

SPIRITUAL FOUNDATIONS

PARAMAHAMSA TEWARI

PREFACE

What is the reality of the universe? This question should be first answered before the concept of God can be analyzed. Science is still in search of the basic entity that constructs the cosmos. God, therefore, would be a system too complex for science to discover. Unless the basic reality of *aakaash* (space) is recognized, neither science nor spirituality can have a grasp of the Creator, Sustainer and the Destroyer of this gigantic Phenomenon that the Vedas named as Brahman.

Paramahansa Tewari
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This book has been scanned and prepared for publication and distribution on the internet. A glossary, index and transliterations have been added. The first chapter of the physics of free energy has been added to the end of the book to encourage those who may be inclined to further study the physics of new energy systems. Details can be found at www.tewari.org. If moved to do so, please email and distribute this book to people or organizations that may be interested.

EDITORS NOTE

During the last years I have been involved on both sides of the energy equation exploring for oil, gas and geothermal resources using seismic and magneto-telluric methods and working in oil refineries, and the utility industry in coal, natural gas, and nuclear power plants.

I became interested in non-polluting, sustainable energy systems while attending the University of Connecticut. Since 1980 I have been involved in the search for alternative methods of energy production. After attending the 1993 International Symposium I had the opportunity to serve as the first President of the Institute for New Energy and chair or co-chair several conferences including the 1995 International Symposium on New Energy. The urge to explore and duplicate experiments of others in the field led to publication of papers at the Low Energy Nuclear Change conference at Texas A&M University and Intersociety Energy Conversion Engineering Conferences sponsored by the American Nuclear Society, IEEE, and ASME. It was through participation in alternative energy research that I came into contact with the work of Paramahansa Tewari.

With the grace of God I was born with a spinal curvature that resulted in a spinal fusion in 1974. This led me to the study of Hatha Yoga which I have practiced since. Because of an interest in Hindu Philosophy sparked in part by Paramahansa Yogananda's Autobiography, I took Sanskrit classes at Denver Free University, taught by Neal Delmonico, Sanskrit scholar and former secretary to A.C. Bhaktivedanta Swami Prabhupada. Noting the use of Sanskrit terminology by Nikola Tesla, the inventor of alternating current motors and generators led to a study of the philosophy and principles of Tesla's teacher in this matter, Swami Vivekananda.

Participation in Native American ceremonies and study of and contact with tribal beliefs of indigenous people around the globe has given me a profound respect for the spiritual foundations of mankind. With this background, and many trips over twenty two years to visit the author in India, I proposed to Paramahansa Tewari that we prepare his book *Spiritual Foundations* for publication on the Net. I believe that the most ancient of philosophies, that of the ancient seers of India as presented in *Spiritual Foundations* provides the key not only for understanding consciousness, and our existence, but also for understanding that modern science is can go no further until it realizes the nature of reality as presented in the Vedas.

I believe this work by Paramahansa Tewari is as important, if not more, than the discoveries and insights that led to the Space Vortex Theory (SVT) and the resultant Space Power Generator (SPG). It is with deepest gratitude that I was able to prepare *Spiritual Foundations* for publication on the Net. James Sheppard also assisted in the proofing of the final copies.

I am currently employed as a Senior Electrical Engineer by an Engineering and Construction firm designing and building Combined Cycle Gas Turbine Power Plants in the 200 - 1,000 MW class.
Toby Grotz, BSEE, January 5th, 2003

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1. ILLUSIONARY NATURE

Nature presents a panoramic view through the boundless sky, vast oceans, ranges of mountains and hills, stretching forests and deserts, the flowing rivers and streams. The gift of eyesight from nature enables one to witness with awe and wonder some of the most bewitching scenes like snow-clad mountain peaks floating in clouds against the blue firmament, green belts of forests with multifarious hues and colors of vegetation, spotted here and there covering the planet, the starlit and moonlit nights, the splendor of the rising and the setting sun. The roaring waves of the ocean incessantly trying to submerge the land, lightning and thunder, storms and gale, reveal the mighty force inherent in nature. The living beings endowed with the sense organs of hearing, sight, smell, taste and procreation seem to be created to live happily and harmoniously as if to witness the glorious working of nature while themselves being an integral part of it.

What meets the eye is the solid earth with its flora and fauna, the cycle of night and day, and the changing seasons. The air which sustains life is not even visible to the eyes. Also what is not experienced is the tremendous speed at which the earth hurtles around the sun and the rapid movement of the whole solar system in the galaxy. All the oceans and the lands with their vegetation and everything that exists there, maintain their respective positions even when the planet rotates around itself at unimaginably high speed, clinging on to the mother earth on whose fate their existence depends. It also is not evident that there could be countless stars like the sun, with planets and moons similar to the solar system, that might possibly exist within the numerous galaxies which are moving away from us at speeds close to the speed of light. What a gigantic system!! What tremendous speeds for such enormously large heavenly bodies!! What in reality is the cause of motion? What is the origin of cosmic matter? And what is the basic source of consciousness that the living beings possess? And finally what is that that is named God?

कोऽहं कथमिदं जातं को वै कर्ताऽस्य विद्यते ।

उपादानं किमस्तीह विचारः सोऽयीदृशः ॥

Koham kathamidham jatam ko wa
karthaasy viddhyathe.

Upaadaanam kimastheeh vicharah
soyedhwashah.

”Who am I? How is this created? Who is the creator? Of what material is this made? This is the way of that enquiry”, - *Aparokshanubhuti*, Shri Shankaracharya.

The science of space, matter and energy, till the 19th century, held as a general consensus that the medium of space was not empty, as it appears to the senses. The hypothesis was that space was filled with a substance, ether, through which the waves of light were transmitted somewhat like the waves on the surface of water when it is disturbed. Though the details of the properties of the ether and also that of light were still being debated, the existence of an ether-filled space was firmly believed. The concept of ether as a subtle substance provided the medium of space with ever-existent reality. It was meaningful to incorporate the concept of God as an Omnipresent Conscious Entity because space, then, was not considered to be an extension of void or nothingness. The realizations of the seers of the Upanishads that aakaash is the first element from which in certain proportions air, fire, water and earth had been produced, had some scientific basis too because ether was somewhat akin to aakaash. There were even scientific ideas that atoms, that are material particles, are dynamic structures of the ether itself. Thus it was possible

to build a scientific theory based on a single reality: That matter could be created from the energy and dynamic substance of space. Indeed, these are the basic concepts of unity on which the Upanishads lay their foundation of not only the universal theory of space (aakaash), matter and energy, but also of Brahman - the Creator, Vishnu - the Sustainer, and Shiva- the Destroyer.

The trend in physical theories of physics that started with the advent of the 20th century has, however, been to consider space to be an extension of nothingness in which some real conditions or states of energy, that emanate from matter and are termed as fields, exist. The hypothesis of modern science starts from matter as the basic reality, considering space to be an extension of void. The phenomenon of creation of stable cosmic matter, therefore, goes beyond the scope of the present science. The theory also can neither pinpoint the source of cosmic energy that resides in the structure of matter, nor can it explain the cause of material properties that are experienced with the behavior of matter. These are, in brief, the limitations of the modern scientific theories at the most basic level of the physical phenomena of nature. When a scientific theory cannot cope with the question of the very origin of the universal matter and energy, how could it ever grasp and explain the phenomenon of consciousness which is evident in living beings?

The spatial reality achieved by the hypothesis of ether (aakaash) in the past has now fresh and solid experimental evidence through scientific experiments performed in recent years. These experiments demolish the dominant view today of the emptiness of space. There is no point in space, in an almost limitless universe, that is not pregnant with energy in the absolute sense. The space or aakaash itself is the reservoir of cosmic energy though, apparently, it appears to be void—a state of nothingness. Though the ether now being conceived is partly different from the ether of the past, it retains the dynamic and fluid character assigned to it earlier, but it has no properties similar to those possessed by matter. It is the nonmaterial but real ether that can be concluded to be the aakaash of the Upanishads.

The limited anatomical systems of the living beings permeated with the physical consciousness of distinctive separateness and segregation from the rest of the nature, added with a strong sense of "I-ness" (rather than "we-ness") in each of them and apparently independent of the others, generates a false experience opposed to the underlying unity of the universe. The zones of interconnections, inter-dependence and interrelationships with nature are hidden from the cognition of man in his waking consciousness and thus his actions are normally governed by the motivation "I", and "the rest of nature".

If the molecules of air that are the life-breath of the living creatures were visible vibrating at enormously high frequency, flowing into the lungs and being forced out incessantly colliding and interacting with the ocean of the molecules of the atmospheric air; if the pumping of blood by the heart into the numerous blood vessels and the arteries could be visible, thus revealing the precarious balance of life-force with each cycle of the heart beat; and if the movements of the earth, the moon and the stars could be felt in the same proportions as these do exist in reality; then life would be a horrid experience full of fear and anxiety, indeed a nightmare. Only an Ultra-Intelligent and Super Ingenuous System can harmonize such diverse functions at micro as well as macro levels and provide shields to these intricate operations from the human sight. But, on the very basis of these invisible phenomena, nature operates to fulfill her tasks and, therefore, the basic relationships of man with the medium of space and matter, whether visible or invisible, has to be clearly understood to decipher the real truth and purpose of nature and God.

2. DYNAMIC AAKAASH IS THE PRIMORDIAL REALITY

”All this universe of motion moves in the prana and from the prana it proceeded”, says Yama, the God of death in Kathopanishad, to Nachiketa, who was a young boy with intense desire to learn the mystery of the universe and the principles of life and death.

The *aakaash* in motion is like flowing streams of water similar to the whirls and vortices in ocean. Just as the flow of any liquid creates force and energy, the flowing *aakaash* is itself the most basic state of cosmic energy. When *aakaash* circulates around a center at the highest possible speed, it creates fundamental particles of stable matter, like the production of bubbles and foam from water when the same is set in motion. The universal matter is created out of prana since prana is *aakaash* in motion and *aakaash* is the primordial superfluid substratum of the universe.

”All the beings arise from *aakaash* alone and are finally dissolved in *aakaash* because *aakaash* alone is greater than all this and *aakaash* is the support of all times”. (Chhandogya Upanishad)

The *aakaash* is the most basic, eternally existent substratum with unique absolute properties, and is the real substance of the universal matter and all the beings. It is, therefore, that the Chhandogya Upanishad declares *aakaash* to be the support of all cosmic matter and beings for all time.

आकाशशरीरं ब्रह्म

Aakaashashareeram Brahm.

says Taitreya Upanishad, the body of Brahman is *aakaash* like the flesh and bones to the human body. The fluid substance of *aakaash* is the basic conscious medium and also the only reality in which cosmic matter is created due to the inherent energy of the dynamic *aakaash*.

सृष्टिर्नाम ब्रह्मरूपे सच्चिदानन्दवस्तुनि ।

अब्धौ फेनादिवत् सर्वं नामरूपप्रसारणम् ॥

Srishtirnaama Brahmaroope sachchidhaanandhavasthuni.

Abdhaou fenaadiwath sarva namroop prasaranam.

proclaimed Shri Shankaracharya in Drig-Drishya-Viveka. The world of matter as seen in nature is the manifestation of Brahman, that has sat-chid-ananda as its basic absolute attributes and the substance of *aakaash* as the body. Similar to the creation of foam from the formless water, the cosmic worlds and nature, with names and forms, are created from the formless satchidananda.

इदं तदक्षरे परमे व्योमन्

Idham thadhakshare parame vyoman.

is the pronouncement of the Mahanarayanopanishad. “The *aakaash* is not destructible, it is the primordial absolute substratum that creates cosmic matter and hence it is:

परमे व्योमन्

Parame vyoman

The Vedic dictum, Neti-Neti, signifies that the properties of *aakaash* (that forms the very body of *Brahman*) are absolute, and not to be found in the material properties that are in a sense relative. For example, the *aakaash* is the eternally existent, superfluid reality, for which creation and destruction are inapplicable. A portion of *aakaash* cannot be annihilated like the phenomenon of annihilation discovered in this century between two basic particles of matter. The properties of mass possessed by these particles is not possessed by the *aakaash*, which is

सूक्ष्मातिसूक्ष्मं

Sookshaathisooksham

that is, "subtler than the subtlety" as said in the Shwetashwatara Upanishad.

"The supreme *Brahman*, eternally free and immutable existed alone." (Shri Shankaracharya in Panchikaranam) The *aakaash*, different from any material substratum like air or water that are discrete substances (atomic/molecular in nature) and change their state, is unchangeable, and indeed beyond conception when analyzed with material experience. For instance any material substance can be compressed to a smaller volume, but the question of compression of *aakaash* does not arise, just as bubbles and foam cannot compress a volume of ocean's water so also matter which is a product of fluid *aakaash* cannot compress it. The *aakaash* is therefore eternally free.

A material fluid during motion loses energy due to internal friction and comes to rest. The superfluid *aakaash*, while spinning, is itself the basic state of cosmic energy for creating matter. For instance, the electron is the *aakaash* spinning at its limiting speed and since there is no loss of energy due to motion of *aakaash*, the electron is eternally existent till it meets its opposite particle when it is annihilated producing a tiny flash of light .

All the properties of *aakaash* are nonmaterial and absolute. To summarize the *aakaash* is a superfluid with the absolute non-material properties. Therefore, Neti-Neti, which means Not-this, Not-this, is the vedic dictum to describe the properties of Brahman who has the body of *aakaash*.

ओमिति ब्रह्म प्रसौति

Omithi Brahma prasaothi

Taittiriyanopanishad. With Om Brahman begins motion and creation. The circulating movement of *aakaash* at an unimaginably high speed of light, creates cosmic matter. The *aakaash* itself becomes the basic matter that further assembles terrestrial matter like air, water, and elements of earth. The oscillatory movements of finer matter and annihilation of material particles create heat and light (fire).

एकोऽहम् बहुस्याम

Akoham bahusyam

"I am one, should become many". Brahman, the One, with the body of *aakaash*, churned himself to create the cosmic worlds so as to become many, or to assume many forms. "He became knowledge, and He became ignorance. He became truth, and He became falsehood" :

Taittiriyanopanishad. The Nirvikar Brahman developed vikar and this happened due to the creation of cosmic matter within Brahman from the energy of Brahman and from the Will of Brahman.

Fundamental matter, as said before, is the vortex of *aakaash* spinning at light speed such that the center of the vortex within a sub-micro region breaks down creating a zone of void or non-existence of *aakaash* there. Thus the Sat that is *aakaash* of Brahman becomes Asat, that is, non-

existence at the center of the vortex of basic material particles. Matter therefore, is a combination of Sat - Asat, truth - falsity, *aakaash* - void, continuity - discontinuity, reality - non-reality, permanence - impermanence. The forms of cosmic matter are non-realities superimposed on the basic substratum (*aakaash*) of reality, and this illusionary aspect of nature is Maya.

"In the beginning all this universe was non-existent and un-manifest from which this manifest existence was born. Itself created itself. None other created it". - Taittiriyaopanishad.

"Ishavasyamidam Sarvam", says Ishopanishad. The one reality of *aakaash*, the body of Brahman is all that exists. Hence all this visible and invisible nature is pervaded by God, or is itself God with regard to its substantial reality.

3. ORIGIN OF CONSCIOUSNESS

The absolute and basic attributes of Brahman with *aakaash* as its substance is Sat-Chit-Anand. The Sat, the cosmic energy, which is a dynamic state of *aakaash*, generates the cosmic matter and is the universal truth of all visible and invisible existence. The Sat also produce the principles of truth as the main code of morality.

Since the behavior of matter and its properties have been experimentally determined, it is possible to infer the absolute properties of *aakaash* scientifically as far as the role played by it in the constitution of matter is concerned. If *aakaash* as a single substance can construct all the diverse kinds of inert matter, some aspect of this non-material entity should explain the origin of consciousness too. A mobile medium can be either static or in motion like circulation or linear motion at varying speeds. The limiting motion as spinning action explains the creation of fundamental matter. It is the static *aakaash* that should account for the purest state of consciousness, and possibly the varying speed of motion of *aakaash* could cause different degrees of consciousness in the living species of nature. Since *aakaash* in motion is identified with prana, consciousness and prana are either the same effect or are intimately connected.

The *Chit* could therefore be "that state of *aakaash* which is less dynamic than that in the constitution of matter" and possess the absolute attribute of consciousness in varying degrees depending upon the motion of *aakaash*. The four states of consciousness that one experiences during waking, dream, sleep and samadhi are derived from the most basic state of consciousness which is named *Chidakaash*. In vastness, the *Chidakaash* is larger than the largest, and is almost limitless subsuming within it the countless galaxies of the universe.

The *Chidakaash* is the purest state of consciousness that in its lowest degree or potential resides in apparently inert matter. In conscious beings, for instance man, the lowest rung of consciousness is during the waking state where physical interactions are dominant. The consciousness ascends in its quality and purity from waking to the higher states that are dream, deep sleep and samadhi. There are three *aakaashas*: The *Chidakaash* is seen as *Chittaakaash* in man (and other living beings) as individual consciousness and *Bhutaakaash* as cosmic matter. As explained by Shri Sathya Sai Baba:

चिदात्माऽहं नित्यशुद्धबुद्धमुक्तसद्वयः

Chidhaathmaaham nithya shuddhabuddhamukthasadadhwayah.

"I am the Atman, the pure consciousness, eternally pure and Intelligence Absolute, ever free and one without a second". – Shri Shankaracharya in Panchikaranam.

Also, "The attributes of Existence, consciousness and Bliss are common features in *aakaash*, air, fire, water and earth as well as in Gods, animals and men, etc. Names and forms differ". Drig Drishya Vivek.

– Shri Shankaracharya.

On the nature of Sat-Chid-Anand, Shri Sathya Sai Baba clarifies that in reality "Sat alone exists; the Chith is its effulgence; Anand or Bliss is the consequence". The physical pleasure derived through the senses is also drawn from the basic source of Bliss in the substratum of Brahman, but since the means of pleasure is through the physical senses and mind, that have imperfect matter (vikar) as their constituent, the sensation is not unalloyed bliss, but a poor reflection of it. With

restraints on the senses and concentration on the basic source of the universe, the Brahman, a Yogi, unites his individual consciousness with the Chidakaash and goes into raptures of samadhi, deriving immense peace and bliss.

सत्यं ज्ञानमनंतं ब्रह्म विशुद्धं परं स्वतः सिद्धम् ।

नित्यानन्दैकरसं प्रत्यगभिन्नं निरन्तरं जयति ॥

Sathyam jnanamanantham Brahman vishuddham paramam swathah siddham.

Nithyaanandhakarassam prathyagabhinnam nirantharam jayathi.

“Brahman is existence, knowledge, endless, pure, supreme, self existent, eternal and indivisible Bliss, not different (qualitatively) from the individual soul, non differentiated and always triumphant”. Viveka Chudamani - Shri Shankaracharya.

The consciousness of Brahman has supreme knowledge too. The knowledge of nature discovered by man, and also the instinctive abilities possessed by the living beings, are derived from the basic source of knowledge, that is, Brahman alone. It is the primeval substratum of the most basic aakaash that possesses capability of creation of cosmic matter, and is itself consciousness and supreme knowledge, thereby making possible the proclamation of Shri Shankaracharya:

ब्रह्म सत्यं जगन्मिथ्या जीवौ ब्रह्मैव नापरः

Brahma sathyam jaganmithyaa jivo Brahmev naaparah

“Brahman is the truth, the worlds are illusionary, and the individual soul is qualitatively not different from Brahman”. The illusion lies in the fact that matter, in its constitution, possesses reality as well as non-reality, and though created out of the subtle substance of *aakaash*, yet appears different from it.

4. ORIGIN OF LIGHT

The terrestrial environment has light in the day and darkness at night, the source of light being the sun. The question is whether light can still exist in the absence of all the universal matter when the medium of *aakaash* is the only reality left. It is known scientifically that the process of combustion of matter produces light and oscillation of material particles at atomic levels too produce heat and light of different qualities. However, to determine the basic source of light the deepest phenomenon of creation of fundamental matter from *aakaash* has to be studied and analyzed.

The *aakaash* of the universe after creation of fundamental matter is, as said before, gravitationally energized. Gravity is the attraction between matter, and is identified as *tamasik* state in space (*aakaash*). Gravity also produces darkness in *aakaash* as far as its interaction with the human eye is concerned. When matter is annihilated, as it happens when an electron and its opposite particle positron come together, it is the destruction of the gravity effects (fields) associated with these particles that is seen as a flash of light detected through experiments.

Light is *satvik* in nature and is the effect produced when gravity which has a *tamasik* effect, is reduced in magnitude at any point or region in *aakaash*. The *aakaash* of the universe, prior to creation of the cosmic matter, is a self-effulgent entity that dims in brightness in and around that region where cosmic matter is created, and when the gravity fields associated with the cosmic bodies reduce at that point or in that region of *aakaash* for any reason, there is a proportionate restoration of the self-effulgence of *aakaash* there.

चिदानन्दैकरूपत्वाद् दीप्यते स्वयमेव हि ।

Chidhanandhakarupathwaadh dheepyaathe swayameva hi.

”The supreme self (Chidakaash) because of its nature of consciousness and Bliss shines by itself”,
- Atma Bodh, Shri Shankaracharya. Also,

न तत्र सूर्यो भाति, न चन्द्रतारकं नेमा विद्युतो भान्ति कुतोऽयमग्निः ।
तमेव भान्तमनुभाति सर्वं तस्य भासा सर्वमिदं विभाति ॥

Na thathra suryo bhathi, na chandratharakam nema viddhutho
bhanthi kuthoyamagnih.
Thameva bhanthamanubhaathi sarvam, thasya bhasa sarvamidham
vibhathi.

”There the sun cannot shine and the moon has no luster: all the stars are blind: there the lightning’s flash not, neither any earthly fire. For all that is bright is but the shadow of His brightness and by His shining all this shines”. - Katha Upanishad, ”The Upanishads”, Shri Aurobindo.

“When the stars and moons are not created in the universe, there can be no matter and hence no lightning, etc. In that stage of *aakaash*, there are no gravity fields of cosmic bodies to reduce the self-effulgent luster of the primordial substratum.” Tham Devaa Jyothishaam Jyothih - The Gods acclaim It as the light of lights.

5. RAJASIK AND SATVIK FORCES

The spinning action of *aakaash* creates electrical force of attraction and repulsion between particles of matter or assembly of material particles. These forces exist in *aakaash* in and around the particles and are identified to be *rajasik* in nature. The spinning action or circulating motion of *aakaash* signifies intense activity', and, therefore, wherever (including human nature) rajasik forces are predominant, there can be no inertness which is the quality of *tamasik* forces. The cosmos is pervaded with electric (rajasik) and gravitational (tamasik) forces due to the tremendous movement and enormous mass of the heavenly bodies.

The static *aakaash*, with no activity whatsoever, is the highest state of the *satvik* condition, and as described before is the *Chidakaash*. Depending upon the degree of the "lack of movement" of this basic substratum (*aakaash*), *satvik* conditions develop. A yogi, stills his mind by removing all extraneous thoughts, and by concentrating only on one Deity, passes over from rajasik to the satvik state of samadhi. The human body, an aggregation of inert matter (with the least consciousness) is superimposed on the real medium of Chittakaash which, if not over activated with consumption of inappropriate food and the associated aggressive thoughts, remains close to the satvik state. All sadhanas meant to gain knowledge on the spiritual phenomena in an attempt to come face-to-face with Divinity are the process of transition from the tamasik and rajasik states to the satvik state.

6. MAHAVAKYAS

The vedic dictum *aham Brahman asmi*, that is, I am Brahman, signifies that the individual being (*jivi*) is qualitatively the same as Brahman because his consciousness and intelligence, though of limited potential, are derived from Chidakaash, the consciousness of Brahman. The material substance of his body are produced from the *aakaash*, which is the body of Brahman; and his soul being a state of *aakaash* is as eternal as Brahman. *Thaththwam-asi*. That thou Art is the second vedic aphorism, that means that the individual being is Brahman, for the reasons given above.

आर्द्रज्वलितज्योतिरहमस्मि ।
ज्योतिर्ज्वलति ब्रह्माहमस्मि ॥

- Mahanarayanopanishad.

Ardhrajwalithajyothirahamasmi.
Jyothirjwalathi brahmaahamasmi.

"I am the light of the fluid (substratum). I am the effulgent Brahman". The identity of the *jiva* with Brahman and self effulgent nature of Brahman is revealed above.

"Prajnanam Brahman" follows from the very definition of Chid in *Sat-Chit-Ananda*, which means Vijnana or supreme knowledge. Satya Sai Baba says, "*Chith in Sath-Chith-Ananda* means *Vijnana*, the super knowledge that confers perfect equanimity and purity; in fact, the *Atmajnana*, which can be experienced by one and all. In common parlance, *Vijnana* is used to indicate the science, but really it means the higher wisdom".

"This Atma is Brahman", is the fourth Vedic dictum that reveals that the soul of the *jivi*, which is a characteristic state of *aakaash*, is Brahman qualitatively for the reasons given in the first Vedic Dictum, "I am Brahman".

7. MEANING OF ETERNITY

The decay and disintegration of matter with time and the changes in state with applied pressure and temperature, provide proof that matter is impermanent in nature. However, until scientific experiments were performed in this century, it was held in science that atoms are permanent entities. With the discovery of the phenomenon of annihilation between an electron and its opposite particle a positron, which results in a pulse of light, the theory of the permanence of matter is no more valid. Lately, the vortex structure of the electron in which *aakaash* spins and creates a central void within the vortex, where there is a non-existence of *aakaash* within a sub-micro region, is seen as a basic material particle possessing all the properties of matter due to its structure. Thus, matter can be termed transient (compared to cosmic time) and *aakaash* to be an eternal substance, since it does not decay or disintegrate with time, as it has no atomic or molecular structure like a material medium. If water of the ocean is supposed to be a non-viscous and continuous superfluid, then it shall remain so forever, whereas, its foam and waves will be the impermanent features. It is precisely the same way with *aakaash*, which, as a non-material and yet a real substance because of its subtleties (non-viscous, zero mass, incompressible), does not change its quality till eternity, and stays as an ever existent primeval substratum of reality.

The start of time coincides with the Will of Brahman. “*Ekoham Bahusyam*; Alone I am, should become many; with which cosmic creation starts with the movement of *aakaash*.” Thus, time too is created by Brahman. As the cycle of creation proceeds with the emergence of matter, galaxies, stars, planets, and moons, and the formation of highly organized matter that subsequently shapes and develops into the vegetative world with mobile living beings in water, air, and on earth, the metagalaxies move out to the farthest reach of the universe only to reverse back towards the center for the annihilation of cosmic matter, thus completing one cycle. There may not be even a speck of matter then and yet the universe will be as full of energy as before since it will lose only its bubbles (cosmic matter), the void entities and not its dynamic substance, *aakaash*.

ओं पूर्णमदः पूर्णमिदं पूर्णात् पूर्णमुदच्यते ।

पूर्णस्य पूर्णमादाय पूर्णमेवावशिष्यते ॥

Om poornamadhah poornamidham, poornath poornamudhachyathe.
Poornasya poornamadhay, poornamevaavshishyathe.

“This world (of cosmic matter) is full and substantial. That (from which cosmic matter came out) is also full and substantial. Though this full (and substantial material world) came out of that (Brahman), it still remains full.” The above invocation for peace is literally true with superfluid nature of *aakaash* and cosmic matter as its froth and foam.

The creation and annihilation of cosmic matter repeats in cycles, and at the end of each cycle, Brahman wills to create. The eternity is applicable not only to the continuation of the cyclic universal time, but also to the permanence of the substance of *aakaash*.

8. STATES HIGHER THAN *AAKAASH*

Taittiriyaopaniṣad declares:

तस्माद्वा एतस्मादात्मन आकाशः

Thasmaadhwa aethasmaadhaathman aakaashah sambhuthah.

”From that Brahman, from this *Atman*, *aakaash* came to be.”

Shri Satya Sai Baba explaining this verse in Upanishad Vahini, describes the five universal elements thus: ”Let us take the Five Elements, one by one. The living being has the first one, the Earth, as its base. Water, the second, is the basis for the earth. Water is produced from Fire, the third element. Fire itself emanates from Wind, the fourth. Wind or Vayu arises from Ether, or *Aakaash*. *Aakaash* emerges from the Primal Nature and the Primal Nature is but the manifestation of one aspect of the majesty of God, or the Supreme Sovereign Atma, the *Paramatma*”.

The absolute properties assigned to *aakaash* can explain the basic material properties shown by matter. While fundamental matter can be considered to be a void entity in *aakaash*, the vast sphere of *aakaash* itself can be either endless, or larger than the largest. If it is larger than the largest, it can have a boundary which could be between *aakaash* and a void, an endless extension beyond. The sphere of substantial *aakaash* (Brahman) shall float in an endless zone of nothingness, and there could be numerous such vast spheres of *aakaash* interspaced with void. The other possibility is that *aakaash* is endless and ever existent. For both the above alternatives, creation of *aakaash* from Primal nature is a necessity. While the definition of Sat-Chid-Ananda given by Shri Satya Sai Baba explaining the three qualities in a single entity ”Sat” can be comprehended, the creation of *aakaash* in its highest state (Chidakaash) seems to be beyond human understanding. That is why, perhaps, Brahman is *anirvachaniya*, or beyond comprehension and description.

9. A MYSTIC VISION

An awe-inspiring vision of dynamic *aakaash*, or *samsara*, or whatever else it might mean, presented itself to me while I was sleeping, during the period when for months I contemplated the nature of the space medium while formulating a theory that could build matter out of its own substance. An ocean that shone like molten silver with undulating waves showing its fluid nature, homogeneous in character, and with a central dome (part of a hemisphere) with unmatched brilliance spontaneously came into my vision. I had a feeling that I existed somewhere near the central dome, as I could see it from its side, and could also see more than half of the circular cross-section of the spherical ocean on which the waves existed. While the dynamics of the ocean was evident due to the waves, the scene as such was static. I felt happy as I witnessed the majestic beauty of this lustrous vast span of ocean with a clear horizon beyond which there existed nothing. There could not be a source of light above the ocean's surface due to which it shone, and the fact that the central dome shone much brighter than the rest of the ocean gave me the impression that the fluid itself was self-effulgent. I wished, during this dream, to know if the ocean was symmetrical, that is, if it was a section of a spherical ocean. And right at that instant when I so wished, the horizon started shifting slowly and positively revealing its circular symmetry through one full rotation and thereafter it stopped rotating. There was only one shining substance with waves everywhere and some smaller ripples and perhaps foam around the thin circular line which divided the dome with the horizontal plane of the ocean.

My happiness due to the majestic sight suddenly changed to an anxiety and fear as to how I would cross over the ocean since, I thought, I stayed around its central dome and the horizon where presumably the shore could be far off. And right at that moment, I heard a clear voice that suggested that I should utter the name of a Deity. I could utter that name just once, and was about to repeat when almost instantly I was moved to the far horizon where in place of nothingness as it existed before, there stood tall green trees on solid land to which I climbed with little effort and felt safe and relieved. The ocean disappeared and so did the vision.

The waves in the vision had a slight darkish shade at the trough while the crest was brighter. Was it the ocean of *samsara* with pleasure and pain shown by the light and dark shades on the waves? Indeed, it was the utterance of the name of my chosen Deity that took me across the ocean of *samsara* most effortlessly!! But, then, where was the need of the magnificent central dome? Where does its unique design fit in? These questions have come to my mind time and again, reviving the vision of which I have clear memory even after the lapse of more than one and a half decade. The essence of the vision that there exists a mobile, homogeneous, one and only one entity, that is, the basic substratum of the universe, provided a mystical proof to the postulate on the nature of space (*aakaash*) that I had already made in my scientific works much earlier to the vision. The attribute of the "self-luminosity" of the *aakaash*, however, was the additional feature that the vision provided.

10. PROJECTION OF FUTURE EVENTS INTO PRESENT

It is possible to predict some of the results of scientific experiments even with a newly postulated theory. Such future events can be described in advance because the framework of the theory leads to specific conclusions and experimental set-ups are suitably devised to detect the future event, like detection of particles, quality of light, etc. In spiritual phenomena, where future events are seen vividly or faintly during dreams and visions prior to their actual occurrence, the experimental set-up is the human being himself. (The dreams referred to here exclude those that are caused due to over anxiety and worries. It requires little effort to identify such dreams after some experience as the individual is well aware of his day to day mental condition, stress, etc.) Each person, irrespective of formal education, is a divine entity formed out of the same substance as Brahman and, therefore, possesses, possibly to a varying degree depending upon his evolution, human qualities of love, compassion, and truthfulness. When the mind is tranquil during sleep, some mysterious Entity, perhaps out of compassion or mere adherence to His duty, brings forth the future into the present both happy and sad events with artistry unknown to man, through natural scenes, bewitching beauty of figures and forms, creating most pleasant sensations and also horrible and repulsive experiences so very terrifying sometimes that the sleep itself is disrupted. In the immediate future subsequent to the dream, the individual undergoes his dream experiences now in a waking state, when he actually encounters pleasure and pain due to his social living conditions, success, failure and calamities, etc. With positive efforts and discrimination, it is possible to draw close connections between the dreams that one had and the actual happenings that occurred later.

For scientific proof of this phenomenon of premonition, a fervent prayer by a *sadhak* to the Omniscient Source to enlighten him on the future happenings even for the sake of experiment will certainly be answered. The Divine seems to suggest to the *sadhak* to explore Him scientifically or spiritually through concrete experience of his own. And finally the *sadhak* having experienced the Divine shall exclaim with amazement: "Behold! here is the all knowing Power that goes beyond time and space, and knows not only the past and present but the future too". This is another inexplicable aspect of Brahman.

The occurrence of dreams cannot be considered a trivial phenomenon. Just as a painter applies real paint on a canvas with brush and produces a painting, so also in dreams very real and subtle substance of "material mind" acts as a canvas on which the living consciousness throws its own light, conceives and organizes the scenes in deterministic way with a purpose to convey a message. One learns in advance sometimes of very crucial matters related to profession, family and social aspects depending upon the anxiety and concern during waking state of consciousness. With faith in the Deity, who could be a prophet, an Incarnation, or a God or Goddess, clear voices are heard that assuage, encourage, suggest and also admonish the *sadhaka* depending upon his actions. Many devotees of Shri Sathya Sai Baba have had numerous visions of this Incarnation while asleep, and receive guidance from Baba on their *sadhana* and on all matters of relevance in their lives. Visions are real in sleep consciousness to the extent the material world is real during the waking consciousness.

11. BRAHMAN, VISHNU, MAHESHWARA

The "force of creation" of cosmic matter is Brahman, who consciously moves his body of *aakaash* to create cosmic matter. The constant circulation of *aakaash* as "spinning motion" sustains the basic particles of matter, and also it is the dynamic *aakaash* that maintains the instability of the heavenly bodies. The "force of stability" or sustenance is Vishnu. The force of electrical attraction that causes annihilation of matter and produces light is the force Shiva, or Maheshwara. Shri Sathya Sai Baba explains: "The universe which is based on the triple nature of time and which is sustained by the Trinity - *Brahma*, *Vishnu* and Maheshwara, is permeated by the Divine in the form of the three *Gunas* - *Satva*, *Rajas*, and *Tamas*". The creative force of *Brahma* would therefore pertain to *tamas* whereas *rajas* and *satva* will be the aspects of *Vishnu* and *Shiva*. Just as a living and conscious being performs acts willfully, so also the cosmic powers, the Trinity, consciously execute their functions for the gigantic universe to sustain and operate its systems eternally.

Right from the structure of the basic matter the *aakaash* ceaselessly works to sustain cosmic bodies and their movement. So also in the animal kingdom and the vegetative world each entity of the organism performs involuntarily its role to enable functioning of the whole. Accordingly, the highest of the living being - man - has to identify with discrimination his duty towards work and has to perform his karma for the social structure of mankind to sustain.

12. IMMORTALITY OF *JIVA-ATMA*

”The *Atma* in the individual, the *Jiva-atma* is Eternal, Immortal, Full. There is no Death; what appears so is the shifting of Its center”. – Shri Sathya Sai Baba.

The *aakaash* is eternal as it is a non-material fluid. A circulating state of *aakaash* can exist forever. The soul (*Jiva-atma*) of a living being, in order to be immortal, will have to be some unique form of motion of *aakaash*, somewhat like a whirl or an assembly of more than one whirl. The subtle-body of a living being is a condition of *aakaash* which has within its configuration a specific geometry of forces due to *aakaash* being in a dynamic state and thus forming the subtle body. The subtle body should have matter superimposed on it in accordance with the pattern of the forces of *aakaash* so as to form the physical body and also maintain its functioning through prana (motion of *aakaash*). In the event of death, the subtle body will separate itself from the physical matter, leaving it to disintegrate, and also similar to the motion of whirls in water, will migrate to some other position in the medium of *aakaash* so as to take a rebirth.

The Principle of *Karma* requires that the experiences of the individual being, based on his actions during the lifetime, are imprinted in the subtle body, which will therefore have to possess some organized structure of fine matter as mental state within it, and will accordingly be impelled to move to specific locations for rebirth. The record for punishment and reward for the lifetime actions of the individual are thus carried by him in his subtle body. If the Divine can be conscious of future happenings, which in fact is the miracle of all miracles, then to organize a system which determines the future depending upon the inputs of the present is comparatively a much easier task, for Him. And the principle of *Karma* is fundamentally based on this very concept that the deeds of today shape the future events for man - the most intelligent of beings is gifted with the discriminating ability in addition to the instinctive habits that all other creatures possess.

For animals, there is no sin when they satisfy their sensual demands as dictated by their instincts. Man, however, has to reason and discriminate so as to achieve moderation in these strong desires, lest his actions affect adversely the society from which he draws sustenance. It is for this reason that the morality and an ethical code is essential for man. His inner conscience invariably informs him whether the action he intends to undertake is righteous or not, even if he is totally ignorant of the religious scriptures or the moral ethics. Since, with the free will gifted to him by nature, he indulges either in accordance with his conscience or against it, he gets merits and demerits in the future accordingly. Having made the Law of *Karma*, the Divine seems to stand unattached and aloof unless a devotee implores upon Him to protect and save him.

13. REALITY OF THOUGHTS

The universe has no entity other than aakaash, its movements and resultant fields and forces. Just as in a pond of water, even a slight disturbance on the surface creates ripples that spread throughout the surface, so also even the least movement of the brain's material constituents, that takes place due to conception of any thought in the mind, spread like waves throughout the universe and affects the conscious minds of all other living beings. Thus, one is interacted with other's thoughts through the real ripples in the medium of *aakaash*, in the same way as his own thoughts affect others. It is the quality of the thoughts that determine the quality of the waves? For peace to dawn in the world, there have to be peaceful thoughts. It is here where the relevance is seen of the religious prayers for the benefit of the individual offering the prayer, and also the humanity at large. Each thought in the mind, and every word uttered has physical reality and, therefore, creates an impact on the character of the individual and also on human society. It is the extreme subtlety of *aakaash* and the limitations on the perception of the sense organs imposed by nature that make invisible to the human sight the ripples and the waves of thoughts. The teacher and the disciple pray to the Lord:

ॐ सह नाववतु । सह नौ भुनक्तु । सह वीर्यं करवावहै ।
तेजस्वि नावधीतमस्तु । मा विद्विषावहै ॥ ॐ शान्तिः शान्तिः शान्तिः ॥

Om saha naavavathu; sah nao bhunukthi; sah veerya karvaavahai.
Tejaswi naavdheethmasthu; ma vidhwishaavahai. Om shanthih, shanthih, shanthih.

May He protect us both together. May He protect us both. May we attain vigor together. Let what we study be invigorating. May we not envy each other. Om ! Peace ! Peace ! Peace !

Also when the Peace Invocation is made, the Divine, which is Omnipresent, due to His being Omniscient hears or is conscious of the prayer:

ॐ भद्रं कर्णेभिः शृणुयाम देवाः । भद्रं पश्येमाक्षभिर्यजत्राः ।
स्थिरैरङ्गैस्तुष्टुवांसस्तनूभिर् व्यशेम देवहितं यदायुः ॥
स्वस्ति न इन्द्रो वृद्धश्रवाः स्वस्ति नः पूषा विश्ववेदाः ।
स्वस्ति नस्तार्क्ष्यो अरिष्टनेमिः स्वस्ति नो बृहस्पतिर्दधातु ॥
ॐ शान्तिः । शान्तिः । शान्तिः ॥

Om bhadram karnemih shrinuyaam devaah bhadram pasheyemaakshabhiryajathraah;
Sthirairangaisthushtwan sasthanubhir vyashem devahitham yadhaayuh.
Swasthi na Indhro vriddhashrawaah swasthi nah poosha vishwavedhaah;
Swasthi nasthaakshyon arishtanemih swasthi no brihaspathirthadhaathu.

Om shanthih.shanthih.shanthih.

The experience of many sadhaks shows that chanting the name of God creates a protective shield against the onslaught of jealous forces that one invariably faces in society. Also utterance of *Gayatri Mantra*,

ॐ भूर्भुवः स्वः
तत् सवितुर्वरेण्यं भर्गो देवस्य धीमहि
धियो यो नः प्रचोदयात् ।

Om bhoorbhuvah svah,
Thath savithurvarenyam, Bhargo devasya dheemahi,
dhiyo yo nah prachodhayaath.

is effective in ensuring one's physical protection and also enlightenment of the intellect. A *sadhak* engaged in the arduous task of scientific, literary or social nature must reap the benefit by chanting this powerful *mantra*. When the physical reality of words, thoughts, and consciousness of *aakaash* are recognized, chanting of God's name or *mantras* will no longer be considered superstitious. Noble thoughts produce words saturated with love, and result in noble actions. The unity of thoughts, words, and deeds are emphasized in religions so as to follow the dictates of the inner Conscience, the *Atman*, whose nature is truth - knowledge - bliss.

14. INCARNATION OF GOD

If the planet earth, its environment and nature so very conducive to the evolution of life are taken for granted, the intricacies of the various phenomena and the highest degree of *Intelligence* behind their systematic functioning do not get revealed. Only deeper thoughts, constant efforts, and the most basic analysis of the cosmic forces and functions reveal the limitations of the human mind compared to the universal source of knowledge despite the fact that man, in reality, is a portion of *Brahman*. It has been possible to grasp scientifically to some extent the laws that operate in material phenomena. And yet, the mystery of matter's creation and its interrelation with space (*aakaash*) continues to be unresolved in science for centuries. At the spiritual plane, where more fundamental issues like soul, life after death, consciousness, and attributes of love, compassion, and truthfulness are attempted to be understood, science as well as intellect become dumb. It is here when the deeper inquiries are made, the concept of God comes to the scene. Where atheism is blocked, theism begins to provide answers to the inquiries made.

Higher than the science of matter is the science of *aakaash*, and higher than science of *aakaash* are the spiritual laws. But higher than both the scientific and spiritual principles is the Phenomenon of God, *who* incarnates time and again in human society as a human being to restore peace and love on the planet, and also to show the supremacy of God over the laws of science and spirituality and the demonstration of His omnipotence. Though not impelled by a sense of pride, but to reveal the basic universal truth and to impart knowledge to the seekers of the truth is the reason that He incarnates. The One Who is the creator of the countless beings, who is the Architect of this gigantic cosmos, who is the Cogniser of each entity in this universe, can certainly comprehend the ailment of society, and arming Himself with appropriate Powers He incarnates on earth at a time and place that He alone chooses.

The Incarnation of God in human form is an Experiment by Divine to demonstrate to mankind the ideal character and behavior that one should endeavor to possess. *Rama Avatar* with twelve Kalas was that of *maryada purushottama*, that combined in Him the ideals of son, husband, brother and a just-ruler. (Kalas is the plural of Kala; meaning "Godly aspects" associated with power.) *Krishna Avatar* with sixteen *kalas* was a *Purna Avatar*. The *Avatars* though born in different eras and having different Divine Powers, possess highly pronounced state of the absolute attributes of *Brahman* in being truthful, omniscient, and ever blissful. The Prophets too exhibit similar Divine qualities, and their life and teachings provide clear-cut guidance and directions at crucial stages of the progress of human society.

The religions arise from the *upadesh* of the Prophets like Buddhism, Christianity and Islam. The similarity in different religious preaching occurs due to the common substratum of *Brahman*, wherein alone lies the seed for all material and spiritual phenomena. While the outer forms of religions like rituals, mode of prayers and other subsidiary details may vary depending upon the specialty of regions, climatic conditions, time of the advent of the Prophets and Avatars, the basic principles are rigidly the same. There is only one eternal *Brahman*, only one eternal *aakaash*, and indeed, only one universal religion, which is eternal (*sanatana*) religion.

It is amazing the way nature performs her functions so smoothly and apparently automatically. The germination of seeds sprouting into different kinds of plants each drawing its respective elements for nourishments from the same soil; the male and female principles multiplying plant and animal life; the sustenance of vegetation on soil, and in turn, plants providing food to the living creatures; the phenomena of night and day, the changing climates, the cycle of the evaporation of water from the seas forming clouds and rains, the water then flowing back into

rivers and to the seas; the blanket of life supporting atmospheric air around the planet, the sunlight and its heat sustaining the living beings; the harmonious and uninterrupted working of all these organized systems and phenomena are the real pointers towards a living Intelligence of the highest order far far beyond the conception of the limited human faculty. The Incarnations of God do not come in the way of functioning of nature, and yet they convincingly demonstrate abilities they possess to control nature. *Brahman* wills to create and the *aakaash* starts moving and churning; *Avatar* wills to give to a devotee some token of His love, and nature produces it spontaneously for Him; man wills to do a noble task and with perseverant efforts and God's Grace achieves his goal. That is the difference between man and God. Unless God wills, man cannot reach his desired goal. An Incarnation is born to reveal this mystery and thereby educate humanity that man is subservient to God.

15. INFATUATION, LOVE AND COMPASSION

The fundamental particle and its opposite are physically attracted due to conditions in *aakaash* arising from the very structure of the particles. Both these smallest particles of stable matter have the least degree of consciousness and are directed by the strongest and blind force of attraction that leads to the very extinction of the particles. Because nature has in its basic design this system of physical attraction, it is the same phenomenon, governed by the form and figure, that is the primary cause of infatuation inherent in the male and female principles.

Infatuation controlled and moderated by the *buddhi* (discrimination) becomes a socially permissible physical attraction between men and women. When the impermanence of this attraction is experienced with time, assimilated in thoughts and put into restraining action, it is sublimated and becomes affection. Affection, when permeated deeply with a sense of gratitude, is expressed as a noble emotion towards community, nation and humanity at large. The love between the mother and the child, however, is of unique kind; it is derived from the universal bond between cosmic energy (*shakti*) and the manifested worlds. The mother is the creator and the sustainer of her child who instinctively clings to her bosom and blissfully sleeps on her lap. The mother nourishes the child and cares for its needs and protection out of sheer selfless love. The child itself is a bundle of innocence and love. The love towards the mother is closest to the love of God. It is God's love for His creation that is seen as the mother's love for her children.

The underlying unity of the inanimate and the animate beings, through the substance, power and consciousness of *aakaash*, is the primary cause for the generation of compassionate feelings when any disorderly act is done against nature's living creations. Compassion is a force to fight cruelty. Cruelty is compassion covered by ignorance and *ahamkar* due to apparent and deceptive separateness of individual beings. When the knowledge of one-ness of the universal reality dawns, the shield of ignorance covering compassion is destroyed.

The I-ness in an individual with the associated feeling that he is independent of others and all the rest of the universe arises due to the fact that matter that constitutes his body in its fundamental form has developed *shoonya* (void) at its center and thus, in the sense of continuity, is different from *aakaash*. *Aakaash* is transparent to sight but matter, due to the above structure, obstructs vision through it. Thus the individual experiences through sight and other sensual interactions his separateness from the rest of nature. Apart from the above illusionary aspect of matter, the individual *jiva* possesses certain centers within his physical body around which the movement of *aakaash* takes place to create *prana* and physical consciousness. The individualized center, like the center of a single whirl in an ocean, distinguished by its independent rotational motion, further intensifies the belief that he is not an integral part of others and nature as a whole. The illusion lies mainly in the fact that *aakaash* is invisible to the eyes and its connection with matter is not perceived due to the limitations of the sense perceptions. But, though the eyes cannot see the underlying unity, the heart feels it through the surging emotions of love and compassion towards all entities of the universal God.

16. NASADIYA SUKTA

The *Nasadiya Sukta* consisting of seven verses (*Rg-Veda*) is the realization of a vedic seer. It describes the state of the primordial reality at the time of creation of the material universe, that is, the visible and the invisible matter of nature. With the ever existent, non-material, super-fluid, and dynamic reality of *aakaash* as the most basic substratum of the universe, the significance of the spiritual experience of the *Rishi*, who would have composed these verses, becomes clearer.

नासदासीन्नो सदासीत्तदानीं
नासीद्रजो नो व्योमा परो यत् ।
किमावरीवः कुह कस्य शर्मन्
अंभः किमासीद्गहनं गभीरम् ॥

Naasadhaaseenno sadhaseeththadhaneem,
Naseedhrajō no vyomaa paro yath.
Kimaavareevah kuh kasya sharmān,
Ambhah kimaaseedhagahanam gabhiram.

”Non-truth (non-reality) was not there. Then truth (reality alone) existed. No grains of dust (even fine matter) was (anywhere). The *aakaash* beyond was inactive. What and where was (any) cover (on the basic reality)? Whose protection (was then)? What was that deep and immense celestial waters (*chidakaash*)?”

There was an instant when time began for one of the endless cycles of creation and annihilation of the cosmic worlds. Before this happened, the universe had only one reality, that is, the primordial substratum of the conscious *aakaash* which was then static. The cosmic matter (combination of reality and non reality) was not yet created and a vast stretch of seemingly endless celestial waters (*aakaash* with superfluidity) existed. The ”time” for the cycle began when *chidakaash* started its churning motion.

न मृत्युरासीदमृतं न तर्हि
न रात्र्या अह्न आसीत्प्रकेतः !
आनीदवातं स्वधया तदेकं
तस्माद्भान्यन्न परः किं चनास ॥

Na mrithyuraaseedhamritham na tharhi,
Na rathrya ahan aaseethprakethah.
Aaneedhawatham swadhayaa thadhekam,
thasmaadhdhaanyathra parah kim chanasa.

”The question of death and deathlessness, night and day did not arise. The highest (state of) *aakaash* existed. That only one entity ”breathed in” without air with self-will, and other than that, indeed, nothing else was”.

The Seer of the Nasdiya Suktha (in the most ancient Rg-Veda, whose name is unknown) describes his realization. He saw in a state of transcendental consciousness: a vision of the primordial Entity prior to the creation of universal matter, when there were no galaxies, stars, planets; and due to their rotations, no night and day. The primordial Entity is ever existent,

Chidhakaash (conscious substratum of aakaash), it is eternal and deathless. Its absolute property is unlike matter, in fact, it produces energy through it's self-willed dynamics (OM is the symbolic representation of the start of material creation), which converts into matter. The properties of matter are: discontinuity, disintegration, even annihilation (death). Being unlike matter the Chidhakaash is deathless. Prior to the material creation, the One (Chidhakaash) only "breathed in" (was alive, existed). There was no air, and unlike living beings, It required no air to breathe (to exist).

As then the cosmic worlds were not formed, there were no stars and planets, and hence no night and day phenomenon. The living beings were yet to be produced, and therefore the very question of life and death did not arise. The *Nirvikar Brahman* willed to create and moved Itself to produce the cosmic matter from Its own substance and dynamically stable submicroscopic entities that became basic particles of matter.

तमआसीत्तमसा गूहळ्हमग्रेऽ
प्रकेतं सलिलं सर्वमा इदम् ।
तुच्छयेनाभवपिहितं यदासीत्
तपसस्तन्महिनाजायतैकम् ॥

Thama aaseeththamasa guhalhamagre,
Praketham salilam sarvama idam.
Thuchchhayenaabhwapihitham yadhaseeth,
Thapasasthanmahinaajayathaikam.

”The forefront (of the dynamic *aakaash*) was enveloped with *tamas* (darkness produced due to creation of matter). All this celestial water is the highest state of *aakaash* (*chidakaash*, unmanifested *aakaash*). The ”water” with emptiness (bubbles formed due to circulating *aakaash*) covered that. With self destruction (breakdown of *aakaash*) that one gave birth”.

The movement of *aakaash* at the phenomenal speed of light produced bubbles of *aakaash* that, in fact is matter. The creation of matter, with voids (non-truth) contained within each bubble, covered the *aakaash* in whatever region it was created. It is this matter that eventually formed into stars and galaxies.

कामस्तदग्रे समवर्तताधि
मनसो रेतः प्रथमं यदासीत् ।
सतो बंधुमसति निरविंदन्
हृदि प्रतीष्या कवयो मनीषा ॥

Kaamasthadhagre samavarthathaadhi,
manaso rethah prathamam yadhaseeth.
Satho bandhumasathi nirvindhana,
hridi pratheeshya kavayo maneeshaa.

”In the beginning, with the streams of consciousness (cosmic matter) was produced. The non-truth was bonded and contained within truth. After deep scrutiny it was so realized in the hearts of the seers”.

That non-truth is contained within the truth and bonded together is the deepest insight of the seer on the structure of matter that was produced due to the tremendous motion of *aakaash*. The

relationship of matter with *aakaash* thus becomes like that of the froth and foam produced in turbulent water. As regards the substance, the *Nirvikar Brahman* and the cosmic matter are the same; but as regards the form and the permanence in time, the *aakaash* (the body of *Brahman*) is formless and eternal, whereas, matter is transient (undergoes annihilation) and has diverse forms.

The truth of the relationship of *Brahman* and cosmic matter was realized by the seers after deep scrutiny and meditation. They realized that matter is a *partial* truth; material form is an appearance of the most primary Entity (formless Brahman) which, basically, has no form, but as the only universal reality assumes form; thus the material world is partially real, in the sense that it has real energy, but temporary appearance that vanishes with annihilation.

तिरश्चीनो विततो रश्मिरेषा -
मधः स्विदासीदुपरि स्विदासीत् ।
रेतोधा आसन्महिमान आसन्
त्स्वधा अवस्तात्प्रयतिः परस्तात् ॥

Thirashcheeno vithatho rashmiresha, madhah
swidhaaseedhupari swidhaseeth.
Rethodhaa aasanmahiman aasan, thswadhaa
avasthaathprayathih parasthath.

“The beam of light (streams of *aakaash*) spread horizontally (in circulating motion). What ! below; Hey ! above. The created (matter) seeds (held) status of great importance. With ease it goes down; with endeavor (it goes) up”.

The movement of *aakaash* spread in circulating motion like that of a vortex, the motion spreading everywhere in the cosmic space (*aakaash*) . The motion created due to this churning action of *aakaash* produced matter from which and around which further cosmic matter grew in a similar way. The force of gravitational attraction came into being due to mutual attraction between cosmic matter.

को अद्धा वेद क इह प्रवोचत्
कुत आजाता कुत इयं विसृष्टिः ।
अर्वाग्देवा अस्य विसर्जनेनाथा
को वेद यत आबभूव ॥

Ko addhaa vedha ka iah pravochath,
kutha aajaathaa kuth iyam visrishtih.
arvaagdhevaa asya visarjanenathaa,
ko vedh yath aawabhoowa.

”Who truly knows and positively states that wherefrom this material universe was born. After material creation Gods came into being. Hence, who knows the source from which this creation took birth”.

The creation of the cosmic matter and nature was prior to the birth of the seers. Even the Gods, the celestial beings, are subsequent to the start of the first movement of the *chidakaash*. Therefore, none can be a witness to the cosmic creation. But since the states of consciousness in a

seer are derived from the fundamental consciousness of the *Nirvikar Brahman*, he can have experience through spiritual visions and thus have glimpses of reality that existed even prior to the start of the cosmic creation.

इयं विसृष्टिर्यत आबभूव
यदि वा दधे यदि वा न ।
यो अस्याध्यक्षः परमे व्योमन्
त्सो अंग वेद वा न वेद ॥

Iyam visrishtriyath aabbhoowa,
yadhi vaa dhadhe yadhi vaa na.
Yo asyaadhyakchhah parame vyoman,
thso ang vedha vaa na vedh.

”The source of this creation possibly may or may not be resting on something else. However, the unmanifested *aakaash* - the Presiding Entity of this creation, indeed, knows, or may not know”.

The unmanifested *aakaash*, which is the most fundamental Entity, would indeed be aware of the fact that It Itself is the source of cosmic creation. The seer wonders whether there is some Principle more basic than the *Chidakaash*, and also whether the very source of consciousness, the *Chidakaash*, is aware of the basic role that it plays in the creation of the cosmos and the nature.

(These new translations of the verses of the Naasadhiya Suktha (chapter 16), and some of the Upanishads are a result of P. Tewari’s scientific insights on the nature of space and the formation of matter, supported by his experiments and scientific theory. – ed)

17. SAI AVATAR

We are today witnessing the miracle of all miracles, the wonder of all wonders of nature, that the Incarnation of Shri Satya Sai was born in the mid twenties of this century for speedy evolution of humanity. It is the greatest fortune of mankind that God, in human form and with inexplicable power over nature, has incarnated on this planet to teach, guide, console and assuage us, since the society presently is in distress, and needs to be nourished with peace, love, truthfulness, righteousness and non-violence, perhaps, more than ever before. Satya Sai Baba demonstrates, time and again to the *sadhaks* and devotees of God, irrespective of their religious faith, His power of omniscience and omnipotence through dreams, visions, personal interviews and public discourses. He expounds on the Vedic truth, explains the very meaning and deeper aspects of basic religions and the associated historical facts of the Prophets and Incarnations that are now buried deep in history, in order to establish ideal conduct, ethic and morality that will save humanity from the impending dangers of the prevailing hypocrisy, deceit, untruth, selfishness and arrogance, and will protect the noble ones from the onslaughts of the wicked.

I once dreamt of Shirdi Baba who in few seconds changed into the form of Satya Sai Baba. "Baba, are you and Shirdi Baba the same"? I asked in the dream. "Yes, yes, yes", was the reply by Satya Sai Baba. Satya Sai Baba has told to many devotees and also declared in His public discourses, that His next incarnation will be in Karnataka as Prem Sai. On another occasion, I dreamt of Shirdi Sai's image that conveyed to me in advance very clearly through words on an important official position with specific designation that I would hold, and it did happen almost three years later. "You will go to Karnataka" was another message in my dream presumably from Satya Sai Baba, and it came to be true a couple of years later. (The author took the position as Project Manager for the construction of the Kaiga Nuclear project – ed.) "Future place of your *Sadhana*" was the sentence I heard very clearly in dream again, while I witnessed a vast region of green valleys and ranges of hillocks and mountains. I was posted to such a scenic place about two years later. Many important events in my personal life and also of my professional career were projected through dreams and visions much before their actual occurrence. I have had solid proofs that Baba has indeed been instrumental in shaping these crucial events in my life.

Knowledge is the criterion used to distinguish between man and an *Avatar* in addition to the direct experience of the *sadhak* if doubt arises on any account. Just as without education in science, one cannot explain any scientific phenomenon satisfactorily, and his pretensions soon come to light, so also a person pretending to be a Divine Incarnation cannot be erudite in the Vedas, and will fail to give expositions on the scriptures of basic religions. The Prophets and Incarnations, however, being in close communion with the *Prajna* of *Brahman*, utter words that are un-alloyed truths. Lord Krishna's Upadesh in Bhagavad Geeta is more authentic proof of His being an Incarnation of God than the destruction of the *asuras* and evil men that He carried out during His life time starting right from the young age when He was a mere child since the latter actions could be termed by the rationalists as magic or miracle, and thus the great might that child Krishna would have had to manifest at His will in killing the demons time and again could go ignored.

Shri Sathya Sai Baba declared, "This human form of Sai is one in which every divine entity, every divine principle - that is to say - all the names and forms ascribed by man to God is manifest. Do not allow doubt to distract you. If you only install in the altar of your heart faith in My Divinity, you can win a vision of My Reality". Much before I learned of the above pronouncement of Baba, I had visions of a Goddess (Savitri?), Shiva-Shakti and numerous dreams of Shri Sathya Sai.

In a vision during sleep seated in a raised throne of gold in an office room was a Goddess with ornaments and crown on her head studded with gems. The most beautiful feature was a lustrous countenance and a straight beam of golden color light emanating from her towards me. The golden-orange hue of the beam was a most pleasant and wondrous sight. The expression on the face of the Goddess was serene; there was a faint smile. Mistaking her perhaps for a worldly lady, I commented in my dream that she looked charming. "Attractive not Charming", she politely replied and added that soon I was going to have a new office much better than what I had expected. Her assurance concretized two years later when I took over a large project's construction responsibility. (The Kaiga Project – ed.) I believe that Baba appeared in my dream as Goddess Savitri or Lakshmi. In another vision, I saw Shiva-Shakti in the posture of Nataraj, the face and the body was dark blue, very bright and effulgent, and resembling that of a handsome youth in his late teens. The male and female aspects were very clearly evident. The crescent moon was faintly seen.

"I am *Varun Ravindran*" was heard another time during my dream from an elderly person to whom I was taking round at some project site which was in its very initial stages of construction. Soon there was a storm and high wind blew across the large area of the site raising dust and threatening to uproot the trees. "I shall control this, you watch" he said. And right then the storm subsided in few seconds. In a similar dream, I was surrounded by a large sheet of water somewhat like a rising river. The water level rose slowly up to my neck. I started chanting "Sai Ram", "Sai Ram", and to my amazement the utterance of Baba's name instantly controlled the rise of water, and the flood started receding. The above dreams, spaced within a few months, occurred during the period when serious opposition then existed against the execution of a large nuclear project under my charge.

In a gathering of thousands of devotees of Shri Sathya Sai Baba at Puttaparthi (Andhra Pradesh) in the mid eighties, I kept in my hand a letter for Baba requesting him to give me experiences of his Divinity if indeed he was the Incarnation of this age. Swami willingly accepted the letter, which was one among the several letters from others, and thereafter a series of spiritual experiences took place including many more dreams and visions of Sathya Sai and also some of Shirdi Baba.

"In one of the dreams I witnessed a bluish mountain with a snow-capped dome at its top, and simultaneously heard a voice: "Kailash". On another occasion while rising from bed early morning I involuntarily uttered; "Every mount is Kailash; everywhere is Shiva". Later again in a dream a gigantic and unusual figure of a man measuring about 15 feet in a half-seated posture, with reddish tinged body complexion, of strong build with broad shoulders and arms appeared. His face was calm and serene. With great curiosity and surprise I stared at him and noticed that his head and face was much smaller than his body; his cheeks were somewhat sunken despite glowing countenance. Later I realized that God Hanuman, who is monkey-faced and in devotion to Lord Rama (incarnation in Sathuga) was unparalleled, who was an ocean of knowledge and strength had come into my vision".

It was Swami's blessing that enabled me to come out victorious from my professional upsets, after a period of trial that lasted a few years. The proof of the above fact is that Baba in one of my dreams had clearly answered in response to my anxiety expressed to Him: "Your problems will get solved in the nick of time". And then after a few dreams that distinctly spelled out my future place and professional task, Swami blessed me by giving *vibhuthi* (again in the dream) just a day before the important assignment was given to me. "The ordeal ends successfully" were the words heard during sleep around the same period.

It was the most pleasant surprise when I heard that Sathya Sai Baba in a personal interview with a Senior Scientist from the USA had said, "I know Tewari". ("*Miracle in the Void*", Dr. Brian O'Leary, NBP, PO Box 1657, Guerneville, CA 95446, USA.) Having experienced numerous dreams and visions, for which I am fully aware that Baba alone was instrumental in, it is no surprise to me that Swami is the Omniscient one, and He is in constant communion with every living being on this planet.

The advent of the Sai Incarnation was predicted ("Shri Sathya Sai Baba and the Future of Mankind", Satya Pal Rahela, Sai Age Publications, "Sai Kripa", New Delhi-110 004) by the Sage Shuka in his 5000 year old palm leaf manuscript, and also by Prophet Mohammed as per an ancient Arabic book "Mehdi Moud" (Vol. 13 of the book "Ocean of Light"). The physical features of the Sai Baba Incarnation, His teachings on religious, creation of small gifts for the devotees, His span of life, etc., are clearly predicted by the Prophet. The similarity of these predictions with Sathya Sai Baba leave no doubt in Sathya Sai Incarnation of today.

Swami had declared about three decades ago, "I am Shiva- Shakti, born in the *Gotra* of Bharadwaj, according to a boon won by that sage from Shiva and Shakti. Shakti herself was born in the *Gotra* of that sage as Sai Baba of Shirdi. Shiva and Shakti have incarnated as Myself in his *Gotra* now. Shiva alone will incarnate as third Sai in the same *Gotra* in Mysore State". With my visions of Shiva-Shakti, and also the dream in which Shirdi Sai changed into Sathya Sai as described earlier, the above pronouncement of Sathya Sai have been spiritually experienced by me. Baba has also said, "I am the dance master, I am *Nataraja*, Prince of Dancers. I alone know the agony of teaching you each step in the Dance of Life". My vision of Shiva-Shakti was in the posture of *Nataraja*. Yes, indeed, Sathya Sai Incarnation is re-establishing religions, reassuring mankind on its Divine origin, and re-establishing truth, righteousness, peace, love and non-violence globally.

18. DHARMA SCIENCE AND CRUELTY

The principles of Dharma and a code of conduct for righteous living of man in society enunciated by the Rishis of the Vedic and Upanishadic era are based on their deep knowledge and experience of the most fundamental entity, the universal Absolute, that which is so basic in its state of energy that all the matter of the countless worlds of galaxies, stars and planets is created out of it; so dynamic that even some of the cosmic bodies moving close to light speed cannot match it; so powerful in its might that all the cosmic forces are only a fractional part of it; so vast in its stretch that even light takes countless years to span it; and so brilliant in effulgence that many suns will fade into twinkling stars compared to it. That Absolute is also the consciousness which generates in each living being, even at the lowest stage of the evolutionary process, the sustaining force of life.

It is the direct connection of the Absolute (Cosmic God) with the living and the non-living that makes It the creator, the sustainer, the substance of the screen and also the Actor of all the plays in the cosmos. Each point in space (*Aakaash*) throbs with the consciousness of God; each particle of matter is a vortex of *Aakaash*; each blade of grass is God disguised; and every creature is itself the most organized state of the forces in the phenomenon of the manifestations of God. Science is yet in total delusion with regard to the fundamental reality of a space medium and considers it to be an empty extension of nothingness. The space (*Aakaash*) is in fact as full and forceful as an ocean. Logic based on deluded concepts of either science or philosophy cannot decipher the reality of God, consciousness and life force, and are therefore found to be shallow, since even the process of the origin and source of universal energy and matter is yet not known to modern science.

When science considers vacuum to be a vacant region of nothingness, how can there be an omnipresent and omnipotent Principle, God, existent in the Universe?

It must be now recognized that in this wondrous universe, the *Aakaash* has rolled itself as particles of matter and has also become a conscious life force. The creation of finer matter like atoms and sub-atomic particles (air) from *Aakaash* is indeed the truth. And thereafter various fields and forces (fire), fluid state (water) and solid state of matter (earth) were formed in due course as Upanishads declare.

The life force derived from the very consciousness of God entered into the diverse assembly of organized states of matter to create plants and a vegetative world as the first crucial stage of manifestations that blossomed forth as flowers and fruits for the more organized forms of life to subsist upon.

The second stage of highly developed and organized evolution of material aggregates pregnant with conscious force created living creatures that, unlike trees and plants, became mobile and possessed free will. Part of the vegetative world provided sustenance to the animal species.

More and more organized forms of evolution or organized material forces and conscious forces of life continued to take place and finally man evolved, (as consciousness evolved, so did the vessel to hold that consciousness – ed.) who also inherited from the universal intelligence his intellect (Buddhi, vivek) transcending the limits of the instinctive functions of the animal world.

The vivek in man enabled him to discover the Creator, establish a relationship between the Creator and the created, and establish Dharma for an ideal living in society. Man being gifted

with vivek learned to respect the whole universe as a temple of God, and the powerful force of love and compassion that surged through him due to his righteous living enabled him to seek his kinship with all living creatures as members of one family.

He experienced God as substance, matter, energy, force, light and power, love and compassion, truth and fearlessness, dharma and peace. He discovered ways and means to meet his physical needs with moderation, regulation and discrimination and formulated social laws, so that mankind could live in peace and harmony with nature. Such is the wisdom of the Vedic seers that pervaded this holy land, Bharat, since time immemorial!

Now in this very land of rich heritage where Incarnations were born time and again to demonstrate the principles of universal love that transcend humanity and which flowed even into the animal world, countless fowls, goats, cows and other animals are being mercilessly slaughtered to satisfy the insatiable desire of man for meat and flesh. The degeneration of human qualities have taken place to such a stage that compassion is totally enveloped with the force of cruelty.

The selfishness and pride in man have made him worse than animals. While the animals devoid of vivek are indeed ignorant of sinful acts, man, despite his being endowed with discrimination and buddhi, has fallen prey to pride, conceit and thereby ignorance resultants. Considering the act of adherence to Dharma as a hoax he leads a life of uncontrolled sensual gratification with little discrimination even on the food that he consumes.

Driving the old skinny animals, who have labored hard throughout their life time tilling lands of the farmer, pulling carts, providing nourishing milk and many other useful products, over long distances without giving them water or fodder to slaughter houses; herding them together at the entrance of the slaughter houses by physical beatings with sticks, tying their feet and breaking their necks, and finally slitting open their throats leaving them to die a slow death while all the time the poor mute creatures shudder in terrible fear, looking helplessly in a pitiful condition appealing silently for mercy, even until the last breath when their throats are cut open and their bodies quiver in pain, is a sin that this country shall not easily wash off.

The tyranny that man is perpetrating, the shameful act that he is indulging in, the reckless attitude and scant regard that he is showing towards nature's living creations, by building slaughter houses is a story of horror that must soon come to an end. The only one real Entity in the universe, inherent with, truth-consciousness-bliss, manifests as inert matter as well as sentient beings; each living being has its own karma to perform for its higher evolution culminating into the highest form of man, who while possessing instincts (to cater for sleep, hunger, fear, sensual needs) like other living creatures, is also endowed with compassion, discrimination, virtue of sacrifice, truthfulness, and an urge to know the creation and the Creator. Those who know the above principles are the sages and the saints. They see each living-being as the God manifested, fulfilling its karmic debt in its allotted life span. To slaughter the animals for selfish ends (when alternatives are available) amounts to a degradation to a step below in the ongoing process of evolution; and also to interfere in Nature's laws. The realized souls with their highest state of compassion will sacrifice themselves in protest cheerfully to send the message that living beings are the very limbs of God spread far and wide.

The most ancient land, Bharatha, where the timeless and endless Vedas, preaching the principle that 'the precious human birth is meant for helping others', and 'the greatest sin is to cause pains to others', has the foremost responsibility to take the lead in stopping the slaughter of animals. The sacred land of Bharat must restore its sanctity without any further delay. But who will oppose the

authorities who maintain that slaughter of animals is an essential need of the present society? Not the ones whose wisdom is already shrouded due to the consumption of tamasik food; not those who are preoccupied with selfish ventures and yet put on the garb of intellectualism; not also those whose pride makes them believe that the entire universe is created exclusively for the gratification of their physical urges.

It is the satvik and the rajasik forces that shall crush further growth of tamasik elements. It is the saints and the sages who shall no more hesitate now in descending down to the field of action and be ready for the highest sacrifice when needed. It is the true conscience of Bharatiyas that alone shall re-establish Dharma and honor of this sacred land.

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19. AN ANALYSIS OF THE PRINCIPLES OF THE ABSOLUTE THROUGH SCIENTIFIC AND SPIRITUAL LAWS

The omnipresence and omnipotence of God as proclaimed by the seers and sages makes God the basic Substratum which can generate from itself cosmic matter, fields of matter, and energy for the working of the universe of invisible space and visible manifestations of material bodies. Adi Sankaracharya's realization in Atma-Bodha is: "Like bubbles in water the worlds rise, exist and dissolve in Supreme self (Parmeswara) which is the material cause and the support of everything". This is the highest spiritual truth as regards the origin of the universal energy for the generation of cosmic matter and their harmonious movements.

For Science to reach the above conclusion, it must first develop to that stage where it can have a grasp of the physical nature of the fundamental state of universal energy and the processes of its transformation into different states such as kinetic, gravitational, electromagnetic and nuclear. The discovery of the fundamental field which can create the fields pertaining to each form of energy is also a related issue needing exploration to the deepest level. And equally important is the knowledge of the physical aspects of conversion of universal energy into the fundamental particle or particles of matter which can further aggregate into cosmic matter. Since the understanding of the above fundamental phenomena of energy, matter and fields of matter, their generation and inter-conversions have not yet been fully gained, current scientific knowledge can at best point towards the great Unity rather than reaching the same through positive conclusions.

That matter and energy are inter-convertible is quantitatively well proven by modern science. So also the distinction between matter and field of matter has disappeared; matter, field and energy are now generally taken to mean the same entity. Such conclusions though pointing towards some underlying unity that may exist at the base of matter, energy and fields, fail to reveal their basic physical nature, or their relationship with the underlying unity in regard to their generation and maintenance. In the absence of adequate knowledge of the physical aspects of basic quantities like mass, charge, field and energy that lie at the foundation of the current physical theories, and also absence of a universal theory that can unify these basic phenomena, a serious doubt arises whether the quantities presently considered fundamental are truly fundamental and not reducible to any other more basic entities. It is apparent that current physics shall revise its concepts on space and matter through an alternate approach which will not only successfully overcome the obstacles to the present theories but also reveal the underlying unity in its bare form.

The point in question can be better made through a concrete example. An electron shows the behavior of a universal unit of charge and the smallest mass among stable particles. Its electrostatic field falls inversely as the square of the distance from the center. A question arises whether the electrostatic field varies continuously up to the electron center or if there is a discontinuity around the center within an ultra small fieldless zone. If the continuity of the field all the way up to the center is supposed, the electrostatic field of electron should possess an infinite amount of energy which is an impossible proposition that presents a great problem of the modern theory of the electron. If however, a fieldless zone at the electron center in an ultra small region is supposed, a new and hitherto unknown medium of fieldless-void is to be incorporated in the physical theory of electron structure; it would bring about radical changes in our current concepts of space and matter avoiding the difficulty of infinite energy in the electrostatic field of an electron.

The concept of fieldless-void is unprecedented in physics because the absolute vacuum is presently considered to be the most basic state of space, which can sustain and transmit all kinds

of fields. The absolute space itself when devoid of matter and fields is presently considered to be empty and void. Whereas the fieldless void proposed above is that state of absolute vacuum which an electron center has broken down into an ultra small spherical volume and which can neither generate nor transmit any field through it since the absolute vacuum is non-existent within the void. The fieldless-void can possess no positive energy, as energy cannot be located without field. With the centrally located void and the fields emanating from its spherical boundary spreading in the whole of universal space, the behavior of mass, inertia, charge and field of electron are indeed explainable and thus the absoluteness of space can be re-established in physical theories of space and matter.

With this model, the modern view of energy distribution of the electron center in highly condensed form, and real fields in empty space, is reversed to energy-less fieldless-void constitution of the electron and dynamic space of absolute reality which generates fields as its own modes of motion, acceleration, energization and de-energization. The only medium of reality then becomes the absolute space (absolute vacuum) - the *Aakaash* - which generates matter like bubbles in water. The import of spirituality shall become evident through scientific logic as well, but only after the recognition of the void at the heart of fundamental matter and ever full *Aakaash* (space) in which the Principle of Vishnu resides. All the manifested worlds of things and beings are projected by imagination upon the substratum which is the eternal all pervading, Vishnu, whose nature is existence-intelligence, just as different ornaments can all be made out of the same gold.

The void structure of the electron is also supported by the clairvoyant observations recorded in the book *Occult Chemistry* by Annie Besant and C.W. Leadbeater. "These units are all alike, spherical and absolutely simple in construction. Though they are the basis of all matter, they are not themselves matter, they are not blocks but bubbles...Just as bubbles are not water but are precisely the spots from which water is absent, so these units are not koilon but the absence of koilon - the only spots where it is not - specks of nothingness floating in it, so to speak, for the interior of these space-bubbles is an absolute void to the highest power of vision that we can turn upon them.... The worlds are built out of these voids, these emptiness."

H. P. Blavatsky wrote in the 1880s on *Aakaash* in relation to matter as follows in *The Secret Doctrine*, I. 78th, "Whatever the views of Physical Science upon the subject, Occult Science has been teaching for ages that *aakaash* (of which Ether is the grossest form), the Fifth universal cosmic Principle – to which corresponds and from which proceeds human Manas – is, cosmically, a radiant, cool, diathermanous, plastic matter, creative in its physical nature, correlative in its grossest aspects and portions, immutable in its higher principles." In "H.P. Blavatsky Collected Writings," VI, 124-126 we find, "Before closing, a word about the 'passage' of matter through matter. Matter may be defined as condensed *Aakaash* (Ether); and in atomizing, differentiates as the watery particles differentiate from super-heated steam when condensed. Restore the differentiated matter to the state ante of undifferentiated matter, and there is no difficulty in seeing how it can pass through the interstices of a substance in the differentiated state, as we easily conceive of the travel of electricity and other forces through their conductors. The profound art is to be able to interrupt at will and again restore the atomic relations in a given substance."

The few steps that science has to take for realizing an underlying unity are: (a) to recognize the continuity, mobility, and homogeneity of eternal space with absolute properties unlike any material medium; and (b) to develop theories that are based on the generation of the properties of matter and fields, from the non-material substratum of space.

”Realize” that to be Brahman which is non- dual, indivisible, One and Blissful, and which is indicated in Vedanta as the Immutable Substratum realized after the negation of all tangible objects.”

All objects are pervaded by Brahman. All Actions are possible because of Brahman; therefore Brahman permeates everything as butter permeates milk”.

Athma-Bodha, meaning 'knowledge of the Self' by Adhi Shankaracharya;
translation by Swami Chinmayananda.

The highest of knowledge that scientific theories can reach is the revelation of the cycle of generation, sustenance and annihilation of cosmic matter from the dynamics of universal space, motion of material bodies in the universe, and the interdependence of space, matter and energy. The 'why' and 'how' of all phenomena pertaining to inert matter can be expected to be explainable by the developed science of the future. Scientific knowledge, however, is only a portion of the 'Sat' aspect of Sat-Chit-Ananda- the Parmeswara, who has three basic elements in him. ”Realize that to be Brahman which is Truth-Consciousness-Bliss, which is non-dual, infinite, Eternal, and One, and which fills all the quarters above and below and all that exists between.”

The knowledge of Consciousness and the Bliss aspects of Brahman cannot be gained through scientific methods, simply because physical properties like mass, inertia, charge and their associated fields with which science probes into the details of various phenomena exist only in material media of discreteness (voids), diversity, impermanence and imperfection which are not the qualities of the Eternal and one, non-dual Brahman. “Nor does the sun shine there, nor the moon, nor fire; to which having gone they return not, that is my supreme Abode”.³

Brahman is 'one without the second', that is the sole Entity, the continuous Substratum, inherent with the highest state of Bliss (transcendental peace, beyond sensual pleasures). The absolute properties of the continuous Substratum are inferred by negating all the properties of matter (tangible objects); yet, all objects are created by Brahman with its own nonmaterial substance and forces; therefore Brahman pervades all the visible as well as the invisible world. (It has been shown in space vortex theory that material properties (mass, inertia, charge etc.) are created from the nonmaterial medium of the fluid space). (For further information see *The Physics of Free Power Generation*, Chapter 1 – ed.)

It should be realized that Brahman is itself energy (truth, dynamic state), consciousness (static state; my own inference), and transcendental peace (bliss), vast, larger than the largest, ever existent every where (fills all the quarters). The phenomenon of 'creation' and 'annihilation' is applicable to matter only; not to Brahman, who exists before Its own creation.

The limited zone of science, though vast, is yet only an offshoot from the much wider and more basic domain of spirituality. The scientific laws of inert entities breakdown when applied to spiritual phenomena which indeed defy explanations through rationality and logic developed by science due to the spiritual effects exercising control over the behaviors of matter.

The universe has gradations of qualities starting right from its basic element. Let us take the five elements one by one. The living being has the first one, the Earth as its base. Water the second, is the basis for the Earth. Water is produced from Fire, the third element. Fire itself emanating from wind, the fourth. Wind or Vayu arises from the Ether of *Aakaash*. *Aakaash* emerges from the Primal Nature and the Primal Nature is but the manifestation of the majesty of God, or the

supreme sovereign Atma, the Paramatma.⁴ (Here the elements of earth, water, fire and air in scientific terms, should correspond to the states of solidity, fluidity, heat, and gaseous elementary and nuclear particles respectively.) While it is possible to frame a scientific theory that the *Aakaash* in its dynamic state is the universal energy, and this universal energy in certain limiting conditions of motion creates matter as *Aakaash-bubbles* which foam and froth as universal matter, vide Occult Chemistry, it is indeed difficult to imagine how the *Aakaash* emerged from the Primal Nature, and what are the attributes of the Primal Nature? The phenomenon of emergence or creation can be applicable to the evolution of matter from *Aakaash*, whereas, the *Aakaash* itself being non-material in nature can remain self-existent, eternal and beyond the principle of creation and annihilation. But then what is the significance of emergence of *Aakaash* from the Primal Nature as quoted above? The following quotation from the Upanishad Vahini by Bhagwan Sri Sathya Sai Baba throws light on this deep mystery.

”The knowledge of mud and gold will give the knowledge of all pots and pans, as well as bracelets and necklaces. The mud and the gold are the truth; their modifications and transformations are temporary, mere name-forms. So too, the world, like the pot and the bracelet is just an effect, the cause being ”Sat”. Sat means ”is-ness” ...the ”is-ness” that is the Universal Characteristic of all objects persists even in the absence of objects. Prior to creation there was only just this ”is-ness”. There was no void. There was this ”is-ness” everywhere! When the ”Is” was reflected in Maya or Primal Activity, it resulted in Iswara who partook of that activity to manifest as the Universe with the three elements of Fire, Earth, and Wind. All creation is but the permutation and combination of these three”.

The ”Is-ness” is the *Aakaash* in static state, the Primal Nature, the Eternal IS. It is the Universal Consciousness, the Chidakasa, the Jnanam. Like *Aakaash* I fill all things within and without, changeless and the same in all, at all times I am pure, unattached, stainless and motionless”. When the Conscious IS, the static *Aakaash*, partook of the Primal Activity, it became the Iswara, the universal manifestation; Isaavaasyamidam Sarvam.

The phenomenon of God generates awe and wonder through its mysterious and subtle laws that rest on the eternal foundations of truth, righteousness, peace and love, and are far beyond the scope of scientific analysis.

- 1 Atma-Bodha of Bhagwan Sri Sankaracharya by Swami Chinmayananda.
- 2 ”Space is the absolute Reality” by Paramahansa Tewari, Proceedings of International Conference on Space-time Absoluteness, Genoa 8-11, July 1982.
- 3 Sreemad-Bhagwad-Geeta by Swami Chinmayananda. 4 Upanishad Vahini by Bhagwan Sri Sathya Sai Baba
4. Upanishad Vahini by Bhagwan Sri Sathya Sai Baba

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20. THE UNDERLYING UNITY

Living beings seem to be the final products in Nature's working, since the existence of earth, air and water on which their survival apparently depends, must necessarily precede the evolution of the beings. The Upanishads teach that *aakaash*, air, fire, water and earth are the basic constituents of the universe. Man, who is a product of these elements, can continue to survive along with other living species on this planet even if he is unaware of the constitution of his own body or the universe, its origin and laws of protection. The survival of the numerous evolutionary stages from amoebae to man is indicative of the protection and safeguards incorporated in Nature's subtle working and therefore, no man-made power of destructive nature is expected to ever wipe out the human race. There could of course be disturbances that obstruct the evolutionary processes, but these can be only localized effects in a period of comparatively shorter time.

While man's mere ignorance of the cosmic universe cannot make him extinct, a knowledge of the basic structure of the universe and his correlation with it can certainly sublimate his baser instincts and raise the mental state above animality, thus bringing about a happy living of the human race in a cohesive society by diminishing and moderating the ferocity of competition, selfishness and sensual indulgence that are purposefully introduced by Nature in the world of living species for their very survival and continuance.

Impelled by this noble aim of pursuit of knowledge, man has produced a science of matter in the last three hundred years through which it has been possible to have a deeper insight into the main universal constituents namely earth, water, fire and air. Matter has been identified and classified into different states, right up to the atomic, nuclear and sub-nuclear particles, and its mode of interactions has been framed into universal scientific laws. Earth, water and air have been shown to be the final product of some basic material entities which, with mutual interactions and aggregations, have formed on this planet the material environment conducive to the development of living beings including man. Similarly fire, or the phenomenon of heat, has been scientifically studied in its various forms and behavior, and its laws of interactions with matter have been framed. However, physical science in its body of knowledge is not yet complete; it has many anomalies that are awaiting a major breakthrough in the basic concepts which can reveal the reality of the universe in its bare state, and thus, by showing the unity of matter, fields and energy, can complete the knowledge of at least the 'science of matter'. The present state of science with its enormous technological advantages to social development and welfare to man has yet failed to reveal the 'underlying unity' of the universe due to its incompleteness and still being in a stage of development. Any analysis made of a basic phenomenon transcending materialism or inferences made with the aid of the conclusions of modern science, would indeed be erroneous due to the above limitation of scientific development where the substratum of the physical theories is yet to be fully grasped.

On the sequence of the generation of the worlds, the Upanishads teach that air was generated from *aakaash*, and air in combination with fire, produced water which, in turn produced earth. In modern scientific terms the three states of matter namely solid, liquid and gas should, in the language of the Upanishad, be taken to correspond to earth, water and air, which in combination with different degree of heat (fire), are inter-convertible. But then how did the *aakaash* generate air or fundamental forms of matter, considering the fact that by 'air' the Upanishads may convey 'finest matter'. This is precisely the question which today needs a direct answer. The modern trend in physics has been to evade this main issue, for around the dawn of this century, the "absolute vacuum" or "space" or "*aakaash*" was considered to be empty. An attempt to improve the situation of chaos that arose due to the impossibility of the transmission of action in the

emptiness of space, by recognizing the reality of fields in space, has not fully bridged the gap between space and matter by not giving the status of 'absolute substratum of universal reality' to *aakaash*. For how else can space generate the basic states of matter as asserted by the Upanishads, if it is not a dynamic state pulsating with energy? In an emptiness and void space, if energy for the generation of even inert matter cannot exist, where is the question of it being a seat of consciousness and bliss?

We are today directly confronted with two views which have certain opposite elements in them. One is of materialism, which is, by and large, in line with the current scientific development. It assumes the fundamental reality of the universe lies only in cosmic matter that moves due to the mutual interacting fields in void space, which, apart from matter and its associated fields in it, has no independent existence of its own. By some force of magic this cosmic matter came into sudden existence and gathered tremendous motion at the universal scale, and in due course, distributed itself, and finally organized in an orderly motion of stars and planets including our earth.

The separate aggregations of cosmic matter, despite their mutual interactions through fields, produce discontinuity and discreteness as the basic law of materialism. Apart from the fact that the physical quantities on which such a theory of matter rests its foundation remains unexplained with regard to their origin and fundamental nature; the scope of analysis is confined to only inert entities which, again, under certain miraculous working conditions and chance, generate consciousness, life and evolutionary processes to such a high degree of orderliness, precision and perfection, automation and control, that living beings with intricate and complex organism are produced. The anomalies of materialism in addition to its ignorance of the basic source of universal matter and energy, are the generation of sentience from inert and insentient matter, continuity of fields originating from discrete material particles, generation of ordered processes of evolution from disorderly primary bang and explosions. The universe of matter pregnant with energy, its manifestations of charm and beauty, are in existence just for once, only to wither away and die in the course of time and never to return due to the dissipation of universal energy through radiation into the remotest voids of the unfathomed hideous darkness. Devoid of any future hopes of re-generation materialism grips, at every opportunity like a drowning man at the floating straw, and attempts to convert it for purely selfish ends even at the cost of ethical and moral values. Any concept of omniscience is vehemently rejected because the materialistic theory of void space and inert matter, already stretched to its final limit, broken in parts and covering its obscurities through patches in explaining the process of consciousness in living beings, cannot ever cope with the phenomenon of the omnipresent and omniscient God. A devastating effect is produced when an apparently simple point of view that the medium of *aakaash* is a void extension is incorporated in physical scientific theories and assimilated in thoughts.

Basically different from the philosophy of materialism is the science of spirituality which lays its foundations on the ever-full *aakaash*, the dynamic substratum of universal energy, which is eternal, self - existent as the most fundamental base of the universe, and which due to its complete homogeneity, mobility and subtlety of the highest order, is quite distinct from even the finest or quantum state of matter. The properties of matter and fields emanate from the *aakaash* as its characteristic dynamic state. Material phenomena are only a portion of spiritual phenomena, which being much wider and basic, remove all the restrictions of materialism by providing an eternal source for cosmic matter and energy and continuity through the substantial *aakaash* between each particle of matter and the entire space. The dynamic *aakaash* of spirituality froths and foams in the form of cosmic matter. The basic state of *aakaash* possesses the properties that are absolute and non-material. It also has the attributes of Truth- Consciousness-Bliss. The truth as universal energy generates the cosmic matter in eternal cycles of creation and annihilation.

The attribute of 'Consciousness' from its highest state in the pure *aakaash* is diluted down to the lowest degree so that matter shows inertness. Living beings are the intermediate evolutionary stages between the inert matter and pure *aakaash* with gradations of consciousness in each species. There are even gradations of consciousness in different limbs of the same living being. The attribute of 'Bliss' of *aakaash* from its highest state in pure *aakaash* is graded and diluted down to all the material manifestations and appears in its lowest state as sensual pleasures in the living beings.

The underlying unity can be seen only at the most fundamental state of the universe to which the current science of matter and field has not yet reached, however, some glimpses of the unity are evident at each evolutionary stage of Nature. The common features in Nature's different patterns of design inherent in the plant and animal world, the distribution of consciousness in each living entity, the existence of the senses and the reproduction systems in the animate of all kind, the perpetual change encompassing everything, and the similarity of basic relationships and equations of different physical phenomena, are indicative of the 'Underlying Unity' field in which rigid boundaries between categories of thought eventually smudge and melt away. Might not the concept of unity in the universe eventually turn, reflectively, to the mind which gave it birth, subsuming all the products of that mind, all its divisions of thought and experience?

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21. SOME ASPECTS OF RELIGION AND SPIRITUALISM

Spiritualism is based on principles that are broader and more fundamental than Materialism. Each religion incorporates within it a varying degree of broadness, universality and gradations of basic principles. However, all the streams of religions originate from a common reservoir of spiritualism. Efforts have always been made to establish the superiority of one religion over the other. Such attempts do not serve any purpose since the elaborations of various religions have been sufficiently governed by the geographical, social and intellectual state of evolutions at the time and place where the Divine incarnated as prophets and proclaimed the universal truth in the language of the masses. On occasions, however, when certain principles of religions are innocently or intentionally distorted, it does become necessary to discriminate and analyze the principles and practices to bring out the fundamental universality of the underlying principles.

From a single tree of spiritualism, many branches and sub-branches of religions and sects emerge. Just as the branches of a tree when minutely studied at any particular stage of development will show themselves to be in different stages of growth, like flowering and fruition, so also the different religions when compared at a particular time can never be the same. The off-shoots of their basic principles will invariably be found to be in different stages of evolution. Some religions will be broader and more basic than the rest. To proclaim that all the religions preach and lay equal emphasis exactly on the same principles is a generalization born out of only a superficial understanding of the very basic issues. The preachings of the various religions can never be equally broad, equally basic, equally universal and equally eternal. Spiritualism, however, provides the basis that unites different religions at the fundamental level. In other words the import of common factors among different religions can be grasped by considering only the fundamental aspects.

The basic approach followed in religion is to bring about mental transformation by the observance of moderation and control of the instinctive behavior pattern of thought, action and feeling. The rituals and mental disciplines observed in *sadhana* result in the necessary transformation in character in a gradual and positive process almost imperceptible to the *sadhaka*, though distinctively felt by those in association with him. The religiously corrected mind with moderation and control of his *vasanas* is, socially, better accepted by a society that is seeking its fulfillment by rising above animality and the gross. Even a partial observance of religious disciplines brings forth some changes in character and shows positive signs even in the very initial stages. These are: development of fearlessness, kindness, straightforwardness, tendency to cultivate truthful thoughts and action that are the Divine qualities that are latent in each person due to the very fact that nature has created and taken the human to the most evolved form. Religious observance activates those qualities which are buried deep in character, such that they come to the fore of the personality and get reflected in the day-to-day activity of *sadhaka*.

The moderation of the physical and mental as preached by religion is in fact a derivation from nature's basic scheme of design and operation. For instance, in an animal body, the temperature fluctuates between a narrow band, the pulse beats with a close and marginal variation, the rotation of earth causing day and night and also the variation of seasons in yearly cycles, are some of the very few examples of the regulation and control functioning in nature. Nature's physical phenomena no doubt appear to work mechanically, nevertheless, similar principles operate in the subtler planes of mind and thoughts as well.

Beyond these regulating functions, religion helps enfold the final envelope of spiritualism where physical and mental activities play a secondary role, the primary function being performed by the highest intellect, the *buddhi*, which realizes that the human race is itself the race of Gods. The

realization opens the flood gates of knowledge and experience. Nature whispers the message: "You are the supreme being, the messenger from God, similar to God in structural designs, and intellectual ability. Like the live limbs of the human body, you are the limbs and organs of the universal God that has sent you forth as his perfect creation.

The realization so dawned brings to light that the physical matter of our body is woven into a conscious substratum of *atma*, an eternal and nonmaterial entity constituted of energy and consciousness, which at its highest stage and in its purest form, is the blissful experience or the bliss itself. The consciousness and energy are its basic attributes and in this respect it is identical and related to *Brahman*, just the same way as a grain or rock is similar and related to a mountain of rocks in its basic properties. The *atma*, through intellect and *buddhi*, discriminates between right and wrong, so as to command and regulate the impulsive actions of mind, which is blind to discriminative ability. The *vasanas*, which constitute the mind, to be kept under check is the basic commandment of a true religion.

Mere knowledge of spiritualism does not bring about character transformation which is a total and permanent basic change in thought, attitude and action in the spiritual sense. Spiritual knowledge alone points to the right direction towards which one has to proceed with persistent efforts of *sadhana*. At this stage, it is essential that the *sadhaka* should possess faith in the reality of existence of some conscious power above the material phenomena. Without faith, religious discipline, instead of being pleasurable, will be rather difficult to perform. Just as a journey through the medium of air is quickly and comfortably made using a suitable mode of transport like an airplane, the apparently difficult journey of *sadhana* needs strong faith as its vehicle. The outcome of *sadhana* is the realization of the Principle of God – the conscious Power that from its invisible state has been directing our thoughts and activities and communicating with the heart through the nobler emotions of love, truth and compassion.

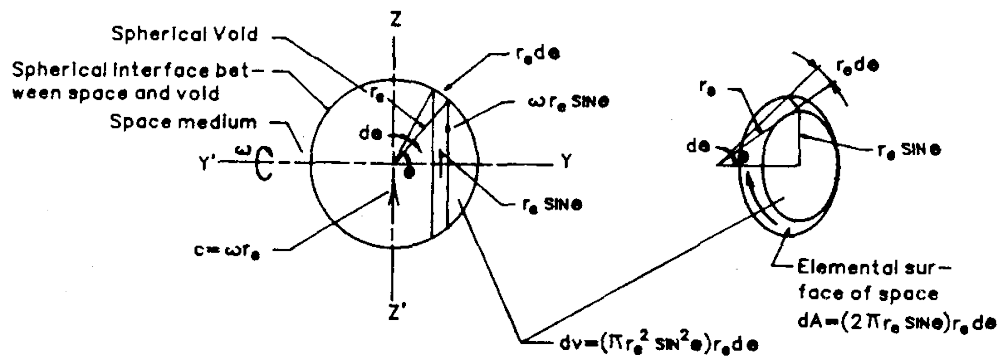
The Divine projects its own image at subtler planes of visions and thoughts, just as, at the physical plane it projects the visible and concrete material cosmos from the invisible universal energy. Experiences through visions lead to spiritual faith, since a specific prayer and demand to the Divine made persistently to reveal its fundamental nature is answered. Altogether different from the normal dreams that may arise due to mental disturbances, some of the visions in the dream, are the projections of the future events mainly in symbolic forms. Sometimes proofs of the capability of some visions in forecasting future events are possible in such concrete terms that the spiritual theory on the existence of the super consciousness that possesses the full knowledge of future cannot be discarded.

Spiritual faith is the end result of *sadhana* and is to be acquired through knowledge and experience. The faith that spiritual power exists has to be had while treading the path of *sadhana*. Many argue that they will believe in God provided first He physically concretizes in a trice before them. While the physical concretization of Divine is in fact already existent in a natural way in the form of visible nature, Divine concretization in a trice is a miraculous feat desired by a child rather than a spiritual aspirant. The Divine does not concretize for fun and miracle whether one believes in Him or not. Such arguments are similar to the statement that "I will believe in the existence and magnificence of the Himalayan mountains, provided they come to me here and prove their existence to me." We have to take initiative and go and meet Him rather than call Him to us. It is a different matter, however, that out of His immense love and compassion and depending upon the degree of necessity He comes to meet us on the way itself.

For a couple of years I concentrated deeply on the fundamental nature of *Aakaash* in order to determine its relationship if any with the process of creation and motion of universal matter. At

the end of my meditative inquiry came the formulation of a scientific basis as presented in my works that analyze the basic nature of universal energy and the process of creation and annihilation of matter. The confirmation of the basic concepts founded in my scientific works soon followed, through a vision in dream of which I have a vivid memory. A finite though enormously large spherical ocean, constituted of a fluid that shone with luster of molten silver, was presented to me in the vision. The ocean had undulations and a perfect symmetry of waves and ripples around its center. The center had a smaller hemispherical dome of the same fluid with a brilliance to match the reflected sun rays from a large sheet of water like a river or ocean. The enormously large homogenous mass of the dynamic, shining fluid was concluded by me, subsequent to the vision, to be the basic substance and substratum of energy that constitutes the *aakaash*, and also the source for the creation of the material world. This vision and its occurrence at a particular time substantiated my scientific postulation and also injected conviction and faith in the reality of my experience.

Sri Hari Katha 1980



ω = Angular velocity of spherical interface around $y-y'$

Void = Fieldless spherical hole in space

Space = Non-viscous, mobile, continuous, incompressible

22. SPIRITUALISM THROUGH MATERIALISM

The basic aim of religion and spirituality is to bring about sophistication in human thoughts and actions by moderation, control and refinement of animal instincts that are latent in human nature. Such a transformation of character can take place by a clear understanding and assimilation of spiritual principles. There are however serious hindrances in reaching all the way to the universal base from whence the spiritual principles emerge.

Normally the uninitiated is emphatic in the belief that the material world, with its separateness, discontinuity, and isolated existence is the basic truth of the universe and there is nothing else really more fundamental than matter and its different forms. Matter is considered to be eternal, neither created nor can it ever be destroyed. This is the materialistic approach toward the universal design; the outlook that creates distinct barriers between the different phenomena of nature. For instance, the animate and inanimate are imagined to be fundamentally distinct rather than different forms with different degrees of evolution of the same primary substance. The sky and the earth have no connection whatsoever; the visible world of matter and the invisible extension of space have no common substratum of reality. In the absence of a common base, the unity underlying the diversity, materialism breeds logic that is only locally suited to a phenomenon in isolation. This results in materialistic knowledge diverging to an indefinite eternity. With the emergence of a divergent, limited, rigid and short-sighted logic of materialism, how can a universal theory encompass all phenomena and unified theory of matter, life and God, ever be evolved? This is precisely the reason that with materialistic progress, the science of spiritualism is getting shrouded with controversial debates and arguments which contain more of obstinacy and rigidity of views rather than subtlety of logical and coherent thoughts. The materialists ideas are incapable of probing to the final base of life, energy and consciousness, from which the world emerges and into which the cosmos also submerges.

Suppose one studies in detail some of the parts of a tree like trunk, branches, leaves, flowers and fruits but fails to see the root, that which nourishes and sustains the tree and is also the main source on which the life of the tree depends due to its being underground. The scientific knowledge born out of such a partial study will be incomplete and therefore can hardly be fundamentally true. In order to study the function of the root, one way is to dig open the base of the tree, but the danger is that in this process the tree itself may collapse and die, thus stopping the function of all its parts including the root. (Similar danger lies these days in scientific experiments performed to study the behavior of very minute particles of matter where the system itself gets disturbed during the process of its experimental study.) One can however follow an alternate method, a method with an intellectual approach, in which the nature of the invisible root is inferred by a detailed study of the properties and functioning of only the visible parts of the tree. The inferences drawn from the nature of the root must be the positive conclusions on which the separate inference emerging from the study of the individual parts of the tree must converge. Similarly science built out of the study of only the visible and material cosmos cannot form complete knowledge. The knowledge of the invisible substratum of spirit pervading the *aakaash* and interpenetrating the minutest particles of matter is also to be inferred from the detailed study of the visible world of matter. Materialism is the visible portion of the 'Universal Tree' in which the spiritualism is the hidden root. The visible world of matter evolves from the invisible substratum of spirit that constitutes the *aakaash*. Without taking into account the spiritual aspect, the science of matter, in its incomplete state, developed defective logic that is being used to ruin our social culture which has so prudently evolved from the spiritual foundations of the Vedic times.

Most of the controversies on the validity of the religious and spiritual values raging today are due to the misinterpretation of spiritualism brought about by the defective logic of materialism. We can elucidate this with an example. At the time of a person's death, the escape of the soul from the physical body on its onward journey to the next birth is not visible to the eyes. The invisibility of the soul and also the lack of memory of the previous births, are used as strong supports to discard the *Karmic* theory of rebirth, as per which, our past and present *Karmas* determine the next birth. When there is no soul, there can be no rebirth. Thus there is no continuity and relation between the *karmas* from one birth to the next.

The deeds, good or bad, cannot therefore determine the quality of the next birth. Having killed the *Karmic* principles of rebirth one can let the passions loose allowing the greed, lust and selfishness to have their unbridled movement. After all, one will have to live just one physical life, and why should he abandon the full share of physical pleasure? Having eliminated the very necessity of soul and God, by using restricted arguments such a person tends to find an easier path without using his discrimination (*buddhi*) to decipher the truth. In this way he is spared of the efforts of the comparatively difficult path of *sadhana*, which bears fruit in years, decades, and life after life, rather than the quick results that the sense organs produce.

To grasp the import of religious and spiritual messages, the imagination has to cross over the materialistic barrier. Just as in a flowing stream of water it is the invisible kinetic energy of the water molecules that move the visible water stream, so also it is the invisible spiritual energy that produces visible material effects. The body, mind, and intellect, function due to *prana*, the invisible and subtle entity permeating the body and its non-visibility and lack of detection through scientific experiments are not proofs for its non-existence.

Sri Hari Katha
1980

23. SPIRITUAL REGENERATION

The 'regeneration' of spiritualism should not convey that the spiritual-base of the world is governed by the laws of creation, generation and annihilation, as is applicable to the world of visible matter. The basic substratum of spirit which constitutes and projects the visible cosmos intermittently in eternal cycles of creation and annihilation, and in which the cosmic worlds exist and move, knows no such distinction that we can talk of in terms of regeneration of spirit and spiritualism. Here 'spiritual regeneration' is used in a restricted sense, implying 'spiritual awakening', 'spiritual *jnana*', and adoption of spiritual practice by society.

A child born from mother's womb does not know that right from its embryonic stage it is the mother's womb that provided nourishment for its growth till birth; it does not indeed know its origin till others educate it on the mechanism of birth. It is a similar state of forgetfulness in which entire material worlds are living unaware of their origin from the sea of spirit, the *aakaash*. The visible nature thus remains in an ignorant state due to the universal maya which makes the sense organs incompetent in deciphering the truth of the basic substratum of substance, power and consciousness, which we call God, Brahman and Parmatma. It is getting over this maya, probing deeper into the surface to infer the cause from the effect so as to reach the primal cause and determine Its laws of operation that should be the basic aim of spiritual regeneration

With *Jnana* emerge love and gratitude. The knowledge that one's origin is from the very flesh and blood of the mother creates gratitude and love towards her. This knowledge is to be further enlarged to encompass the nation as mother which will breed love for motherland; to further cover the planet as mother which will arouse sacred feelings for mother-earth, and to encompass even the solar system as the originator and sustainer of the planets, which will create devotion to Sun God. The sun, planets and stars are not lumps of dead and inert matter. On the other hand each is a conscious Deity well aware of the role that IT plays in nature's creation and her evolutions. However, with the advancement of scientific knowledge of the cosmic bodies, there is a growing tendency to treat them as lifeless and unconscious entities. Imagine if the planets wandered away from their course into random motion there would be havoc, destruction and disorder. It is therefore that the cosmic Mind has ordained the orderly motion of the earth so that life can evolve here under favorable climatic conditions. Since the earth does not change its course at our will we may feel that it is an unconscious mass of matter hurtling round the sun aimlessly. If that is so, what is the origin of our consciousness? Where did we inherit consciousness from? Just as sweet meat gets its sweetness from the sugar, which is mixed in it, so also our consciousness is derived from the consciousness permeating the earth and the *aakaash*. It is however likely that just as we are not conscious of the circulation of blood in our body so also the earth may not be conscious of its rotational motion which determines day and night and seasons. However it is definite that our consciousness has to be derived from the earth's. To see consciousness in varying degrees in the cosmic bodies is another basic aim of spiritual regeneration. The entire universe is a pulsating sea of life, only the degree of evolution of life and consciousness is different in various entities whether animate or inanimate. The realization of such an all pervading life and consciousness provides an entirely new direction for the expression of thoughts and actions that become sublime and noble. (The preceding forms the basis for the late 20th century theory of Gaea – ed.)

The entire universe is constituted with an absolute substance of energy and consciousness. The truth of existence of this Absolute introduces the very principle of truth as a moral and ethical base of our behavior. To speak the truth, to follow a truthful behavior, is to adore the Absolute power. Each statement, each argument, each activity, should be finally tested with the yardstick of truth, because beyond truth nothing in reality exists. There is a tendency to get caught in

circuitous argument while defining the norms of social behavior if the existence of absolute truth is not taken into account. To argue against the existence of God without understanding the origin of matter, energy and consciousness, to discard the validity of *Karmic* principle without understanding the nature of soul, *prana*, mind, thought and their effects, would create a spiraling web of logic if the element of truth as the highest absolute and the reasoning borne from that truth is not taken into account.

An atheist looks at the universe as a mechanical working power where all events take place due to chance. The good and bad have no inter-relation, these are not connected with cause-effect law. He bases his thoughts and actions on the principle of 'might is right' and not 'truth is victory'. Very true, superficial study of the outer manifestations of nature does create the impression that only brutal force brings victory. What can ever withstand the fury of a mighty storm? What caused the storm and what is the agency of its control? The difference in air pressure between two regions on earth brought about, maybe, due to difference in temperature between these regions generated a latent potential which becomes the fundamental cause for the storm. Just as this latent potential can control the storm, so also there is an all pervading invisible power which controls the brutal force when it so wishes. Imagine the tremendous energy associated with the large planets and stars hurtling in space. Whatever regulates their motion is the power latent in *Aakaash*, the Divine Power that knows IT's function. The atheist therefore will have to probe deeper into nature's phenomena, in order to know the cause behind the effects. For instance, what is the cause of so much of the miseries that we see around us? Only a careful analysis, step by step exploration, right up to the Absolute from the outer shell of ignorance to the inner core of Truth, will give the right answer to such a basic question and not the superficial scrutiny that one is generally inclined to do.

The basic responsibility of spiritual regeneration is that of Divine. The birth of some great saints like Ramkrishna Paramahansa, Vivekananda, Ramana Maharshi, Shri Yogiraj Aurobindo and others, in recent past, has paved the way for a quick grasp of the philosophy of Incarnation. The birth of Shree Satya Sai Baba on the very day when Aurobindo declared the descent of the Supermind on earth is no coincidence. Baba's revelations of the subtle truth hidden in Vedic scriptures, His discourses on moral, religious and ethical behavior of society, His matured and learned elucidation on the limitations of material science for the analysis of the spiritual phenomena are providing a great impetus to spiritual regeneration. He says, "Spirituality without science is lame; Science without Spirituality is dangerous". True, we need an appropriate fusion between science and spirituality for which the current science must further evolve and the spiritualism must regenerate.

Bhagwan Sri Sathya Sai Serv Organization (UP)
Quarterly News Letter July -Sept. 80.

24. WILL SCIENCE AND SPIRITUALITY MERGE?

Once again in our sacred land of ancient wisdom, the greatest of all ideas – the merger of science and spirituality, is being voiced here and there, off and on. What do we understand by the word 'merger'? Is it the merger of two equal streams of knowledge? No, it is the merger of a stream of knowledge that science has created in the last few hundred years in the eternal ocean of the spiritual knowledge. The stream of science can certainly merge into the ocean of spirit. Indeed there is a vast difference between science and spirituality! This assertion is not new. Shankara, Ramkrishna Paramahansa, Vivekananda, Gyaneshwar, Nanak and many prophets and seers have declared so in past. The prophets and seers of today are also repeating the same assertion of the Principle of Unity of universal substance and universal matter as the fundamental law of spirituality that encompasses all the scientific phenomena.

But why is it that through the present scientific knowledge we cannot understand the phenomenon of spirituality? Why do the majority of scientists of today consider spirituality a hoax? Why do we not teach the principles of spirituality to our school children just as we teach them science if spirituality is the basic truth of the cosmos? The answers to these questions are complex.

The majority of scientists do not seriously attempt to recognize the basic deficiency in the fundamentals of current science and therefore, they are not sure of the nature of the final evolution of science. For them, present scientific conventions represent the final truth, and it does not occur to them that despite the scientific and technological developments of the last few hundred years our present knowledge of the basic laws of science may be only partial and superficial. Thus they interpret the spiritual phenomena through the logic borne out of the current science and fail to have even a glimpse of the spiritual phenomena. This is not to say that all the knowledge of science is false. Knowledge based on the experimental evidence is right as long as the interpretation of the experiment is right. It can be said with conviction that current science has yet to attain a higher stage of development because its fundamentals are only descriptive today and not explanatory.

Similarly most of the so called spiritualists have only spiritual knowledge with no realization. Spiritual knowledge should be followed by spiritual experience, and then alone faith in the reality of spiritual phenomena develops. Spiritual experiences have to be sought in our day-to-day life. We do not need to go to a laboratory for spiritual experience. Science deals with the phenomena of matter and its effects in space. Current science is materialistic; it always deals with matter and its associated fields and, therefore, it is materialism that dictates science. Spiritualism on the other hand deals with the phenomena associated with the medium from which matter originates, the science of space (*Aakaash*), and its reality. For a scientist if there is no matter, there is no science. For a spiritualist, all the scientific phenomena emerge from the mass-less *Aakaash*, the eternal medium with nonmaterial properties – the *Sat-Chit- Ananda*. A spiritualist has not to pick up a piece of matter and go to a laboratory to experiment. He experiments with the conscious *Akaash* which is omnipresent. He therefore selects a secluded spot to meditate upon the Principle of Consciousness that is inherent in *Aakaash*. He desires to know how he got the consciousness in his material body due to which he is able to witness the magnificent play of nature. He directs his questions to the Conscious Universe (*Brahman* of the Vedas) and gets the answers through his experiences, during and after meditation. He experiences the Unity behind the diverse manifestations, the vast span of time and space, and the Consciousness pervading the universe. Without this experience he certainly does not fully realize spiritualism. Such a spiritualist has little conviction while discoursing on the Spiritual Truth just as a scientist basing his knowledge blindly on the experiments of others, falters while asserting that the current science reveals the

final truth of the universe.

A scientist knowing the limitations of science, and with an eagerness to improve upon it, can certainly look for help from spirituality. It is not the spirituality that has to compromise its laws; it is the science that has to revise its current notion. Science today cannot stand at par with spirituality. A scientist should be permitted to have the better of both science and spiritualism. Spiritual ideas have apparently suffered due to some invalid ideas of science. Science has to accept its limitations before it can claim its fitness to merge with spirituality. Science has to evolve further till it crosses the barrier of the material mind. It has to look into the Base, that created the material mind. It has to grasp the Principles of life and consciousness. It has to understand the Phenomenon of God. Where is the merger till then? How can the eternal fluid of spirituality merge into an inert and discrete materialism? Let us be patient and evolve science first before we challenge spiritual ideas.

We are no doubt marching towards the merging point as already proclaimed by our *Rishis*. The *Advaita* philosophy of Shankara is scientifically true, and the world will very soon realize the Truth behind the assertions of the Vedas, the declarations of the prophets and seers who preached universal brotherhood, motherhood of the universe and fatherhood of God. For the further evolution of science, ideas that will be useful will be the mysticism peculiar to our land. The western ideas on materialism have already played their role by providing enough useful experimental evidence and accumulated facts and figures.

The creation and annihilation of matter has been scientifically demonstrated by the current science thus proving the transient nature of the visible worlds. We now need to know the agencies behind the fundamental phenomena – the 'whys' of physics. The nature of energy is to be understood. The properties of space have to be intuitively derived from the available scientific data. We have to pick out a single elementary material particle to construct the material universe and to establish the unity of the material worlds. We need to know the attributes of the single Substance, the nonmaterial *Akasha* to establish the Unity behind the diverse scientific and spiritual phenomena. We need to realize the agency of Consciousness, the principle of life and death, and the intelligence of the Universe. We can certainly know these phenomena through a scientific approach but the science that shall answer the above questions shall not be the current science. It shall be a new science inclusive of a spiritual base. And that shall set the stage for a merger of science and spirituality.

Shri Hari Katha 1979

25. SOME PRINCIPLES OF BHAGAVAD GITA

The very basic of the existence of the Universe is governed by the principle of action due to which each point in *Aakaash* is in motion, and each fundamental particle in the assembly of matter has motion inherent in its structure. The macrocosm and microcosm are closely knit with the web of motion. Motion of *aakaash* is the basic form of energy, the mother of matter, life and consciousness. The reality of the universe is motion.

Man is one of the evolved forms of life out of the numerous living species on this planet as well as on the countless planets hidden into the unfathomable depth of the cosmos. The existence and life span of earth and our solar system is predetermined by the laws of the cosmic space and time. The fate of our planet is wedded with the fate of our galaxy that is ceaselessly working for its evolution and onward march to reach its goal. The universal laws governing the microcosm are truthfully reflected in macrocosm as well, without any discontinuity. Human society has accordingly to frame its social laws and function within the overall laws of nature. When each cell of a human organism has to function continuously for its very existence, how can the composite human body escape from the actions of thoughts and deeds? It is thought that leads to action. It is the realization of the Reality of the universe that constructs noble thoughts. We must therefore first attempt to realize the cosmic law of the principle of action which shall accordingly shape our thoughts and, in turn, deeds.

The universe, during the stage of its creation, is evolutionary by nature. The growth of the cosmic worlds therefore appears automatic. Similarly a tree blossoms and bears fruits by its very nature. It does not hoard the fruits of its evolution nor does it hanker after its fruits. The tree does not accelerate the growth of its fruit before its maturity and enjoys each instant of its growth during the various stages of flowering and fruit bearing. In fact it discards the fruits of its evolution and is content with the selfless action of the evolution itself. So also man, who is a higher stage of creation compared to a tree, being gifted with intellect, logic and intuition, must act for evolution as his very nature. The gain of the fruits of his actions are certainly not his aim. His aim is to evolve and enjoy each instant in the process of his evolution. Nature is constantly whispering the message of selfless action which is the secret of evolution. Lord Krishna revealed to Arjuna:

”Set thy heart upon the work, but never on its reward. Work not for reward, but never cease to do thy work.”

Lord Krishna to Arjuna, in the *Bhagavatha Geetha*

Brahman (the unfathomable universe) continues the cycle of creation and annihilation eternally and for this continuous phenomena, an eternal reservoir of energy is needed. Energy cannot be destroyed like disintegration and annihilation of matter though it can be transferred from one system to the other. It is the indestructible energy that creates a characteristic state – the ”soul” in the living bodies. It is the soul that evolves the body, keeps it conscious, and gives it energy for each motivation of thoughts and action. The material body is superposed on the conscious substratum of the Divine Soul to make the composite body of man and all living beings. Being transferable from one point to the other, the conscious and immortal soul at the time of death moves from one body only to take the next with the imprint of the life-time *Karma* on it. When the *Karmas* are full, there is no rebirth.

Current science knows only the material portion of the body. It is ignorant of the real substratum of energy which characterizes the indestructible soul, and hence discards the existence of soul and the phenomenon of rebirth. Believing that the present life is the only life that man has to live, a materialist indulges in raging social competition to acquire the materialistic wealth while his own

consciousness is recording each of his good and bad deeds, the sum total of which shall determine his future not only in this life but also the next.

The ignorance of the principle of soul eventually breeds atheism, and strikes at the *karmic* theory of the Bhagavad Gita. Man has in his body an indestructible and conscious energy – the soul that always reminds him of his Godly nature, that communicates with the universal God due to being His own portion, and that motivates man for higher evolution. The soul also reminds man of his continuity and nearness to God, thus providing the source of strength needed to achieve successful results in all noble ventures. Without soul the universe would be dead, and also there shall be no God. Lord Krishna says to Arjuna on the nature of soul:

”He is never born and he never dies. He is Eternity: He is for evermore. Never-born and eternal, beyond times gone or to come, he does not die when the body dies.”

”Weapons cannot hurt the spirit and fire can never burn him. Untouched is he by drenching water, untouched is He by parching winds.”

Lord Krishna to Arjuna, in the *Bhagavatha Geetha*

How did our saints realize the cosmic law? How did the seers and prophets in this holy land declare so boldly that the Bhagavad Gita reveals the Universal Truth? Because they realized the Truth themselves through their own *sadhana* and then having known that the realizations similar to theirs was had by others also, and that it was revealed by the Lord Himself, they developed faith in the Universal Truth of the Bhagavad Gita. God points to us the proper direction. He expects us to evolve ourselves through the immortal *Karmic* Principles.

From our experience of materialistic phenomena we have gotten used to the words “creation” and “destruction”. We see events appearing and disappearing even in the short span of day-to-day life. Therefore we are prone to ask questions on the creation and destruction of any entity that we come to know. The very question of creation or destruction of universal energy however does not arise because the energy of the invisible Universe is self-existent and eternal and also all the material phenomena are within its bounds both in space and time. It is our ignorance of the energy substratum of the universe (*Brahman*) that raises many unwarranted questions.

”Brahman is the Supreme, the Eternal. *Atman* is his Spirit in man. *Karma* is the force of creation, where from all things have their life.”

Lord Krishna to Arjuna, in the *Bhagavatha Geetha*

The Bhagavad Gita is the most scientific analysis of the universal cosmic phenomena. Current science requires further evolution so that the Principles of cosmic glory as revealed by Lord Krishna can be realized.

Sri Hari Katha 1978

26. THE PHENOMENON OF GOD

The visible universe that comprises galaxies, stars, planets and all universal matter is an insignificantly small fraction of the invisible Universe of *Aakaash* (Spirit) which is eternal, self-existent, the real ocean with Consciousness, the source of the visible and material worlds, and the self-motive substance, revealing its omnipotent glory by propelling enormous material worlds contained within it, and by its omnipresent vigilance by surrounding each of the countless fundamental material particles like water surrounding a tiny bubble formed in it. The only Substance that is real in this huge, spherical physically unfathomable and yet finite Universe is the *Aakaash* with attributes different from apparently inert matter. The *Aakaash* with *Prana* (motion) is the Consciousness, energy itself, that evolves material worlds and is also the seat of Consciousness in countless living beings. The Universal Being declares His marvelous principle of Superconsciousness by keeping living beings conscious, by growing their bodies, and by injecting His own quality of love and compassion into the hearts of all the creatures. The invisible Universe of energy, consciousness, love, and compassion, the omnipresent, omnipotent, self-existent and self-motive Entity is the Phenomenon of God – the Brahman of the vedas, longer than the largest material worlds but finite, that floats blissfully in the infinite and non-existent extension where there is no *Aakaash*, no matter, no motion, and not even the concepts of light, darkness and time. God is invisible but He reveals that He exists by creating matter and dissolving it at the end of the creation cycle. God is eternal and this He reveals by continuing the endless cycles of creation and dissolution. God is love and compassion and our hearts therefore inherit these emotions since we are small portions of the Universe. All living beings inherit all the attributes of God in different degrees. Man is God, was God, and shall ever be nothing but God. To the Universal Consciousness, man being his own portion is always a God. We can be led to the knowledge of God even scientifically through the knowledge of fields and forces associated with matter. But knowledge is only the first step to realization, since God is not to be known but realized. Scientific *sadhana* leads to knowledge and not necessarily to realization. Knowledge is in the domain of logic and intellect – the attributes of mind, whereas realization is the domain of emotions of the heart which is the seat of consciousness.

To a materialist who believes in the reality of matter and nothing beyond matter, God realization is difficult unless he seriously attempts to know the source of matter and persistently questions on the 'whys' of natural phenomena. Satisfied with the limited materialistic knowledge which is only a portion of full knowledge, a materialist lives blissfully ignorant. Since all matter possesses the property of mass and deterioration with time, for a materialist to imagine the Universal Spirit which is changeless, mass-less, certainly appears to be an absurdity. However, if after shaking off his illusion he deeply ponders over the 'whys' of even the fundamental scientific phenomena like gravity, inertia, light, etc., and the possible source for the universal matter, he shall discover the simplicity and uniformity underlying the multifarious and apparently complex natural phenomena. The limitations of current knowledge shall then be evident and he shall be from then onwards on the road to spiritual knowledge never to return again at least to the limited thinking that he earlier possessed. The realization that our consciousness is derived from the Universal Consciousness makes us very truly personify the Universal God. We then pray either to His formless Body, the *Aakaash* (Spirit), or any material form of conscious and ideal man, the Incarnations, who can draw Universal Power at their will, or even the apparently unconscious stone idol. If some prophet or saint did indeed deprecate idolatry, he certainly did not have complete universal knowledge, and this can be said with conviction. If the Spirit can evolve galaxies, it can evolve all the forms, and therefore all the names and forms of his being are to be loved and worshipped. Such realization, however, does not occur due to the defects in our own

minds.

The vital part that mind plays in the human body is its interaction with the external material world through the sense organs and thus it undergoes various 'conditions' or 'states' when light pulses interact with the mind through the respective organs. The function of the mind is to truthfully reproduce the external world including the human body and place the messages before the Consciousness. Consciousness is a nonmaterial Principle with non-material attributes, that keeps the material body including the mind in a rhythm of life, possesses creative force due to which our bodies grow, has the attributes of love and compassion, is itself Sat-Chit-Ananda, and flashes forth intuition which is above and far different from logic and reason that are the products of material mind. Since the very design of mind is to keep our material body intact, selfishness is the main property of the mind due to which, if uncontrolled, it adds on to further impurities like greed, lust, jealousy, hatred and anger, mainly because man is living in a competitive society. The impurities apparently create an indelible impression on a major portion of the mind leaving a very limited portion which is clear and pure and therefore the faculty for creative thinking and clear vision is drastically reduced.

The process of thinking is a phenomenon due to both the mind and consciousness. What we call 'thought' is, in fact, a picture temporarily composed out of the material constituents of mind by the fields and actions of consciousness which we may also understand as 'will or self'. The forces of consciousness are independent of the forces associated with the matter of mind and therefore we can think and picture at will. It is only the consciousness that has self motive power. Matter is not self motive.

In this Universe, I find the different religions, languages, nations and in fact all the planets, solar systems and galaxies are unified by a common theme which is the phenomenon of God. Vedic religion and science recognized the eternal Truth behind the material manifestations of cosmos and declared it repeatedly and boldly to the world. However to realize the Truth we need an open mind to ask questions of Nature herself. One has to fall in love with nature and be persistent in his questions and demand for her to reveal her bosom with secrets and beauty. After all Nature is conscious, because if She were not, where from do we derive our consciousness? Are we not composed apparently of inert matter and also consciousness? And therefore, one has to treat conscious Nature, the mother and also the beloved, with love and sacred emotions in order to know Her secrets. She knows the language of heart where the seat of emotions is located. How can one converse with the beloved under-intellectual arrogance? The poets, the writers and the lovers know where to find God.

Man wants to see miracles to believe in God. The principles of life and death, the origin, evolution and annihilation of the cosmos, the principle of consciousness, love and emotion, the beauty of nature, the perpetual cycle of creation and destruction, the very design of the bodies of living beings, trees and plants are the miracles of God. Scientific laws already discovered and many more to be discovered in future are also part of the above miracles.

Intellect plays little part in God realizations. What we deprecate today as 'sentimentalism', the "emotions" are the qualities also needed to realize God. Every heart has emotions as its very basic quality. Society by unbalanced division of natural resources which in fact are the sustenance of all living creatures, has created an unnatural condition and therefore harmful qualities in the minds of men like unhealthy competition, deceit, greed and jealousy have cropped up. The mind so polluted and restricted does not let the nobler emotions flow out for the help of the poor, helpless and needy. One must therefore endeavor to purify the mind by diverting attention from selfish deeds to a nobler cause. Serious effort is needed to erase the pollution of the mind though there is

lesser effort required to develop the sacred emotions of love and compassion. Through purified mind, sacred feelings flow automatically due to their natural existence in the heart. If one cannot materially help the poor, one must pray to Him thinking of the needs of the poor. By thought alone can one start the act of help.

This great ancient land where Vedic religion and science originated, where men and women debated on the mystery of the Universe, where sages and kings discarded materialistic pleasure, and having realized the Supreme Reality, blessed all the friends and foes, is rising once again to describe the Vedas in a language that can be understood by the world of today.

Sri Hari Katha 1977

27. SUBLIMATION OF INSTINCTS

The unity-aspect is predominantly inherent in the basic design of the universe. At fundamental levels there is no place for any sharp distinction between the stages of evolutions that are projected by nature as the visible cosmos and its associated effects. The worlds of matter are firmly united with the invisible substratum of the cosmic energy threads. Basically, matter cannot be differentiated from energy. All that can be positively stated is that energy is more basic and subtler than matter which is gross. The two phenomena are inter-linked like a tree and its invisible roots that support it from below the ground. The universe is woven with a fundamental principle, which is of continuous gradation and variation rather than distinction. The night and day are united with the in-between of dusk and dawn. Spring lies between summer and winter. Similarly, in the subtler domain of nature's manifestations, humanity finds itself sandwiched between animality and Divinity. The Divine principle, with its continuously varying potential down to humanity, when further downgraded, becomes animality. Conversely, the animality ascends to humanity, humanity to Divinity, and at no stage, basically, are there sharp borders of distinction. The three evolutionary stages of animal, human and Divine are interlinked with intermediary stages, overlapping zones, which enable ascent and descent as dictated by the all powerful and dominant free-will common to all living beings.

It is left to the free-will of man to ascend to higher stages through sublimation of instincts inherent in him. However, since descent is invariably easier than an ascent, the normal tendency of the instincts is to drag down, and to resist any effort of sublimation at least in the initial stages of *sadhana*.

The interconnection between the evolutionary stages, and the intermixing of their qualities, is a basic necessity covered within the ingenious scheme of nature. The hands that offer flowers for worship, and provide help to the destitute, must also forcefully resist the aggressor. The tongue that speaks softly producing soothing words must also be, at times, stern before the wicked. The physical body must be capable of accepting bitter medicines on occasions. Intelligent nature makes the same organ perform more than one function with the use of discretion and free-will. At times these very functions, oscillating in the bordering zones of animality and humanity, though mostly human, may yet appear to be animal-like. (An eyewitness to the war of Mahabharata, if ignorant of the righteous stand of the Pandavas, will charge Arjuna with the most heinous crimes.) The multipurpose functions of each entity of nature requires that in living beings the instincts of hunger, sleep, sex and fear, despite being predominantly animal-like, have their rightful share and place in animals as well as in humans. There is, however, a definite provision that these instincts can be sublimated through discretion, moderation and restraint, so that their ferocity can be curbed to right proportions, making it possible for man to ascend to Divinity.

Nature has filled the same pot with both nectar and wine. It is the different proportions of these basic ingredients that determine animal or human behavior. The *satvik*, *rajasik* and *tamasik* elements that exist in man by necessity are inter-convertible. It is within the power of man to willfully regulate the content of these elements.

Out of the countless living beings, the power of restraint and regulation, the ability of sublimating the instinct, the capacity of discrimination, rationalization, and discernment of subtle working of nature, is most pronounced in man. Indeed, man has rightfully acquired this stage of distinction having passed through a series of undeveloped and partially developed stages. A lump of clay, dead and inert, lies motionless, and weathered by wind, water, heat and cold, it disintegrates. The provision of consciousness into this lump, such that it can move about with the energy built in its

own systems, and of its own accord, takes it to higher stages of evolution, where it occupies a place of honor, though only an infinitesimal amount of universal matter is given, this small amount of consciousness makes it self-motive with built-in energy. In the still higher stage, this conscious lump of clay develops organs of sight, hearing, smelling, eating, and reproduction, such that its living becomes pleasurable and practicable within a self-sustaining cyclic system. This stage of living beings was further bestowed with the power of the intellect, discriminatory control, truthfulness, compassion and selfless love, which thus reached the highest form of nature's evolution on the planet – man, the master, the guardian and the owner of the vast natural resources.

Though man does acquire higher qualities in addition to those that other living species possess, having passed through the lower stages, he has the partial animalism also in him for the sheer necessity of survival of the human race and has therefore to cater to instinctive demands. However, the pride of place in nature's evolution that he occupies is for possessing those abilities that are higher and more sublime than instinct. Through the advanced intellect in him he has capabilities that can control the powerful cravings of the senses, and the ability to discriminate applications of his talents.

Man has to play many roles. In his heart he has to possess affection for his daughter and sister, physical love for his wife and also selfless love of extreme gratitude towards his mother. Only a discriminating intellect can safeguard such a diverse kind of love and affection residing in the same heart without any mixture and dilution. Animals do not possess such an advanced stage of discriminating power, and it is therefore that they are ignorant of the higher blissful stages that are beyond the sensual pleasures.

When the discriminating intellect is not used by man he falls to the lower stage of animalism, and allows his instinctive sensual pleasures to drag him down to excessive indulgence, brutality, selfishness, falsity, and other hideous acts that, in fact, would degrade even the animal world. This is mainly because the intellect possessed by man is used not for discrimination and sublimation of the animality in him, but rather to evolve ways and means to promote excessive indulgence in sensual pleasures, indiscrete consumption of resources, uncalled for competition on the materialistic plane that brings about rivalry, war and disasters. Such a degeneration of the human race takes place when the animality, humanity, and Divinity inherent in man assume disproportionate ratio with a preponderance of lower nature. Instead of offering the latent animality as sacrifice to the Deity, there are rituals to sacrifice animals at many temples of the Goddess Durga. It is a heart wrenching experience to witness the sacrifice of the helpless animals that tremble with fear and struggle to escape impending death. The convulsion of the beheaded bodies, the streaming blood from the severed throats, the lifeless heads scattered all over the sacrificial place makes one wonder whether there can ever be any lower stage of degeneration of man. The ignorance of the true understanding of the basic meaning of sacrifice has led to such crimes by man in the name of the Goddess Durga. This is a specific instance where ignorance, the very basic element of animality, has been allowed to develop disproportionately.

The sublimation of the animal instincts through *sadhana* is the primary duty of man, as without that, Shri Sathya Sai Baba says” ”I would like you first to learn the art of so living in the midst of people that you do not grieve nor make others grieve. Learn to make the best of life, this chance offered to you to sublimate your instincts, impulses and vasanās rise higher and higher in the moral and spiritual plane. Make the best out of opportunities like this and derive Ananda from every hour, garnering all the profit you can.”

”Man did not come here to sleep and eat; he has come to manifest, by disciplined process, the

divine in him. That is why he is called *vyakti*, he who makes *vyakta* (clear) the *sakti* that is in him, the divine energy that motivates him. For this purpose he has come endowed with this body and the intelligence needed to control it and divert it to useful channels of activity. You must achieve this by *dharma-nishta* and *karma-nishta*, a steady pursuit of *dharma* and karma-morality, and good work.”

1978

* Voice of the Avatar – Part II

28. DIVINITY LATENT IN MAN

The universal evolutionary processes converge to the fact that Nature has molded man out of her own substance, energy and consciousness into the best of the creations that she could possibly evolve. The physical organs are no accidental aggregations of inert matter but rather fulfillment of a well thought out plan, preconceived and predetermined. Life and consciousness penetrate through physical matter in a living body which thus develops feelings and emotions in different proportions varying among the different species of animals. The instinctive feelings possessed by animals, though at the lowest rung of the ladder in the process of evolution of consciousness, are yet the product of a highly advanced process unknown even in the most intricate and sophisticated man-made machines.

Scientific and technological methods cannot impart to a mechanical machine the instinct of hunger, sleep, fear and other physical desires, let alone the forces of life operating at the lowest stages of evolution, in for instance, a worm. Nature uses instinctive principles that are subtler, more basic and reliable than the scientific laws derived from the behavior of inert matter. Man, who is in possession of the capability of control and moderation of even the most powerful instinctive impulses, can certainly proclaim with pride that he, being in possession of the highest of the Divine principles, stands much above the animal world as a Divine entity. God is no other than the amalgamation of the principles of Love, Truth and Compassion that penetrate through the human core.

Man need not wonder at the fact that nature is Divine. In fact the whole universe is indeed a great wonder. The outer physical stage of material manifestations as visible to the eyes has, for its field of play, the invisible Force of cosmic 'prana' that pervades the entirety of space and constituents matter. It is through the real, though invisible, medium of 'prana' that the Divine consciously performs the functions of omnipresence and omnipotence. Like the fine threads controlling the puppets, 'prana' controls the orderly movement of the macrocosm and also the microcosm including living entities. The material world getting activated with the force of 'prana' is the wondrous phenomenon of nature. The evolution of man from the fetus is a wonder, death is a wonder, the cycle of birth and death is a wonder. All that comes to the eyes, and also that which does not, is wonder.

There can be no wave without that imparts reality to the ocean; no bubble without water. It is the reality of water in the ocean the wave and the bubble. There is no permanence either in the wave or the bubble, though there is permanence of the existence of water in which these phenomena occur. Similarly the natural phenomena of the material universe arise out of the Divine Water which alone is permanent. Man, who is an integral part of nature, is a ripple in the Divine Ocean of Sat-Chit-Ananda.

"Upaadaane-akhilaadhare

Jaganthi Paramesware Sarga-sthithi-layannyaanthi Budbudaaneeva Vaarini"

is the realization of Adi Sankaracharya. The evolution, sustenance and dissolution of the worlds, like bubbles in water, take place in Parameshwara which is the basic source and Substratum. Like a fruit with the tree, child with the mother, flower with the plant and light with the sun, man is bound with the Divine under the cause-effect law. The growth of skepticism about the Divine nature of man is due to mere superficial analysis of the issues involved. The mundane behavior of man like other animals is dictated by the instinctive needs. In order to keep the continuity of the creations going, the intelligent Nature has associated the instinctive acts with physical sensual pleasures. A mechanical machine does not enjoy the pouring of oil in its tank, whereas an animal

relishes food while eating it. The senses and their associated acts have no doubt an important place in the physical evolution of nature and are also the offshoots of the Divine. For the animal world, there is justification to say that they are Divine forms and have full right to fulfill the demands of their instincts for their very survival and sustenance. For man, however, apart from the fulfillment of the instinctive desires, something higher, sublime and universal is expected as per the Divine plan. It is only man who is endowed with intellect which is the potential ability that enables him to inquire deeper into the mysterious working of nature.

It is this 'buddhi' that after a detailed analysis of nature's phenomenon concludes that abstinence is nobler than gratification in sensual pleasures. The discard and dispersal of fruits by a tree is a process nearer to the evolutionary Divine plan for universal application rather than acts governed by selfish fulfillment. Such a conclusion, which is contrary to the excessive instinctive demands, is drawn by the 'buddhi' and from this universal view arise the basic pillars for the superstructure of human society: Satya, Dharma, Shanti and Prema. Man is the discoverer of the Divine principles and the author of the Dharmic Laws. The divine incarnates as the human race which is the noblest and the highest form in nature's creation.

Bhagavan Baba says, "You must first have a clear understanding of the nature of good—God or Goodness or the universal Absolute whatever the name—its grandeur, its beneficence, its magnificence, then the understanding itself will prompt and urge you towards it. The universe of which you are a unit is pure, true, egoless, unlimited and everlasting. Contemplate on it and your innate egolessness, truth, purity and eternity will manifest itself more and more every day."

Sanathana Sarathi July 1981

29. TO THE YOUNG AND NOBLE

There are countless creatures on this planet that pass through the cycle of birth and death, live their lives for a brief span of time attempting to fulfill their needs, as instinctively dictated by their senses. "Man", it can be logically proved, possesses (or more correctly, is bestowed by nature) the level of logic and intelligence which exceeds that of all other living beings. This has been since time immemorial, and this superiority of man in the intellectual plane will so remain as long as life evolves on this planet. The question arises as to why does nature endow man with such a super sense of logic and intellect relative to the other animals? With his intelligence, man has learned to transport natural resources and energy from one place to another, and convert natural energy from one form to the other per his desire. Everything being integral with nature, he cannot however create even an elementary particle of matter without using natural energy. The scientific knowledge of nature's laws (to the extent we know today) and consequent technological achievements in tapping natural energy through micro as well as macro phenomena has injected in man a deep sense of ego. Man now believes that he is the unchallenged ruler of this planet which in fact is the resting place of not only man but all that exists on this planet, flora and fauna, animate and inanimate. The river can be dammed and channeled to flow across barren deserts, the mountains can be blasted and tunneled, the green lush forests can be destroyed, the deserts converted into green belts of vegetation, and species of animals can be made extinct if so desired by man. Landing on other planets of solar system, the launching of satellites, quick air-travel around the globe, controlled atomic explosions for peaceful as well as destructive purposes, and transmission of messages to distant planets have been achievements of man during the past century. Man, therefore, believes himself to be the master of this planet and his swelled up ego makes him feel that he rules over nature. He now plans to manufacture living beings in laboratories like machined components in workshops.

There have been tremendous gains due to science and technology; there have been disasters too. Imagine this planet without man. Go into the interior of the Himalayas and witness its virgin natural beauty, watch the sunset and sunrise from the shore of the vast ocean, where a glowing ball of fire disappears and reappears on the horizon time and again. Listen to the whispers of nature in moonlit night, and hear the songs of birds in bushes and trees near a flowing mountain stream. The trees laden with flowers and fruits, the fearless wild animals, the chattering birds, the natural course of rivers and streams, the pure and fragrant air enveloping the planet, and the very atmosphere of calm and peace pervading everywhere would have been the natural state of this planet without the existence of man. There would have been no social disease of envy and jealousy, no competition among nations, no misery and torture to the poor and destitute, and no hoarding of natural resources. The words like rich and poor, high and low, literate and illiterate, touchable and untouchable, dark and fair, beautiful and ugly, would have been unknown. Yes, the mother earth would have been free of all the man-made social evils.

On such a beautiful planet, the bosom of the mother nature, man too was created by nature herself along with other creatures. The cosmic energy that evolves fundamental matter and the smallest of the living worms, is also responsible for the evolution of man. Why then, has this super-intelligence, that can be directed to interfere with nature's scheme and design, been granted to man and man alone? We cannot answer this question at this stage. We have to first understand the design of the cosmos and its invisible and visible power and glory; we have to realize the eternal base for the material manifestations, and also the very purpose of the universe. We must grasp the principles of life and death, the difference between the attributes of heart and mind, and the Principle of Consciousness. Yes, the very Principle of God has to be first realized before one can define man. What is good and what is bad? What is right and what is wrong? These are mere

relative terms. How can we define these words till we know the eternal base, the absolute? We must realize the attributes of the eternal Substratum so that we have a datum line of reference compared to which good and evil can be defined.

Mental pollution has enveloped society. There is a steep decline in morals. The greed for material wealth, the competition to earn name and fame even through evil means, the selfish motives to rule over and govern fellow beings, the unconcern for other's miseries, the deceit, the falsehood and hypocrisy of modern living have become means for competitive development in society. But is this development at the cost of mental peace and happiness? Are we marching ahead or going backward? What is the purpose of society? What is the aim? Where is the goal? Are we going to heaven or somewhere else? Where is heaven? Where is hell? We just do not know. But we have got to know the answer to all these questions if progress and only progress is our aim.

We have a rich heritage of spiritual knowledge. Time and again prophets and incarnations have led us to the destination, the "final goal". The souls of the Rishis are not dead. We are their children. Man has all that God has. We have to realize our origin. We may have to redefine Dharma in the language of science – the offspring of the intellect of man. We have to prove that current science is yet to evolve and its yardstick presently is too tiny to measure the depth of spirituality. We have to point out the limitations of current science for its further development. When science further evolves and merges with spiritual knowledge the world will once again know the truth behind the revelations of the Rishis, the Truth of the Vedas, the teachings of Krishna to Arjuna, the realizations and the message of Christ, the preachings of Ramakrishna Paramahansa, the Advaita philosophy of Shankara and the significance of the miracles of Sathya Sai – the practical experimenter who plays with the cosmic energy and cosmic power at His will to demonstrate the power of God. We will see the truth behind the preachings of the prophets and the seers of this land and of other lands as well who realized the ocean of cosmic energy, the invisible and the Conscious Medium, the eternal Base for all the material manifestations.

How does one accomplish the lofty aim of realization of spirituality? By preaching the principles of Dharmas, by glorifying the principle of God, by studying the holy scriptures, and by prayer and meditation one can certainly realize spiritualism. But today in certain quarters, the scientific arrogance has gripped the minds of the intellectuals and has permeated through the social structure of the so called civilized community - the community that to some extent, governs human living and thinking. The founders of science glimpsed nature's harmony through intuition developed after years of meditation with strong will and determination to reveal her glory. But some of the followers of the founders of science have ignorantly taken a wrong direction today. Instead of furthering the cause of science, the limited vision prevalent in some of the scientific ideas and fanciful imaginations, is creating doubt in the minds of common man that there is no such power as God and the words, "Almighty", "Omnipresent" and "Omnipotent", are mere fabrications of false religions. Materialism is becoming the order of the day. Spiritualism is considered a ghastly notion. The falsity and wrong notions that have entered into modern scientific conventions have got to be shattered – not by mere slogans but by evolving philosophies and theories that answer the unexplained phenomena of science. By boldly revealing the limitations of science, and developing it further, we can take material science to a stage where it will merge with the ocean of spirituality. Science will then be a portion of the universal Spiritual knowledge. Scientific arrogance will disappear, and with minds then purified, we can march onward to realize that love, compassion and truth are the main attributes of the spirit – the Conscious Medium that pervades the invisible universe – the Brahman of the Vedas.

Bharat, the land from where the formulation of the Dharmas, the universal laws of Spirituality emerged, where the very theory of the Phenomenon of God was realized and proclaimed to the

world, the land where pleasures and pains were considered of transient nature, had its social structure well knit with fabrics of spirituality, the potent power of the cosmos. Religions erected on the foundations of spirit cannot be annihilated by destroying the temples and idols of Gods. Annihilation is not a phenomenon applicable to spiritualism; it applies only to materialism. Spiritual religion is different from all other religions. There is only one religion that will be a universal religion. The prophets and the seers born in other countries too have realized the same Truth on which the universal religion is based. It is not from blind faith in the religion of this land that I make this assertion. It is not the patriotism that makes me glorify Sanatana Dharma. It is also not the knowledge of the Hindu scriptures that makes me believe. It is the conclusion that science itself takes to; it is the science of today, though incomplete, that directs us to the apex from where we can see the invisible cosmic spirit as a conscious ocean of Energy from which the material worlds emerge and into which the visible world submerge. Every word that Krishna said in the Gita is true. Christ's revelations are true. Shankara's realization of Advaita Philosophy is true. We can realize the Truth in each and every word that Sathya Sai Baba preaches. Science has yet to develop to the point where it can reach the truth of the cosmos, to reach the boundary of knowledge that nature uses to construct fundamental particles of matter and also the universal laws of spirituality, that are reflected in the materialistic phenomena, of which, only a part is known to modern science today.

Spirituality is the phenomenon of the dynamic activities in the invisible Akasha (Spirit) which moves, pressurizes and depressurizes, circulates (circular motion), pulsates, thus creating fundamental matter with its associated fields (conditions in Akasha), that in turn construct the visible cosmos, which is the secondary phenomena of the primary substratum of Spirit (Akasha). Modern scientific theories do not recognize the real existence of Spirit, the ever existent and Primary Substratum with non-material attributes, and therefore science has limitations with no knowledge of the "why" of fundamental phenomena. Spirit is the mother while matter is the child born out of her womb and nourished by Her throughout its existence. Matter finally dissolves (vanishes) when it is annihilated in the medium of the spirit. The energy of the universe is hidden in the Akasha (Spirit) - the dynamic medium of Reality and not in the inert matter that moves due to the interaction of the fields and forces residing in Akasha due to the creation of matter. Our eyes are blind to the reality of spirit (eyes are designed to see only matter): scientific experiments cannot detect it directly, since our experiments can detect only the material properties which are not the attributes of Akasha.

Materialism is only a sector in the full circle of knowledge of spiritualism, the fundamental and also the final knowledge, that only which can satisfy man's eternal quest for knowledge. The time has come when all the fundamental scientific phenomena can be explained by the powerful and fundamental laws of spirituality. The rishis, the sages, the seers and the prophets realized the real existence of the spirit. The Incarnations practically demonstrated the spiritual phenomena. We must scientifically support the realizations of the rishis so as to diffuse the scientific arrogance that prevails in this century of materialism.

Ours is the land of saints and sages, rishis Incarnations, the sacred Ganges, Krishna and Cauvery, the majestic Himalayas, temples, gurus and shishyas. Ours, is the country where the waves of spiritual knowledge submerged the entire land from the Himalayas to Kanyakumari. We are the proud sons of proud ancestors who believed in the eternal ocean of spirituality and not in the transient pleasures of materialism. We recognize the motherhood of the invisible Akasha as the source of energy for material manifestations, the motherhood of galaxies for the evolution of the star systems, the creation of our own planet from the sun, and finally the birth of all creatures from the womb of the mother earth. Ours is therefore the faith in the universal brotherhood of mankind and motherhood of the conscious universe.

The rishis and sages of Bharata discarded pleasure, and material and social comforts to gain spiritual knowledge. They propounded the law of Karma. They recognized all the prophets and incarnations as evolved states of Soul; each a portion of God. The Aryans of Aryawarta lived like Gods on this planet. Alas! The veil of ignorance has descended now on our own minds. Jealousy, competition, greed, hatred, and anger have saturated human minds to a limiting stage, threatening to dissolve the inheritance from a noble race. Man is restlessly oscillating today between a materialistic and spiritualistic philosophy with little control of his movements. Religion is considered a taboo. God is projected as some animal in a zoo. What a degeneration! Maybe it was to happen. It was a stage in the course of gaining higher universal knowledge that truth had to rise and fall. Material knowledge is almost at the peak now. Spirituality is not at its crest. Materialism however is a weak child of spiritualism and cannot overpower the latter. Matter is borne by the conscious spirit. The Himalayas are giving us a call to rise once again and reveal to the world the ancient wisdom and glory of this great land Brahma. The young men and women of India must accept the challenge thrown by the evils of society, should be inspired by their spiritual heritage, and march ahead with determination and conviction.

Sri Hari Katha
1978

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GLOSSARY

- aakaash* - Ether; space; matter in the subtlest state.
Advaita- philosophy - The philosophy of unity of nature soul. and God.
Atma- Soul.
Avatar - God's Incarnation.
Brahman - The absolute reality.
buddhi - Intellect.
Chidhakaash - The conscious state of aakaash.
karma - Action; work.
Katha -Upanishad - Part of the Vedas.
rajasik - passionate; energetic.
Rg-Veda - The oldest holy Hindu scripture
sadhana - Spiritual discipline.
samsara - Worldly life.
satva - The quality of peace and purity.
Taittiriyaopanishad - part of the Vedas.
tamas - Undesirable tendency of inertness.
Vayu - air.

PHYSICS OF FREE POWER GENERATION

(Beyond Matter)

By

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PREFACE TO THE SECOND EDITION

This work (1983) is the fourth in series, preceded by "The Substantial Space and Void Nature or Elementary Material Particles"(1977), "Space Vortices of Energy and Matter" (1978) and "The Origin of the Electron's Mass, Charge, Gravitational and Electromagnetic Field from "Empty" Space" (1982). The basic idea, of constructing the universe of matter and the medium of space with a single mobile entity (fluid substance), was first formulated as a hypothesis in my work (1977), which was further developed in other works, referred to above, without any change in either the basic postulates or the main framework of the hypothesis, though the mathematical analysis underwent constant improvements in the subsequent works. For mathematical clarity, the reader may refer to the work, "Beyond Matter", whereas, for the progressive development of the ideas of spatial reality going through the earlier works will be useful, specifically, for the qualitative aspects of the generation of the fundamental phenomena of mass, inertia and charge.

The experimental proof of the hypothesis of the substantiality of space has been subsequently obtained through the numerous experiments on a new phenomenon of "space power generation", that are discussed and reported elsewhere. The positive results of these experiments has given me the added conviction to name the earlier hypothesis as "Space Vortex Theory", abbreviated as SVT.

There is hardly any deviation from the earlier theme. The nature of space and elementary particles of matter, conceived by me about two decades ago, remains unaltered even today.

PARAMAHAMSA TEWARI
(1996)

CHAPTER-ONE

EVOLUTION OF BASIC CONCEPTS

1.1 The Mechanistic view in Newtonian Mechanics:

In classical mechanics of Newton, the physical reality of the universe centered on material points (mass-points) and the force acting on them in absolute space which was considered to be three dimensional, Euclidean and at rest. Matter consisted of hard, solid particles that attracted each other through the intervening emptiness of space due to some mysterious gravitational force, the agency of which remained unknown. Newton also formulated the laws of motion with the principle of inertia, and with these laws and gravitational force, he explained the orderly motion of the cosmic bodies. Despite this, the fundamental nature of mass, inertia and gravitation, remained obscure, and the reason for "action at a distance" could not be understood. Newtonian mechanics did have a great success in explaining more and more the phenomena of astronomy, and in extension of its application was able to explain the motion of liquids, the nature of heat,

etc. The mechanistic view of nature, in which only material points and the forces acting on them seemed to constitute the entire physical reality¹ of the universe, was strengthened with the success of the classical mechanics of Newton.

1.2. The "Field" as the basic element of force:

In the 19th century, while studying electric and magnetic phenomena, Faraday and Maxwell introduced a revolutionary concept of "field" which proved to be a more basic entity than the Newtonian force. (The concept of "force field" is generally applied to electrostatic, magnetic, electromagnetic and also gravitational phenomena. Though the nature of electric and magnetic forces of electrodynamics, with regard to their origin, is different from the gravitational force of Newton, the concept of the "force field" of Faraday is taken here as common to the gravitational as well as electromagnetic force). The force could be split-up into two physical quantities, one of them being invariably a field. It thus was revealed that field is more elementary in nature representing a physical reality, more basic than force, and with this distinctiveness of field, a deeper insight into the fundamental nature of force could be realized.

1.3. The "Force Field" concept transferred the physical reality from "force on a material-point" to "field distribution in space medium"

While the Newtonian force acted on a material (mass) point, the fields arising from a point-source of matter like a mass, or a source of charge, were distributed at each point in the whole of space, with continuous variation, such that, by placing another material source of field at any point in space, a corresponding force at that point could be produced. In qualitative terms, physical reality was spread out through the field in the whole of space rather than remaining confined to an ultra small limited zone of a material-point with a force or a set of forces acting on it. The following inquiries that center on the physical reality of space would, consequently, assume paramount importance.

- (i) Just as a "field" is seen to be a more basic state of reality than "force", is there a fundamental state of reality which is more basic than the "field" itself?
- (ii) Since the fields are of different kinds, can the space medium not fulfill the requirement of a common unifying substratum of physical reality which, in its different characteristic energized states of motion, de-energization etc., are able to create, sustain and transmit all kinds of fields?
- (iii) If (ii) above is true, then, what are the basic properties of the space medium either in terms of the known properties of matter, or even radically different properties? It would cause a severe restriction in the development of a basic theory of space, energy and matter, to presuppose that space must necessarily possess properties akin to matter.
- (iv) Since "field" is a basic element common to both the forces (that it can produce) as well as the field-sources of matter (that produce the field), a deeper study of the fundamental nature of the field that constitutes the material point of Newton is basically essential for the development of a universal theory of matter.

(v) The elementary field in the constitution of the material-point, as in (iv) above, should be so distributed, that the basic nature and agency of mass, inertia and gravitation, as introduced by Newton in classical mechanics, are fundamentally understood. Similarly, the nature and agency of the charge (of the electron, discovered by the close of 19th century), the "positive" and "negative" aspects of charge, as introduced in electrostatics and 'electrodynamics, also require

¹ The term 'reality' is qualitatively defined as the *basic state* of universal energy.

explanations which support the basic structure of a material point. A theory on the physical structure of matter must necessarily incorporate, side by side, the above two main and fundamental aspects of the behavior of matter, which provide the foundations for classical mechanics and electrodynamics.

1.4. 19th century efforts to show that aether is the basic physical reality of the universe.

By the close of the 19th century, the above issues would have been the main considerations to determine the nature of aether that was earlier introduced by Descartes in order to explain the gravitational force involving "action at a distance" and to provide a theory of matter. (It is the unifying aspect of aether that can produce forces as well as the very basic substance for matter that merits critical examination.) The physical reality of the space medium was required not only for the propagation of light, but to account for a very wide range of fundamental phenomena. In the year 1899, Michelson had, in one of his lectures, stated the following; *"suppose that an aether strain corresponds to an electric charge, aether displacement to the electric current, aether vortices to the atoms; if we continue these suppositions, we arrive at what may be one of the grandest generalization of modern science, namely that all the phenomena of the physical universe are only different manifestations of the various modes of motion of one all pervading substance, the aether. The day seems not too far distant when the converging lines from many apparently remote regions of thought will meet on some common ground. Then the nature of the atom and the forces called into play in their chemical union, the interactions between these atoms and the non-differentiated aether as manifested in the phenomena of light and electricity, the structure of the molecule, the explanation of cohesion, elasticity and gravitation, all these will be marshaled into a single compact and consistent body of scientific knowledge."*

1.5. The Special Theory of Relativity, at the start of this century, discarded aether but recognized fields

The aether by the close of the 19th century could not be assigned with definite basic properties, and sometimes, the explanations to certain phenomena required aether properties that contradicted each other. In Einstein's own words² against aether hypothesis (though expressed in his paper published as late as 1950). *"Since the field exists even in vacuum, should one conceive of the field as a state of a carrier or should it rather be endowed with an independent existence not reducible to anything else. In other words, is there an aether which carries the fields, the aether being considered in the undulatory state for example; when it carries light waves? The question has a natural answer. Because one cannot dispense with the field concept, it is preferable not to introduce in addition a carrier with hypothetical properties. However, the path finders who first recognized the indispensability of the field concept were still too strongly imbued with the mechanistic tradition of thought to accept unhesitatingly this simple point of view. But in the course of following decades this view imperceptibly took hold."*

There is a lurking danger in rejection of the very existence of an entity if it happens to be even more basic than the basis on which the entity is rejected. For instance, in classical mechanics, to recognize the physical reality of momentum which is obtained as a product of mass and velocity and to reject the very existence of mass, would be a folly, since, comparatively mass is a more basic property of matter, in the sense, that there can be a body of a definite mass and zero velocity, which will, therefore, have zero momentum. Einstein, through the Special Theory of Relativity, was himself not proposing a physical theory of matter, and was also aware of the limitations of electrodynamics in providing a comprehensive and basic theory of the material point. His concern, through his Relativity Theory, appears to be to analyze some universal

² On the generalized Theory of Gravitation By A. Einstein, Scientific American, April 1950 Vol. 188 No. 4 pp. 13-17.

phenomena through a novel approach.. Under such a view of nature, which gets restricted by not incorporating a basic theory of matter, a proposal for the rejection of aether, the existence of which had been debated for centuries, and which was considered, as a basic and universal entity of the substratum or the universal space itself, can indeed be considered rather hasty.

The many unresolved and fundamental issues, which had arisen by the end of the 19th century, and which the aether theories were expected to answer, covered much wider phenomena than the above view of Einstein which seems to limit aether's function to act only as a "carrier" to the field. If, however, a universal elementary field is indeed discovered and shown to construct the material-point of Newton and the point-charge of electrodynamics, and also be able to produce the fields in space and the associated effects of mass and charge as experimentally observed, the aether can be replaced by this basic universal field. There were larger issues at stake in rejecting altogether the existence of aether, specially because, by the end of the 19th century, little knowledge had been gained of material structure (atomic and nuclear). At the start of this century the two physical realities of Newton, namely, the material point and force, force had been developed to a more basic concept of field while the material point was yet to be fully explored. In addition the Special Theory of Relativity branded the aether of space as a superfluous entity.

Einstein's effort to find a unified base for mechanics as well as electrodynamics through the Special Theory of Relativity brought about a major change by demolishing the basic foundations of absolute space and time on which Newtonian mechanics was erected. It will be shown below that without demolishing the basic structure of traditional concepts of space³, time, and simultaneity, the unification of classical mechanics and electrodynamics and fields and forces can be done in the very structure of fundamental matter.

1.6. The Limitations of Maxwell's Electrodynamics

In the absence of a theory of matter, Einstein points out further in the paper referred to above, that "Maxwell's theory, although adequately describing the behavior of the electrically charged particles in their interaction with one another, does not explain the behavior of electrical densities i.e. it does not provide a theory of particles themselves. They must therefore be treated as mass points on the basis of the old theory." There is, however, a very serious difficulty in the "point" concept of matter. If an electron is treated as a point charge, it would possess in its spatial fields an infinite amount of energy which indeed is an absurd result. In addition, there is further inconsistency with the mass-point model of particles as argued in the same paper by Einstein. "The combination of the idea of continuous field with that of a material point discontinuous in space appears inconsistent. A consistent field theory requires continuity of all elements of the theory, not only in time but also in space and in all points of space. Hence the material particle has no place as a fundamental concept in field theory. Thus even from the fact that gravitation is not included, Maxwell's electrodynamics cannot be considered a complete theory." The new physical theory of matter must remove the above inconsistency, bringing about the unification of the spatial fields with the particle structure while overcoming the difficulty associated with the point concept of matter. The challenge can be met by adopting an entirely new approach as discussed below.

1.7. A new approach to a material point

The inconsistency between the "continuous field" and "discontinuous material-point", as pointed out by Einstein in the middle of this century, is real to this date and the most fundamental issue

³ The traditional concept of inert space of classical mechanics has however undergone revision in this work.

to be considered in the development of basic theory of matter. A clue towards a new hypothesis can be had by arguing with the following basic considerations.

(i) The concept of a variation of a field continuously in space being more elementary than the force acting on a material point, as in classical mechanics, the physical reality of the ideal "zero radius point" concept of matter can be sacrificed in favor of the physical reality of spatial fields. In other words, the reality (energy content) of a material-point should be considered to be inherent in its spatial fields which need not start from zero radius, that is, from the geometrical center of the material point.

(ii) Resolution of the difficulty of the infinite field energy associated with a point-charge (electron) can be achieved by breaking down the fields within a definite ultra small fieldless spherical zone concentric with the geometrical center of electron, while yet retaining the continuity of the fields in the rest of the space and also around the fieldless zone (fig.1.1).

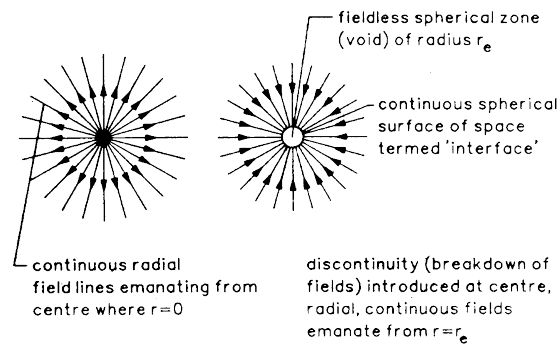


Fig. 1-1.

(iii) The fieldless spherical zone concentric with the center of electron should account for the basic properties exhibited by matter, like mass, inertia, creation of charge and associated fields and their effects as outlined earlier. The ultra smallness of the fieldless spherical zone would behave like a 'point' in its interaction with external fields and material particles.

(iv) The discontinuity introduced by the fieldless zone should however be so ingeniously accounted for that the continuity of all the starting point of the fields around the fieldless sphere remains maintained through the medium of space forming the spherical surface. (fig.1.1).

(v) With the introduction of the fieldless zone, the process of the creation of matter would be to describe the conditions that create the fieldless zone and consequently the fields. Similarly the collapse of the fieldless zone and the associated fields will account for the process of the annihilation of matter.

1.8. Introducing a fieldless void at the center of the Electron

The introduction of an ultra small fieldless zone at the center of the electron will necessitate the following new definitions of space and matter that make sharper and precise distinctions among the terms like, 'empty-space', 'absolute vacuum', 'matter' and 'void'. (Refer to Fig.1.2.)

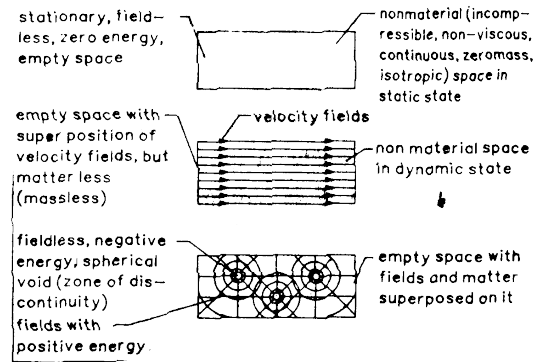


Fig. 1-2.

Matter

The medium composed of an assembly of entities, each with its own specific geometrical center, and possessing rest mass, inertia, electric-charge (in certain conditions), and their associated fields.

Space (Absolute vacuum and empty space)

The continuous medium which has no matter (as defined above) within the volume considered, but may have fields produced by matter located outside the considered volume, or fields produced due to the dynamic state of the absolute vacuum itself. The absolute vacuum free of matter shall also be referred to as space. The term 'empty space' will however signify *'that state' of absolute vacuum or space which has neither matter nor fields produced either due to its own dynamic state, or due to matter located outside the considered volume*.

Void

An ultra small spherical zone of a fixed radius concentric with the electron center, which does not possess space medium and therefore cannot generate or sustain any kind of field within its sphere. Since the points in space (absolute vacuum and empty space) can sustain fields, they are physically real points. However due to the impossibility of the creation of the fields within the void, the points there have only imaginary geometrical positions with no physical reality. A void is a fieldless *'hole' or a 'cavity'* in the real medium of space where the *'real medium'* signifies the medium that can sustain fields and can, consequently, possess energy.

With the above definitions, a sharper distinction between the terms 'empty space' and 'void' have been made. The definite volume of the fieldless void at the electron's center has also replaced the material-point with a highly condensed distribution of energy as conventionally supposed. A material medium consists of empty space (of which the basic properties are discussed further) on which matter with a fixed void content in each of its entities, and the fields arising there from, are superimposed. There is, thus, no empty space (as defined above) left in a material medium, though, there is a fieldless void in each particle that in multiple assemblies constitutes matter. Due to the presence of an enormous amount of matter extending into the farthest depths of space, there can be no empty space anywhere in the universe. However, each electron will contain a definite size of a fieldless void at its center under the proposed new theory which distinguishes between the media of space, matter, 'fieldless empty space' and void.

The above new definitions of the basic terms related to space, energy and matter are essential for further analysis in this work in view of the lack of sharp distinction among these basic

phenomena. This is evident from Erwin Schrodinger's Observation.⁴ Today a physicist no longer can distinguish significantly between matter and something else. We can no longer contrast matter with forces or fields of force as different entities. We know now that these concepts must be merged. It is true that we speak of 'empty' space, (i.e. space free of matter), but space is never really empty, because even in the remotest voids of the universe there is always starlight and that is matter. Besides, space is filled with gravitational fields and according to Einstein gravity and inertia cannot very well be separated."

The "empty space" referred to in the above quotation signifies "space free of matter", whereas, as per the definitions provided earlier, "empty space" is defined as a "matterless and also fieldless volume of space". Also in the above quotation, no distinction between 'void' and 'empty space' has been made in addition to the prevalent lack of distinction between 'field' and 'matter' and 'inertia'. To establish clarity of concepts, with sharp distinctions among the fundamental phenomena, and suggesting their merger only at an appropriate stage, is the central feature of this physical theory on space, energy and matter.

1.9. A new approach to the properties of space

The insertion of the fieldless void at the electron's center leaves the spatial fields as the only physical reality in the universe (Fig.1.1). The basic properties of space can now be inferred keeping an overall view of the fact that the phenomena of the spatial fields are left out as the sole agents to produce energy, matter and all of their effects. The fields in electron structure, as also shown in author's earlier works⁵, are produced in space due to the insertion of the central void, and the conditions required for the dynamic stability of the void. Some basic derivation in the above works are that:

- (a) the rest mass of electron (m_e) is directly proportional to the product of the volume of its spherical void and the speed of light speed, c , in absolute vacuum.
- (b) the charge of electron (q_e) is directly proportional to the product of the surface of its spherical void and the speed of light speed, c , in absolute vacuum.
- (c) the energy from within the spherical void during its creation is, $m_e c^2$, and, in a static electron, distributed as spatially as electrostatic and gravitational fields, thus leaving the void fieldless and with a definite negative potential. It is these spatial gravity and electrostatics fields that, during oscillation or motion of the electron, appear as electromagnetic fields produced by electron.
- (d) the dielectric constant ϵ_0 of the absolute vacuum is inversely proportional to the light speed c in absolute vacuum.
- (e) Planck's constant, h , is directly proportional to the product of the rest mass of electron, void radius $r_\emptyset$, and the speed of light.

⁴ 'What is matter"-by Erwin Schrodinger, Scientific American, September 1953, Vol.189, No.3 pp.52-57.

⁵ (i) The Substantial Space and Void-nature of Elementary Material Particles (1977), (ii) Space Vortices of Energy and Matter (1978) (iii)The origin of Electron's Mass, Charge, Gravitational and Electromagnetic Fields from the Empty Space (1982), and (iv) Space is the Absolute Reality (Proceedings of International Conference of Space Time Absoluteness, Genoa, 8-11 July, 1982.

The important inference from (a), (b) and (c) above is that since the void, associated with its gravitational and electrostatic fields in space, accounts for the mass, inertia, and electromagnetic properties of the electron, the medium of space, or the spatial field of electron, is not required to possess either mass or density (mass per unit volume). The basic concept of "massless" and 'densityless' space of primary reality is the distinguishing feature of the Space Vortex Theory (hereafter, abbreviated as SVT).

Universal space in its basic state is three dimensional, Euclidean, massless and densityless.

As defined before, the fieldless-void does not contain within it any real point. The continuity of the space-points and the fields on them will, therefore, have to be continued only up to the spherical interface (Fig.1.1). A continuous spherical boundary (referred above as 'interface') of the physically real space points enclosing the void is needed. This necessitates that the neighboring space points on the interface are in complete continuity. The fields will have maximum strength at the interface, the magnitude falling off continuously away from the void. Since the fields are recognized as the elementary state of physical reality, their continuous variation in space, as observed, leads to the positive inference that space itself should be continuous. We can thus conclude that:

Space is a continuous substratum.

The inconsistency between the continuous field and the discontinuous material point, as pointed out by Einstein, will stand resolved with the continuous space and the 'fieldless' sphere of void' in the electron's structure, since, as stated before, at the interface there is a complete continuity of the space points. In an empty space volume, the absence of void signifies the absence of mass proportionate to the volume of the void. Since mass is directly proportional to density, the very concept of 'density' will not be applicable to space (empty space, absolute vacuum). The concept of "density" will however be applicable only to an assembly of voids, which as discussed later are shown to be present in each material media. These discrete voids may be either closely or loosely packed, thus imparting the property of 'density' to the material media. Since the property of compressibility is dependent on the density of the particles of matter, the absence of mass and density in space removes the compressibility concept from the basic space properties. *Therefore, space is an incompressible medium.*

A material entity like an electron, with a void in its structure, can move freely in space medium. It would be, therefore, necessary that the physical reality of space should possess mobility as its basic property. A normal fluid is constituted of atoms and molecules (that as shown later possess voids) which, during motion, develop internal frictions and shear forces. In a moving liquid, the shear stresses are described by viscosity, and are proportional to the velocity gradient v/d , as shown in Fig.1.3. Since space is continuous and does not possess mass and density, in its basic state (when the atoms and molecules are not yet created), it cannot develop viscosity. However in the limiting state of its flow, when the velocity gradient reaches the limiting value (light velocity / the electron's void radius), as discussed further in Chapter-2 of this book, the flow of space breaks' down into independent voids, leading to the formation of matter, thus giving rise to the property of viscosity. Hence, in its basic state, *space is a nonviscous fluid.*

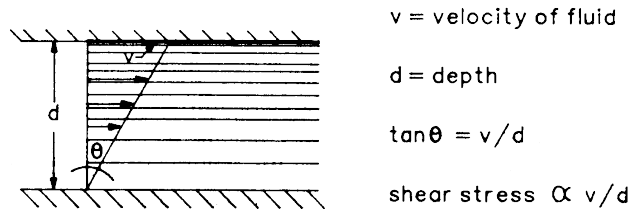


Fig. 1-3.

From the foregoing arguments, space is hypothesized to be a continuous, incompressible, non-viscous, zero mass, and zero density fluid. Since all these basic properties are unlike the properties of any material medium, the above non-material properties, assigned to space, do appear rather hypothetical. The evolution of material properties from the substratum of space with non-material properties is an apparent contradiction, however, the very basic philosophy of SVT is to lay a foundation on the most fundamental base, so that the inquiries on the basic properties of matter like mass, inertia, density, viscosity, compressibility, discontinuity, and charges with their effects, are pursued to the final depth, till the origin of these properties is traced and shown to emerge from the fundamental substratum of reality. With this approach, it will stand proved that the analysis has been carried right up to the truly basic state from where the material properties originate. Also, the unification of space and matter can be achieved by proving that space, in its various modes of motion and energisation, generates matter and its associated properties, which otherwise do not exist in static space. The generation of matter from non-matter (space), evolution of apparently concrete material particles from the empty voids, unifying space and matter into a single universal physical reality of a primary spatial field (dynamic state of space), form the distinctiveness of the approach that has been followed in the formulation of the SVT. This is mainly because the results of some crucial experiments of the 20th century have enabled probing into the structure of electron, which made possible the application of the alternative reasoning that could not have been otherwise applied before. For instance, one very important basis for introducing void in the electron structure is the discovery of the positron in the thirties of this century, and the annihilation process which takes place while interacting with the electron. The discovery of the annihilation phenomenon should, in author's view, take us back to the pre-relativity and pre-quantum era which could not keep pace with the mathematical treatment of quantum theory developments. Since the physical structure of the electron can vanish by the emission, of light while interacting with the positron, the possibility for the electron and positron to possess a 'hole' (void) structure which can collapse during annihilation is also an alternative and probable approach such that the electromagnetic energy (light) released during annihilation is recovered by the decay of spatial fields of the electron and positron. If the above is the reasoning pursued to describe the physical structure of the electron, the 'hole' shall necessarily be embedded in a physically real medium of space, which would strengthen the case for some special kind of aether, that is, the 'aether' signifying the physical reality latent in the space medium in it's most basic state.

With the possibility of a dynamically stable physical model of the electron more on classical lines (Fig.1.1) than on the modern quantum theory concepts, the true significance of the fundamental quantum quantity (Planck's constant) and the reasons for it to have physical relations with the classical concepts like angular momentum and magnetic moment of electron as discussed further would also be possible to grasp.

The discovery of the annihilation phenomenon should, thus, take the arguments on the nature of charge, mechanical mass, electromagnetic mass of the electron, back in history to the aether era, and the dawn of the Special Theory of Relativity and the quantum theory. Specifically, because the fieldless void (at the electron center) embedded in space, shows enormous possibilities for the

re-establishment of the physical aspects of quantum phenomena, and gives directions for building an alternate theory of existence-nonexistence of energy, continuity-discontinuity of space medium, positive-negative potentials, as already foreseen by philosophers in the past, while also providing the basic link between classical physics and quantum theory through the classical treatment of h , m_e , q_e , and c which are the keystones of the basic structure of 20th century theories, and of which the real significance of is still in obscurity.

1.10. Introducing new terms for a sharper distinction between spatial and material effects

The space properties of continuity, zero-viscosity, zero-mass (zero-density) and incompressibility shall henceforth be grouped together and termed as 'non-material' properties. Also, in order to remember that non-material space is the basic substratum of reality (which will generate fields, energy and matter), a new term '*substantial space*' (abbreviated as ss) shall be used for the medium of space wherever such an emphasis is required. The term 'substantial' applied to space will qualify basic non material reality, and in this respect, will differ, hereafter, from the term 'physical' which will qualify the reality related only to the material particles and material media. In this sense the term 'substantial' is considered to be more primary than physical since in SVT, matter is generated from the non-material dynamic space. The term 'reality' shall, henceforth, signify the most basic state of universal energy latent in ss which manifests as spatial fields and matter as discussed in the ensuing chapters.

1.11. The Limiting flow velocity of substantial space

One of the postulates in SVT is that the non-material ss can have a steady flow at different speeds varying from zero to light-speed in absolute vacuum. Light-speed is also postulated to be the limiting speed of flow of the ss. The main idea of imposing this limit on the flow of ss is for the creation of voids when the limiting conditions of flow are reached. The transmission of electromagnetic fields (light) at a constant velocity c relative to ss substratum, irrespective of the motion of the source of light with respect to ss, is the basic concept adopted in this work. The effect of field transmission includes the speed of transmission of gravitational fields also, thus leading to a general postulate as given in the following section that all fields are transmitted in the ss at constant speed c (relative to ss) and irrespective of the motion of the material sources (producing the field) relative to the ss.

1.12. Some comments on Einstein's postulates of a special theory of relatively (STR)

In his paper "On the electrodynamics of moving bodies", Einstein wrote....."light is always propagated in empty space with definite velocity c which is independent of the state of motion of the emitting body.... " The introduction of a "luminiferous ether" will prove to be superfluous in as much as the view here to be developed will not require an "absolutely stationary space" provided with special properties, nor assignment of a velocity vector to a point of empty space in which electromagnetic processes take place. Out of the two broad divisions of basic universal entities, namely, space, matter and fields, Einstein's above postulate recognizes the dynamics of only matter and fields, while space is assumed to be empty. The 'empty space' of Einstein, defined before, precisely as "Space without matter or fields", is a "zero energy state" of space substratum with zero velocity-vector at each of its point. Thus the 'empty space' of Einstein's Special Relativity, with the definitions of SVT, becomes the basic state of zero energy or a "specific condition" of space out of the many possible conditions in a generalized theory on dynamics of space (ss) presented here, in which space points are assigned with a velocity vector, and which as discussed below, can reveal the process of generation of universal fields and matter, whose fundamental nature and agency of creation have so far remained fully obscure in current physical theories including Special Relativity. Therefore, the necessity to assign velocity vectors

to space points, and speculation on the fundamental properties of space in contrast to Einstein's approach, arises for the primary necessity of development of a basic theory of matter.

Einstein did not assume the existence of a "luminiferous ether" in his postulate of Special Relativity referred above and even after a lapse of almost half a century from the formulation of this theory, he maintained the view (expressed earlier) of aether being superfluous. While in modern physics field is taken to be the fundamental concept which cannot be reduced to anything simpler, quite opposed to this view, it will be conclusively shown in this work that fields are indeed only the "characteristic states" of a carrier and do not have an independent existence apart from the 'carrier' and that all fields are reducible to a more basic fundamental entity, which is the empty space substratum. Presently it is argued, that because of the mechanistic point of view dominating physicist's thinking (late 19th Century and early 20th Century), it was not readily accepted that an electromagnetic disturbance could be propagated in empty space, where 'empty space' signifies void). Such an argument can be considered provided the origin and the basic nature of the electromagnetic disturbance, with regard to its relation with space, is revealed to be such that it is independent of the fundamental existence of the empty space. If, however, the electromagnetic disturbance happens to be a product of the empty space itself, where is the question of its creation and transmission in the absence of the empty space? Therefore, the recognition of the basic properties of continuity and mobility of empty space, as argued before, is not only for the purpose of introducing a 'carrier' for the transmission of fields, but also for a much more fundamental and broader issue, which is, the very generation of fields required for the creation of energy and matter as characteristic "dynamic states" of empty space.

The other fundamental property of empty space, that has been vigorously debated especially since Einstein's Relativity, is the velocity of light, c , in an absolute vacuum. (The absolute vacuum is defined here as empty space with zero matter and zero field and absolutely stationary in the sense that it is in a zero energy state due to zero velocity vector on each of its points). Maxwell's equation used c as a fundamental constant, and its physical significance was the velocity of the transmission of electromagnetic energy (including light) in a matter-free universal substratum and relative to it, at a speed of 3×10^{10} cm/sec, (the speed of light is exactly $c = 1/(\mu_0 \epsilon_0)^{1/2}$ cm/sec, where ϵ_0 is the dielectric constant of the absolute vacuum, and μ_0 is the permeability constant of the vacuum). By the end of the nineteenth century, while the properties assigned to aether in many aether theories could not be confirmed experimentally, the property of the aether as a substratum for electromagnetic transmission did indeed remain unaltered.

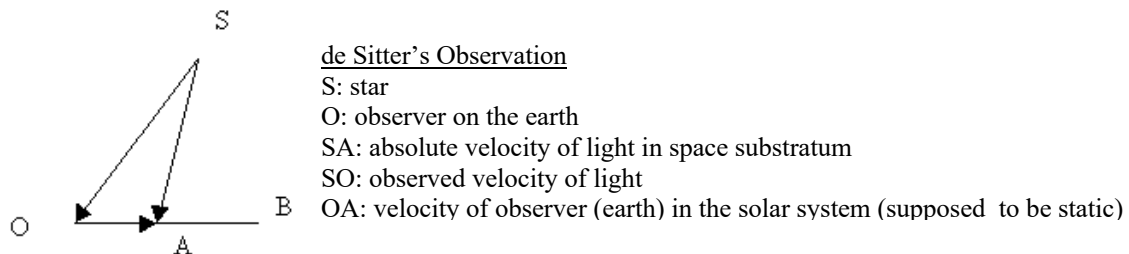
One of the main reasons for the failure of the detection of aether would certainly be, if it did possess a non-material nature as postulated above. The other reason for the substratum to remain elusive in various experiments (Michelson-Morley and others) would be the non-recognition of the dynamics of space, since the complex motion of space points around the earth, sun and the stars, and also in the interspaces of the cosmos (discussed later), would interact with the electromagnetic field (light) deviating the course of a light-ray as per the principle of Galilean Relativity. Therefore, for correct interpretation of the results of the experiments, performed to detect the aether, dynamics of space would need to be taken into account. Postponing the discussion on the distribution of motion of universal space to a later stage in this work, Einstein's second postulate' of Special Relativity is first examined below.

The second postulate of Einstein states that light is always propagated in empty space with a definite velocity c , which is independent of the state of motion of the emitting body. In view of the earlier definition of empty space in which the space points, in contrast with void, possess substantial reality, and also in the light of the properties assigned to empty space, the second postulate of Special Relativity will now convey the following significance.

(1) The velocity of light c is relative to the empty space substratum similar to the constant c used in Maxwell's equation, and

(2) The basic nature of light is unique that in contrast with the Newtonian law of momentum conservation, it does not inherit the velocity of a moving source from which it is emitted in addition to its own natural transmission at c relative to empty space.

In further discussions on the fundamental nature of electromagnetic fields (light), it will be shown that light is produced at a point in space when there is "decay" or reduction in the magnitude of fields (gravitational and electrostatic fields) at that point, and that the effect of this decay is transmitted at constant speed irrespective of the motion of the light source. That light velocity is independent of the velocity of its source is also proved by de Sitter's observation of double stars⁶.



SOA: angle of the apparent position of the distant star S;

SAB: angle of the true position of the star S.

OSA: angle of aberration; this angle changes at different positions of the observer during the earth's orbit around the sun.

Thus the *true path* of the light along SA is independent of the velocity of the observer's motion. It is only the apparent path SO that changes with different velocities (backward or forward) of the observer moving with the orbiting earth. The apparent direction of the position of a star is displaced from its true direction due to the motion of an observer in the earth's orbit. In my own work, starting from the field structure of the electron and analyzing the electron-positron annihilation process, it is shown that the velocity of light with respect to the medium of space is independent of the motion of the source.

Thus, Einstein's postulate on the constancy of c confirms only the absolute property of the substratum of empty space in that it transmits light at a constant speed c due to its fundamental characteristic property, and the true nature of light as to why it does not partake of the momentum of the source of light) will to be clearly understood when demonstrated later in this text.

Also it is the lack of the precise definition of "empty space" "void" and "Absolute vacuum" that has shrouded the clarity of concepts of the fundamental nature of space and matter. For example, Einstein derives in Special Relativity the transformation of coordinates and time from a stationary system to another system in a uniform motion of translation relative to the former. Now, since

⁶ The Logic of Special Relativity, S. J. Prokhovnik, Melbourne University Press, Carlton, N. 3 Victoria. . On page 3: "...it had been known since Bradley's observation in 1728 that the apparent direction of the 'fixed stars' changes with the direction of the earth's orbit around the sun. This phenomenon, known as an astronomical aberration, follows immediately from the assumption that the path of starlight is independent of the velocity of the observer's motion and that its apparent direction is then the vector difference of its velocity and the observer's velocity relative to a substratum. That light-propagation is also independent of the velocity of its source was further suggested by de Sitter's more recent (1913) observation on double stars, thus complementing the previous support for a substratum property of space"; de Sitter, W. (1913). Phys. Zeitschr. 14, 429.- 'binary star ghosts if light velocity depends upon the velocity of the source'.

the empty space of Einstein, for important reasons given before, is now postulated as mobile, non-viscous and continuous, the relative motion of space points in a system of coordinates of one inertial frame will also set in motion the space of the preceding system of coordinates of the inertial frame assuming that there is no 'rigid' barrier of some kind between the two systems. In other words, uniform motion of space points of empty space of one inertial frame relative to the empty space of the other inertial frame is impossible, and consequently there remains only one universal inertial frame of 'dynamic empty space' in the Special Theory of Relativity when the mobility of empty space is postulated. Where is the question then of the transformation of coordinates and time in a single universal inertial frame of empty space? Whereas, if empty space is not distinguished from void (as in Special Relativity), and assuming that if matter still did somehow exist in void space, following Newton's first law of motion, a hypothetical material inertial frame of reference can indeed have uniform relative motion relative to another material frame of reference. However, in such a system, the void as defined above cannot have real points and can sustain no field (the electromagnetic field) which is to be measured in two frames of references as proposed in Einstein's Special Relativity. Also, since a hypothetical universal space, as an extension of void, would not produce a fundamental theory of the agency and origin of fields, energy, mass, inertia and charge, the 'void' can- not in reality replace the 'empty space' of the universe.

There is another basic difficulty with regard to the "Inertial" nature of the frame of reference. An inertial system is a frame of reference in which the law of inertia, Newton's first law- holds. From the structure of the fundamental mass discussed later in this book, it will be seen that inertia is a phenomenon exhibited due to the combined affect of void in the fundamental particle of matter and the mobility, zero-viscosity and continuity of the empty space. A void extension of universal space cannot make matter exhibit inertial property and hence there can be no inertial frame of reference in the universe of void space. The theory of matter discussed here will show that universal energy generated from dynamic space creates universal matter, and hence there can be no existence of matter if the universal space itself is a void region.

1.13. Postulates

The basic aim of this theory being to generate electric charge, rest-mass, fields and other properties exhibited by matter, either due to the properties of mass (inertia, density), or discontinuous nature (compressibility, viscosity) from the dynamics of space itself, in the postulates below, the most fundamental state of space is hypothesized as a 'non-material' medium, where 'non- material', as defined before, signifies an incompressible, nonviscous, zero-mass, continuous and mobile substratum.

(A) The space of the universe is a non-material substratum of continuity, isotropy and mobility.

(B) The space of the universe has a maximum limiting linear velocity of flow equal to the light-velocity in absolute vacuum c , and a maximum limiting 'angular velocity, when in a state of circulating motion.