
THE SCIENCE OF HUMAN CONSCIOUSNESS

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ABSTRACT. A model of human consciousness is presented here in terms of physics and electronics using *Upanishadic* awareness. The form of *Atman* proposed in the *Upanishads* in relation to human consciousness as an oscillating psychic energy-presence and its virtual or unreal energy reflection, *maya*, responsible for mental energy and mental time-space are discussed. Analogy with Fresnel's bi-prism experimental set up in physical optics is used to state, describe and understand the form, structure and function of *Atman* and *maya*, the ingredients of human consciousness. A description of phases of mind in terms of conscious states and transformation of mental energy is given. Four states of consciousness and four modes of language communication and understanding processes are also given. Implications of the above scientific awareness of *Upanishadic* wisdom to the modern scientific fields of physiological psychology, cognitive sciences, mind-machine modeling and natural language comprehension are suggested.

KEY WORDS. Physics of human consciousness, phases and conscious states of mind, natural language comprehension, physiological psychology, mind-machine modeling, cognitive sciences.

INTRODUCTION

The study of the human consciousness and mind, their nature, structure and function is generally believed to be a subject matter outside the realm of the disciplines of physics and chemistry (Taylor and Green 2002). Others feel that the study of human consciousness belongs to the domain of philosophy and psychology, and the concepts of physics and chemistry are not sufficient enough to explain the nature, structure and function of human consciousness. Such *feelings* convey that the consciousness of living organisms certainly cannot be described in terms of physics and chemistry, even though neurophysiologists can describe the working of the single neuron in psychicochemical terms.

Scientifically, human consciousness, knowledge, perception, reasoning, intellectual abilities, understanding, experience, etc., are mental processes of the vertebrate human-being belonging to *Homo sapiens* species. Thus, human mental processes are biological, involving physicochemical energy transitions and transformations relating to the brain, spinal chord

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and nervous system (Guyton and Hall 2004, Blakemore 1977). Proteins, which are made up of aminoacids that are oriented in space as poly-peptides, are one of the basic macromolecules that take part in these cognitive processes together with neurons. All this is the hardware part of human consciousness, mind and mental functions and relates to neurology and physiological psychology disciplines.

Human consciousness is a biological entity and activity, present in humans and hence has to be amenable to be understood in physicochemical terms as any other biological phenomenon. Human consciousness is the awareness of mind (Guyton and Hall 2004, Blakemore 1977, Radhakrishnan 1994 Ramabrahmam 1997, 2004, 2005a, 2005b). Mind, which is an expression and part of consciousness, is an aspect of the human body. Mind does all human mental functions which are physiological processes. Thus psychology is physiology.

As visualized by some, consciousness is the collection of millions of neurons and their electrochemical states, even if we have no real knowledge of the chemical nature of thoughts and ideas. According to them, we neither have understood completely how living organisms originated and evolved. They feel that we may not be able to define precisely what life is nor whence it came from. All that we can do, according to them, is to describe the observable phenomena that distinguish living from non-living matter.

Mathematics and modeling by computational activity can explain understanding and consciousness. About 2300 years of philosophy, 100 years of mathematical logic and 50 years of computational intelligence have been trying to understand human consciousness and to model its form and function, and still a clear model is eluding the scientific community (Perlovsky 2001, chapters 11 and 12). Theorems and other concepts developed by Gödel, Turing, Penrose and Putnam on mind and machine have not been sufficient to model intellect, understanding, experience and the other mental processes. Perlovsky (2001) and Penrose (Perlovsky 2001) sustain that the brain activity responsible for conscious understanding must depend upon a *physics* that lies beyond computational simulations.

Further, we are yet to formulate neural structures of consciousness. "The physics of spiritual substance" is yet to be proposed and develop. We have also to understand the physics of the nature of free will and the creativity mysteries. We have also to probe and determine whether consciousness is a hitherto not known new physical phenomenon. A future direction for this research lies in the path to understand the physical nature of the symbol and the emergence of consciousness.

Cognitive sciences often rediscover philosophical analyses painstakingly. A better policy to understand and model human consciousness and mental functions would be first to learn what philosophy (Eastern or

Western) teaches about human consciousness and mind in this regard, and then move on to experimentation and model-building within the scope of positive sciences. The aim of this research paper is to present such a possibility by using *Upanishadic* wisdom to model and understand the form, structure and functions of human consciousness and mind, and to provide as well necessary hints to develop a software which would model the tasks of mind.

Ancient Indian wisdom as revealed in the *Upanishads* has a lot to say about human consciousness (Radhakrishnan 1994, Ramabrahmam 1997, 2004, 2005a, 2005b). The expressions of the *Upanishads*, when translated into the modern scientific terms, will benefit the fields of physiological psychology; the natural language comprehension branch of artificial intelligence, and the modeling of human cognition, language communication and understanding processes. A physics and electronics model of human consciousness based on *Upanishadic* expressions is presented here.

THE FORM OF ATMAN AND MAYA: THE INGREDIENTS OF HUMAN CONSCIOUSNESS

Atman's (Self) existence is proposed by the *Upanishads* (Radhakrishnan 1994). *Upanishads* are the source-books of *Atmajnana*, the Knowledge of the Self. *Upanishads* construe the state of *Atman* or Self as the real 'I' state. *Upanishads* say that the 'I'-awareness is human consciousness. They understood the state of Self, i.e., human consciousness to be *unoccupied (mental) awareness*, the natural, original and ground state of human mind (Ramabrahmam 2005a, 2005b).

Atman is the result of breathing process (Vasista Ganapathi Muni 1982, 1994). *Srestapana* (most possibly O₂, and the consequent rhythmic gaseous exchange taking place in the lungs) is given as the body (*tanu*) of *Atman* (Vasista Ganapathi Muni 1982, 1994). *Upanishads* are traditionally commented upon from a theological point of view (Radhakrishnan 1994). These comments gave rise to various schools of interpretation. *Advaita* view of Sankara, *Visistaadvaita* view of Ramanuja, *Dvaita* view of Madhwa and the *Saaktaadvaita* view are the chief and popular views (Radhakrishnan 1994). When studied with an open mind and further contemplation, it becomes clear that *Upanishads* are actually *texts of science on human mind* (Ramabrahmam 2004, 2005a, 2005b). The *Atmajnana* (Knowledge of Self) as revealed in the *Upanishads* is an *integrated psychology* in mental energy-presence and transformation terms.

The psychological and physics meanings of chief *Upanishadic Mahavakyas* and the various purports about human consciousness as revealed in the *Upanishadic* awareness are given in Tables I and II respectively. From these it is evident that *Atman* is a *physical entity* responsible for human

consciousness. *Atman* is always in motion (*yasya gamanam satatam tat atma*—which moves incessantly is *Atman*) and is the result of breathing process and in modern scientific terms can be termed as a bio-oscillator/bio-maser/bio-laser issuing out pulses of mental (*chit*) energy. A period 10^{-1} of a second, the time required to pronounce a short syllable like 'a' is put forward as the time- period of this oscillator (Krishnamurty 1946, Ramabrahmam, 2004). [It is interesting here to mention that the mental rhythms detected by the experiment by German scientist Hans Berger {Adian and Matthews 1934} using EEG (electro-encephalogram) also have the same time- period of 10^{-1} sec.]

PHYSICAL OPTICS ANALOGY OF FORM OF ATMAN AND MAYA

The famous bi-prism experiment of Fresnel, Kamalakkannan, et al. (1997), in physical optics describing and explaining the formation of the interference pattern of dark and bright bands from a point light source on a screen is a very apt analogy to state, describe and understand the *real* nature of the *Atman* as an oscillating source of mental energy and the virtual (*unreal*) nature of *maya* as reflected mental energy pulse series. *Atman* is similar to the point source of light and *maya* to the virtual (*unreal*) source(s) formed from light reflections in the bi-prism. As is known, the two formed virtual sources in turn serve as the two coherent sources responsible for the formation of the interference pattern while the *real* point light source remains *untouched* and *unchanged*, but its presence is essential for the formation of the virtual (*unreal*) sources and the consequent interference pattern. The transformations of *maya* also give rise to various mental phases, functions and activities, while the *real* source of mental energy, *Atman*, is *untouched* and *unchanged* or not transformed; it is essential for the existence of awareness as (human) consciousness and simultaneously for the awareness of activities of the mind and body as transformations (becomings) of *maya* (Figure I, Concept Diagrams I and II). Thus mental energy pulse series reflected in *Medha*, (can be medulla oblongata?) termed as *maya*, are virtual (*unreal-mithya*), but are the same in content, form and nature as the *real* mental-energy presence (*Atman*), just as reflected light energy is the same as light energy from the source in content, form and nature. *Maya* is also known as *Chit Aabhasa* (reflected *chit*) or *Pranavam* (primordial sound).

FORM, STRUCTURE AND FUNCTION OF HUMAN CONSCIOUSNESS IN TERMS OF ATMAN AND MAYA

Atman provides humans with the mental energy whose presence and transformations of its virtual (*unreal*, reflected) form (*maya*), gives them

mental time-space and states of consciousness respectively (Concept Diagram I), to be aware of the body, of themselves, of within of the body, of without of the body, and also of a state that transcends both the body and mind consciousnesses. *Atman* in conjugation with *maya* and its transformations in the four conscious states referred to in Concept Diagram I also help humans to cognize, store the cognitions and cognition-related and created experiences and retrieve them when necessary. The transformations of the reflected—*chit* energy—*maya*, does all this. *Maya* is the virtual or reflected mental energy flowing throughout the body providing sensing abilities to humans. *Maya*, the virtual mental energy and its transformations provide the *current of awareness* and hence consciousness to humans. *Conscious states are the phases of mind in the awareness of Atman*. Conscious state of cessation of mental activities, similar to zero in the number system and the vacuum in physical sciences, is the unique proposition of *Upanishadic* wisdom which plays a profound role in human cognition processes (Ramabrahmam 2004, 2005a). Also the *Upanishadic* wisdom contains information about the origin, structure, function, form and cessation of mind and its activities (Concept Diagrams I and II).

As is stated above, the presence of *Atman* and transformations of *maya* give rise to four conscious states in humans (Concept Diagram I). The wakeful-sleep (*Jagrat Sushupti*) and deep sleep (*Sushupti*) conscious states are the *advaita* (No Two—only *Aham*—*Aham* series flow) conscious states (here *Aham* relates to *Atman*, the unoccupied awareness or pure consciousness when no mental cognitions taking place). Wakeful (*Jagrat*) and dream (*Swapna*) conscious states are *dvaita* (Two—*Aham*—*idam* series) conscious states (here *idam* relates to mental cognitions and functions in the awareness *Aham/Atman*).

These conscious states alternately and simultaneously rise and set in humans, helping them to cognize/know/learn, perceive, reason, think, do intellectual operations, experience/understand, speak/teach, read and write and thus be aware of their various disciplines and skills, master and use them through the medium of language or otherwise by the simultaneous use of *antahkaranas* (inner mental tools—*manas*, *buddhi*, *chittam* and *ahamkaram*), sense organs and action organs (Concept Diagrams I and II).

FUNCTION OF ATMAN AND MAYA (HUMAN CONSCIOUSNESS) AND TRANSFORMATIONS OF MAYA (HUMAN MENTAL FUNCTIONS)

Upanishadic awareness informs that *Atman* is *Sat-Chit-Ananda*, which gives humans the ability to be aware of themselves (*Sat*), their ability to acquire knowledge and be knowledgeable (*Chit*) and the ability to experience the fruits/experiences of knowledge (*Ananda*). *Upanishads* profess that the combined operation of *Atman* (the mental energy-presence which pro-

vides awareness), *maya* (the reflected or virtual mental energy formation), *antahkaranas-pancha pranas* (inner mental tools, the reversible virtual mental energy—*maya*-transformations—technically called *vivartanam*, the two-way transformation or becoming) sense organs (activated by *antahkarana* [inner mental tool] *manas*) and action organs (activated by *pancha pranas* [mechanical energy branches of *maya*]), constitute the structure and function of human mind (Concept Diagram II). Transformations of *maya* into *antahkaranas* (inner mental tools—electro-chemical energy branches of *maya* carrying cognized object-energy forms and cognized object—created experience energy forms) and the reverse of this process to know, think, perceive, experience, understand, etc.—this two-way transformation of *maya*—is technically called *vivartanam*, what makes humans to function mentally. This process together is called *being and becoming* of mind (Ramabrahmam 1997, 2004, 2005a, 2005b). Thus mental functions are reversible transformations of virtual *chit*—energy pulse series (*maya*) in mental time—space (awareness of mind).

Further, *Atman* as *Sat* gives humans the ability to relate themselves to their body, their self (egoistic mind), aches/pains/sensations within (to have self-consciousness) and without of their body, as *Chit* gives the ability to know, to perceive, to think and as *Ananda* to experience, to understand, to know the meanings of utterances and as *Sat-Chit-Ananda* gives humans the ability to be aware of all these. If humans are involved in these mental functions with an egoistic mind, they are self-conscious (*jivatma*/egoistic state of mind/*individual*) and if they witness these transcending as a seer or witness (*saakshi*) uninvolved and unaffected, they are pure consciousness (*paramatma*/egoless/ego-transcending /*Divine*).

Jagrat (wakeful conscious state) corresponds to *Bahirmukha Dristi*—Awareness of without); *Swapna* (dream conscious state) corresponds to *Antarmukha Dristi*—Awareness of within). In both these phases of mind *maya* undergoes a two-way transformation. And *maya*, remaining untransformed, gives rise to the conscious states of *Sushupti* (deep sleep) and *Jagrat Sushupti* (wakeful sleep) conscious states. *Jagrat Sushupti* and *Sushupti* phases of mind are also known as *Visranta Dristi*—Unoccupied Awareness conscious states (Concept Diagram I). During the awareness of without (*bahirmukha dristi*) humans are connected through mediation of inner mental tool *manas* and sense organs to the outside world, and knowing takes place. During the awareness of within (*antarmukha dristi*) object-energy forms sensed get stored together with the experiences they cause and retrieved. This operation gives humans the possibility to perceive, think, reason, experience, understand, etc. During unoccupied awareness (*visranta dristi*), the mental functions cease to be and peace, silence and bliss are experienced.

In the interplay of the conscious states, the *Chidabhasa* or *maya*—reflected *chit* energy pulse series—undergoes *modulations* in the expresser/teacher and *demodulations* (in the same sense of happening in radio broadcasting and reception) consecutively in the receiver/knower/learner to give humans knowledge, perceptions, experiences, understandings, meanings and skills in the simultaneous use of *Atman* (awareness), *maya* (current of awareness flowing throughout the body), transformations of *maya* as *antahkaranas*, *pancha pranas* activating and using sense organs and action organs.

Simply put, according to *Upanishads*, human mental functions are the forward and backward transformations of *chidabhasa* or *maya*—the carrier (in the sense of carrier radio wave in broadcasting and reception process) cognitive-energy pulse series *modulated* by energies sensed through sense organs or the stored information as potential energies retrieved (as *vasanas*, object-experiences, first and then *jagat* [inner world] as feelings/thoughts/perceptions) and *demodulated* to give humans knowledge, experiences, etc. The transformation of *maya*, reverse transformation of *maya* and cessation of transformation of *maya*—the *dvaita* and *advaita* conscious states respectively—taking place simultaneously, consecutively and alternately is the structure, form, function, state and essence of human consciousness, mental functions and cognitive processes.

Maya, which is also known as *pranavam*, and its transformations understood in combination with the *Sabdabrahma Siddhanta*, throws light on language learning and communication processes. *Sabdabrahma Siddhanta* based on *Upanishadic* wisdom provides four modes of language communication and reception process: *para*—mode of awareness—; *pasyanti*—mode of verb or sense or mood—; *madhyama*—mode of sentence—, and *vaikhari*—mode of utterance in sound form, which can be successfully used to understand human language acquisition, communication and usage processes (Bhatrtuhari 1974, Ramabrahmam 2004, 2005a, Ramanuja Tatcharya 2005).

APPLICATION OF THIS PRESENTATION

Several branches of knowledge make the study of mental processes one of their subject matters. Epistemology, psychology, physiological psychology, neurology, artificial intelligence and cognitive sciences contribute to the study of the mental processes in their own way.

Up to now, however, little has been done to combine the approaches—let us say—of the physiological psychologists and neurologists, who see cognitive process as a biochemical and biophysical energy transformation, with the proponents of mind-machine modeling, who have a lot to say on pattern-recognition, memory and learning, and the *Upanishadic* wisdom

which has understood human consciousness and analyzed mental functions.

The insight of human consciousness and mind and its functions in modern scientific terms presented in this communication can be used to develop the software to model human cognitive processes and language learning/communication processes going on within humans, and compare them with the working of the bio-chemicals and bio-materials and the energy transitions and transformations associated with such transitions.

Most of the present attempts try to model thinking as an isolated process which is the result of sensing. But if human mental processes are carefully observed, it becomes obvious that thinking is but an intermediary process which transforms sensing into sense and sense into utterance/expression. This sequence of human mental processes can be applied and the human cognitive model obtained can be refined and developed to build the software to model human understanding/experience process in conjugation with the existing mind-machine models (Perlovsky 2001, Bitchel and Abrahmsen 1989, Bobrow and Collin 1975, Changeux and Dehaene 1989, Donald Michie 1986, Elaine Rich and Kelvin Knight 1991, James Allen 2003, Partridge and Wilks 1990, Stuart Russel and Peter Norwing 2003). This can also be used by the physiological psychologists to model the biochemical and biophysical energy transforms that take place during human cognitive and language learning/communication processes.

Thus, this article presents human consciousness as a physical entity in the form of an oscillating energy-presence. This oscillator has a time period 10^{-1} sec in accordance with both Eastern and Western knowledge. It will be beneficial to use *Upanishadic* wisdom in clearing conceptual issues relating to consciousness, experience, understanding, etc., to reach the stage of extending available mind-machine schemes to model the human consciousness and mental functions. Translating the software obtained into artificial intelligent, combining existing mind-machine models will be a useful application. Further, physiological modeling of mental functions by combining the study of bio-materials such as neurons and proteins and energy transformations by and through them, clubbed with *Upanishadic* awareness of mind and its functions, helps to understand the physiological processes relating to psychological processes.

Cognitions by sense-organs and actions and reactions through action-organs are mental processes of the human beings and, to a less extent, of animals (all vertebrates which breathe and have brain, spinal chord and nervous system). *Atmajnana* is also the statement and explanation of consciousness and cognitions taking place in other vertebrates—minus language skills—and thus is an all encompassing understanding about the

form, structure and function of consciousness, intelligence and mental faculties of all vertebrates.

CONCLUSIONS

1. Human consciousness is an energy-presence in the form of bio-oscillator /maser/laser issuing out mental energy pulses.

2. Human consciousness is a series of awareness responsible for and constituted by mental energy pulses generated by breathing process and the consequent gaseous exchange taking place in the lungs.

3. The time period of one mental energy pulse is 10^{-1} sec.

4. Human consciousness as oscillating energy-presence is the provider of mental energy, mental time-space and awareness.

5. Human consciousness is an awareness of both mental activities and their cessation.

6. Modulation and demodulation—the forward and reverse becoming—of virtual mental energy carrier pulse series *maya* in two stages is the process of all human sensing/learning/knowing/expressing/teaching/perceiving/doing intellectual operations/thinking/understanding/experiencing associated with human acquiring and imparting knowledge through languages or otherwise about the disciplines and skills (painting, singing, dancing, car-driving, etc.) and the ability to perform those skills.

7. Human consciousness is the result of breathing process and is an oscillating energy presence. Energy released from such an energy presence and its flow is the *current of awareness* flowing throughout the body and makes the body active cognitively by activating neurons, proteins—the biochemical hardware—similar to *electric current* flowing throughout a television set makes it active in conjunction with hardware within and apparatus that sense, receive and reproduce the information.

Table I
PSYCHOLOGICAL AND PHYSICS MEANINGS OF CHIEF
UPANISHADIC MAHAVAKYAS ON HUMAN CONSCIOUSNESS

1. **Aham Brahma Asmi** **I AM BRAHMAN**
Human consciousness is expressed by the term 'I'. The real identity of 'I' is Unoccupied Awareness. 'I' is the psychic **energy presence** as an oscillator issuing out psychic energy pulses which are **transformed/modulated/demodulated** to enable the individual to know (through sense organs), act, react, interact (through action organs), perceive, do intellectual operations (like reasoning, logic, etc.), experience, understand, intuit, feel and express, urge, sense and express generated volitions and all mental functions related to knowing/learning, expressing/teaching enabling human-beings to know, learn, express, teach various disciplines, languages, acts, skills etc.,.
2. **Tat Tvam Asi** **YOU ARE THAT**
Self-consciousness (ego) is part of human consciousness and relates to individual's senses and thoughts regarding one's body and its features, gender, mental traits, status in society etc.,. Pure consciousness is original and natural state of human consciousness when the individual is bereft of self-consciousness in the mental awareness and is termed as mental solitude or Silence. Peace, Bliss, Calmness-Thought and sense transcendence are its characteristics. Pure consciousness is **forgetting or being unaware of** self-consciousness. Self and Pure Consciousnesses are same in nature, content, structure, form (function) and presence. At a given moment either self-consciousness or pure consciousness will be present. Self-consciousness is super imposition over pure consciousness. Pure consciousness is continuous, self-consciousness is transient and transitory.
3. **Ayam Atma Brahma** **THIS ATMAN IS BRAHMAN**
Atman is Brahman – Unoccupied Awareness — Energy Presence without transformation.
4. **Prajnanam Brahma** **PRAJNANAM IS BRAHMAN**
Brahman— as *Atman* — Energy Presence – is Mental Time- Space and Continuous Awareness. *Prajnanam* is Unoccupied (by cognitions, thoughts, cognition-related and created experiences, senses or their retrieval) Awareness in Pure Consciousness.
5. **Raso vy Saha**
AWARENESS OF MEANINGFUL EXPERIENCE AND
EXPERIENCED MEANING IS BRAHMAN
Experience of Essence of the meanings of all *vakyas* (sentences), the cognition-related experiences in the awareness of the *Atman*. Meaningful Experience. Silence. Peace. Bliss. Experienced Meaning. Purport.
6. **Anando Brahma** **BLISS IS BRAHMAN**
Unoccupied Awareness is Bliss.
7. **Saryam Khalu Idam Brahma** **ALL IDAM IS BRAHMAN**
All the world--*idam*, *prapancham* or *jagat* (collection of cognitions sensed by sense organs through the medium of *manas*)--is composed in, made up of, sustained by, rests in and ceases to be because of and part and parcel of psychic energy pulse generator--*Atman*.

Table II

Upanishadic Definition of HUMAN CONSCIOUSNESS

The term 'I' denotes human consciousness.

'I' is **not** a term denoting any of an individual, individual's body, self-consciousness, the social status, age, gender etc.

'I' is the **unoccupied awareness** in the individual in the *Jagrat Sishupti* (wakeful sleep) consciousness state when peace, bliss, silence and oneness or non-duality are experienced.

'I' is not a person, a thought, a sense, an experience or an understanding. 'I' is an **awareness** which transcends all these and is a non-transforming **seer** and **witness** to all these and is revealed and experienced as peace or bliss or silence in wakeful sleep conscious state--the mind-transcending phase when all mental activities in the form of thoughts and senses etc., cease to be. One has to refer to this natural mental state when one refers to 'I'.

'I' is unceasing, undivided continuous blissful awareness.

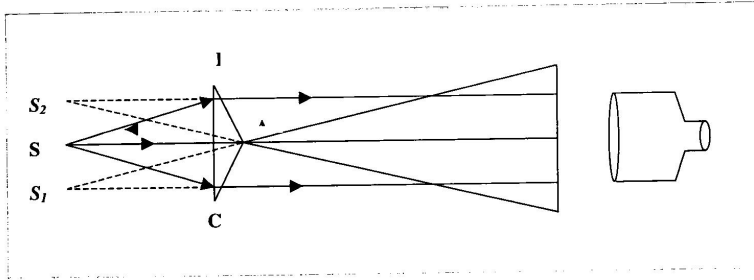
'I' is an awareness present always and is super-imposed but untouched by mental functions during wakeful (*Jagrat*) and dream (*Swapna*) conscious states and becomes sense/mood or thought or expression. Self-consciousness arises in these two states and then 'I' is identified with individual's body, sense and thoughts about I, me, mine, mental capabilities, gender, social status, age etc, and masks pure consciousness. In deep sleep (*Sushupti*) conscious state (like zero in number system without value but is essential and significant) there is no awareness of the body, the within or without of the body. No 'I' expression, thought, feeling or sense or experience relating to individual exists in this mental phase.

'I' is an eternal awareness transcending the three conscious states--wakeful, dream and deep sleep--and observes all the mental activities or cessation of such activities taking place in these three mental phases. 'I' is also present during these phases as continuous consciousness/awareness to happenings within and without of the body.

Upanishadic awareness uses the terms *Atman*, *Brahman*, *Sat* (Being), *Chit* (Pure Consciousness), *Ananda* (Bliss), *Prajnanam* (mental time-space – Unoccupied Awareness), *Santhi* (Peace), *Maunam* (Silence/Quietude/Mental Solitude) synonymously

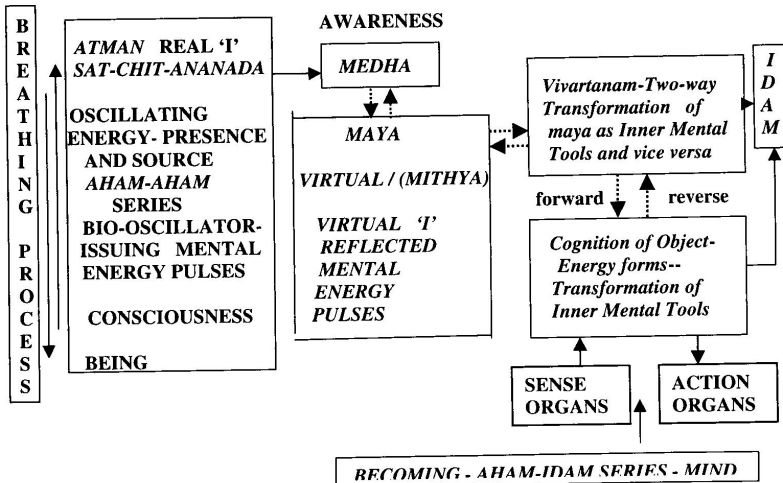
FIGURE I

A. Fresnel's Bi-prism Experimental Set up



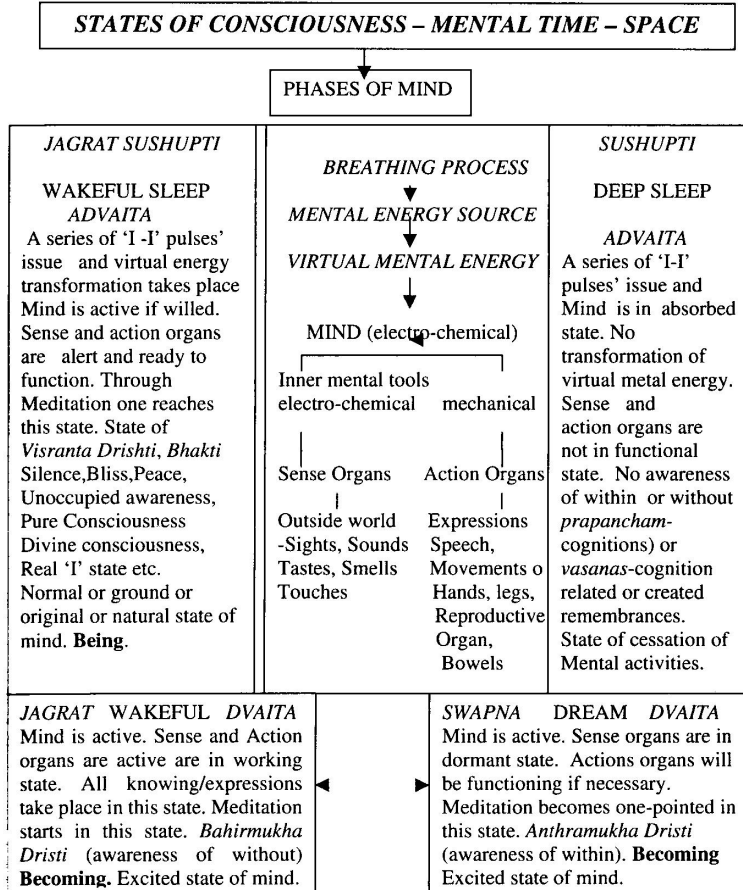
S = real point light source. S_1 and S_2 are virtual point light sources.
ABC = Bi-prism. T = Telescope.

B. FORMATION OF ATMAN AND MAYA



MENTAL ENERGY IS PHYSICAL WHOSE FORM CAN BE MECHANICAL,
ELECTRO-CHEMICAL OR OPTICAL. MENTAL FUNCTIONS ARE FORWARD/
REVERSE TRANSFORMATIONS. CONSCIOUSNESS = BEING ↔ BECOMING =
MIND (MODULATION OR DEMODULATION OF MENTAL ENERGY)

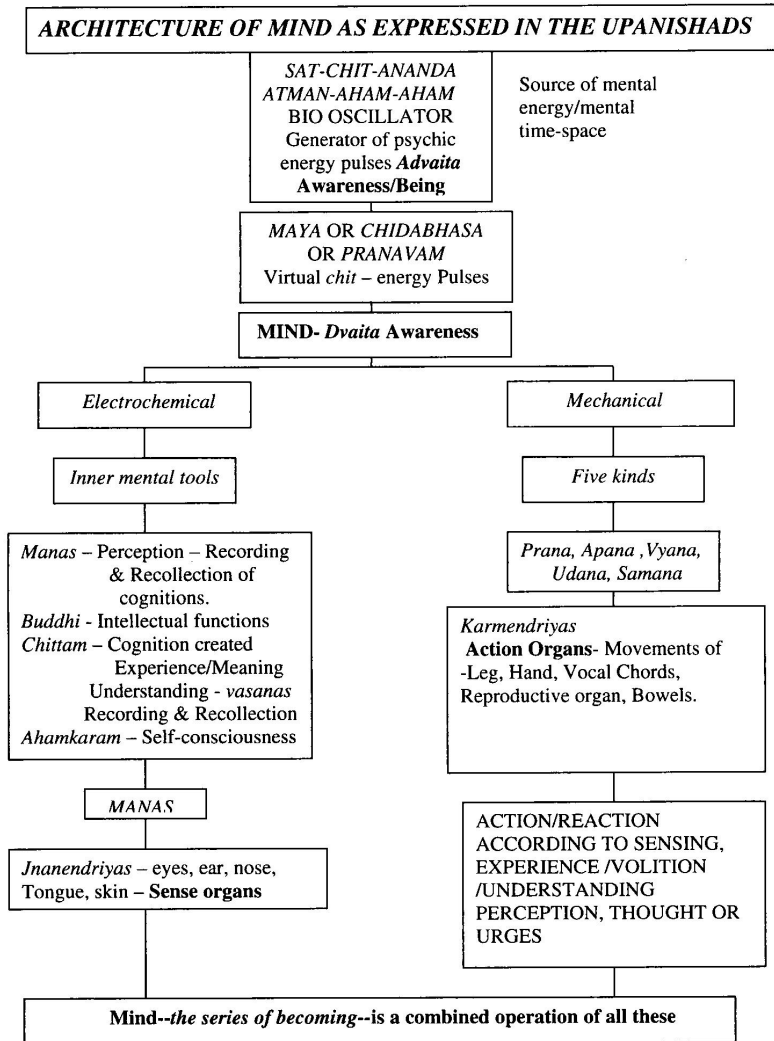
CONCEPT DIAGRAM I



* Eyes, ears, nose, tongue and skin are **sense organs**. * Movements related to hands, legs, vocal chords, reproductive organ and bowels are **action organs**. ** *Manas, Buddhi, Chittam and Ahamkaram* are **antahkaranas** (inner mental tools). Experiences created by perceived or retrieved object-energy forms are *vasanas*. Stored and retrieved collection of perceived object-energy forms is *prapancham*. *Jagrat Sushupti* (Wakeful Sleep) is **Unoccupied awareness**. Knowing/learning expression/teaching, thought, perception, experience, understanding, volition, urges etc., are **occupied awarenesses**, happening in *Jagrat* (wakeful) and *swapna* (dream) conscious states. *Sushupti* – State of cessation of mental activities.

#AHAM-AHAM: 'I'-I' -PULSE SERIES (NO TWO) ADVAITA: AHAM- IDAM - I (AWARENESS)+COGNISED/PERCEIVED/EXPERIENCED WORLD--PHASE OF MENTAL ACTIVITY--PULSE SERIES (TWO) DVAITA

CONCEPT DIAGRAM II



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