-ready, as suggested by the author, for phase conjugation with 4-D material world at the site of Zero-Point Energy (ZPE) [19].

The dark thread of the cosmic web connects a variety of cognitive systems of this universe, a unicellular slime mold and the intergalactic phenomena [30]. Our brain interacts with all three layers of cosmological realities; 4-D world through sensory systems, intergalactic world as supracortical reality, and the essence of the multiversality as supracortical consciousness. How does the event horizon of the brain (cortico-supracortical border) churn out behavior maintaining its epistemological, phenomenological, and axiological integrity is the frontier of neuroscience research.

Free Will and Event Management at the Behavioral Level

Will is never free! The maker of the will is always free! Willing is

a prerogative of consciousness. Will or won't, in this regard, belong to the same category of process. Consciousnesses are free. However, as soon as any will is made, the will becomes a part of the causality chain. The reality of will-maker is free but the reality of will is not! When the operation of consciousness gets more confined or bound and restricted within a system, say within the cognitive system or, the organ brain, the will becomes more restricted. The degree of freedom of consciousness determines the degree of freedom of its will.

That a single cell can decide has been now a fact, experimented again and again since 1906 on the idea that microbes can change their minds [31], till very recently [32-36]. What could be the mechanism [37], behind it? To get the answer, we are to look for the principle of event management (Figure 6).

"Will" is made at the level of consciousness and is sent downstream to the mind through different information states for its translation into an event. The event is expressed as a space-time-energy construct of this information. Space-time-energy-construct of information is observed as one single specific pattern. Therefore, from the top-down, we are to search for the layers between the "will" and the signal, and from the bottom-up, the layers between the signal and the "will". There is a number of processes in-between, as described below.

When the event is to be executed within the system, it requires the permission of the chief executive of the system, which represents consciousness within the system. This CEO representing consciousness within the system is "self", a very important cognitive faculty, and a colleague of consciousness and mind in the cognitive system. Since cognition is a property of a living system, translation of the will into an event is impossible without the affirmative nod from 'life' through her subtle processes that look after homeostasis. In real life, life processes are to adjust and adapt for the eventual outcome within the systems from the will generated by consciousness and the event generated by the mind. Life is, therefore, another important faculty colleague in the cognitive system.

Will is always mixed with intention, which is an elaboration of the will on the intent or the purpose. Will is masculine while the intention is feminine in nature! The couple is indissolubly wedded, picked up respectively by the 'self' and 'life' in cognitive biology! The defined intention once analyzed and approved by "life", the homeostasis manager catches up with self, the Chief Executive Officer (CEO) of the systems acting on behalf of consciousness. Life takes care of several 'ifs' and 'buts' in terms of uncertainties, symmetry-breaking, symmetry-making processes, and the requirement of

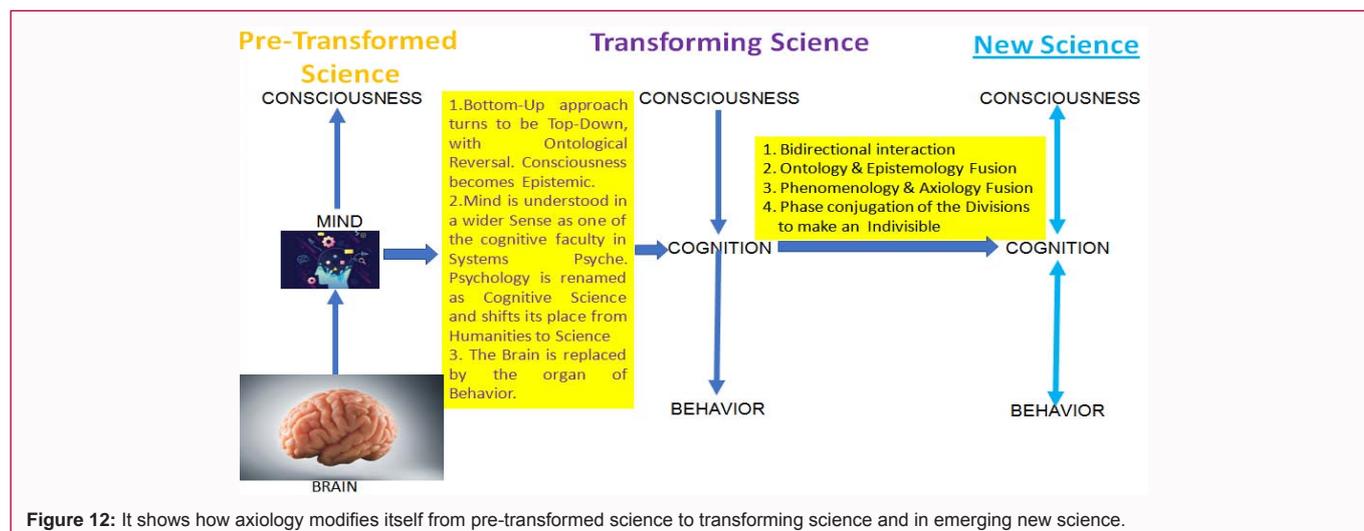


Figure 12: It shows how axiology modifies itself from pre-transformed science to transforming science and in emerging new science.

energy for inter-conversion of different information states. Once these internal plans are finalized, the ‘executive file on information’ is developed. The file with clearly laid-down instructions is handed over to the event-making entity, the mind, to execute. The event-making entity, the mind, conceives information and delivers events in terms of new space, new time, and new energy (Figure 6). In terms of reality, consciousness is the reality of will, self is the reality of the system’s existence, the mind is event-making reality and life is a biological reality. Information is a reality non-observable communication while the signal is the reality of observable communication.

As said, the degree of freedom of consciousness determines the degree of freedom of the will initially. Next, the will gets bound in the causality chain. Consciousness outside the boundary of the systems is supposed to be absolutely free. In cosmology, the situation is comparable to outside the boundary of the universe. In the context of neuroscience, outside-boundary freedom is equivalent to freedom of supracortical consciousness (Figure 6).

To sum up, “will” originates from consciousness which operates as the event manager. The faculty of “self” operates as decision-taking executive for the systems. Self operates in coordination with the faculty of “life”, the homeostasis manager, for translation of will into an event. “Life” chalks out the purpose (intention) of the will. The self organizes phenomenology for the process to be executed. Consciousness, self, and life communicate the will and intention in form of clear-cut information to the mind. The information works on the event-making faculty, the mind, and impregnates her. The mind delivers the event across ZPE in terms of new space, new time, and energy.

Consciousness is the event manager, and the mind is the event-maker. Both are non-observable! Their operations are non-observable! In-between processes and their operators are also non-observable! Events are observable only in form of a signal. The neural brain manifests these signals in behavior. Neural signaling pattern and their consequences are within the boundary of neuroscience. Cognitive science is prior to neural events. For the in-between processes within the cognitive systems, we require a science of information [38]. The science of information states is intertwined with cognitive science. At the very depth of recognizable specific processes, is the science of consciousness. Take note of this nested communicative connectivity. In this sense, the entire cosmos is intrinsically cognitive [39].

The distinction between local and nonlocal is understandable. The entities not localizable in space and time are nonlocal. The entities which are prior to space and time are nonlocal. I wonder, how does non-local manifest locally? How does the will, wisdom, and experience come down in the observable, localizable biological and material plane as a signal and then manifest in the behavior of the systems through the brain or without a brain?

In this regard, I do not have any other answer, but “information”! Therefore, I think that the nature and science of information are the real flashpoints. Other arguments and explanation scan wait!

There are situations when free will and neural signaling do happen instantaneously. This happens in spiritual science, in the situation of God as a person. In fact, God is He, whose will unlike ours, manifests as the desired event instantaneously. A case study could be conducted on those who claim themselves as God-in-Person.

Neuroscience of Free Will is, therefore, to follow the vertical axis: Consciousness Cognition and Behavior [1]. Consciousness cognition and behavior is a vertical, two-way relationship. The trichotomy of the consciousness-mind-body has been replaced by the communicative connectivity between the three (Figure 1). Initially, such divisiveness of the indivisible is understandable in the approach. But with maturity, scientists have been leaning towards nested communicative connectivity, which is inclusive of complexity too.

The operations within the cognitive system and eventual interactions with neural infrastructures are complex. In a recent paper, the Supplementary Motor Area (SMA) of the cerebral cortex has been implicated in free will and personal responsibility [40]. This complexity in behavioral response is different from the complexity we are familiar with. What is this science of new kind of complexity?

New Kind of Complexity

The approach to usual complexity science is said to be an alternative to the reductionist approach. Complexity in biological reality is deeper as compared to the material reality since there are hierarchy of graded freedom, autonomous operators in addition to automated operations, and feed forward manipulations along with feedback control. Signaling of neuronal firings at different conscious states is complex [41-43]. Computational neuroscientists are familiar with this. A system is said to be complex when it is not

simple to explain. The science of such complexity is a branch of systems science that is holistic and non-reducible. There are several operators and operations executed by interconnected dynamics such as competitiveness, cooperativeness, dependencies, which maintain a hierarchical order. This hierarchy could be pyramidal, inverted pyramidal, tangled, and even labyrinthine. The complexity in cognitive organ, however, is not computational complexity but non-algorithmic complexity. This complexity is not with a usual arrow of time. This complexity operates in the domain of timelessness. The operational dynamics in this complexity are not propelled by any known force, field, or energy and, therefore, cannot be explained by any known law or principle of material science. Something still unknown has been missing in the core. That creates the element of wonderment! Often, there is spontaneous emergence from the identified complex system! Last but not the least; such complexity is difficult to model.

Within nature, there are complex systems like our universe, brain, organism, and ecosystem. In the man-made world, economics, and chaos are examples of complex systems. There are static complex systems too, for example, the honeycomb of bees. Once inside a complex system, it is difficult to come out of it. The human architects have tried to create such static complex heritage sites as the monument of the labyrinth. In India, such a monument is called Bhulbhulaya (e.g., Imambara in Lucknow, UP, India). There are so many crisscrosses inside it that for anyone who has entered inside it is difficult to get out. The guidance for navigation within such labyrinth comes from the ability of finer discrimination on the intensity of light; advised to choose the path on a crossroad towards where the light is comparatively brighter. Inside a biological complex system, on the other hand, the ability to discriminate between the degree of autonomy and automation is the guiding light. The more we adopt automation, the more we are likely to be in the trap of labyrinth, resulting in more enslavement by the complexity. More towards autonomy, the closer we are to the exit or emergence. Material complex systems mostly succumb to closure. Biological complex systems succumb at the end to what we call death.

What is the openness of biological complexity due to? One can surmise only at this stage. The author suggests openness to ZPE, neutrino particles, and the homeostatic ability of the live system to engage with dark energy and visible energy. All three mechanisms of openness are supposed to be interconnected.

As an example of a natural complex organ, our brain is not merely made of matter! As said earlier, the brain handles material, biological, and nondual realities. Within the brain there is material complexity responsible for automated behavior, biological complexity manifested as autonomous behavior and the complexity of nondual reality that could be judged by the degree of freedom in behavior.

Neurological Reality

Could the gap between NCC and 'Hard' consciousness be bridged?

Biological reality is central to all realities. Our biological body is our only mate and is also the address of our mind, life, self, and consciousness in the 4-D world till the time of death! Death, life, love, sex, and ego (conditioned existence) are important phenomena, absolutely elementary in nature that make the private facets of self create motivations [20], for the progress of biological reality and account for the liabilities and assets of the body biology. In the 4-D

world, biological reality is addressable in terms of wakefulness, dreamy sleep, dreamless sleep, sensory reality, perceptual reality, conceptual reality, experiential reality, and wisdom-based reality. Sensory reality is quantifiable. Others are not quantifiable. The source of wisdom in the biological reality is, however, un-quantifiable nondual reality.

Another biological reality is the ability to think. We do not think with information. We think with thoughts. What is the source of our thoughts? Do really all thoughts come from within the brain? The answer is not in the affirmative. All thoughts have a form, and that means a space-time construct. Space and time originate from information-split phenomena executed by the mind. In fact, what has been called in a linguistic popular sense as 'mind' could be identified in science by the operation and operator that is engaged in information-signal and signal-information transformation? The source of thought is information. Information could be formed within the brain by the mind from signals received through sensory conduits. Information could directly come to the mind from the pre-quantum environment around the brain. This is what has been described by the author as supracortico-cortical communication at the neurological level. Evidence has started accumulating in favor of this theory.

In the context of the function of the brain, neuroscience looks for neural correlates of such conscious realities for sensation, perception, thoughts, and experience. Proposed and furthered by Francis Crick and Christoff Koch, the Neural Correlates of Consciousness (NCC) have been defined as the minimal neural mechanisms that are together necessary and sufficient for experiencing any conscious percept [6]. This is considered by the scientists as the "holy grail" for neuroscience! True, when we have the data for all kinds of states of consciousness! We are to remember that there is a non-synaptic long-range signaling system within the brain too [44]. Proper zeroing down on NCC for different experiences requires massive work with the available technology such as fNMR, PET scan, magnetoencephalography, etc. Brain scans using fMRI in an infant's brain [45], during near-death experience [46], at the spurt of various emotions [47,48], during sexual arousal in women and men including orgasm [49], have been recorded with consistence. Finding out NCC during self-transcendence [50], and various meditative states (inclusive of Love) could be found in the extensive works conducted by Davidson and his team [51-53], and others [54-56]. All said and done, the definitions and boundaries of fNMR-specified regions are complex and context-dependent. There is so much overlap that a single brain network "has more aliases than Sherlock Holmes", (L. F. Barrett in Quanta magazine) [57]. It has also been found out that for taking decisions inside the brain, there are dictator neurons for some tasks, a team of neurons for another task, and Sherrington's "million-fold democracy" for some other tasks [58].

Evidence for supracortical influence on the brain has started accumulating [59-61]. Circadian redox rhythm has an influence on neuronal excitability [62]. Supracortical dimension is not observed in our 4-D world, but some kind of shadows has been identified in recent brain scanning studies. Such multidimensional 4-D concepts are already well known in physics [63]. A very recent study points towards the brainstem periaqueductal reticular grey column in the spiritual belief system [64]. This area is evolutionarily conserved and is meant for behavioral expression of love, altruism on one hand, and experience of non-phenomenal minimal consciousness on the other [65]. For investigation of environmental communication with this area, we are to delve beyond the neuro-doctrine and beyond the

quantum doctrine of consciousness! For the time being, this could be holographic information doctrine at the event horizon of the brain and the universe.

Consciousness itself is hard to crack. In this context, we are reminded of Albert Einstein, who was supposed to know almost every law of material nature. However, he was aware that he did not know what God's will was! Willing or won't is a prerogative of operational consciousness, even when in a brain-bound state. The author is emphatic on the view that the brain is not the source of consciousness. It is the consciousness that uses the brain for its manifestations. The science is to frame the right questions to address such issues such as how from a non-dual non-qualifiable state appears quality, and how this quality expresses itself through the brain in quantifiable patterns.

What could be the layers between the neural signal pattern and conscious experience? The layers have been described by the author earlier [1,37]. The terrain stretching between signal to will and from the will to signal could be described along the ladder of cognition! Environmental signal produces sensation. Application of the mind leads to perception. The self helps to build up concepts from the percept. In the concept, there is the symmetry of knowledge. With the symmetry-breaking and symmetry-making processes in life, knowledge is transformed into experience. Experience is system-bound. Multi-systems concurrence is what is called wisdom in common sense. Therefore, in the context of neuroscience, the sensation is in the neurons. Perception is in the mind. Conceptualization is within the self. Experience is in the fabric of life. Wisdom is on the top of the brain (head). Sensation, perception, and even concept building could continue without any inside-outside communication by the brain. NCC is easy to find out for such phenomena. As one goes a notch above knowledge, to the level of experience, communication between brain-bound consciousness and brain-independent consciousness is essential. Experience is bi-hemispheric and always requires overhauling of the brain by inside-out and outside-in phenomena (Figure 11). Without this communication, the experience cannot happen. The location of wisdom is mostly at the boundary of the systems. In the context of the brain, it is in the cloud around the supracortico-cortical catchment zone.

Axiology Changing with Developments of Cognitive Concepts

Any framework for a science of consciousness is expected to have its invariant axiology. Figure 12 shows changing axiology in concurrence with the transformation of science.

The bottom-up approach in the brain-mind-consciousness worldview of prevailing science becomes top-down as consciousness-cognition-behavior in science, which has been transforming. In the new science of consciousness, axiology becomes bidirectional, with fusions of ontology and epistemology, phenomenology, and axiology. Phase-conjugation of mind-made divisions at various levels of nature-consciousness creates a picture of reality, which is Indivisible.

Perspectives

We have presented an unbroken wholeness of nature-consciousness, with cognizable divisions of the indivisible. The canvas with three principal organizers, EM (the Essence of the Multiversity), SNOG (Supraneural Organizing Centre) and SMOC (Supramolecular Organizing Centre) form an unbroken Reality (Figure 7) accommodating consciousness-as-such (Spirit), consciousness-as-

experienced (Humanity) and consciousness-as-articulated (Science) (Figure 1). The criteria of sustainability of any axiology, although, are different for science, humanity, and spirit, there is little doubt on the sustainability of the axiology described here for all science humanity and spirit! We get the Akhanda Worldview for doing science.

In systems science, this axiology of reality also takes care of issues such as (i) governance, (ii) ownership, and (iii) economics of profit and loss in the expressed behavior.

Issue of governance

We are embroiled in questions like what governs the input-outcome. What all ontological entities and/or their processes have the governing power? What is the hierarchy governing such a system? For an answer, we look forward to axiology of consciousness. What has the decision-making power? Who owns the responsibility for the decision? For the answer, the focus turns on what all are there in the governing body? Who makes the final call? One has to zoom in on the cognitive orchestra, its faculty, and operations. Mind, self, life, and consciousness cannot be considered as external agencies. They are part and parcel of the systems. They own our brain as their systems home, and take responsibility for the decision.

The ownership issue

There is a prerequisite of a definite boundary for me-and-others distinction, for the distinction of the organism from its environment! An envelope is necessary for the independent operation by the systems. The science still does not have the knowledge of the mechanism of envelope formation in two situations. First, the epochal phenomenon of how the materials of metabolome and genome are brought within an enclosure of cell envelope. Second, how the cognitive faculty own the brain or similar infrastructure to operate as systems psyche within the systems brain. We do not have the knowledge of how much of this envelope of the systems could be pushed, how much of it could be made selectively porous, and how and when the envelope should be dissolved to embrace the total reality! The experience of no boundary leads one to the largest intellectually comprehensible systems, the systems of multiple universe(s), The Multiversity.

The issue of behavioral economics; profit and loss

The axiology of nature-consciousness reality as described here accommodates the whole in terms of sensual, perceptual, conceptual, and experiential reality in the context of non-qualifiable abstract nature of nondual reality. The brain is used for the execution of the perceived reality in behavior, articulation and gesticulation included. Depending on the porousness of the boundary, the cognitive faculty opportunistically uses the brain with minimized loss and optimized profit looking at the evolutionary advantage in manifest behavior.

Virtual reality

This paper is on the Multiversity-inspired nature-consciousness reality. We have not discussed the artificially created reality of metaverse, the online virtual reality based on the metaphor of the real world. Virtual reality, however, has been changing the perception of the world, but not the fundamentals of the universe! Virtual reality has educational value. It has also value in the investigation of the terrain which is not directly approachable (e.g., hyperspace). Simulation experiments have brought worthwhile data in science. However, the cautioning note is that virtual reality is not real! Also, it is to remind the readers that there are psychological, psychobiological, and

Figure13: An Alternate way of Classification of the Disorders of the Cognitive System.

DISORDER PREDIMINATELY INVOLVING ONE SINGLE FACULTY OF COGNITION:

Disorder predominantly of Mind

Disorder of identifying signal from Noise; Inebriated state, and confused states of mind, incoherent thoughts and delirious articulation (e.g., in Acute Korsakoff psychosis), incoherent dream, dyslexia
 Disorder of converting signal into Information; Disorder of Perception, e.g., Illusion, Hallucination and Delusion
 Mind acting as internal sense organ; Extrasensory Perception, outside information directly acting on mind
 Disorder of Thought and thinking
 Disorder of semantic memory; Its formation, storage and retrieval
 Disorder of Patience
 Disorder of sphincter control

Disorder predominantly of Nature of Information

Information malware within mind, corrupting or damaging established programs and programming process
 Disturbing information operating through mind
 Inner Voice; Inner information directly expressed through mind
 Information Overload leading to *Information Encephalopathy*: Morphology: Misfolded proteins in Endoplasmic Reticulum of neurons and glial cells in the rain (ER stress in neurons and glial cells)]

Disorder Predominantly of "Self"

Multiple self, divided self, self-talking
 Disorder of episodic Memory; its formation, storage and retrieval.
Déjà vu, Déjà vecu, Jamais vu (never seen before) etc.
 Disorder of private facets of Self; Motivation, Phobia, Depression
 Disorder of formation of concept from percept (disorder of learning)
 Disorder of flow of logic and development of wholistic perception and conception
 Anergy homeostasis; Stress

Disorder predominantly of operation of "life"

Emotional disorder
 Disorder of feelings, emotion, experience and mood
 Anxiety, triggered by uncertainty sensing
 Depression, triggered by sensing loss of symmetry in life.
 Disorder of inefficient conversion of dark energy into visible energy and vice versa

Disorder predominantly of function of Consciousness

Graded loss of Consciousness in patients (Glasgow Coma scale)
 Four defined unconscious States with their characteristic features are shown below

Unconscious State	Awareness ****	Sleep-Wakefulness Cycle***	Meaningful Behavior**	Reflexive Behavior*
Minimally Conscious State	Intermittent	Intermittent	Seen	Present
Vegetative state	ABSENT	present	ABSENT	Present
Comatose State	ABSENT	ABSENT	ABSENT	Present
Brain Death	ABSENT	ABSENT	ABSENT	ABSENT

*Only signal transmission is at work, neural pathway is intact, ** Mind is working (e.g., control of sphincter, respond to command), *** Life in the cog of cognitive labyrinth, **** All life, self and consciousness are in operation
 In vegetative state, Consciousness-Mind axis is also broken. Absence of meaningful behavior and awareness

Disorder of Will; Locked-in Syndrome. Akinetic mutism
 Disorder of Cognition; Disorders of Attention and Concentration, Premonition, Precognition, Metacognition
 Disorder of developing and execution of Skill
 Disorder of Inter-Systems Communication (Hypersensitivity to criticism, provocation)
 Disorder of Imagination; Hypochondriacs (False imagination of presence of disease)
 Disorder in perception of Higher Reality (This emerging area needs a close watch)

DISORDER GENERATING OUT OF EXCESSIVE CONTACT WITH VIRTUAL REALITY

Perception disorder
 Attentional disorder
 Sexual disorder

DISORDER OF OUTCOME OF COMBINED OPERATION:

Disorder of the outcome from the combined Operation of Self-Mind-Memory

Disorder of Intelligence

Disorders of the outcome from the combined Operation of Life-Mind-Information

Disorder of Emotion; Anger, Fear (Phobia), Hatred

Disorder of the outcome from the combined Operation of Self-Life-Consciousness

Disorder of Sleep-Wakefulness
 Insomnia, Narcolepsy, Lucid Dream/Day dream/ Disturbing dream, Imagination etc.
 Disorder of Awareness
 Disorder of Experience
 Disorder of Choice
 Disorder of making Decision

Disorder of the outcome from the combined Operation of Consciousness-Self-Life-Mind

Disorder of Attitude

Disorder of Consciousness-Self-Mind-Information

OCD

Disorder involving Life and Self

Misplaced Purpose
 Melancholia

Disorder involving Consciousness, Self, Life, Mind and Information (Pan components of Psyche)

Disorder of Cognition (Age-related, Substance/Drug-induced)
 Motivational disorders
 Stress and Anxiety

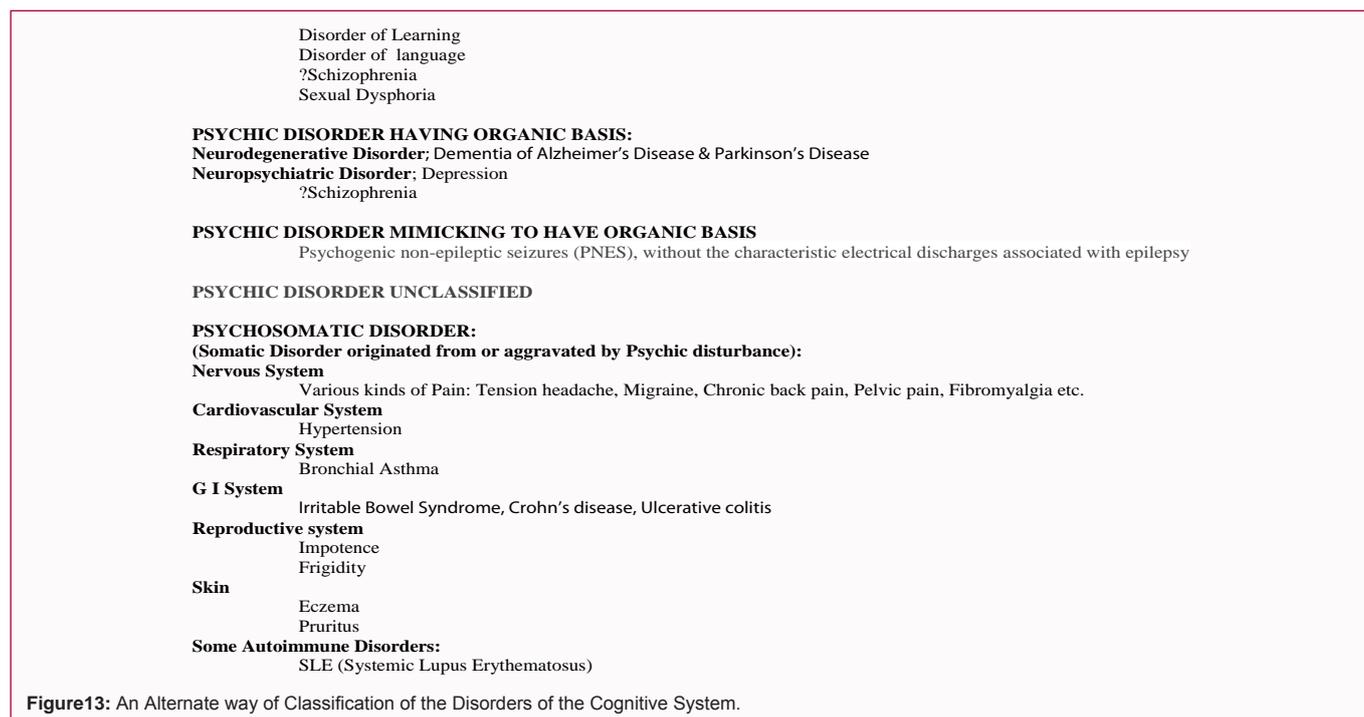


Figure13: An Alternate way of Classification of the Disorders of the Cognitive System.

psychiatric disorders generated out of excessive contact with virtual reality.

Impacts of this Axiology in Psychology and Psychiatry

In the twentieth century, Sri Aurobindo from India envisaged 'greater psychology' in coming. We are at the beginning of new psychology extending from SNOC to SMOC (Figure 7), Supraneural Organizing Centre outside the brain to Supramolecular Organizing Centre inside neurons and every cell of the body. This new psychology is greater in its dimension, fathomless in its verticality, and richer in its elementary contents, composition, and mechanics. The root cause of psychological problems and psychiatric diseases is broken axiology in the perception of reality. Psychology and psychiatry are in demand of a new classification of the problems and the disease. An alternate way of classifying disorders of systems psyche has been shown in the (Figure13).

Doing science generally means going from periphery to center with a goal for generalization from the evidence-based particular events. What at present we need is a Deep Science across ZPE and across the boundary of the universe (systems brain), that describes how the event becomes a reality since its inception in "will", and to collect evidence for every step of it. For making a new event, when and why "will" arises within consciousness is another deep research question! What is the source of intention hidden within the will? The cognitive decision is neither fully automatic nor fully democratic. Nor it is entirely teamwork! Deep Science is meant for making a science of such decision-making process along the axiology as proposed. Scientists are looking for a deeper relationship between cognitive ripples and metabolic processes [65], between SNOC and SMOC. How science addresses such issues would be interesting to watch.

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