

Consciousness: Quantum and Jainism

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Part- II: Soul, Consciousness, Mind and Jainism

1 Soul and Consciousness

It is necessary to distinguish between the terms soul, consciousness, mind and awareness and understand the function of brain. We briefly review the views of different religions and philosophies on soul and consciousness first.

1.1 Jainism

In Jainism the term *Jiva*, meaning soul, connotes that Soul is consciousness (*cetana*) itself and consciousness also is invariably soul. The *Jiva* is non-corporeal, living, eternal and permanent, and fixed (constant) substance of the Cosmic Universe, having the attributes of consciousness.

Jiva is the generic name of sentient substance. *Jiva* substance is non physical and is not sense - perceptible; it does not have the properties of colour, smell, taste and touch. Consciousness and *upayoga* (manifestation of consciousness) are the differentia of the *jiva*. *Upayoga* and consciousness are the two sides of the same entity *jiva*. Consciousness may be interpreted both as a structure and a function of the *jiva* but *upayoga* refers to the functional side only. *Upayoga* gives us almost the same meaning as we get by being mentally active. Just as a mental activity is a fact of mental functioning and a mental capacity, a fact of mental structure; in the same way consciousness or *chetana* may be taken as a fact of the *jiva*'s structure and *upayoga*, as a fact of the *jiva*'s function.

Consciousness is the generality of the attributes (if not of all the attributes of the *jiva*), which distinguish the *jiva* from the inanimate. *Upayoga* is the generality of the manifestations of such attributes. Intelligence (or knowledge) and intuition (or conation) are agreed to be the two main manifestations (*upayoga*) of consciousness. Both of them are comprehensions of the object by the subject.

Consciousness (*cetana*) manifests itself in several ways: intelligence, knowledge, intuition, bliss, perception (cognitive elements), emotions, will, attitude and behaviour, awareness of pleasure and pain. Life and consciousness are coextensive. Wherever there is life, there is consciousness and vice versa. But there are degrees of explicitness or manifestation of consciousness in different organisms. In the lowest class of

organisms, it is very much latent, while in human beings, it is very much manifest. *Jiva* is entirely distinct from inanimate existence, which does not possess consciousness.

Life-essentials of worldly soul are represented by five senses, mental, vocal and bodily activities, duration of life and respiration. Whatever things and behaviors it makes, such as forces (*samskaras*), etc. are reflected in it, one fine material body, called karma body, containing an impression of these forces is being formed by it, and that body exists and accompanies it at the time of taking up another new body. The soul is doer and enjoyer of the fruits of his actions.

Jiva, even being conscious and non-corporeal, becomes corporeal by its activity of collected (formed) corporeal body up to the moment of existence of such body. In regard to the relation of soul with mind, speech and body, it is plain that speech and mind are non-soul, i.e. matter, for they are corporeal, non-conscious and non-living, and are associated with the spiritual being soul. As to its relation with body it is defined that soul is identical with body, with the former exists in the latter. Thus the soul is corporeal and non-corporeal, conscious and non-conscious, living and non-living and it is of beings and non-beings also.

There are infinite souls in the cosmos, each having distinct identity. In the multitude of souls the inherent capacity of soul is accepted as one (equal), nevertheless, the manifestation of each one is not equal.

1.1.1 Soul: The Subject and the Object

In the absolute sense the soul can only be conscious of itself, because it alone exists as that state of pure singularity. When we say 'it is conscious of itself', we separate the intellectual level into two aspects: (1) the aspect that it is observer and (2) the aspect that it is observed (although they are one and the same). Intellectual examination, in fact, reveals the existence within consciousness of three values, inherent in any process of conscious experience or any process of observation: (1) the observer, (2) the observed, and (3) the process of linking the observer and the observed.

Even though there is nothing but one consciousness, this principle of three emerges. Consciousness being awake to itself experiences itself, and is at once the knower, the process of knowing, and the known- observer, process of observation, and observed; or subject, object, and the process of linking them. In this state of absolute consciousness, these three values are one and the same, yet they represent these aspects of the same singularity.

It is obvious that every relative experience requires a subject coming together with an object. This coming together takes place both on the level of attention as well as on the sensory level of perception. When the subject comes together with the object

through the process of observation, then the experience occurs- then knowledge of the object by the subject takes place. Knowledge therefore, is the result of the coming together of the observer, the process of observation, and the observed.

As one consciousness leads to three aspects, the interaction between the three and the resultant aspects, relationships, and their interaction, etc. leads to an infinite number of ever-expanding possibilities. All these possibilities, all these forces of interaction and relation, exist in the soul.

The interaction of forces, even though within the soul, creates a dissymmetry, as if a distortion, in the flat and homogeneous- yet infinitely flexible- absolute singularity of soul. The virtual pull and push, rise and fall, vibration and silence, dynamism and silence, leads to the formation of structure within the soul. Structure is the result of apparent breaking of infinite symmetry. With all interactions always taking place in accordance with the fundamental forces that uphold them, structure is the result of the virtual distortion generated by the interaction of forces.

In the pure soul or the soul of the Omniscient the structure is absent and the subject and the object is the same pure consciousness. In the impure soul the subject is the consciousness and the object is the structure created by the virtual distortion. The structure identifies the perverted state of the soul.

1.1.2 Relations between Soul and Body

As the soul is non-corporeal, it cannot be perceived or known by the senses, mind and intellect. Its attributes is consciousness, which too is beyond the reach of perception. It (consciousness) can be known only through its function, but it cannot be directly comprehended through sensory perception. The denial of the existence of the soul may chiefly be attributed to its imperceptibility.

The soul extends in the body. The soul being non-physical in fact has no contact with the body. The contact with the body is made through karma. The soul is bound with karma but it has no contact with the karma either. The soul and karma has an association of essential nature. The soul does not exist without association with karma in nature, that is, the soul is always in impure state unless purified by special efforts. Was the soul without karma at any time in the past? No, like any other chemical element the soul is also found in impure state, impregnated with karma, in nature. The bonding of karma is a continuous process

The soul and karma are always in a state of some kind of equilibrium. The soul becomes free of karma only in the liberated state when all the karma is eliminated by special efforts. Once free no more karma is bound and the soul is not embodied again.

1.2 Souls in Other Systems of Indian Philosophy

The Samkhya-Yoga system accepts each individual soul endowed with beginning less and endless inherent consciousness, reality of consciousness as unchangeable

permanent, eternal and all pervading, and infinite souls like Jaina philosophy. But it does not admit soul's capacity of contraction and expansion and that the soul is doer and enjoyer.

The Nyaya-Vaisesika system also conceives beginning less and endless, infinite soul substances as distinct by the difference of body but does not accept soul as intermediate dimension like Jaina metaphysics; this system admits it as all pervasive just like Samkhya-Yoga system. It does not admit inseparable inherent, eternal capacities like consciousness in the soul substance; nevertheless, it accepts knowledge, bliss, pain, desire, hatred, effort, merit and demerit, etc. as the qualities of soul as its status of the modes. Nyaya-Vaisesika admits doer and enjoyer concept in the physical body state, when there is inherence of qualities like knowledge, desire, effort, etc., but not in the liberated state.

Upanishads differ in the nature of soul and Brahman. Vadarayana composed the text Brahmasutra to establish his cherished views on soul. As soon as Acarya Sankara wrote a commentary on Brahmasutra, etc., and established the doctrine of Maya (Illusion), a reaction started again. Other thinkers opposed this doctrine and wrote their commentaries but all of them agreed upon one point of Sankara that soul has only the illusory existence, not real, for it is also real, and the soul having the real existence is also distinct by the difference of body and is permanent. Sankara, not conceding that there is any really real existence except Brahman, explains the multiplicity of individual souls as experience in practical life in terms of illusion. This power also is not independent of the Brahman. Hence, the mutual distinction between soul and Brahman is not real. Madhvacarya maintained by all means an opposite view in regard to soul by asserting that it is not imaginary but is real, and it is also distinct from the Brahman. He believed in the doctrine of infinite eternal souls. Bhaskara and all other Acaryas really accept soul, but as a modification, an effect or a part of the Brahman. These modifications, however, may be due to the power of the Brahman, but they are not at all illusory.

Lord Buddha denied the permanence of any entity or substance. According to Pali Pitaka the soul is like the momentary combination of mutually undivided feelings, ideas, volitions and other faculties and pure sensation of general consciousness i.e. there is no soul apart from feelings, ideas, volitions, etc. But on the other side there were four groups of the Buddhist order and many advocates of the doctrine of eternal soul. Nagarjuna established Sunyavada, the doctrine of essencelessness or void ness of all appearances. The Yogacara School at last established soul in the philosophy of Vijnanavada.

1.3 Soul in Western Thought

Socrates and Plato- Plato, drawing on the words of his teacher Socrates, considered the soul as the essence of a person, being that which decides how we behave. He considered this essence to be an incorporeal, eternal occupant of our being. As bodies die the soul is continually reborn in subsequent bodies.

Aristotle- Aristotle defined the soul or psyche as the essence or definition of a living being, but argued against its having a separate existence from the physical body. In Aristotle's view, the primary activity of a living thing constitutes its soul; for example, the soul of an eye, if it were an independent organism, would be seeing (its purpose or final cause).

Thomas Aquinas- St Thomas Aquinas understood the soul to be the first principle, or act, of the body. His epistemological theory required that, since the intellectual soul is capable of knowing all material things, and since in order to know a material thing there must be no material thing within it, the soul was definitely not corporeal. Therefore, the soul had an operation separate from the body and therefore could subsist without the body.

Immanuel Kant- Immanuel Kant identified the soul as the "I" in the strictest sense. "We cannot prove a priori the immateriality of the soul, but rather only so much; that all properties and actions of the soul cannot be cognized from materiality." It is from the "I". or soul, that Kant proposes transcendental rationalization, but cautions that such rationalization can only determine the limits of knowledge if it is to remain practical.

Judaism- The soul is believed to be given by God to a person by his/her first breathe, as mentioned in Genesis. Judaism also has a concept of purity of body and soul, which requires avoidance of "unclean" things.

Christianity

The Old Testament contains the statements "Then shall the dust return to earth as it was and the spirit shall return into God who gave it" and "And the Lord God formed man [of] the dust of the ground, and breathed into his nostrils the breathe of life; and man became a living soul."

Most Christians understand the soul as an ontological reality distinct from, yet integrally connected with, the body. Its characteristics are described in moral, spiritual, and philosophical terms. When people die, their souls will be judged by God and determined to spend an eternity in heaven or in hell.

Roman Catholic beliefs- The present Catechism of the Catholic Church defines the soul as "the innermost aspect of humans, that which is of greatest value in them, that by which they are most especially in God's image: 'soul' signifies the spiritual principle in man. All souls living and dead will be judged by Jesus Christ when he comes back to earth. The Catholic Church teaches that the existence of each individual soul is

dependent wholly upon God: "The doctrine of the faith affirms that the spiritual and immortal soul is created immediately by God."

Protestant beliefs- Protestants generally believe in the soul's existence, but fall into two major camps about what this means in terms of an afterlife. Some believe in the immortality of the soul and conscious existence after death, while others believe in the mortality of the soul and unconscious "sleep" until the resurrection of the dead.

Seventh-Day Adventists beliefs- Seventh-Day Adventists believe that the main definition of the term "soul" is a combination of spirit (breathe of life) and body, disagreeing with the view that the soul has a consciousness or sentient existence of its own. They affirm this through Genesis 2:7 "And (God) breathed into his nostrils the breathe of life; and man became a living soul."

Origin of Soul- The origin of soul has provided a nexing question in Christianity; the major theories put forward include soul creationism, traducianism and pre-existence. According to creationism, each individual soul is created directly by God, either at the moment of conception or some later time. According to traducianism, the soul comes from the parents by natural generation. According to the pre-existence theory, the soul exists before the moment of conception.

Islam

There is a hadith reported by Abd Allah ibn Masud, in which it is stated that the soul is put into the human embryo 40 days after fertilization takes place. This version of hadith is supported by some other hadiths narrated by Sahih al-Bukhari and Sahih Al-Muslim. According to the Quran, Ruh (Soul) is a command from Allah (God).

Consciousness

It is pertinent to make final remarks on consciousness. Consciousness, according to Jainism and most other philosophies, is a property of the soul. Consciousness, and hence intelligence, in no case can be a property of matter. The concepts, classical or quantum, of emergent property, or epiphenomenon, that consciousness emerges from matter (or brain) is fundamentally misplaced. The interpretation of brain processes in terms of consciousness must be taken as insistence on denial of the existence of soul by science and perhaps to justify the scope of science to explain all phenomena in nature including the living systems. This materialistic approach stems from the thinking that every truth is empirically verifiable, According to Jainism universe consists of two kinds of substances physical and non-physical; the non-physical substances can be verified by inference only and cannot be measured empirically. It is obvious that to understand consciousness the science has first to recognize the existence of soul, which would require transcending the traditional approach of studying nature, adopting a new way of comprehending reality and discovering new laws that merge science and spirituality.

Awareness

Another concept analogous to consciousness is awareness. Awareness is defined as the state or ability to perceive, to feel, or to be conscious of events, objects, or sensory patterns. In this level of consciousness, sense data can be confirmed by an observer without necessarily implying understanding. More broadly, it is the state or quality of being aware of something. In biological psychology, awareness is defined as a human's or an animal's perception and cognitive reaction to a condition or event.

Awareness may be focused on an internal state, such as visceral feeling, or external events by way of sensory perception. Awareness provides the raw material from which animals develops qualia, or subjective ideas about their experience.

2 The Mind

2.1 Mind (*manas*) in Indian Philosophy

According to the Nyaya and Vaisesika mind (*manas*) is taken in an internal sense. It is atomic in size and moves around the external senses. Its contact with the soul is an essential condition for knowledge and thus, it controls the non-occurrence of much cognition at a time. Unlike the other senses it is not made of any of the physical elements. It is an eternal substance having an independent existence. It is beyond the sensual perception and can be known through inference only. The mind does not possess any of the physical qualities; consequently its objectivity is not confined to any of them. It is common instrument for all types of knowledge. But, the subjective qualities of pleasure, pain etc. is directly perceived by the mind. Doubt, dream, memory, inference and other types of indirect knowledge are purely subjective, and therefore apprehended by the mind.

According to the Vedanta *manas* is not a comprehensive term. It is a particular state of *antahkarana*, which includes all types of mental states. The *Antahkarana* is an evolute of *avidya* (ignorance) and occupies the entire body. It involves the empirical self of the Vedanta, a condition of pure consciousness, limiting the latter into body and thus constituting the person of *jiva*. It goes out through the senses and establishes the three fold identity. The qualities of pleasure, pain etc. are apprehended by *antahkarana* itself. According to another opinion they are directly perceived by the (modalized) consciousness (*kevala saksibhasya*). *Antahkarana* has five conditions with five corresponding names. The condition of suspense (*samsaya*) is expressed by *manas*; that of judgment (*niscaya*) by *buddhi*; vanity (*garva*) by *ahamkara*, consciousness by *citta* and recollection by *smriti*.

According to the Sankhya mind is evolute of *prakriti* coming after *ahamkara* (ego). It is all-pervading and is intellectualized through the reflection of *Purusa*. In other respects the Sankhya resembles the Vedanta.

In the Buddhism Mind is split into two chief parts. The subjective part, or mind viewed as a receptive faculty, is represented by one element called,

indiscriminately, *citta*, *vijnana* or *manas*. It represents pure consciousness, or pure sensation, without any content. Its content is placed in the objective part which contains the definite sensation (*sparsa*); feelings (*vedana*), ideas (*samjna*) volitions (*cetana*) and various other mental phenomena up to the number of forty-six separate elements. So, it is that feelings come to be viewed as objects of the mind. Out of the 75 elements known as dharma in Buddhism. 64 belong to the mental group (*caitta dharma*). To this we can add *citta* or the mind as a receptive faculty. The remaining ten are five senses and the five objects. They are differentiated from the mind and mental elements as being material (*rupinah*) while the latter are immaterial (*arupinah*). Besides the forty six mental phenomena the mind contains fourteen elementary forces (*viprayukta samskara*), the element of character (*avijnapti*) and the three elements which are eternal (*asamskrt*): among the latter is Nirvana, the chief dharma. The common feature of all these elements is that they are apprehended by the intellect directly without any intermediate agency of the senses. In the apprehension of sense-objects there is likewise participation by the intellect; but these dharmas are non-sensuous objects, they are the exclusive domain of receptive intellect, just as colour is the exclusive domain of the sense of vision. The Buddhist does not regard the soul as different from mind.

2.2 Mind in Jain Philosophy

In Jainism, the mind (*manah*) is a structure with no-sense (*anindriya*) or sometimes known as sixth sense. The terms 'no' or 'not' in this case, do not mean negation but comparatively lesser degree of the character of a sense. Though mind also is a source of knowledge, it is regarded as no-*indriya*; because, it is dependent on other senses for grasping the external objects. It is a common factor in all indirect cognitions. The object of other senses is fixed but the mind is not confined to any of the physical qualities. It is capable of apprehending the past and future also. The function of the mind is thinking. It arranges the data given by the senses.

The mind is divided into two varieties the physical mind (*dravya manah*) and the psychical mind (*bhava manah*). The physical mind is material structure, constituted of *mano vargana*. It occupies the whole body. This part of mind interacts with the brain and the nervous system. The Digambaras admit the heart as its abode; and of the shape of a lotus with eight petals. The psychical mind (*bhava manah*) is the power or activity of the self resulting into various states of mentation, it is soul's capacity to perform mental functions. This part of mind thinks, imagines, plans, discriminates, and takes decisions.

According to the Nyaya, the qualities of soul are cognized by the mind. The Jaina does not favour this dependence. He says that soul apprehend its own qualities independently. The Vedanta, Sankhya and Buddhist assign the qualities of pleasure,

pain etc. to mind only. The Jaina says that they are the qualities of the self mixed with karmic matter.

2.2.1 The Object of Mind

According to the Non-Jaina systems mind is an essential condition for all types of psychic function. It is only the Vedanta, which holds certain qualities *assaksibhasya* (cognized by the pure soul). But, as far as the cognition of external things is concerned, he also holds *antahkaran*, as an essential condition. The Jaina does not favour this view. The Nandi clearly holds the mental cognition is different from the sense cognition. The first is direct (*pratyaksa*) while the latter is indirect (*paroksha*). All types of indirect in the logical period, except Agama, are included into indirect empirical cognition.

In the case of super sensual cognition of *avadhi* (clairvoyance) and *manahparyaya* (mind-reading) the object is cognized directly by the soul. After cognition the mind begins to function again for the creation of favourable or unfavourable attitude. In the case of an omniscient it is absolved from that function also. In the case with sense-cognition the mind functions in creating a desire to know a particular thing. It has nothing to do with the stage of sensation. It functions again for creating the particular attitude. But the stages of desire and attitude are not cognitive stages. They are result of deluding karma. Here, the mind does not function as an instrument of knowledge, but that of feeling or willing.

Jaina distinguishes between soul and mind. The physical mind does not possess consciousness which is the exclusive property of the soul. Mind like soul is not a permanent entity, it exists only when consciousness manifests as thoughts, beliefs, desires, emotions and feelings. All these activities are influenced by karma. The state of mind is a function of rising karma. This implies that the perception of external objects made by the mind is highly karma dependent.

The mind has two properties, singularity and individuality; it can have only one thought at a time. If minds were many we could have many thoughts simultaneously. In contrast, soul has power of plurality; it can conceive many and have a pool of knowledge simultaneously. Both soul and psychical mind are spiritual substances. The physical and psychical (spiritual) parts of mind are in balance. The mind derives its power from the soul and acts on a physical plane. The mind is influenced by the external world, including the body, and it influences the soul. Mind is one but its modes are many, it can assume a mode as per our wish. So mind can present a thought in a multitude of perspectives. The mind is the organ of apprehension of all objects of all the sense organs of the three periods of time.

2.3 Materialism- The Contemporary Approach

The contemporary approach does not so much attack the existence of an independent soul as render the concept less relevant. The notion of soul has less

explanatory power in a western world-view which prefers the empirical explanations involving observable and locatable elements of the brain. Materialists hold that the mind is the brain and the conscious mental activity is identical to neural activity. When the brain activity ceases, so do all conscious experiences and there is no immortality. However, if we are entirely physical beings, then must not all the brain activity and behaviour in question be determined by the laws of nature? Although materialists may not logically rule out immortality or free will, they will likely often reply that such traditional, perhaps even outdated or pre-scientific beliefs simply ought to be rejected to the extent that they conflict with materialism.

There are, however, a number of much discussed and important objections to materialism most of which question the notion that materialism can adequately explain conscious experience. Joseph Levine coined the expression "the explanatory gap" to express the difficulty for any materialistic attempt to explain consciousness. David Chalmers similarly points to "the hard problem of consciousness", which basically refers to the difficulty of explaining just how physical processes in the brain give rise to subjective conscious experiences, or experience an emotion. Chalmers usefully distinguishes the hard problem of consciousness from what he calls the "easy problem" of consciousness, such as ability to discriminate and categorize stimuli, the ability of a cognitive system to access its own internal states, and the difference between wakefulness and sleep. The easy problems generally have more to do with the functions of consciousness, solving them does not touch the hard problem of phenomenal consciousness.

Another objection to materialism is the knowledge argument, forwarded by Thomas Nagel and Frank Jackson. The general pattern of each argument is to assume that all the physical facts are known about some conscious mind or experience. Yet not all is known about the mind or experience. It is then inferred that the missing knowledge is non-physical in some sense, which is surely an anti-materialist conclusion in some way. . On the whole, brain-mind identity theory does poorly in accounting for mental phenomenon of qualia and intentionality. While neuroscience has done much to illuminate the functioning of the brain, much of subjective experience remains mysterious.

The western philosophies lack a clear distinction between soul and mind. While it is true that the term "soul" (or "spirit") is often used instead of mind, the problem in philosophy is that it is unclear just how the soul is supposed to differ from mind. The terms are often used interchangeably by many philosophers because it is unclear to them what else the soul could be other than "the mental substance". One might wonder "even if the mind is physical, what about the soul", May be it is the soul, not the mind, which is non-physical.

2.4 Projections from Jainism

The concept of awareness as defined above is related to indirect cognition, particularly perceptual cognition, of Jainism. The mind establishes contact with the external world through senses. The sense signals are communicated to brain and then contact are made with mind. If the connection between sense organs and brain is broken due to some reason the mind does not know the object. The thinking process starts when the object is perceived by the mind. The perceptual cognition is the knowledge gained through sense - organs and the mind. The knowledge is conceptual consciousness and is determinate.

There are different elements of perceptual cognition. Perceptual cognition (*mati*) takes stock of a present objective datum, recollection (*smriti*) has reference to a datum perceived in the past; recognition (*samjna*) is the cognition of the identity of a past object of perception with the present; thought (*cinta*) is the cognition of a future event. All these different varieties of cognition are regarded as identical in spite of the difference of determinations, because the substantive object is the same. *Abhinibodha* is cognition competent to take stock of an object with all its temporal determinations as past, present and future. *Matijnana* (empirical knowledge) is a comprehensive class which includes a large variety. Thus, for example, there are purely sensuous cognitions, purely mental cognitions and cognitions which are generated by both the senses and the mind. The sensuous cognition of animals, beginning with one-sensed and ending with five-sensed, but destitute of mind, are purely sensuous. Recollection and instinctive intuition are purely mental. The normal cognitions of beings endowed with mind are generated by the cooperation of the mind and the senses. According to Jain epistemology, all cognitions are nothing but different states of soul and as such are only cases of emergence and not origination proper, the senses and the mind being auxiliary conditions or instruments only.

One variety of perceptual cognition is *Sruta nisrita* - the intellect based on scriptures or depending on verbal symbol. These are of four types (i) *Avagraha-sensation* (ii) *Iha-speculation*, (iii) *Avaya-judgment*, and (iv) *Dharana-retention*.

Sensation means cognition of a generic character in the wake of the intuition of the contact between the sense and the object without the manifestation of any particular characteristic of the contact. The sensation is in respect of the *vyanjana* (possible object) and the *artha* (plausible object). The *vyanjana* sensation means indeterminate cognition of the objects such as sound and the like through the contact between the object and the sense organ. This is a judgment like 'there may be something'. There occurs in the trail of this sensation another sensation called *arthasensation*, which cognizes the object a little more distinctly, though devoid of the concepts of class, substance and attributes. This is a judgment like 'there exists

something'. Speculation consists in the experience "this must be that". The speculation constitutes the intermediate stage between indeterminate perception and determinate perceptual judgment. Speculation is an attitude of the mind which leads to the determination of the specific character of the object by laying emphasis upon the real characteristics that are perceived and the elimination of the unreal attributes that are not cognized. Perceptual judgment is the specific determination of the object 'this is that'. The persistence of the perceptual judgment is called retention.

There are three stages in the perceptual cognition process (1) desire to know, (2) cognition, and (3) attitude in terms of feeling and willing. The first and the third stages are processes of mind, *bhava manah*, as states above. The second stage of cognition consists of two parts (i) change in the state of the soul that affects cognition, and (ii) physical processes taking place in the body in accordance to changes in the soul. The soul and the body system are in mutual balance, a change in one causes equivalent change in the other. The second part of cognition process comprises of two steps (a) processing of multitude bits of sense data by the brain, and (b) integration of processed sense data to create unity of experience.

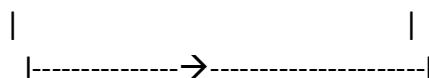
How and where these two physical processes take place? It can be assumed without difficulty that processing of sense data is the function of brain that works as structural information processor. Empirical evidences cited in the first part of this essay raise doubts that integration of data is also performed by the brain. It is a pointer to the possibility that this function is the responsibility of the physical mind, the *dravya manah*. The physical mind and the brain interact through radiations emitted by the physical mind. The physical mind is a subtle structure and may behave like a quantum computer that enables integration of data and generating information. The fact that brain is unlikely to integrate the processed data and that unity is experienced by us there must be another part that discharges this function and the *dravya manah* is the obvious choice for this act. The *dravya manah* also stores a large amount of memory and therefore it could also be a holonomic device. This suggests that brain must be a classical device and determinate in that sense.

We see that concepts from Jainism suggests a suitable system consisting of brain as structural information processor and the *dravya manah* as a unifying device that enables a large sensory data input to be converted into a unified processed information to be presented to the perceiving soul. The soul makes the experience "what it is like"; the experience is subjective, called qualia or phenomenal. Thus the soul, the mind (*dravya manah*) and the brain together constitute a composite system that realizes perception of object by the subject. This is the process of perceptual cognition. The soul also has the capacity of direct cognition of object without the involvement of brain and mind as happens in clairvoyance.

The brain is an important component in the process of perception and cognition. The perception is interrupted when the brain does not receive the sensory data as happens in sleep, coma or un-aware conditions. This cannot be interpreted to mean that consciousness is absent. The involuntary functions of the body are still taking place that require intelligence, and hence consciousness, which is beyond the range of material genes; the body would be dead without consciousness (*cetana*). In the state of the soul in question only the voluntary functions are suspended. To justify existence of consciousness on the basis of voluntary activity is not correct. Consciousness is a permanent feature of a living being in whatever state he may be; it is certainly not an emergent property,

The steps in perceptual cognition are shown in the flow diagram below.

Sense data → Brain → Physical mind → Psychical mind or Soul



The sense data to brain link is accessible to science and has been studied in detail. Operation of this link depends on the health of the body and the brain; it is broken in case of any physical disability. For example, sensory loss takes place in polio, brain damage, sleep or coma. In all such cases the brain does not register the sensory inputs. The receipt of processed data by mind from brain depends upon attentiveness of mind; the mind receives data only when it is attentive. For example when someone is calling you, you hear him only when you are attentive; if your mind is wandering elsewhere you miss the call. In this case the ears receive the sound and the brain registers the sense signal but still you are not conscious of it. This implies that in order to be conscious of a sensory input both the brain and mind must be attentive. Understanding follows when the mind compares the sound you heard with the previously recorded sound of the same individual and then you know that X is calling you.

Mind is a powerful super computer that manipulates data at such a fast speed that we experience the event almost instantaneously. Because of its speed the mind can also present several options in quick succession and you decide that it is only X, and not Y, calling you. For this kind of processing the mind should also be in a healthy and alert state. If the mind is preoccupied or disturbed because of worries or some other mental problem the understanding, the awareness, may be impaired. Note that the high speed of action is possible because of the subtle structure (quantum?) of mind; the brain does not possess this capability. The brain processes data and information primarily for the body where the communications are relatively slow.

We now attempt to define the terms awareness and 'consciousness'. Awareness is assumed as reception of sense data without understanding. The process of awareness bypasses the mind, which is the instrument of understanding, and it is identified by the route senses data-brain-soul on the flow diagram. Awareness is comparable to the first stage of perceptual cognition, the sensation. In the above example it means that you only hear a sound and do not know that it is a call. The process of being conscious of the object involves application of mind and the route of information flow is now sense data-brain-physical mind-soul on the flow diagram. This 'consciousness' is comparable to the second stage of perceptual cognition, speculation. In the example in question it means that you know that that sound is a call. In the next stage of perceptual cognition, judgment, you know for sure that it is X and not Y calling you and this constitutes knowledge. There is a third kind of mental activity called thinking, not requiring assistance of sense data, and this is represented by the route physical mind-soul on the flow diagram. Is brain involved in thinking? Perhaps the brain may be involved as a processing center, and hence it has a record, but thinking is supposed to be primarily an activity of mind.

A final remark on the meaning of the terms 'consciousness' and awareness is in order. The main property of the soul is called *cetana*. *Cetana* is not only just 'consciousness' as is generally known to philosophers but much more than that, it manifests itself in several ways: intelligence, knowledge, intuition, bliss, perception, emotions, will, attitude and behaviour, awareness of pleasure and pain as stated before. Philosophers hold that consciousness is "awareness" or "experience" in the conscious state, it is supposed to be absent in unconscious or in coma state. *Cetana* being property of the soul is always present, it manifests explicitly in the conscious state and implicitly in the unconscious or coma state. Without *cetana* no life is possible.

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