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Published Monthly

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EVOLUTION OF CONSCIOUSNESS AND SUPERSUBJECT

A dialogue between

Srila Bhakti Raksak Sridhar Dev-Goswami Maharaja and
Dr. T.D. Singh (Srila Bhaktisvarupa Damodara Maharaja)

Dr. T.D. Singh: When scientists speak of evolution they mean that life has evolved from matter. I have heard you speak of evolution with quite a different concept. You say that everything is evolving from consciousness.

Srila Sridhar Maharaja: Yes, consciousness comes first and then matter. The basis of all things material is consciousness, which is spiritual. Consciousness can contact consciousness directly. When consciousness comes into the stage of matter, material conception, we experience a kind of vague consciousness; first there is hazy consciousness and then material consciousness. But everything has its spiritual side. And as eternal souls, our direct connection is really only with the conscious aspect of existence. For example, the Earth is conceived of as a woman. According to the *Vedas*, the presiding deity of the Earth is a woman. And the sun is conceived of as a *devata*, a male god.



Srila Sridhar Maharaja

The soul, coming into material consciousness, must come through some hazy reflection of consciousness, *cidabhasa*. Only then can the soul experience material consciousness. Before pure consciousness evolves to material consciousness, it will pass through a hazy stage of consciousness or *cidabhasa*. So in the background of every material thing, there is a spiritual conception. This cannot but be true.



Dr. T.D. Singh

Dr. T.D. Singh: What is *cidabhasa*?

Srila Sridhar Maharaja: Something like mind. Suppose consciousness comes to feel matter. When consciousness is coming to the material world to know the material world, it has to first pass through material consciousness, and then it

can feel what is matter. According to Darwin's theory, matter gradually produces consciousness, but before producing consciousness it must produce some hazy consciousness, then mind, and then the soul. But in reality, it is just the opposite. So subjective evolution parallels objective or material evolution. But in the evolution of consciousness, the supersubject is first, then the individual soul or *jiva*-

subject is next. Then, from the subjective consciousness of the *jivas*, matter is produced. But consciousness must penetrate hazy consciousness to perceive matter.

I say that the process of evolution moves from the top downward. The Absolute Reality – if we at all assert that there is anything which is the absolute reality – must possess two qualifications. What is that? First, in the words of Hegel, He must be by Himself: He is his own cause. Second – and more important to us, He is for Himself: He exists to fulfill His own purpose. He is not subservient to any other entity, for then His position would be secondary. Reality the Absolute is full in Himself. All other things are coming from Him. The perfect substance already exists. What appears to us as imperfect comes down according to our own defective senses.

The imperfect must be dependent upon the perfect, the ultimate reality. And the imperfect may be so arranged by Him in order to prove His perfection. To prove the perfection of the Absolute, there is conditioned and unconditioned, finite and infinite reality. The defective world therefore has an indirect relation to the truth.

However, consciousness cannot jump at once into the conception of matter; it must pass through a process to come to material consciousness. From the marginal position, from the verge of the higher eternal potency, evolution and dissolution of this material world begins. This takes place only on the outskirts of *svarupa-sakti*, which is the system responsible for the evolution of the spiritual plane, and is an eternally evolving dynamic whole. It is not that nondifferentiation is the origin of differentiation. An eternally differentiated substance exists. That plane is filled with *lila*, dynamic pastimes. If a static thing can be conceived of as eternal, then why can't a dynamic thing be conceived of as eternal? That plane of *svarupa-sakti* is fully evolved within. It is eternal. Evolution and dissolution concern only the degradation of the subtle spirit to the gross material platform and his evolution towards perfection. Here there is evolution and dissolution, but these things do not exist in the eternal abode of *svarupa-sakti*.

Dr. T.D. Singh: Objective evolution is what modern science calls Darwinian evolution, but how does subjective evolution unfold in Krishna conscious science?

Srila Sridhar Maharaja: You have to take the example of hypnotism. Through a form of mystic “hypnotism,” the supersubject controls the subject to see a particular thing, and he is bound to

see that. One may think that as we see a stone, the stone compels us to see it as stone, but it is just the opposite: we are compelled to see it as stone being under the influence of the supersubject who displays everything as He likes. When He commands, “See stone,” then we shall see stone. Full control over whatever we see rests in His hands. No power to control what we see rests in the objective world. The objective world is fully controlled by the subjective. This is confirmed in *Bhagavad-gita*, where Krishna says *pasya me yogam aisvaryam*: “If I say, ‘Behold my mystic power,’ you are bound to see it. You have no other choice.”

Krishna says *mattah smrtir jnanam apohanam ca*: He is the prime cause of remembrance, forgetfulness, and intelligence. He is the controller. For His own pleasure, His *lila*, He can do anything. This is true not only in the material world, but also in His own domain. What is meant by this statement of the *Gita* concerns this *brahmanda*, this material world. The gist of this statement is that from the lower planetary systems up to the highest – this entire area of evolution and dissolution – everything is manipulated by Him. No credit can be attached to any external thing. All credit should go to the Center who controls everything.

And reality is subjective. It is based on consciousness. Color is perceived through the eye. It is not that the color is there and the eye can catch it. But the seer sees through the eye and perceives color. So color is a perception. Its position as actual substance should be traced to the subtle plane of existence. This is the nature of reality: the gross is coming from the subtle. In Sankhya philosophy, of course, that is described as a bifurcated thing. According to Sankhya philosophy, there are three branches of reality: the sense, the senses, and the sense objects. Sound is created by the ear, color is produced by the eye, and so on.

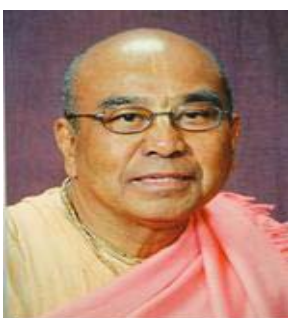
The objects of the senses are in the mode of ignorance, *tama-guna*, the sensual instruments are in the mode of passion, *raja-guna*, and the power of sensation is in the mode of goodness, *sattva-guna*. From these proceed light, the eye, and color; sky, the ear, and sound. In this way, mundane reality branches in three ways: *tama*, *raja*, and *sattva*. So the gross world is coming from the subtle through the channel of consciousness. The feeler, the instrument of perception, is creating the object of his perception.

Try to understand this principle of hypnotism. The whole thing is hypnotism – this whole creation – and it is completely in the hand of the Supreme Subject. All material laws have no meaning; the laws and the sublaws are all pertaining to the subjective world.

THE LAWS INVOLVED IN THE OPERATION OF CELLS ARE UNKNOWN TO MODERN CHEMISTRY

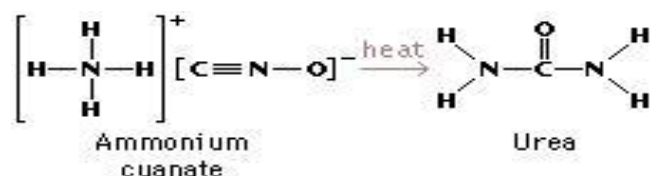
by

Srila Bhaktisvarupa Damodara Maharaja (T. D. Singh, Ph.D.)



Until the early part of the nineteenth century, chemists thought that whatever happened in a living system could not be reproduced in the laboratory. In other words, Inorganic matter was thought to be fundamentally different from the organic matter composing living material bodies. The prevailing view was that a

non-physical vital energy was operating in the living system. In 1828, however, the German chemist Friedrich Wohler announced the laboratory synthesis of urea from ammonium cyanate, an



inorganic compound. Urea is an end organic byproduct forming the major solid component of mammalian urine. Wohler's synthesis of urea profoundly influenced the minds of chemists toward adopting a materialistic view of life. By the late 1850s, Pierre Berthelot reported the production of such organic compounds as alcohols, acetylene, methane and benzene from inorganic chemicals. Gradually, chemists began to think that there was nothing unusual about the organic world. Thus, a strong conceptual path was paved for the view that life could be a product of a long, tedious and complex series of chemical reactions. The announcement of Darwin's theory of evolution in 1859 lent further support to the wholesale materialistic and mechanical concept that life could be an emergent product of matter, a concept that has since remained dominant in both science and philosophy. The author would like to remind the readers that although Darwin's theory of evolution is about one and a half centuries old, scientists are not making much headway in their attempts to understand the chemical basis of life. We now know a lot more about protein molecules, the chemistry of genes, and many other biochemical paths in the living bodies. However, we are still quite far from understanding life. Rather the scientific study of life for a century and a half indicates that life is beyond protein molecules, beyond DNA and RNA. And a mixture of these molecules cannot produce life. Life is beyond.

Furthermore, it could be said that chemicals either organic or inorganic would not produce life. In fact, living bodies on earth are made up of both organic chemicals such as carbon compounds and inorganic chemicals of Na^+ , K^+ , Mg^{++} , Fe^{+++} ions – although the inorganic chemicals are in minor amounts. Everyone will agree that it will never be possible to revive a dead body where all the organic and inorganic chemicals are still present, thus showing that there is the divine hand of a Supreme Being or God. All the religious traditions of the world strongly hold that God exists and that life is created by God. This paradigm cannot be demolished. Thus, there are only two paradigms for the study of life and its origin: one is the theistic and divine paradigm contained in the religious scriptures of the world, and the other is the atheistic and materialistic paradigm such as theories of spontaneous generation of life – Darwinism, neo-Darwinism theories, chemical evolution and the Big Bang theory.

The very fact that life exists is a proof of the existence of God. In the theistic paradigm, life and matter are created by God only. In other words, God is the origin of both life and matter. In the atheistic view, the Big Bang theory is the origin of matter, and life is an emergent property of matter. What is the difference between God and Big Bang? The model that God exists acknowledges that there are many things beyond human comprehension. Therefore, the acknowledgement of a primeval intelligent source, above which there could exist no other, will be the definition of God. According to *Srimad-bhagavatam*, the complete theistic treatise of the ancient Vedic literatures, there are three aspects of God. One aspect of God is called *Paramatma*, which is an expansion of God Who guides every living being. And life, which in Sanskrit language is called *jivatma* is a spiritual particle of *Paramatma*.

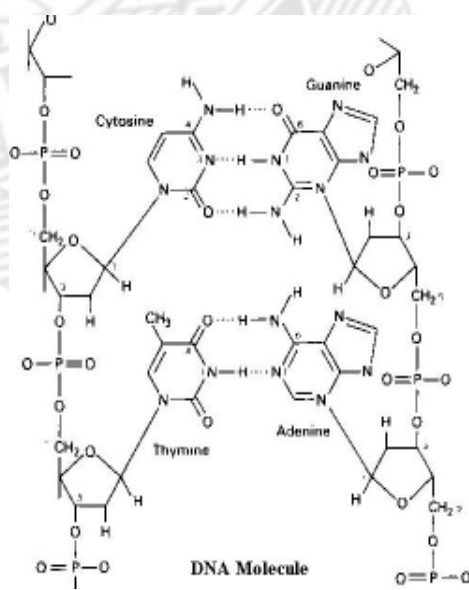
About one and a half centuries have passed since Wohler's syn-

thesis of urea, and indeed organic chemistry has advanced tremendously since that time. Synthetic fibers, synthetic rubber, synthetic dyes, chemotherapeutic agents, synthetic pesticides, synthetic glass, synthetic metals and synthetic liquid crystals are some of the major products of synthetic organic chemistry. Similarly, during the last fifty years or so, many advances have been made in the fields of cell biology and molecular biology. Chemists and biochemists have identified many chemicals such as lipids, proteins, deoxyribonucleic acid (DNA), ribonucleic acid (RNA), hormones and coenzymes inside the cells constituting living material bodies. Many scientists believe that the DNA molecule holds the ultimate key to life. It is their genuine hope that once this DNA molecule, the so called master molecule, is assembled step by step from its constituent atomic elements—carbon (C), hydrogen (H), nitrogen (N), oxygen (O), and phosphorus (P)—their goal of synthesizing life in the test tube will be achieved. This will finally prove that life is, after all, nothing but a complex system of chemicals. Now we know the DNA molecule and the mapping of the human genome is done. But have we known life? Is DNA life?

We would like to argue that no matter how complex they may be, all molecules or collections of molecules, including DNA and RNA, are simply dead matter. What scientists know and agree upon is that the majority of the molecules playing vital roles in living systems are extremely complex. This much is correct. We question only their further conclusion that if complex molecules can somehow be made from simple molecules (for example, proteins from amino acids, and DNA from nucleotides) then life will arise from these complex molecules by virtue of their proper combinations.

Let us briefly examine the chemistry of the cellular DNA molecule. It consists of two intertwined strands of complementary structures forming a regular double helix.¹ From X ray crystallographic studies, the diameter of the helix is found to be approximately 20 Å, and each strand makes a complete turn every 34 Å (or every 10 nucleotides).² Strings made of alternate groups of phosphate and sugar (deoxyribose) form the backbone of the two strands. Each phosphate group links to deoxyribose, a five-carbon chain sugar. The sugar in turn links to one of two possible bases of purine (guanine or adenine) or two possible bases of pyrimidine (thymine or cytosine)

through hydrogen bonds. Adenine (A) is always paired with thymine (T), and guanine (G) with cytosine (C), for conformational reasons and because of the donor acceptor natures of the hydrogen bonding groups. As a stereochemical consequence of this strict base pairing, the two



polynucleotide chains run in opposite directions. Although hydrogen bonding between other base pairs is possible, it leads to nucleotide pairs which have the wrong external geometry and do not fit into the regular double-helical structure.

This strict requirement of base pairing is responsible for the systematic replication process of DNA. Geneticists commonly assume that DNA is the carrier of the genetic information of the cell. It duplicates itself before cell division to provide each daughter cell with a complete set of DNA molecules. DNA replication involves each daughter cell with a complete set of DNA molecules. DNA replication involves strand separation, and each separated strand forms the template for the condensation of a complementary strand. This is commonly called the Watson-Crick mechanism.

Descriptions such as this of DNA and its replication mechanism are commonly given as though they have provided a complete description of the most fundamental processes of life—a final mechanical, step-by-step breakdown of these life processes into understandable chemical terms. However, this is far from true. An enormous gulf lies between the few simple chemical facts known about DNA and the actual functioning of a cell. All that science actually knows about DNA are a few relations between inanimate chemicals. The gap between this knowledge and an actual chemical understanding of life is bridged only by faith.

An enormous gulf lies between the few simple chemical facts known about DNA and the actual functioning of a cell.

Although we may imagine that the cell is nothing more than an elaborate chemical machine, we actually do not at all know how this machine works. We have no idea how the large scale actions of a cell (what to speak of a multicellular organism) can be reduced

to the reactions of molecules. Indeed, we do not even fully understand the chemical interactions of water molecules; and the operations of enzymes composed of hundreds of amino acids are certainly a mystery.³⁻⁵

The assumption that the cell is a machine running according to simple push-pull laws is, therefore, simply a matter of faith. It may be imagined that thousands of reactions of the form $A_i + B_i \rightarrow C_i$ can combine to create an elaborate chemical automaton surpassing even the most sophisticated manmade computers. However, in contemplating this analogy we should consider that even the most detailed knowledge of the intricate functioning of a computer would be incomplete unless it entailed an understanding of the programmer. Similarly, it is quite possible, in the context of current knowledge, that other laws are involved in the operation of cells that are unknown to modern chemistry. The most that can be said at present is that the knowledge of the biochemists is a knowledge of chemical reactions; it cannot be claimed that it constitutes an understanding of life.

... it is quite possible ... that other laws are involved in the operation of cells that are unknown to modern chemistry.

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A UNIQUE INSIGHT INTO THE NATURE OF "KNOWING" AND OF THE CONCEPT

by

Sripad Bhakti Madhava Puri Maharaja, Ph.D.

The purpose of Hegel's *Phenomenology of Spirit* is to demonstrate that the Concept is the underlying reality or Truth that lies hidden to ordinary knowing. Once the Concept is revealed it becomes the object of scientific development in his *Encyclopedia of the Philosophical Sciences*, but because of its absolute nature the Concept and its development are identical while different simulta-



neously. On the absolute platform opposites are identical in their differences, just as the absolute value $|1|$ is the same as the absolute value $|-1|$ in mathematics. To be able to think in terms of absolute knowledge therefore one has to leave the duality of relative knowing or understanding and raise oneself to the level of dialectical unity or Reason.

Reality manifests itself with two faces: a diversity of differences, and a unity of that diversity. In other words, everything has its own identity as well as a relation to everything else. The diversity of differences are the parts, and the unity of the parts in their relation is the whole. A whole is identical throughout its entirety as a whole. For example, a cow is an identity that refers to the entirety of the animal. The head, tail, legs, etc. exist, but the entire animal is what we refer to as a cow. At the same time, the tail is not the cow. The head is not the cow. Etc. So differences are preserved despite the identity of the totality of which they are parts. This means that identity and difference can coexist simultaneously without contradiction, or despite contradiction.

Scientific thinking is analytic. This means it can take apart a whole and study its parts in their isolation from the whole. However, how does this process grasp the whole as an identity? Each part has its own identity and thus becomes a whole itself, but this is not the original whole of which it was a part. Here it is necessary to recall that there are two aspects to every being, its being for itself (its self identity) and its being for another (or its relation to other beings). If we consider the part only in its being for itself, only its self identity, then we have not really understood it in its wholeness or entirety. Thus the part can never be considered as a whole in itself because its relation to what is other than itself has been unaccounted for. Or at least we can say that the part is not a *complete* whole when considered only in its being for itself (or self identity).

Scientific analysis errs when it tries to dissect a unity without also attempting to synthesize its derivatives back into their original unity. Aristotle wisely surmised that “being for the sake of” or final causality was an essential part of every being. But modern science has failed to admit this relational aspect of being into its analytic procedure, which is by its very nature destructive of that feature. By establishing relationships between beings in terms of an external force, science fails to grasp the intrinsic relational component of beings that is essential to their actual nature.

Understanding basically involves holding differences in abstract opposition and distinction from each other. It is abstract because, despite the differences, there is really a connection and unity or identity between differences that is ignored at the level of understanding. To abstract means to extract a particular aspect of a totality and focus upon that aspect separately and independently of its overall dynamic context. It would be like taking one frame of a movie film and trying to make a whole story based upon it, completely oblivious to and independent of the story of which it was originally a part. Reason does not proceed in this way, but rather sinks itself into the totality of what is actual, so much so that what is actual is non-different from the knowing of it. Since understanding grasps only the differences in their separation and independence, such knowing is not in accord with the actuality, which also involves the unity and identity of the differences in the shape of the whole/totality. In addition, knowing is naively assumed to be immediately identical with the known, but knowing is subjective, while the known is objective. Mediation is required to bring the two sides into a unified actuality. It is only absolute knowing that dynamically unifies the distinction between knowing and what is known that understanding would otherwise hold fixed in their opposition, or naively collapse into an unmediated (immediate) identity.

It is not that understanding or distinction as such is in error, but it is the fixity of its standpoint that needs to be fluidized. At first this may seem difficult to accomplish, but from another perspective the whole procedure is very simple because it simply involves following the natural course of the movement of thought that is the actuality to be known. In any case, Hegel’s *Phenomenology of Spirit* gradually take one through the development of thought and in the process provides a chance to exercise reason and simultaneously produce the result – the Concept.

In § 58 of the *Phenomenology* Hegel writes, “What, therefore, is important in the study of Science is that one should take on one-

self the strenuous effort of the Concept.” This effort is the process of conceptual thinking. The sections § 58 – 66 of that book in large measure cover what conceptual thinking is and how it forms the underlying thread of Hegel’s entire system.

The main concern of the *Phenomenology* is the study of “knowing.” Many have tried to make out something other than philosophy as the main subject of the *Phenomenology*, giving undue importance to the Lord/Bondsman relationship, inter-subjectivity, the historical development of consciousness, or other subjects. This can be confusing for those who try to understand Hegel on the basis of secondary literature. In any case the essential point is to take up the effort of conceptual thinking that he explicitly states in § 58 as necessary for Science. To fail to acknowledge the importance of this task and turn one’s attention to other subjects that may be dealt with at the ordinary level of understanding will not lead to the absolute knowing that is Hegel’s unique contribution to Western philosophy.



Hegel

The standpoint of consciousness provides us with a unique insight into the nature of “knowing” and of the Concept. In fact, consciousness is its own Concept. This means that one can experience, quite directly, the specific nature of the Concept within one’s own self. In particular, the subject-object unity that is inherent to the structure of consciousness is readily available since we may all experience that consciousness requires a subject-object relationship. Would you be conscious if there was nothing to be conscious of – be it thoughts or objects? This correlational nature in which subject and object are co-dependent or co-existent is the indication of the concrete nature of the Concept which has the structure of consciousness preserved yet negated within it. It is a mistake to think of the Concept as an abstract subjectivity opposed to an object. The Concept in its absolute sense is not something merely subjective and abstract. The same subject-object structure that we find in consciousness can be found in the Concept as well. The difference is that consciousness provides an empirical instance of subject and object while the Concept is the subject-object relationship as pure knowing or truth. It will be necessary to understand the distinction between empirical and pure knowing. Failure to make this distinction leads to much of the confusion that accompanies the interpretation of the *Phenomenology*. Both Kant and Hegel are careful to point out this distinction between empirical and pure thought and one must take it seriously in order to gain entrance to Absolute Truth beyond the abstract relativity of the empirical.

The whole thrust of the *Phenomenology* is to demonstrate or prove that the study of knowing, of which consciousness is one form, leads us to the Concept as the actual basis or absolute truth that is itself absolute knowing. Once the underlying Concept is uncovered and grasped then the systematic development of the various moments of its self-production form the absolute Idea

that in its three phases are the subject matter of the *Encyclopedia* - Logic, Nature, Spirit.

In paragraph § 58 of the *Phenomenology* Hegel explains that attention to the Concept requires that we understand terms like being-in-itself, being-for-itself, self-identity, etc. Generally when we think of being (which is really an abstract concept) we picture in our mind something existing somewhere, i.e. some material object. This is called picture thinking or material thinking and is really a habit, i.e. something of which we are consciously unaware, just as walking becomes so habitual that we no longer pay attention to the details of balancing that were required when we first learned to walk. Because material thinking is something that we may always do, it is as deeply ingrained and unconscious as walking. Therefore an effort may be required to think in terms of pure thought itself freed from its material encrustation so that thought is with itself alone. This is the thought of thought and is the proper medium of philosophy.

Conceptual thinking must be distinguished from argumentative thinking which is really thinking that is completely detached from the actual content or even worse, a sense of superiority towards it. Argumentative thinking is unconcerned with content in the sense that it sticks to its own thoughts and ignores what is actually before it. At the same time it may only be egotism in which maintaining itself is more important than understanding the truth. Conceptual thinking, on the other hand, is the full acceptance of

what is before it as the expression of its own free thinking activity, in which it can trace the spontaneous, natural movement as the dynamic that is its own self.

The more one can remain absorbed in this inherent movement without interrupting its flow by arbitrarily bringing in creative insights or brilliant ideas from areas totally removed from the subject matter at hand, the more one will be able to focus and sustain attention on proper conceptual thinking. At first one may feel this is a restraint due to being habituated to thinking that such “creative” modes of thought are commendable. For one who thinks like that philosophy may seem to be a severe discipline. But from the perspective of the pure spontaneity of the Concept it is actually the natural expression of its (and consequently *our*) freedom. This concrete, actual freedom in the Concept or Idea, contrasted with abstract freedom *from* the Concept.

In theological terms, the Absolute Concept, or more properly Idea (unity of Concept and Reality) contains within itself consciousness and self consciousness, and therefore Personality – the Personality of Godhead. Differentiated finite beings within the Absolute also possess being for self, as well as being for other as the Concept, God, i.e. as servants of God. Only in this integral conception of self as an identity that is individual but not separate from God does one find genuine spiritual freedom or liberation from the illusion of a separate and independent material identity.

PHYSICAL WORLD AND THE WORLD BENEATH – THE BIT WORLD

by

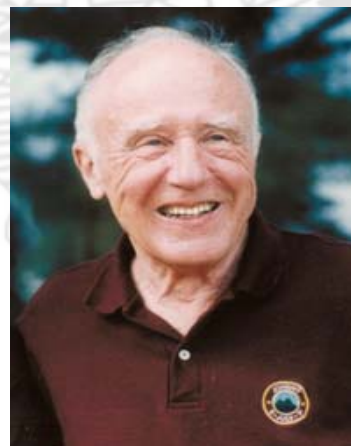
Hari Warrior, Ph.D.

*Assistant Professor, Department of Ocean Engineering & Naval Architecture,
Indian Institute of Technology, Kharagpur*

This article is a step towards analyzing one of the most puzzling aspects of the universe – human consciousness. Mankind has taken many leaps forward in science, but how closer are we to understanding the human mind? Let us categorically state that traditional Hinduism believes the two – consciousness and mind are two different things. Mind is a byproduct out of Consciousness which is otherwise the “intelligence” or soul or the subject. Though the problem remains unsolved as yet, the author believes we are at the doorway to this esoteric knowledge. Science especially Physics is rapidly closing in on this nature of reality. Finally we will hopefully be able to settle this centuries old dispute between the “material scientific view” and a vastly different “absolute/abstract scientific view” which might otherwise be called the “quantum view”. I think I can state with absolute conviction that the science of matter (or objects) will in no way solve the problem of human mind/consciousness. The question remains, what is there other than matter/or better still did matter come from matter or something more subtle and more complex? Though the debate is still raging with most ‘old fashioned thinkers’ (for some reason this mostly seems to include the medical profession, chemists and material physicists) unwilling to let go of material structure of the universe, most recent Physical and Mathematical discoveries seems to point elsewhere. So here, the author tries to look at this innovative/radical outlook.

We start our discussion by an introduction to John Wheeler. **John Archibald Wheeler** (July 9, 1911 – April 13, 2008) was an

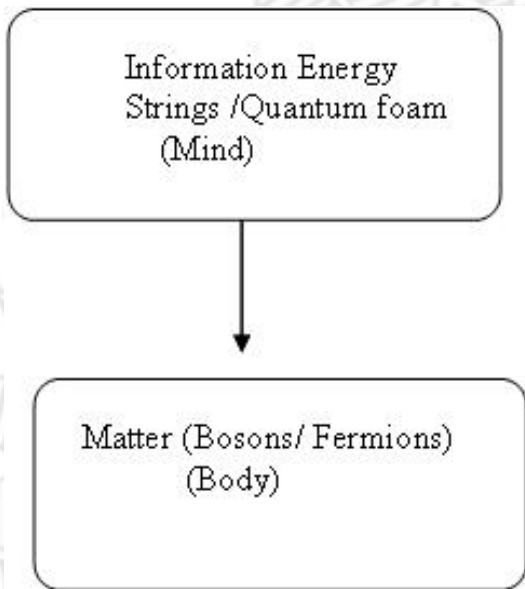
American theoretical physicist. One of the later collaborators of Albert Einstein, he tried to achieve Einstein’s vision of a unified field theory. He is also known for having coined the terms *black hole*, *quantum foam* and *wormhole* and the phrase “it from bit”. It is the last term which we focus on here –it from bit. In 1990, Wheeler has suggested that information is fundamental to the physics of the universe. Information as he means it a quantum foam which is really vibrating strings. According to this ‘it from bit’ doctrine, all things physical are information-theoretic in origin. Wheeler states “It from bit. Otherwise put, every ‘it’—every particle, every field of force, even the space-time continuum itself—derives its function, its meaning, its very existence entirely—even if in some contexts indirectly—from the apparatus-elicited answers to yes-or-no questions, binary choices, bits.” A very startling concept indeed, but what does it mean?



John Archibald Wheeler

This idea that information is the background of this universe is so startlingly different to 20th century mind-set of people that it is taking time to filter in. There is a large class

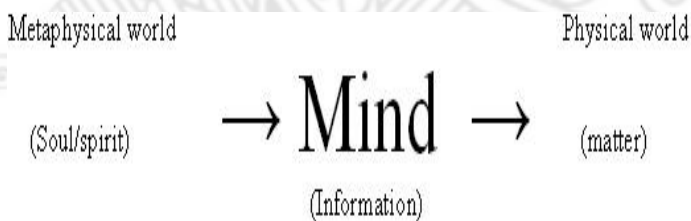
of the top-of-the-profession Physicists and Mathematicians who vouch for this theory after Wheeler like Roger Penrose, a British mathematician. It is mainly the classical science that is yet to catch up. Therefore we come up with the probability that that background of the universe is not matter (or the material form of energy) but information (or information energy). Remember that string theory argues “strings” to be the fundamental principle of the universe, whereby the strings themselves vibrate to produce the quantum foam which is the informational energy. Different modes of vibration of this string, or information energy (what is called as a ‘quantum foam or spin foam’) results in various types of matter – bosons (gravitons, gluons etc), fermions (electrons, quarks) and even some exotic material like tachyons.



Is this really new? If we look at older spiritual thinking, isn't this what they were saying? “We are not matter but something else. We believe ourselves to be matter by a delusion”. The fact is Hinduism (and some of Christianity) went a

Flow chart of the universe system

step further, they don't claim information is the source of the universe either, but “Intelligence”. Therefore just like information is the background of the physical universe as per the latest Physics, for traditional Hindus, “Intelligence or Brahman/Soul” is the source. Thus there exists a metaphysical world of intelligence/Subject. According to Hinduism/Christianity



If this idea is true, then the modern science has solved half the puzzle, from the physical world up to the Mind. As Wheeler and others prescribe, INFORMATION (spin foam/quantum foam) is the background of the physical universe and matter just COMES out of it as various modes of vibration. Beyond and more complicated than the strings/information energy, still the unknown remains. The theory that mind is quantum foam was first put forward by Penrose (author of *The Emperor's New Mind*). He bases this on claims that consciousness transcends formal logic be-

cause things such as the insolubility of the *halting problem* and *Gödel's incompleteness theorem* prevent an algorithmically based system of logic from reproducing such traits of human intelligence as mathematical insight. ‘Strings’ and the spin foam/quantum foam that is derived from it are not algorithmically computable (though determinate) forms of energy but are highly unpredictable, non-linear, chaotic forms of energy. This is the raw form of ‘information’. Penrose and Stuart Hameroff have speculated that consciousness is the result of quantum gravity effects in microtubules, which they dubbed Orch-OR (orchestrated objective reduction). Penrose calls this consciousness, but the author feels that Penrose is really implying the mind, not the consciousness or intelligence, which is still further complicated bringing in the concept of a Subject or intelligence— a matter we will leave for now.

Thus the information energy or quantum foam is connected to the microtubules in the brain cells. Hameroff has put forward models for this form of mind-brain interaction, which we mention in very brief here.

A system at the quantum level (a group of hydrogen atoms, for instance) does not have a single course of behavior, or state, but a number of different possible states that are somehow “superposed” on one another. When a physicist measures the system, however, all the superposed states collapse into a single state; only one of all the possibilities seems to have occurred. Penrose finds this apparent dependence of quantum physics on human observation-as well as its incompatibility with macroscopic events-profoundly unsatisfying. If the quantum view of reality is absolutely true, he suggests, we should see not a single cricket ball resting on a lawn but a blur of many balls on many lawns. He proposes that a force now conspicuously absent in quantum physics-namely gravity-may link the quantum realm to the classical, deterministic world we humans inhabit. That idea in itself is not new: many theorists-including those trying to weave reality out of superposition sought a theory of quantum gravity. He notes that as the various superposed states of a quantum-level system evolve over time, the distribution of matter and energy within them begins to diverge. At some level-intermediate between the quantum and classical realms-the differences between the superposed states become gravitationally significant; the states then collapse into the single state that physicists can measure. Seen this way, it is the gravitational influence of the measuring apparatus-and not the abstract presence of an observer that causes the superposed states to collapse. This is in fact a big step forward from the widely held view of observer causing the quantum state to collapse.

Thus, the modern quantum world is directly showing us that the reality is much deeper than the classical material world. For most scientists, it begins to feel like Alice in wonderland and not surprising. And the tools of science keep changing in many ways to incorporate these new discoveries and move towards the final description of the ‘Ultimate Reality’.