



Non-Observable Influential(s) in the Domain of Consciousness

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There are non-observable factors, which influence behavior of a living system at the observable level. If science has to be expanded beyond Planck's scale of measurement, then these non-observable influential(s) are required to be conceptually defined, localized and described. Their operational mechanism is to be explored. This paper precisely does this by identifying those influential non-observables as consciousness, mind, self, life-principle, and information. Information, in fact, remains the connecting link at the interface between non-observables and observables. When these non-observable influential(s) could be given a place in the algorithms of science, several research questions and hypothesis could be generated leading to an environment for fruitful consciousness research.

Keywords: Consciousness, Mind, Self, Life-principle and Information, Composite Model of Psyche

Introduction

As long as a branch of science offers an abundance of problems, so long is it alive; a lack of problems foreshadows extinction or the cessation of independent development. (David Hilbert in Paris, August 8, 1900)

Why consciousness research is not welcome by mainstream science? It is because consciousness cannot be observed or measured. The dictum is, "Measurement is science and science is measurement" (Madam Pierre Curie). Similarly, mind too cannot be observed or measured. So are also "self" and life as life-principle. All of them work from the domain of nature, which is beyond Planck's scale of measurement. According to the mainstream science, therefore, a couple of "ghosts" dominate the research in consciousness. Consciousness research is meant only for those who love to work with such "ghost"! As long as it does not shed its ghost-like character, consciousness cannot be a part, as non-eliminable factor, of any algorithm of science, or can be considered as an essential factor in descriptive or analytical epidemiology of any scientific pursuit! However, in such assumption we undermine the fact that electron, positron or photon or neutrino in particle physics has also never been observed. However, one has not eliminated their existence as matter/energy. Had not their properties being adequately addressed in science, quantum physics would not have seen the light of the day.

Electron, positron or photon or neutrino although cannot be observed, their effects could be observed inside a bubble chamber and also at the classical level of measurement. Photon, to start with, also perhaps had been seemed imaginary, elusive and nonlocal, which later found a place in science! How? This is because photon as a scientific concept marked its place and got "localized" in the conceptual realm of first in one person

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and then in several scientists. Several of like-minded investigators of equivalent intellect sat together, discussed, proposed, analyzed and reached a consensus on conceptual description, narration of characteristic properties and operation of photon and of several such similar energy wave/particles. This was followed by another conceptual development by establishing the specific abstract relationship between such invisible particles. The relationship when agreed upon was expressed in terms of abstract mathematical equation. Based on this relationship or mathematical equation, predictions were made which were found to work with visibility within the bandwidth of senses. The unobservable relationship between invisible particles works sensibly within the observable realm that could be measured and therefore made sense of it in third person's perspectives. Wow! The first person's experience had gone through the phase of mutual agreement of several second persons and then the predictions made out of such existence were seen to work as third person's observable! The scientists in this way have developed a science called quantum physics!

When we try to develop a science of, or science for consciousness we are practically into far depth of this nonlocal, non-observable and non-measurable realm. This is the realm of nature, which is beyond Planck's scale of measurement. There are several factors which, although are non-observable and non-measurable, participate as witness, also influence, control and modify several operations at more visible levels. However, so far there is no precise identification of those factors, no conceptual localization, no description of their properties and operation, no understanding on the purpose of this inter-level interaction and therefore, there is no consensus on the whole issue. As a consequence, there is no universal common language to express the relationship, which is essential for developing a science inclusive of this realm. However, it is unwise to discard those influential factors merely as 'ghost'. One should have the courage and zeal to address such issues. What is required is to begin work on the following lines:

- (1) Identification of non-observable factors which influence observable parameters;
- (2) Analysis of the Purpose of such inter-level connectivity;
- (3) Conceptual description of each non-observable factor and its operation, solo as well as interactive;
- (4) Consensus building on the conceptual description and operation amongst people of equivalent intelligence; and
- (5) Development of an expression in common universal language.

The first three steps will be the content of this paper, leaving it with expectation that last two steps would follow in due course of time.

Identification of Non-Observable Factors, Which Influence Observable Parameters

Non-observable factors, which have influences on observable behavioral parameters, could be easily found to operate in the living system, say in a simple life-form or in more complex organisms including us, human being. Since such factors have apparently no influence on non-living or on inanimate system, it might be stated that to begin with non-observable factors might not be so relevant for physical science as it is for living system. Whether the cosmos, universe or the system of multiple universe(s), the multiverse, are living system or non-living entity is also open to inquiry.

Non-observable factor has often been sarcastically termed as "external agent" or some "agency", which often influences the well-defined physico-chemical dynamics at the observable level. Inside the system they are often described as "phantom" or "ghost" in the system. Their existence is evident from unpredictable behavior of the living system, from the major difference in behavior between living system and non-living entities and

the profound distinction in behavior of every single individual living entity even when those belonging to same species and culture and working with similar physico-chemical dynamics at the material level.

In this paper, we identify the so-called “ghost” not as just one but four in number. Those are consciousness, self, mind, and life-principle. Consciousness is the emperor of all “ghosts”. It works with other members with defined SOP (standard operative procedure). Consciousness is visibly manifested in a living system. A living system is conscious. Life and consciousness are closely related. Consciousness works with mind and with its designated representative in the system, self. Self is the operational head of the system and is categorically identical to consciousness. Consciousness handles information with its mind. However, it handles phenomenon through self. Self has the ability to choose and a capacity to have will. The operations of self and mind are connected through and influenced by what is going on in “life”. While consciousness mostly remains on the background, not as an inactive or non-participating ground but as one that is influencing and participating, the self, life-principle and mind keep on operating on the foreground (see Figure 1).

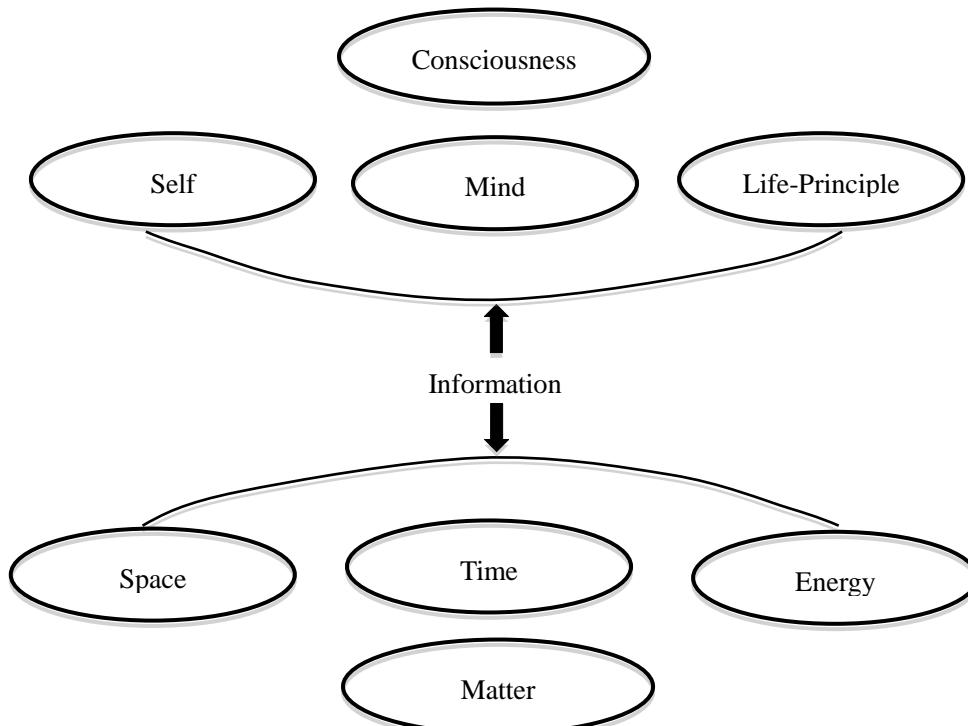


Figure 1. The non-observable factors are connected with measurable and observable factors like space, time, matter, and energy through operation of information.

Analysis of Purpose of Such Inter-Level Connectivity

At observable level, which is comprehensible by our senses (as such, or as aided by instruments like microscope, stethoscope, telescope or sensors etc.), the important parameters are time, space energy and matter. They have their own specific dynamics on the basis of description of which the physical science has been build-up.

However, when these four observable factors operate within a living system, their operation is influenced by four non-observable influential(s) as mentioned above. Non-observable influential(s) within the living system are not ghost or phantom! They are real, although non-observable. The management gurus are aware that this is not merely a statement of assertion but is a reality to explain the major differences in behavior of

different self-organizing living systems. The best out of an individual can come out only following deft maneuvering of those non-observable factors operating quietly within him. It requires dexterity and proper expertise for handling them when subjected to phenomenological or informational challenge. We all are familiar with the phrase, “It is all mind game”, “self-confidence which matters most”, and “You are sure to win when you take it as a life-or-death situation”. We ask for “psychological” training of the players before a football or cricket match only with an objective that the players could use their non-observable influential(s) with deft and dexterity.

The connecting link between the observable behavioral parameters and non-observable influential(s) is the operational mechanism of information. An adequately informed system can manage “self”, others and the environment. Information works in both observable and non-observable domains. Once we know more about information and its mechanics, the connection between two domains would be clearer.

The purpose of this inter-level interaction in primordial level of life-form is essential for keeping the matter and its organization in the “living state”. Once this interaction stops, the matter within the living system has no difference with the matter in non-living state. Further, this interaction is also essential to handle, reject, adapt or cope with numerous informational and phenomenal inputs into the system from environment. Finally, this inter-level interaction is necessary both for evolution of the system and for passage of information to the next generation of the living system.

Why Establishing This Connection Between Non-local and Local Is so Important for Science?

Investigation of how nonlocal, non-measurable, and non-observable influential(s) connect with local, measurable, observable players like energy, matter, space and time to change the behavior of the system is profoundly relevant in science of healing; healing of an ailing system, ailing cell, ailing human being, ailing planet and its environment. Healing occurs because the ailing system is brought in resonance with the whole. Physicians in the mainstream medicine know the dictum, “Doctors dress the wounds. Wound is healed by nature”. The healers in the discipline of complementary and alternative medicine are more aware of this phenomenon. They regularly use this nature’s law in healing.

How nonlocal entity like consciousness, self, mind, life (as life-principle) and information get “encased”/“confined”/“caged” locally within the space-time boundary, howsoever evanescent the boundary may be, is the issue of embodiment of “nonlocal” into “local”. Another issue is how in natural system, “nonlocal” operationally connects with “local”? On the later issue the research question will be how nonlocal Influential(s) operationally connect with local observables within the system to bring measurable change in the behavior of the system? The Research hypothesis in this context would be, it is done through holographic information transfer across the boundary of the system. To make an attempt to prove or falsify and to offer an alternate hypothesis will be the beginning of catching the thread of consciousness research.

Conceptual Description of Each Non-Observable Factor and Its Operation

In this section we will describe the non-observable influential(s) each on four headings; concept, location, operation and characteristic properties. The narration although might appear to be a series of statements, is, however, important for making a beginning. This description is tentative where the first person’s “experiential” has been conveyed in Third Person’s “sensible” perspective.

Consciousness

Concept. Consciousness cannot be defined. As a non-negotiable imperative, consciousness can be qualified. Consciousness is the ground without any background. Unlike any other ground it is an active and participating ground. All activities happen on the foreground of consciousness.

Consciousness is impenetrable for science. However, consciousness also has a nature. To investigate nature is a prerogative of science. Nature of consciousness is epistemic consciousness and comes under purview of science. Nature of consciousness could be called “mother nature”, which could also be called the operational front, mobile facet and kinetic pole of consciousness.

Consciousness as ontological entity, in contrast to mind, self, life and information, is immutable and is an “inviolable constant” that “operates” in silence stillness emptiness and nothingness. Consciousness is just like a spider, which weaves the net but itself is outside the snare of the net. The “signature” of consciousness is found in simultaneity, continuity and identity of events. These three characteristics have been related to “symmetry” “complementarity”, and “superposition” at quantum level by Siegfried Bleher (personal communication, 2013).

Location. Consciousness is nonlocal in respect to time, space and causal matrix. It is everywhere. As it is not observed, consciousness is told to be nowhere. Consciousness becomes functionally more observable in proximity of “life”. Amongst several living cells and tissues it is functionally more observable in proximity of neurons and groups of neurons, which has been called the brain. “Consciousness-as-such” does not have any neural correlates but conscious experience has. Some of the experiences have already been defined with PET(Positron Emission Tomography) and fNMR (functional Nuclear Magnetic Resonance). Many other such experiences are under investigation in neuroscience research.

Operation. Rationality of operation of consciousness could be easily understood by observing the difference in behavior of an unconscious person as compared to a conscious person. The anesthetist in the operation theatre, the doctors working in the post-operative recovery room and the physicians at ICU (Intensive Care Unit) of hospitals have been dealing with this phenomenon of consciousness regularly. Also it can be understood from a subject with disturbed sleep or having jet lag after transcontinental travel experiences with his disturbed ground state of consciousness when he experiences difficulty to apply his mind or self in any work. In fact, the discipline of sleep medicine can contribute a lot towards understanding this ground state of consciousness.

Consciousness at abstract level remains in its own poise in absolute freedom, in absolute ease, independent of its surroundings and in a non-interfering but in witnessing mood. Consciousness remains as a silent witness of all happenings in the foreground. Consciousness hides itself and its own modus operandi from the factors/players in the foreground by its deepest level of nonlocal properties and by creation of an illusion through a network of information. It upholds all diverse activities together with conformity, coherence, dynamicity and openness and simultaneously maintaining their sovereignty and independence. It is consciousness which makes will. Consciousness chooses. Consciousness offers autonomy to any subsystem, which has achieved a desired level of perfection. Consciousness is creative. Creative resolution is the outcome of involvement of consciousness in conflict management.

Consciousness works through “self” and mind. The joint venture of conditioned self and mind is expressed as intelligence.

Consciousness is not seen to respond to any known kind of stimulus, may it be energy, information or

phenomenon! Consciousness is understood to be sensitive to the process of disarmament of conditioned properties by any entity! It responds to the process of surrender of properties. How consciousness asserts its supremacy over self, life, mind, information and matter by dislodging their conditioned properties and dressing them up as and when necessary seems most difficult question for science. Besides responding to the process of surrender, consciousness also intervenes in the presence of imperfection in the system, which has been brought to its notice. Correction of the systems whole is a function of consciousness. Consciousness also actively responds to the evolutionary imperative of the system.

Important properties. The distinctive properties of consciousness and mind have been summarized in Table 1.

B. Mind

Concept. In material or consciousness monism there is no room for mind! Mind arises with duality. Mind cuts consciousness into two. Mind is the organ of communication between two conscious systems. Mind is categorically different from matter and consciousness. However, it remains in the center of the spectrum of consciousness-mind-matter. One end of mind merges with consciousness and the other end with the matter.

Location. Mind does not have independent existence. Mind exists in the duality, between two conscious systems. Mind is there between two communicating cell-consciousness (say neurons), between collective consciousness of two groups of cells or between two communicating organs (between the brain and the universe), between consciousness of two subjects. As there are different layers of consciousness, so there are several layers of mind in between! The mind with the duality of consciousness may be found between two “states”, two “planes”, or two “levels” of consciousness. Also, the mind works between subjective and objective consciousness.

If we accept that each and every neuron forms the unit of consciousness in the brain, then the tentative seat of mind is in the synapse. This could explain how a change in the synaptic chemistry could be the cause of a change in the mind. For example, low serotonin at the synaptic level leads to a depressed state, cannabinoids to euphoria and hungeriness, opioids to analgesic state of mind.

Gazzaniga and LeDoux (1978) demonstrated that two cerebral hemispheres have independent “mind”. In some commissurotomy patients interfering and opposing commands could be issued by each hemisphere.

Operation. Mind acts an organ of communication between two conscious systems. Mind itself is sterile but becomes potent in functional connection with consciousness/self. Mind is sensitive to information. Mind receives and processes information as programmed by self. Mind cannot read the meaning of information. Information processing includes operation like sorting out and prioritization of information. Perception discrimination and so-called decision making property of mind are properties borrowed from self. Mind stores the memory of information (semantic memory). Mind could act as internal “sense” organ through its direct access to information.

Mind cannot handle phenomenon per se but can handle phenomenal information. Information impregnates mind. Regarding conceiving information, fecundity of mind comes from its association with consciousness while infidelity of mind originates from its association with matter. Mind is creative in association with consciousness. Mind splits information into form (space, time) and energy. Space and time are creation of mind, so also is the information-based energy. “Electrification” of the audience by the speech of a great motivator perhaps could be a visible effect of this information-based energy.

Thompson (2007) distinguishes between “heteronomous information processing” and “autonomous meaning construction”. It may be said that “heteronomous information processing” is a function of mind. “Autonomous meaning construction” is a function of self.

Thompson proposes a deep continuity theory of mind and life. However, mind does not accompany the transmigrating “self” following death of the body. The deep continuity theory of Evan Thompson, in this sense, is actually followed or obeyed by self and not by mind. Deep continuity of self, and not of mind, explains why we all are bereft of any memory of information of past life! This also throws light on a possible way the imprints of experiences tagged with migrating self work in the next life as what eastern spiritualists recognize as “samskar” in the context of “karmic” laws.

Self, mind and life-principle are deeply connected with consciousness and their journey reflects co-continuity. Operationally, life-principle, information and mind form a triplex helix. The operation of information, operation of mind and the operation of life are intertwined. Self and mind jointly works as intelligence. Mind and consciousness are connected by operation of “life”.

Important properties. Mind’s own property is to act as an organ of communication between two conscious systems. Property of information processing and retaining memory of information are also properties of its own. Mind has the ability to act as internal ‘sense’ organ. The exceptional ability of conceiving information and delivery of space time and energy almost endlessly, a manifestation of fecundity, is a property borrowed from consciousness. Infidelity of mind regarding conceiving of information is a property borrowed from its connection with matter. The strength of mind comes from its connection with life-principle. The mind owes its ability to perceive, discriminate and decide, to self (see Figure 2).

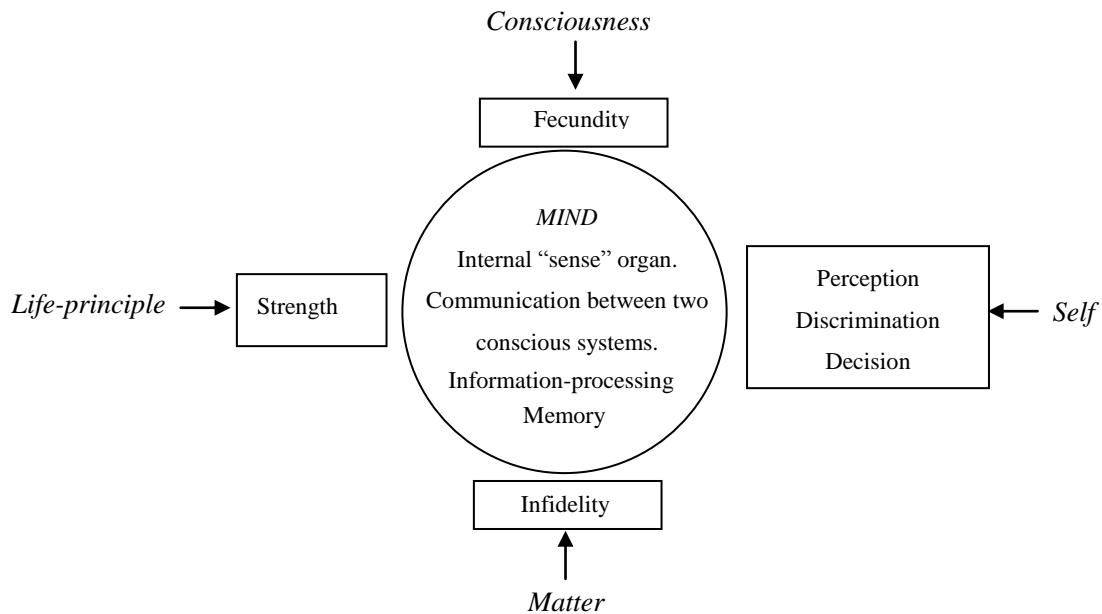


Figure 2. Mind’s “own” (within the circle) and “borrowed” (within the boxes) properties.

Distinctive features of mind and consciousness are shown in Table 1.

Table 1

Distinctive features of Mind and Consciousness

Mind	Consciousness
Basic difference 1. Ontologically of lower status 2. Substance category is different from consciousness 3. On deeper side, mind transits to consciousness. On superficial side, mind transits to matter 4. Mind works on the ground of consciousness 5. Mind originates, evolves, degenerates, dissolves, and also regenerates	1. Ontologically of higher status 2. Substance category is different from mind 3. Consciousness transits to mind on superficial (outer) side 4. Consciousness is the ground without any background and is independent of all foregrounds 5. Immutable
Operational difference 1. Mind works as an organ of communication between two conscious systems 2. Mind cannot proceed without making distinction 3. Mind operates on its past energy 4. Mind retains memory of information 5. Mentality, left alone, leads to exhaustion or chaos	1. Two conscious systems work through mind 2. Consciousness proceeds from unity and works with unifying principle 3. Consciousness is teleological, starts afresh 4. Consciousness retains memory of experience within the “self” 5. Consciousness relieves from exhaustion and could bring order when working with life-principle, information and mind
Difference in important properties 1. Mind does not have intentional property 2. Representational property is in mind 3. Metamentation, the ability to reflect upon its own, is limited 4. Mind can act as internal “sense organ”. This property is best observed during dream	1. Consciousness is intentional 2. No representational property 3. Metacognition, the ability to reflect on its own content, level, state or creation, is a property of consciousness 4. Consciousness is never a sense organ. It also does not dream
Difference in the context of Information 1. Mind receives and processes information. Analysis, prioritization and action on information are done in consultation with “self” or according to program made by “self” 2. Mind can split information into form/image and energy 3. Using computer-metaphor, it may be stated that the matter is the hardware and mind is the software 4. Mind could never be information-independent 5. Without its connection with consciousness mind is sterile, cannot conceive information or deliver space, time and energy. Mind owes its fecundity to consciousness and infidelity to matter	1. Consciousness participates in generation of information. Self programs the processing of information within mind 2. There is dissolution of all information within consciousness 3. Using computer-metaphor, this may be said that consciousness is the software and mind the hardware 4. Consciousness is always information-independent 5. Without mind, consciousness is non-analytical and even non-rational. Mindless consciousness is silent and non-communicative. Mind connects consciousness with the matter
Outcome 1. From mind comes out space, time and energy 2. Local science is the outcome of predominate activity of mind	1. Intention, purpose, information, mind, life-principle, and self, all are outcome of consciousness 2. Nonlocal science is the outcome of predominate activity of consciousness

Self

Concept. Self is the operational head, particulate form of consciousness, informationally conditioned, customized to work within the constraints of the system. Self is categorically identical substance as consciousness. Self could also be called the holograph of consciousness. Self is the centre of irreducible subjectivity. Self is also the centre of phenomenology.

Conceptualization of self is incomplete without mentioning of its private facets. Self is immediately surrounded by its five private motivational facets, which are nothing but imprints of five “elementary phenomena” involved in self’s separation from unconditional consciousness. Those are sex, love, ego, life and death. Sex as a phenomenon is primordial creative force, love at primordial level represents the phenomenon of

the desire for sharing, and ego is the phenomenon of conditioned existence. Life as a phenomenon signifies an adventure in independence and death indicates evanescence of conditioned existence, to realize both “above” (heaven) and “below” (earth). This elementary phenomenology, which had worked during separation of self from unconditional consciousness, is still on operation sandwiched between surface phenomenology of material world and depth phenomenology of consciousness (see Table 1).

Localization. Self is also nonlocal. It is the self of any self-organizing system. In whole nature-consciousness spectrum self can travel through any nest; classical nest, quantum nest, sub-quantum nest, nest of nature of consciousness. Once stripped of all its properties, self merges with consciousness.

Inside the brain, self could be localized at different parts of neural structure depending on the level of being-conscious. Localization of self with neural correlates could be specific for that conscious experience. PET and fNMR have shown different locations of self inside the brain. Pregenual anterior cingulated cortex has been suggested to be the seat of self-consciousness (Dahlberg, 2011).

Operation. Freedom of self is determined by its conditioning information. Self is ever awake, and in contrast to mind, never is in sleep mode. While mind dreams, self experiences the dream. Self is sensitive to and responds to phenomenon and phenomenal information. Self cannot process or store information. Self programs mind to process information. Self reads the meaning of information. Self experiences and retains the memory of experience (episodic memory). Self selects from options. Self rejects and chooses. Self takes decision. Self can be motivated through its private facets; the leftover imprints of five elementary phenomena namely love, sex, ego, life and death. As said earlier the joint effort of self and mind is what is known as intelligence. The transition from self to consciousness involves stripping of its conditioned properties and the process of surrender.

Important properties. Contrasting features of Mind and Self has been shown in Table 2.

Table 2

Contrasting Features of Mind and Self

Mind	Self
1. Categorically different form consciousness, displays more “feminine” property	Belongs to the category of consciousness, displays more “masculine” property
2. Mind is active in awakened and dream states, quiescent in deep sleep state. Mind is not capable of having any experience in awakened, dream or sleep states	Self is ever awake, does not sleep. Able to experience. Self is the experiencer in awakened, dream and deep sleep states
3. Main function of mind is to process information and store information. Mind cannot read meaning of information	Programming of information processing is done by “self” Unable to process or store information Can read meaning of information
4. Mind is inept in handling phenomenon and, therefore, cannot experience!	Self is sensitive to phenomena and can have experiences
5. Retains memory of information	Retains memory of experience

The difference between organizations by self and mind could be understood a bit by looking at the difference of quality in presentation of a professor and that of a new resident doctor on the same topic. The former is based on experience and the later is based on downloaded web information.

Psychology in Quantum Physics: Role of Consciousness, Mind and Self in interpretation of Wave function collapse!. Interpretation of wave function requires clear understanding of the functional role of consciousness,

mind and self in the process of observation. We also are to be clear what we mean by a wave? During the period of Copenhagen interpretation there was no clear understanding of self, mind and consciousness amongst the stakeholders. The terms like, mind and consciousness were probably used synonymously and use of the word “self” in science meant transgressing to phenomenology. Many hard-core physicists were not familiar with the self in “self-organizing system”. This mind-set still persists. And therefore, many new interpretations are still coming!

The proverbial concept, “consciousness of the observer collapses a myriad of possibilities into an actuality”—may be alternatively looked in the following way.

Ontological consciousness is the ground, not an inert but participating ground. However, it rarely intervenes in any operation. It usually plays a role of witness. Intervention by consciousness is called upon on three occasions: (1) when an imperfection in the system is brought to its notice; (2) when any entity surrenders its properties to consciousness; and (3) when there is a need to scrutinize and help the evolutionary imperative of the system.

Wave, as we see, is space per time, i.e., space/time. Wave is not beyond space and time. Beyond space and time there is no wave. Beyond space and time, there are information, not isolated but as information manifolds. Who is the observer of this wave and of pre-space pre-time domain? Not certainly mind! The observer is the representative of consciousness within the system, what is called “self”.

The self, elevated to make observation at this level, is bewildered in midst of endless probability waves. Number of information is directly proportional to number of probable states. The bewildered “self” in search of a meaning during observation of such a situation, to get into a sharp focus, calls on his friend mind. To put it in other way, self identifies myriads of information behind the veil of myriads of waves and, itself being incapable of handling information, looks forward to mind for assistance. Self is capable of experiencing, while mind is capable of handling information. Depending on its evolutionary status, the mind conceives the intended information, only one at a time, to make information’s inside out. The “form” inside information comes out as a result of inside-out phenomenon executed by mind. Mind itself remains potent due to its functional connection with consciousness. The energy is released which is responsible for movement of the “form”. What sense organ can perceive are “form” and movement. From information, which seemed non-sensical, something sensible comes out as “form” and movement.

There is no collapse of wave function. Wave remains as it was before. If anything has happened during observation, it is not transition of quantum world to classical world but a leap of activity of self and mind into information world. It is followed by conversion of this information of nonlocal domain into a sensible “form” and movement of observable domain. The “veiled” non-locality has been made “local” by action of self and evolved mind, potency being bestowed by consciousness. As information functionally reduces uncertainty and brings determinism, it is easily mistaken as collapse of probabilities into actuality of classical world.

The use of words like “evolutionary state of mind” is to indicate that if the mind is not-that-evolved, it does not (because, it cannot) pick up any information from behind the veiled non-locality and sits idle like a zombie.

In absence of observation by human self, mind or consciousness, waves just shake hands (as cited in transactional interpretation of wave function).

Self, phenomenology and consciousness. Approach to consciousness from material and physical world

would certainly come across some specific phenomenology. There is no possibility of bypassing this phenomenology! Self is in the centre of phenomenology and is also the center of irreducible subjectivity.

What is today called phenomenology will be experimental science tomorrow and a part of controlled reality day after! Phenomenology, although, had been always there at the growing pole of science many hard-core physicists do not entertain phenomenological approach at all. In fact, according to them it is mandatory to avoid phenomenology to do hard-core science. We have observed this in celebrated dialogue on nature of space time between Sir Roger Penrose and Stephen Hawking (1997). However, there are quantum physicists like Diederik Aerts and Sven Aerts (2005) who bring the role of experience with a “happening” aspect and “creative” aspect of quantum events. They also bring into focus how we “penetrate”, “clothe”, and “decorate” reality from our experience!

Who is the observer of events or phenomena? It is “self”. Who is the experiencer? It is “self”. Husserl’s phenomenology is entirely subjective! Daniel Dennett coined the term, “heterophenomenological” approach to rescue phenomenology from first person’s perspective and to cast it in second or third person’s perspective. I agree with Dennett that to bring phenomenology within science, heterophenomenological approach (where self is actually observing the activity of another self) will be more relevant.

The phenomenology relevant in consciousness research can be divided into three strata: (1) surface phenomenology of physical world; (2) depth phenomenology in the nest of consciousness; and (3) sandwiched between the two, there are layers of elementary phenomenology.

Surface phenomenology of the physical world. Here the events could not be simultaneous (due to Einstein’s constant, velocity of light), continuous (due to Planck’s time) or identical (due to entropy barrier). Operators for surface phenomenology are physical energy, fields and different forces of nature.

Depth phenomenology in the nest of consciousness. The signature of consciousness is in simultaneity, continuity and identity of events. If one wants to put it in sequence, in chronological order, first the self observes simultaneity of events, then it discovers a deep continuity amongst them and finally it is surprised to realize their identity. Operator for depth phenomenology is nascent nature of consciousness.

Elementary phenomenology. Elementary phenomenology is sandwiched between surface and depth phenomenology. In the elementary phenomenology, one could identify the blend of characteristics of both surface and depth phenomenology. Unlike that in surface and depth phenomenology, elementary phenomena can be named as specific phenomenon (see below). Operators of elementary phenomenology are self, mind, consciousness and information.

Elementary phenomenology can be understood by analyzing the phenomena involved in separation of “self”, from the unconditional “consciousness-as-such”, as an operational head of the system. On careful analysis, it can be stated that during creation of self, which would be independent of, but would still continue to work in connection with unbroken consciousness, five phenomena are supposed to have a role to play. The relevant research question is what are those elementary phenomena? Probably, (1) a joy of separation for gaining independence—birth of new “life”; (2) creating a new conditioned existence—“ego”; (3) having a desire to create many like itself—“sex” in very elementary form; (4) with a will to share the experience with others—the primordial manifestation of “love”; and (5) knowing sure of its limited time-span of independent existence following which it has to relinquish its independence—a phenomenon with elementary meaning of “death”.

Love, sex, life and ego, therefore, are not just event but five phenomena at the elementary level, which leave their imprint on self, by forming its five private facets that work as self's motivational epitome.

Phenomenological approach to consciousness is important for three reasons:

(1) At the center of phenomenology is "self", which is categorically identical to consciousness;

(2) If one takes up any of the element of elementary phenomena, say love, or sex, life or death or even unrelenting ego, and investigates this, one picks up the relevant thread and has every probability to reach consciousness;

(3) Phenomenal binding of various nonlocal entities is relevant for operation of consciousness.

Life-Principle

It is not known what exactly constitutes "life"! It means differently to different disciplines. To a biologist it is life-form. To a materialist, life is "living state of matter" and to a mystical philosopher life is synonymous to life-principle. Ganti (2003) calls the total properties that are present in living state but absent in non-living state as the "principles of life".

Concept. One may call it life-principle or "principles of life" by presence of which one distinguishes living state of matter from non-living matter, and differentiates live-DNA from a synthetic DNA-molecule. The experiment (Gibson et al, 2010) in the laboratory of J. Craig Venter Institute on artificial generation of life depicts a success story of transplantation of synthetic DNA within the living milieu.

Conceptually life-principle has several similarities with consciousness. Also there are features, which can distinguish the two (Mukhopadhyay, 2014 forthcoming). Similarities and differences in properties between consciousness and life-principle have been shown in Table 3.

Table 3

Similarities and Differences in Properties Between Consciousness and Life-Principle

A. Similarities between consciousness and life-principle:	
1	Both are inexhaustible, immutable and irreducible!
2	Both are all-pervasive, diffuse and non-particulate.
3	Both are contagious by nature.
4	Both have the ability to involute. Consciousness involutes as self, while life-principle involutes as live-information.
5	Spontaneity is characteristic of both. Both are creative too.
B. Differences between consciousness and life-principle:	
1	Life-principle is a creation of Consciousness-Mother Nature.
2	Life-principle works on the ground of Consciousness as a currency for the mechanics of Consciousness.
3	Life-principle can have a mechanics of its own, different from that of Consciousness.
4	Independence of life-principle is not absolute. It is bestowed on her by Consciousness.
5	Vigilantism is a property of Consciousness, not observed in case of life-principle.

Life-principle working within "living state of matter" makes a life-form. Life-form could be said as holograph of consciousness-Mother Nature.

Localization. Life-principle is omnipresent, gets localized within a life-form. However if anyone tries to dissect it out to learn in which part of life-form it belongs to, it is not possible to localize life-principle as such. It is nonlocal in this sense. Whether life-principle of a life-form is in communication with life-principle outside it, across the boundary of the living system is an important question.

Operation. Life-principle operates to connect mind with consciousness. Life-principle offers strength to

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the operation of mind. Bereft of connection with life-principle, mind appears weak. Life-principle, in connection with consciousness generates information. Organization by life-principle is different from organization by self.

The “life-style paradigm” in management of health and disease is supposed to operate through this unobservable influential. Maneuvering of activity of life (which always happens with the tacit consent of life-principle) brings the desired change in human behavior.

Important Properties. Contrasting features of life-principle and mind as well as of life-principle and self have been shown in Table 4 and Table 5 respectively.

Table 4

Contrasting Features of Life-Principle and Mind

Life-principle	Mind
1. Categorically different from mind and consciousness.	Categorically different from life-principle and consciousness.
2. ‘Feminine’ in behavior.	‘Feminine’ in behavior.
3. Similar to consciousness in its immutability.	Mind is mutable. It is generated, gets evolved and also disintegrates.
4. Operates in genesis of information.	Processes information, stores information.
5. Life-principle involutes as live-information.	Mind could conceive this live-information and split it into new space and new time.
6. Used as ‘currency’ in mechanics of consciousness.	Connects ‘matter’ on one side and consciousness on the other side.
7. Outstanding property is contagiousness.	Mind operates by dividing!
8. Life-principle is negentropic, capable of bringing ‘order’ in disorder.	Mind operating alone leads to disintegration and chaos.
9. Participates in emotional function. Analytical function nil.	Participates in analytical function. Gets disturbed in emotion.
10. Offers strength to mind.	Mind owes its strength to life-principle but is also weakened by ‘emotion’, which is supported by life-principle.

Contrasting features of life-principle and self have been shown in Table 5.

Table 5

Contrasting Features of Life-Principle and Self

Life-principle	Self
1. Categorically different from consciousness.	Categorically identical to consciousness.
2. A creation of Consciousness-Mother Nature.	An ‘involute’ of consciousness, operating unit customized for the system.
3. More ‘feminine’ in behavior.	More ‘masculine’ in behavior.
4. Gets involved in generation of information for the material world.	Ordinarily works as ‘slave’ of information. A resurrected self could become the master of information.
5. Used as ‘currency’ in mechanics of consciousness.	Can behave as representative/holograph of unconditional consciousness.
6. Not itself capable of experiencing.	Sensitive to phenomenon. Capable of experiencing. Stores memory of experiences.
7. In chronology of the process of embodiment life-principle embodies within the system later than self	Embody within the system following embodiment of mind and before embodiment of life-principle
8. In the course of death, life-principle dismembers at the end, following dismemberment of self	In the course of death, self dismembers later than mind but earlier than dismemberment of life-principle

Information

Information is the “lingua franca” of modern society and science. The author is of the opinion that 21st century is the century of developing the science of information. In TSC-2013 conference, the agenda has been spelled out by the author (Mukhopadhyay, 2013).

Concept. Information is the unit of communication. It is the connecting link between non-localizable influential(s) and local factors like energy, matter, space and time. Information itself is multidimensional, can create dimension (space time) to produce its own context. The context of same information changes with change of dimension, which often encapsulates it. The connecting activity of information is mediated through change of its geometry.

Information originates out of uncertainty in relationship between masculine and feminine factors at the domain of consciousness. Information has an independent existence and has an independent operation in nature beyond Planck's scale. Within Planck's scale of measurement, information uses quantum particle/energy as its vehicle and is responsible for generation of quantum puzzles and quantum paradoxes. Classical fields, force energy, particle could also be carrier of information (Mukhopadhyay, 2008).

What we generally believe as information is really a space time construct of information which is sensible. The "form" (space and time) within "information" is brought out by mind or mind-like structure and process in nature. This maneuver is associated with release of information-based energy. In this relationship, information could be considered as father, mind the mother, and space, time and energy are three children.

Localization. Information is simultaneously local and nonlocal. From a dimensionless domain it creates space time and thus dimension. Information itself is multidimensional. No information is an island. There are information manifolds.

Operation. Information can remain in inactive and active form. Activation of information requires involvement of consciousness and/or life-principle.

Different from quantum mechanics, information itself has a mechanics of its own. It is the mechanics of waiting, mechanics of opportunism, mechanics of causal execution, mechanics of creative emergence and the mechanics of new creation.

Operation of information depends on its location, context, content and intent. Intent of information operates in connection with self while its content works in relation to mind.

Information is the common currency for business transaction with "memes", genes and self. Information holograph carries information on the whole and may be a communicating mechanism between two living systems.

Properties. Information is tinier than what can be measured within Planck's scale of nature. Information has a specific geometry in its inactive and active form. Information uses matter as vehicle for behavioral expression of its content and intent.

Interface Where Local and Non-Local Titans Meet

It will be a common sense that local titans (time, space, energy, matter) meet the nonlocal titans (mind, self, life-principle and consciousness) at the boundary of the system by the action of the mediator known as information. However, being non-localizable the nonlocal titans are not restricted by any boundary! As the boundary of the system is also a creation of Mother Nature, it requires to be respected by nonlocal players for the sake of the system. The negotiator between the two groups of Titans is information. In a cellular model, movement of informational molecules across the boundary makes the connecting link between them. Information molecules are responsible for distributed consciousness within the cellular system.

At the cell culture laboratory one can model this interface between cell and its environment through signal transduction across the boundary of cell membrane and on the basis of informational molecules, which are

responsible for distributed consciousness. Information's multi-dimensional geometry connects: (1) the local spatial dimensions with (2) the trans-spatial dimensionless domain.

In a human model, this interface is a brain-to-brain interface and there are two recognized experimental models for this.

(1) EPR paradox in human brain and the transferred potential (Grinberg-Zylberbaum, Delaflor, Attie, & Goswami, 1994);

(2) In human brain-to-brain interface researcher controls colleague's motion from remote (*Science Daily*, August 27, 2013).

The first model is between two meditation-synchronized brains. The second one is between brains of two scientific colleagues working on the similar theme, meaning there is also some thematic synchronization of their brain regarding their work.

There are some natural models of this brain-to-brain interfacing as observed between Lover's brains (when one of them is posing a question in writing, the loved one is jotting down the answer), and also in genius brain (which can collect fragmented relevant information from other's brain and synthesize from such fragments a consolidated whole, which offers him the recognition of a genius (Laszlo, 1994)). An accomplished motivator keeps the audience captive probably involving this brain-to-brain interfacing mechanism. This type of brain-to-brain interfacing is also observed between the master and the pet (dog).

Further, for such holographic communication the brain is not all that is necessary. Even a gardener can communicate with the plants nursed by him. Plants do not have the so-called brain but responds to gardener's emotion and vice versa could also be observed.

Holographic information transmission (Mukhopadhyay, 2012) could be the mechanism in some of such interfacing.

Concluding Remarks

The beneficial spin-off of the picture what has been drawn is a composite model of psyche. Psyche means differently to different discipline of science and spirituality. Some discipline accepts psyche synonymous to mind, other to consciousness, still other regard it as self. Many think it is a part and parcel of life. For most of them, however, psyche is an information-hub. Information mechanics and the psychic mechanics are inextricably connected. In author's view, consciousness, mind, self (with its private facets), life-principle, and information are elementary ingredients of psyche and are essential for understanding a holistic view of psyche and its mechanics. If the view is accepted, we are at the brim of a major revolution in psychology and in psychology research.

By cracking the psyche into its elementary ingredients, we have made explicit of the non-observable influential(s), which maneuvers the observable behavior of any system supposed to have a psyche.

Following publication of this paper, consensus building process is expected to begin. After necessary addition, deletion and alteration we may proceed towards a consensus from the standpoint of which we can make predictions generating several research questions and research hypotheses for a fruitful consciousness research.

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