**A MODERN SCIENTIFIC INSIGHT OF SOONYA VAADA OF BUDDHISM: ITS IMPLICATIONS TO DELINEATE ORIGIN AND ROLE OF RATIONALISM IN SHAPING BUDDHIST THOUGHT AND LIFE**

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**Abstract**

*Soonya Vaada*, the prime and significant contribution to Indian philosophical thought from Buddhism will be scientifically developed and presented. How this scientific understanding helped to sow seeds of origin of rationalism and its development in Buddhist thought and life will be delineated. Its role in the shaping of Buddhist and other Indian philosophical systems will be discussed. Its relevance and use in the field of cognitive science and development of theories of human consciousness and mind will be put forward. The idea of absence as zero in number system, vacuum in physics and other natural sciences and state of absence of cognition in mind machine modeling will be presented. The use of significance of *Soonya Vaada* in philosophy, rational social life, natural sciences and technology, mathematics and cognitive science will be comprehensively discussed and a model for human cognition and communication will be arrived at.

**Key-words:** *Soonya Vaada*; rationalism; Buddhist social life; cognitive science; theories of human consciousness and mind; mind-machine modeling; vacuum; zero; Modeling of human cognition and communication.

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**Introduction:**

Human life is refined by culture and civilization. Culture is made up of language and religion and is part of civilization. Every civilization is influenced by certain profound concepts and they become nucleus to the evolution of social and spiritual life. India is a treasure-house for many profound concepts and each concept led to the start of another civilization apparently different but a continuation to earlier cultures and thoughts.

**Evolution of Indian culture:**

The evolution of Indian culture is not merely evolution Hindu culture; Indian culture is like Ganges getting contributions from various channels. Culture and civilization mutually influence each other and are complementary and supplementary to each other. Language essentially moulds culture. Religion, fine-arts, natural, secular and social sciences, philosophies, ideologies etc., constitute culture. Literature and texts of all disciplines, arts and skills are off-shoots through language and learning. Language is the medium that conveys all expressions. Experiences, intuitions, understanding, insight, emotions, perceptions, thinking, feelings, knowledge etc., are given form through language. Thus language is backbone for culture. Religion is secondary in this regard.

Sanskrit has been the important medium of culture of India of earlier times. Pali, Paisachi, Brahmi, Praakrut etc., were other languages available in ancient India. All ancient Indian Texts of philosophy, sciences, secular sciences, fine-arts are available in these languages. It is not definitely known when civilization has actually started in India. Whether Vedic culture has pre-existed Harappan civilization and culture is not the subject matter of this article. Also no attempt will be made to decide the chronological order of events or evolution of thoughts and texts of various schools of thought or disciplines or arts or skills or other items.

Upanishads, the end-pieces of the Vedas are the source books of spirituality in India. Buddhism, Jainism, Chaarvakism are other famous and popular non-vedic cultures. Ancient Indian spiritual texts, texts of secular sciences and the like have evolved in unison influencing one another. The evolution of Indian culture will be followed here by observing the evolution of spiritual texts, religions, social institutions, social and political philosophies, social justice movements, which have influenced the origin, being and advancement of various schools of thought and cultures. Spirituality and religion are not taken as one and the same.

Hindu religion has many contours and denominations and is a spectrum of thoughts. Buddhism, Jainism and other non-vedic thoughts and religions which do not accept the authority of the Vedas have their own system of thoughts and hence culture. Brahmanism is the chief ism of Hindu culture. The word Hindu itself is the mispronunciation of the word Sindhu (Indus). Dr. Radhakrishnan has stated that there is a Hindu way of life and not necessarily a Hindu religion. Theology and rationalism are two wings of Indian culture. Both have been flourishing influencing each other simultaneously, and also individually and independently. Upanishads though have been commented theologically by many eminent seers and saints, the sages and seers of the Upanishadic expressions have clear idea of what they are professing. They know that the Upanishadic insight they have revealed and texts composed are texts of science on human mind and has nothing to do with the existence of God. They very unambiguously stated that “Gods” are inventions of and created by, humans. Brahmanism has given a social structure together with cultural and spiritual elements embedded in it. Buddhism, Jainism, Chaarvaakism, Veera Saivism, Veera Vaishnavism are both spiritual and social movements. Later social justice movements of the South [Periyar Ramaswamy (Tamilnadu), Sri Narayanaguru (Kerala)], dalit movements of other parts of India are all labeled and liked to be called rationalist movements. Except for Veera Saivism, Veera Vaishnavism, and Sri Narayana Guru’s movement, rest of the schools of thought are atheisms. They take pride in criticizing and sometimes ridiculing theisms. Gandhism has tried to combine spiritual and social elements taking truth and non-violence as basis and basics. Communism and radical humanism are recent additions to atheist schools of thought and developed their own cultures. The gender has also divided individuals and encouraged to start the culture of feminism and women’s liberation. Terrorism and Naxalism which kill fellow human-beings with impunity have evolved as cultures in their own way.

The Jewish and Persian (Parsi) cultures have their own Indian flavor. The western culture has found favor with people of “modern outlook” and our urban youth and elite are currently aping it joyfully.

All these isms constitute and consist of present Indian culture. Sanskrit, which contains not merely texts of Brahmanism but also of Buddhism, Jainism and Chaarvakism, is unfortunately equated and identified with a single community and many do not like that language only for this reason and hence the culture associated with it. The evolution and development of different regional languages have produced their own cultures confined to a particular geographical area. Chauvinisms have mushroomed around regionalisms and regional languages, claiming to have separate culture. The culture created and sustained by Brahmanism is no longer popular and many criticize it for its bias towards a particular community. i.e., Brahmins. Brahmins have been and are severely criticized for creating and perpetuating a culture which allowed them to “exploit” other social sections. The truth in this criticism is debatable. Under this pretext they now are relegated to live a life of secondary citizens losing all rights for their just inclusion in the affairs of the state and the society. Of course all this is the result of evolution of Indian culture influenced sequentially over centuries by Buddhism, Jainism, Chaarvakism and other medieval and modern “rationalist” movements and cultures.

All the rational schools of thought mentioned earlier are striving to redress the sufferings of people. All of them invariably denounce Brahmanism for its “irrational” expressions. How far all these rationalist cultures spread over India in different denominations have been able to address the concerns and welfare of the citizens as a whole is another matter. The invasions of Muslims have started Islamic culture and it has evolved in India in a unique way forming part of Indian culture. Then Sikhism has born and spread its own culture and religion. Christianity then entered and has an influential role in the design of culture of many Indians.

Thus Indian culture is now a combination of many religions and isms evolved over a period of time. Indian culture has evolved around the Upanishads and related spiritual texts, Brahmanism, Buddhism, Jainism, Chaarvakism, Veera Saivism, VeeraVaishnavism, Islam, Sikhism, Christianity, social justice movements, communism and radical humanism. Indian culture also has nucleus in regional languages and regions. All these give diversity and of course divisions to Indian culture.

The so called Hindu culture is also not unique. Various cults have been formed around the teachings of various seers, saints, sages, Babas. Ammas, Swamis, Sadhus and the like and currently there is no agreement among these cults and all of them individually claim to be different. Now we can not pin pointedly say this is Hindu culture. Many divisions, diversions and estuaries are formed to the Hindu culture and all of them have to be referred to when referring to Hindu culture. Some of these divisions claim to represent a religion different from Hindu religion for various purposes. Caste divisions have perpetuated their own cultures. Around these caste divisions many individuals have developed vested interests and are assiduously cultivating them for political and personal interests. Political empires and Dynasties have been developed around caste, region, language, religion, ideology and the like divisions and Indian culture is also made to contain social justice, political, ideological aspects in addition to religious and spiritual aspects.

Language is stated as forming the basis of culture in the beginning of this article. Language, sometimes, seems to be a more and better unifying force than religion. In Tamilnadu and Kerala Muslims and Christians speak the regional languages, where as in other parts of India Muslims speak Urdu and Christians English. The North-Eastern India has its own unique regional as well as Christian culture. Attempts by some political parties to unite Indians by a religion have not been successful. But divisions by caste have yielded useful results to many caste leaders. So Indian culture is not unique and no single religion, caste, region, language, or ideology has monopoly over it. We have enough divisions to be exploited by narrow-minded politicians and chauvinistic caste, regional, ideological and religious leaders. We have leaders and individuals who want to cash on our divisions and no one attempts to integrate us emotionally. Still we are able to survive as one nation is surprising. May be there is an underlying unifying culture which is Indian and not specifically of any single religion, caste, language, region, or ideology and is spiritual in essence. Let it flourish and let us live in peace.

**Buddhism:**

Of the above various types of cultures and civilizations Buddhism has its unique place in Indian philosophical, spiritual and social fields. Buddhism is many times understood as the “scientific thought” of Indian philosophical systems, even though the Upanishads, the Vaiseshika, the Saamkhya and Vedanta schools too are equally scientific from cognitive science point of view.

 Indian philosophical systems are more spiritual systems than mere thoughts. All the expressions of Indian philosophical systems are expressions of experience and intuition of the Individual philosopher. It is well-known how Siddhartha the Gautama attained Nirvana and initiated into knowledge divine and realized the Self. And He became the Buddha.

All Indian philosophical systems though apparently challenged and “fought” with each other for “supremacy” unknowingly they supplemented and complemented one another and we now have a vast treasure of information to compare and contrast and arrive at a comprehensive view of the experiences of the Seers and Saints to be useful to every human being irrespective of one’s religion, caste, region, nationality or faith or atheism. The Buddhism and Jainism benefited from the Upanishadic expressions and Shad Darshanas (nyaya, vaiseshika, yoga, saamkhya, poorva meemaamsa and uttara meemaamsa or veddanta) are benefited from Buddhist and Jain thoughts. Later developments in all Indian philosophical schools of thought have evolved a systematic theory of human cognition and communication.

Indian philosophical systems are termed as Vedic and non-Vedic grossly. As mentioned earlier, Vedic systems accept the authority of Vedas and the rest not. Even among Vedic systems, saamkhya and vaisheshika do not mention about the existence or otherwise of God.

The Buddhism and Jainism are the famous non-vedic systems of thoughts. Buddhism is special for the proposition of Soonya Vaada. The Soonya Vaada says the phenomenal world is non-existent. Because the Buddhism has not believed in God and said world is soonya (nothingness) it is termed as a rationalist religion. So, all Buddhist propositions follow this dictum. Naagaarjuna, Dignaaga and other great Buddhist thinkers are known for their rationalistic propositions.

And thus Buddhism is free of dogmas. Also Buddhist does not believe in caste divisions or divisions of any king among people. It also as known does not believe in sacrifices like yajnas or yaagaas. Everything must stand to the scrutiny of the logic and reason is its stand. Nyaya of Shad darshanas and the Buddhism have excelled in developing the rational view of life. Thus Buddhism is individual specific and also tries to save individuals from blind faith and superstition.

Non-violence is a great contribution to Indian psyche from the Buddhism, Jainism and the compassion-full Upanishadic insight. Of these three Buddhism is first ism which comes to mind when the word non-violence is uttered. All Buddhist life is guided by non-violence by thought, word and deed. Hurting others is also considered as violence and Buddhism shuns it.

As hinted above, Indian philosophical systems are also source-books of theory of human cognition and communication. Before proceeding in this direction, the word soonya as understood in various disciplines and its use is narrated below.

**The significance and use of *Soonya*:**

 The word soonya in Sanskrit has three meanings: **zero, vacuum and state of cessation of mental activities**. Thus zero, vacuum and state of cessation of mental activities are soonyaani (soonyaas).

 We are aware of the significance and use ofpresence of a thing. Here significance and use of absence of a thing will be discussed. The examples are taken from the branches of mathematics, physics, technology and Buddhism and *Vedanta*.

**Mathematics and Computer Science:**

 Number system is a part of Mathematics. Zero plays a significant role in number system. As we know, when zero is put on the right hand side of a digit the value of the digit increases. The place values also owe their being and significance to zero As is known zero was proposed by Indian Mathematicians. Zero number has ‘no value’. The absence of value makes zero significant and highly useful. Zero is used both by scientists and lay men with equal felicity and benefit. Zero plays important role both in sciences and ordinary day to day activities.

 The hardware of computers consists of circuits and networks. Zero plays very important role in this field also. Binary mathematics is the base for the design of computer functioning. Binary number system makes use of only two numbers, 0 and 1.

Number zero signifies non-transfer of electrical signal and number one signifies the transfer of electrical signal. In this way by making use of numbers, 0 and 1, signifying absence and presence of electrical signal transferred, computer computes and controls.

 Thus zero (absence of value) is inseparable from arithmetic and computer functioning.

**Physics and Natural Science:**

 Physics is one of the Natural Sciences. Matter, Energy, Space and Time play chief roles in this branch of knowledge. Space contains matter and energy and the actions and interactions concerning them. Space can exist without the presence of matter or energy. Space bereft of matter and energy is called vacuum.

 Thus vacuum is absence of matter or energy. Because of the vacuum matter (energy) can exist, move and transform. If vacuum does not exist, physical, chemical or biological matter cannot exist and processes cannot take place. For the creation, being and cessation of matter vacuum is necessary. Evolution, Sustenance and Dissolution of material world and its being and non-being is based on the presence of vacuum. Vacuum holds matter and its transformations. Thus vacuum (absence of matter) is the stage on which natural scientific transformations are enacted.

**Technology:**

 In electronics transistor plays an important role. In technical terms a transistor is called semiconductor. In a semiconductor electron and hole are current carriers. The vacated space by electron is defined as ‘hole’. Hole ‘moves’ in the opposite direction of electron movement. Hole is absence of electron. Hole is not a material particle. It is mere space.

 Concept of hole-electron pair is responsible for understanding current flow in a semiconductor and is vastly responsible for the development of semiconductor and solid state electronics. Thus semiconductor electronics is developed on the basis of the electron and absence of electron (hole) concept .

***Buddhism and Vedanta:***

 Buddhism and *Vedanta* are philosophical systems of ancient Indian thought. Buddhism in its intrepetation as contributing to cognitive science has profound applications in developing the theories of human cognition and communication. Thus all Indian systems of thought are integrated psychology and are science on human mind. Thus also the definition, origin, structure, function, cessation and control of mind and its activities constitute the subject matter of the Upanishads and *rest of the systems of thought*.

**Phases of mind:**

State of awakening, state of dream and state of deep sleep are the conscious states of mind (see Table I). Deep sleep state is a state of cessation of mind and its activities. During this phase of mind, cognition of objects or object – created experiences are not sensed. Mind remains absorbed in its source, the Self. State of Self is the natural and original state of mind. This is a serene state. This is a blissful state of mind. Energy from Self is responsible for the mental activities and enables us to observe them as a witness. Experiencing such a thought – free and object – experience free - state with awareness is wakeful sleep and without awareness it is deep sleep conscious state. This is the phase of ABSENCE of activities of mind. This is the fully conscious or thought and object – experience free phase. This is the state of Self and is the original or natural state of mind. This state is also called the state of timelessness or time-transcendence or state of cognition-free unoccupied awareness or state of liberation – *moksha* or *nirvana* or *turiya* state or thought, object –experience transcendent state or state of silence or bliss or peace.

 The process of Knowing or (learning) is a combined activity of sense organs, mind and action organs. Knower, Knowing and the Known are the inherent divisions perceived during this phase. The awareness as these three divisions is known as *triputi (subject-verb-object or knower-knowing-known)*. Where and when the awareness of this differentiated perception, *triputi,* coalesces into awareness of knowing or consciousness, the consciousness of cessation of divisions as undivided pure consciousness is experienced. This is the state of unoccupied (by any cognitions or experiences) awareness. This is the continuously and eternally present blissful state of the Self.

The concepts of absence of value to a digit (zero), absence of matter/energy, unoccupied space (vacuum), absence of electron (hole), phase of absence of mental activities state are significant and useful in mathematics, physics (other natural sciences), technology and *Indian philosophical schools*. Thus absence of a thing is equally significant and useful as the presence of a thing.

 ***Soonyam:***

This state of, lack of consciousness of *‘triputi*, is referred to absence of cognition- state or *Soonyam* by Buddhists. Here the Buddhists have coined the word ***soonyam*** to signify and point out the state of non-cognition or non-communication of human mind. The name in Vedanta for this state of mind is *sushupti* – state of cessation of mental functions. There is another state or phase of mind in Vedanta termed as *Jagrat Sushupti* – which is equivalent to Nirvana state as termed by the Buddhists. The same state is referred to as full and ego-transcendent *moksha* state by the *Vedantins*. This is also known as the state of Divine Consciousness, the phase of absence of self-consciousness as individual.

**Conclusions:**

Thus the *soonya* state of mind is the state of mind when no human cognitions or communications take place. The only difference between Buddhist and Vedanta thoughts here is Vedanta proposes the presence of a cognizer to know it is *soonya* state. Thus the proposition of *soonya* state of mind by the Budhists has led to proposal of state of *sushupti* and *jaagrat sushupti* by Vedantins and has profound significance in the understanding of human mental functions in various state of consciousness or phases of mind and the role of *soonya* or *sushupti* state of mind in the development of theory of human cognition and communication.

**TABLE I**

**CONSCIOUS STATES OF PHASES OF MIND**

*JAGRAT SUSHUPTI*  WAKEFUL SLEEP *ADVAITA BHAKTI PARA*

 A series of ‘I -I’ pulses’ issue and virtual energy transformation takes place Mind is active if willed. Sense and action organs are alert and ready to function. Through meditation one reaches this state. State of *Visranta Drishti*, ***Bhakti*** Silence, Bliss, Peace,Unoccupied awareness, Pure ConsciousnessDivine consciousness,Real ‘I’ state etc.Normal or ground or original or natural state of mind. **Being*.***

*SUSHUPTI* DEEP SLEEP *ADVAITA*

A series of ‘I-I’ pulses’ issueandMind is in absorbedstate. No transformation of virtual metal energy.Sense andaction organs arenot in functionalstate. No awarenessof within or without of body *prapancham-*cognitions) or *vasanas*-cognition related or created remembrances. State of cessation ofmental activities

**The above two conscious states or phases of mind are the *soonya* states when nothing is cognized or communicated***.*

*JAGRAT* WAKEFUL  *DVAITA*

Mind is active. Sense and Action organs are active are in working state. All knowing/expressions take place in this state. *VAIKHARI* *Bahirmukha Dristi* (awareness of without) **Becoming** Excited state of mind.

 *SWAPNA* DREAM  *DVAITA PASYANTI*

Mind is active. Sense organs are in dormant state. Actions organs will be functioning if necessary. *VIBHAKTI / MADHYAMA* *Anthramukha Dristi* (awareness of within).**Becoming** Excited state Excited state of mind

 Wakeful Sleep, deep sleep, wakeful or awakened and dream. These are the conscious states of mind discussed in detail above. Human consciousness is always on as conscious awareness and only mind rises or sets during these conscious states of mind causing cognition and cognition-related experiences, storing and retrieving them in respective phases. Human consciousness is the form, the structure and the consequence of breathing process and generates psychic energy that does all human cognitions and cognition-related functions. Cognition and cognition-related functions are the result of reversible becoming of this psychic energy and human consciousness bifurcates as consciousness that is aware of the cognitions and related activities and the occurrence of the activities themselves. When these activities are taking place, such a dual role is played by the human consciousness. There is also a phase when no cognitions or cognition-related activity is taking place and it is the original or normal or natural state of human mind, the non-dual or peaceful, blissful or silent phase of mind.

***Soonya*** is the state of mind when nothing is cognized or communicated. The mind will be in suspended animation and is absorbed in the Self.

**TABLE II A**

**EVOLUTION OF CHEMICAL AND BIOLOGICAL SYSTEMS**

**Evolution of universe; chemical evolution; molecular and macromolecular evolution, evolution of proto-cells, cells, tissues, organs and organisms, evolution of consciousness**

**Biochemical evolution:**

**Earth Micro- Euka- Macro- Amino Humans**

**Formed Organisms rytes Atmosphere Organisms Acids**

 **Oxygen**

 **-forming**

**4.5 3.5 2.5 2 1.5 0.5 0**

**Billions of years**

**TABLE II B**

**BRAIN WAVES**

 **Patterns of activation of brain neurons produce four types of brain waves:**

1. **Alpha Waves:** These rhythmic waves occur at a frequency of about 8—13 Hz. One hertz is one cycle per second. Alpha waves are present in the EEGs of nearly all normal individuals when they are awake and resting with their eyes closed. These waves disappear entirely during sleep. (*Jagrat Sushupti* - Wakeful Sleep Conscious State)
2. **Beta Waves:** The frequency of these waves is between 14 and 30 HZ. Beta waves generally appear when the nervous system is active—that is, during periods of sensory input and mental activity. [*Jagrat* (Wakeful/Awakened) and *Swapna* (Dream) Conscious States).
3. **Theta Waves:** These waves have frequencies of 4-7 HZ. Theta waves normally occur in children, and adults experiencing emotional stress. They also occur in many disorders of the brain.
4. **Delta Waves:** The frequency of these waves is 1-5 Hz. Delta waves occur during deep sleep in adults, but they are normal in awake infants. When produced by an awake adult they indicate brain damage. (*Sushupti* – Deep Sleep Conscious State).

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