



Science and Scientist

Bhaktivedanta Institute Newsletter

Science/Spirituality Quotes:

- "I want to know God's thoughts; the rest are details."



- Albert Einstein

- "Our science – Greek science – is based on objectification. ... But I do believe that this is precisely the point where our present way of thinking does need to be amended, perhaps by a bit of blood-transfusion from Eastern thoughts."



- Erwin Schrödinger

- "Can any scientist inject any chemical to revive a dead person?"



- Srila A. C.
Bhaktivedanta Swami
Prabhupada

- "The ability to inquire about the ultimate truth of life makes the human being uniquely different from all other forms of life."



- T. D. Singh
(Srila
Bhaktisvarupa
Damodara
Swami)

Science of the Soul

Srila A. C. Bhaktivedanta Swami Prabhupada

The human life is meant for ending the miseries of material existence. Our present-day society is trying to end these miseries by material progress. However, it is visible to all that in spite of extensive material progress, human society is not peaceful. The reason is that the human being is essentially a spirit soul. It is the spirit soul which is the background of the development of the material body. However much material science may deny the spiritual existence in the background as the living force, there is no better understanding than accepting this living force as ultimately the spirit soul within the body.

The body is changing--from one form to another--but the spirit soul is existing eternally, without changes. This fact we can experience even in our own life. Since the beginning of our material body

mentality presumes that after death the spirit soul's existence is forever finished, just as primitive tribes believe that the sun dies at sunset. Actually, however, the sun is rising in another part of the world. Similarly, the soul is accepting another type of body. When the body gets old like an old garment and is no longer usable, the soul accepts another body, just as we accept a new suit of clothes. Modern civilization is practically unaware of this truth. People do not care about the constitutional position of the soul. There are different departments of knowledge in different universities and many technological institutions, all to study and understand the subtle laws of material nature, and there are medical research laboratories to study the physiological condition of the material body, but there is no institution to study the constitutional position of the soul. This is the greatest drawback of materialistic civilization, which is simply an external manifestation of the soul.

People are enamored of the glittering manifestation of the cosmic body or the individual body, but they do not try to understand the basic principle of this glittering situation. The energy body looks very beautiful, working with full energy and exhibiting great traits of talent and wonderful brainwork. But as soon as the soul is away from



in the womb of our mother, our body has been changing from one shape to another at every second and at every minute. This process is generally known as "growth," but actually it is a change of body.

On this earth we see change of day and night and change of season. The more primitive mentality attributes this phenomenon to changes occurring in the sun. For example, in the winter primitive people think the sun is getting weaker, and at night they presume, sometimes, that the sun is dead. With more advanced knowledge we see that the sun is not changing at all in this way. Seasonal and diurnal changes are attributed to the change of the relative positions of the earth and sun. Similarly, we experience bodily changes: from embryo to child to youth to maturity to old age to death. The less intelligent

the body, this entire glittering situation of the body becomes useless. Even the great scientists who have offered many wonderful scientific contributions have been unable to trace out the personal self, which is the cause of such wonderful discoveries.

Science and Scientist

Modern science has generally been directed toward investigating the material world, excluding consideration of the conscious scientist who is essential to the whole process, since, of course, the nature of the scientific endeavor itself depends upon consciousness. Bhaktivedanta Institute was founded to encourage the study and exploration of the means and methods for developing a more complete science of reality based on the knowledge of matter and spirit.

Bhaktivedanta Institute

Founder:	Srila A. C. Bhaktivedanta Swami Prabhupada
Founding Director:	T. D. Singh, Ph.D. (Srila Bhaktisvarupa Damodara Swami)
Serving Director:	M. A. Marchetti, Ph.D. (Bhakti Madhava Puri Swami)

Attitudes Toward Reality: Exploitation, Renunciation, Dedication

Srila Bhakti Raksaka Sridhardeva Goswami

Modern science is only increasing the circumference of this world, the world of exploitation. According to Newton, for every action there is an equal and opposite reaction. We must be conscious of the fact that all acquisition is ultimately nullity, because like a boomerang reaction will come back again to produce zero. This is actual scientific knowledge. But modern scientific progress is no progress, or progress in the wrong direction. It is like borrowing money. Taking a loan is not money at all. Whatever we take from nature will be extracted from us to the penny. So there is no gain. We are within the circumference of the exploiting world. Every object we take from nature is like a loan. But the loan must be cleared - rest assured.

The Quest Of Life

The first principle of any living being is to live, to save himself. That should be the starting point of our whole endeavor for progress or knowledge. In the Upanishads we find *asato ma sad gamaya tamaso ma jyotir gamaya mriyora ma amritam gamaya*. This indicates what should be the primary tendency of our



can prove that their science devours itself. The civilization already created by it sucks its own blood. Modern man is feeding on the flesh of his own friends or of himself. Material science and knowledge means only this. But this is not knowledge. Real knowledge must absorb oneself and others in eternal life, full knowledge and peaceful existence. This is our conception – what the ancient teachers have given to us. They came to spread this sort of knowledge and we came hankering for that. Hungrily we felt ourselves looking for such things. Still we are engaged in that sort of quest, and that should be the real life for one and all in this mundane world. There should not be any other quest or any other engagement. There should be nothing of the kind. Then that will be real life.

Return To Zero

And renunciation is not the remedy. That is the next point. There are those who say, “Yes, renunciation is the remedy; leave everything.” But the Vaisnavas come with a third proposal. They know it is temporary living in the land of exploitation, but one cannot exist without engagement. Only renunciation means withdrawal, to return to zero. That is not desirable. So the Vaisnavas say that there is a land of dedication, and that is normal, where every unit is a dedicating unit. And dedication must be towards the center. Our inner *atma*, not mind or mundane intelligence, but transcending all these things our real conception is the soul which has some relationship with the subtler realm. The land of dedication begins



Real knowledge must absorb oneself and others in eternal life, full knowledge and peaceful existence. This is our conception – what the ancient teachers have given to us.

— Srila Bhakti Raksaka Sridhardeva Goswami

quest in three phases. First, I am transient and mortal, make me eternal. Next, I am ignorant and in nescience, take me from ignorance to knowledge, from darkness to light. Then, I am in sorrow and misery, guide me to *anandam*, joy and a fit life there. These should be the real goals of life, and any research must begin here only. *Sac cid anandam, satyam shivam sundaram*. These should be the subject matter of our research, the line of our approach to save oneself and save the world, to remove the darkness of ignorance and get the light of knowledge, and to remove misery and get the nectar of the sweet, sweet life.

Scientific knowledge which avoids or ignores this is simply false, wild goose-chasing.

And it is self-destructive or suicidal. At any time atomic researchers

with *Vaikuntha* [*vai* = without, *kuntha* = limit; i.e. the unlimited] and ends in *Goloka* [the sphere of pure fulfillment].

Retirement is Hell

Vaikuntha is the land of calculative dedication in terms of constitution and bound by law. But *Goloka* is the layer of spontaneity. It is desperate, careless of its own self – it is so intense. That is the highest, and by the work of dedication of all it becomes a very heavenly area. All dedicating, none extorting, so happiness of the highest degree is to be found there. Everyone is enjoying there. If all are idle men and they meet together that will be like hell. But if all the working men cooperate together there will be immense opulence. Because everyone is dedicating to the highest degree, opulence or bliss is flowing everywhere. There is no want. All divine consciousness, pure beauty and love reigns there. The king is that of beauty and love, where there is no force of labor, but all is a labor of love. Beauty and love are controlling, not power. That is called *Goloka*. We find this sort of explanation in *Gaudiya vaisnavism*, in the teachings of Chaitanya Mahaprabhu and His followers.



Idea Behind The Sound

And where do we start? Through *nama*, divine sound, it is easy to begin the spiritual quest. The most subtle thing in our experience here is sound. And it is cheap,



much easier than charity, sacrifice and so many other things which are to be gathered. Sound comes freely and without any expense. So our research can begin with sound; but that sound must be of divine characteristic.

Just as the medicine in a homeopathic globule cannot be known by the outer figure, so also only when sound, the divine sound comes from the proper person, then the potency will be there within. In other words, the highest truth from the mouth of a true saint and truth from the mouth of an ordinary person is not one and the same, just like the potency of the homeopathic globule depends on the medicine within. The idea behind the sound, from where it comes, whether from *Vaikuntha*, *Goloka*, or some other particular place, to that place the sound will gradually assert itself and take you there. The sound must come from the infinite world, *Vaikuntha*, not from any mundane origin. So the inner potency is to be discerned and detected.

Sacrifice To The Center

What is the meaning of dedication? Work should be done only as a sacrifice. All other work is mere energizing force. And the Lord, our Guardian says in the *Bhagavad-gita* that it must be devoted towards Him, to His satisfaction, otherwise it is not *yajna* [sacrifice]. Sacrifice means that it must be for the Absolute center, and not for any provincial interest, sectarian purpose or anything else. It must go to the Absolute and then it will be real *yajna*. Other *yajna* (to some relative goal) will go up and then come down. So relative

must be taken up. I shall not exploit anything, at the same time I must not dismiss anything. Everything is friendly to me. One should see with this vision. In *Gita*, Krishna says *yo mam pasyati sarvatra sarvam ca mayi pasyati*, "I am everywhere. Only see in that connection, with that angle of vision. Try to find Me, and everything in Me. Then you will be out of danger. Otherwise, that which is non-God will take you otherwise. If you can see the connection of God everywhere then you are safe. No one will be your enemy. You will have no foes - you are in the midst of friends. He is everywhere and everything. He is not lost in My sight, and I am not lost in His sight". In *Bhagavatam* it is also mentioned. *sarva bhutesu yah pasyati bhagavad bhavan*. "One who can always see My connection with everything, and accordingly see what will be his connection with Me, is properly adjusted. He can adjust with everything. He can see things perfectly, otherwise he cannot avoid punishment

False Ego

The false ego means the ego who is receiving and transmitting false information, false knowledge. The ego is like a *yantra* or machine. Like a computer the false ego is receiving false news and transmitting false news. It is engaged with what is not wholesome and what is opposite to our real interest. Our innate tendency is to live. This is our inner nature or inner necessity. But if that is not being transmitted, it is working against my interest, and that is false. The ego is like the computer, but because it is dealing with



upasana (practices) is *saguna* (conditional), and My *upasana* is *nirguna* (unconditional). *Saguna* means under the influence of *maya*, the good and bad of this world. And *nirguna* means that of Absolute characteristic, which has value everywhere. Just as the standard of money is not currency like the dollar, yen or ruble, but gold, so *rasa* [taste] is the standard of realization of the Absolute. Provincial ideas, sectarianism or anything like that won't do. Such provincialism will be something less - not worship of Myself. The attempts of the little-brained persons will certainly be futile-going up and coming down. In the *Bhagavad-gita*, the Lord says, "I am the only enjoyer of everything, and I am friendly to all. When you can realize that I am all in all and that I am a friend to you, then at the time all misgivings will disappear in you. A devoted or dedicated soul conceives the absolute good as an autocrat, and that is the best arrangement. The absolute good must be concentrated there in the autocrat. He must have complete freedom then everyone will be benefited because He is all good. So there should be no misgivings, no apprehension, then one's heart will be filled with peace only.

Friends Everywhere

By sacrifice and yoga also, dedication is promoted. By dedication we live and grow, and by exploitation we die and go down. By renunciation we become zero and stand still like in deep slumber. So both exploitation and renunciation must be given up and dedication to the center and to all in connection with the center,

falsehood it is called false ego. False information means that one is not acquainted with reality. There may be false duality or real duality. Everything may be real, but if our conception is false then everything will be false.

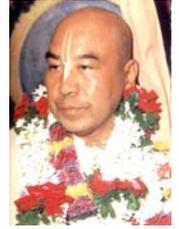
Connect With the Infinite

Argument alone cannot bring us to a conclusion. Everyone carries within them certain presumptions - or faith. Thus *sraddha* (faith) is necessary. For this reason, discussion alone cannot give birth to any fruitful thing. Because the foundation of our reality is based on faith, then only faith can reach it, and nothing else. The electromagnetic ether can reach the sun, moon and stars, but not the air or other similar media. So to approach the infinite or underlying absolute world, the knowledge or experience of this world will not help, but only faith comes to our aid. The intellect or knowledge is like the air around the globe. What is learned through the experience of the earth cannot pierce through the domain beyond. Only the ether connects everything. So *sraddha*, faith, can connect us with the farthest quarter and take us there. Thus faith is the basis of infinite knowledge and by proper realization we can understand its personal nature. Then by dedication to that central source or foundation, we can reach the desired platform of perfection.



Vedantic Conception of Life, Its Meaning and Purpose

T. D. Singh, Ph.D.



Introduction

Life is a mystery. The best minds in the fields of natural sciences and philosophy have been trying to understand life from the dawn of civilization. However, they have been unable to come up with any clear definition and understanding of life. Even after three centuries of tremendous success which scientists have experienced in their scientific investigation, they still can't identify on *exactly* what it is that which separates a living organism from other types of physical objects.

The *Vedanta* speaks of fivefold *tattvas*, truths or realities. These are, (1) *Isvara* or God; (2) Life, *Jiva* or Soul; (3) *Prakrti* or Matter; (4) *Kala* or Time; and (5) *Karma* or Action. The author will try to briefly focus on the difference between life and matter. Vedantic thesis, in a nutshell, is as follows:

Life and Matter: *Vedanta* proclaims that life and matter are two distinct categories of reality. Besides the physical bodies shaped by genome, there is a spiritual particle of life or soul or spiriton in every living being. Our conscious experience or consciousness and free will are the properties of spiriton. Matter, however complex it maybe, can never be conscious. Life and matter can interact under the influence of time resulting in what we call embodied or biological life. God, is the origin of both. Matter is the insentient energy whereas life is the sentient or conscious energy of God. He is beyond the perception of the material senses.

Evolution of Consciousness: There are 8.4×10^6 varieties of life (microorganisms, plants, aquatics, birds, reptiles, animals, humanoids and human beings) and conscious self (or soul or spiriton) passes from a form of less conscious state to a form of a higher conscious state according to the subtle laws of *karma* (cause and effect), until it reaches the human form. In human form of life, consciousness is fully developed and one can inquire about the higher meaning and purpose of life.

What is life?

As indicated earlier, life according to *Vedanta* can be described in the following representation:

Living Being = Genome + Mind, Intelligence & False Ego + Spiriton

(This means a living being or organism consists of physical matter, subtle matter and the spiritual life particle.)

According to *Vedanta*, the topmost scientific and philosophical



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All living beings are animated by the presence of a non-chemical or non-molecular fundamental spiritual particle, 'spiriton,' or *ätma* in Sanskrit. The term 'spiriton' was originally coined by Dr. T. D. Singh. Interested readers can visit the site <http://www.binstitute.org> for more information about Dr. T. D. Singh's books on Science and Spirituality.

treatise of Indian spiritual and cultural heritage, all living beings are animated by the presence of a non-chemical or non-molecular fundamental spiritual particle—"spiriton" (called *atman* in Vedantic terminology).

In *Vedanta* there are two aspects of reality—the spiritual nature and the material nature. It should be noted that the activities of the living beings are not simply physical. Many scientists face great difficulty explaining human behavior only in mechanical or material terms and feel such limitations intuitively. James Watson, the co-discover of double helix model of DNA structure, says, "There are still very major problems to solve on how information is stored and retrieved and used in the brain. It's a bigger problem than DNA, and more a difficult one. . . . we still don't know how the brain works. . . ." Recently, Stephen Hawking also expressed in a lecture, "As Dirac remarked, Maxwell's equations of light, and the relativistic wave equation . . . govern most of physics, and all of chemistry and biology. So in principle, we ought to be able to predict human behavior, though I can't say I have had much success myself. The trouble is that the human brain contains far too many particles, for us to be able to solve the equations."

According to *Vedanta*, the brain in developed living beings is an important organ of the body machinery in which the symptom of consciousness is transmitted. The conscious energy is transmitted from the spiritual soul or 'spiriton'.

In biology textbooks, life or living beings are generally defined as having potential to grow, reproduce, move, respond to such stimuli

*bhumir apo 'nalo vayuh kham mano buddhir eva ca
ahankara itiyam me bhinna praktir astadha
apareyam itas tv anyam prakrtim viddhi me param
jiva-bhutam maha-baho yayedam dharyate jagat*

Translation: "Earth, water, fire, air, ether, mind, intelligence and false ego—all together these eight constitute My (Lord Krishna's) separated material energies. Besides these, O mighty-armed Arjuna, there is another, superior energy of Mine, which comprises the living entities (spiritons) who are exploiting the resources of this material, inferior nature."

According to *Vedanta*, the science of the soul or spiriton (*atman*) is the sublime essence of spirituality. The *Bhagavad-Gita* refers to this science as—*raja-vidya raja-guhyam pavitram idam uttamam pratyaksavagamam dharmyam su-sukham kartum avyayam*, meaning, "This knowledge is the king of education, the most secret of all secrets. It is purest knowledge, and because it gives direct perception of the self by realization, it is the perfection of religion. It is everlasting, and it is joyfully performed." According to *Vedanta*, the ultimate purpose of human life is to find our real spiritual identity and our relationship with the Supreme. Thus, *Vedanta* strictly deals with life from a spiritual perspective and gives it preeminence over non-sentient matter.

Inquiry into the Prime Duty of the Human Soul

The first aphorism of *Vedanta* states: *athato brahma jijnasa*,



According to Vedanta, the brain in developed living beings is an important organ of the body machinery in which the symptom of consciousness is transmitted.

The conscious energy is transmitted from the spiritual soul or 'spiriton'. — T. D. Singh, Ph.D.

as light, heat and sound and are sustained by the processes of nutrition, respiration and excretion. But what makes these living systems grow? Biologically, we explain that growth is due to multiplication of cells through various types of divisions like mitosis or meiosis. But why does any cell start dividing in the first place? Why does a fertilized egg (after the sperm cell unites with egg cell) undergo divisions which result in the formation of the whole body? *Vedanta* describes that it is due to the presence of 'spiriton' that the body is animated and active and undergoes six types of transformations. It takes birth, lives for some time, grows, produces some offspring, gradually dwindles, and at last vanishes into oblivion.

It is just like the analogy of a car and the driver inside. When the driver goes away, the car cannot move. Similarly, when the spirit soul, spiriton, goes away or what we call death, the body can no longer be animated in spite of the fact that all the molecular machineries that make up the body are still intact.

Srimad Bhagavad-Gita mentions about 'spiriton' being different from matter as follows:

meaning in the human form of life, one must inquire about the Ultimate Reality. In the human form of life, the consciousness (*cetana*), intelligence (*buddhi*), mind (*manas*), senses (*indriyas*) are fully developed. Thus, human being is totally equipped to make the deepest *jijnasa* (inquiry), the spiritual inquiry. A similar message echoes in the statement of Albert Einstein who states that knowing the plan of God is most important and the rest are details. By this inquiry, *sambandha*, the relationship between the self and God will be established and the pure spiritual knowledge of the self will be understood. *Isa Upanisad* further declares, *isavasyamidam sarvam*, everything belongs to the Supreme Lord. Therefore, everything should be used, including the works of the scientists and all the leaders of the world in the service of the Supreme Lord. In a nutshell, this is the view of *Vedanta* regarding the prime duty of humanity.

Inquiry, *jijnasa*, is the fundamental quality of life. Everyone inquires about something or the other. In the course of life, one experiences different phases like old age, disease and many kinds of sufferings. Therefore, we want to find out the solution to these problems. Every research work is a kind of inquiry. Unless a person is awakened to the position of questioning his sufferings, he is not to be considered a perfect human being. Humanity begins when this sort of inquiry is awakened in one's mind. Therefore, inquiry forms the most important process of acquiring knowledge. We want to know about things that are beyond what we can see conventionally. We invent electron microscope, telescope, etc., to

satisfy our curiosity. But this is not enough. Our senses and extended senses are still very limited.

Can a bird inquire about the meaning of its existence? Innocent and ordinary living beings like birds and animals inquire only of bodily needs. They inquire, 'where is water?', 'where is food?', 'where is shelter?', and so on. However, they do not have the capacity to inquire about the deeper purpose and meaning of life. But in the human form of life, one is endowed with the unique ability to inquire beyond these bodily needs. This is the special and unique qualification of the human form of life. When a child is growing up, he inquires from his parents about many things around him, such as 'What is this?', 'What is that?', etc. In this way, the child gathers knowledge from his parents. Since the conscious intelligence is fully developed, human beings can make different levels of inquiry including the deeper questions about life. The most important inquiry of human life should be to find out about the Absolute Truth, *jivasya tattvajijnasa*. *Srimad Bhagavatam* (1.2.10) states:

*kamasya nendriyapritirlabho jiveta yavata
jivasya tattvajijnasa nartho yasceha karmabhih*

Translation: "Life's desires should never be directed toward sense gratification. One should desire only a healthy life, or self-preservation, since a human being is meant for inquiry about the Absolute Truth. Nothing else should be the goal for one's works."

The ability to inquire about the ultimate truth of life makes the human being uniquely different from all other forms of life.

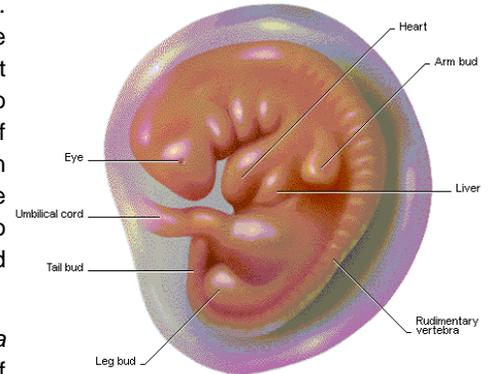
were at conception and the late person which you are now. You were, and are, a human being." He pointed out that each human being is unique – different from the mother – from the moment of conception. A detailed description of the beginning of life and embryology is available in the ancient literature called *Srimad Bhagvatam*, the cream of *Vedanta*.

Thus, since according to *Vedanta*, material life begins at the moment of conception, and life is sacred and human life is very rarely obtained, discarding the embryos at any stage after the moment of conception, in whatever form, is prohibited. The absence of bone, skin, heart, liver etc., in zygote does not imply that it is lifeless. Life is a divine gift and it should be protected and guarded under all circumstances.



The Beginning of Life

Biological issues arise when interaction between life and matter begins. It is very interesting to note that there is a significant description about the science of embryology in Vedantic literatures. *Srimad Bhagavatam*, Third Canto mentions a brief description of human embryology. *Garbhopanishad*, one of the ancient Upanishads, also serves as a brief treatise on embryology. These are very relevant to modern science and technology.



According to *Vedanta* the manifestation of life begins from the moment of conception. Life first enters the semen of the male and is injected into the womb of a woman. Dr. Jerome Lejeune, known as "The Father of Modern Genetics," also echoed, "Life is present from the moment of conception" before the Louisiana Legislature's House Committee on the Administration of Criminal Justice on June 7, 1990. He explained that within three to seven days after fertilization we can determine if the new human being is a boy or a girl. "At no time," Dr. Lejeune said, "is the human being a blob of protoplasm. As far as your nature is concerned, I see no difference between the early person that you

Peace Conference

23 – 24 November, 2007, Imphal Manipur, India

The universe is a manifestation of life, matter and their interactions. Life possesses a developed consciousness, which makes it completely different from dead matter. Life exhibits different levels of consciousness. We observe many different varieties of living entities exhibiting different levels of consciousness in the universe. It is well accepted in every religion as well as in the scientific world that the human form of life has the most developed consciousness as compared to other forms of life such as trees, bacteria, germs and animals. This can be easily noticed through a simple observation that humans genuinely feel deep necessity toward finer needs of life like freedom from all anxieties and suffering as well as lasting and eternal peace in mind and body. A human being can come to the point where he enquires how I can get out from the painful process of birth, old age, disease and death. He desires to know his real identity and thus be established in his eternal peaceful body and mind. These special needs, which are explicitly and inherently manifested in the human form of life, make it unique among the other forms of life. Moreover, these needs make a human being more and more inquisitive. He starts inquiring, Who am I? Who created this universe? What is my relationship with that supreme creator? What is the ultimate need and goal of life? In this connection Michael Polanyi, a famous

scientist says, "Our view of life must account for how we know life."

This inquiring spirit in the human form of life is the foundation stone and becomes instrumental for the development of various departments of knowledge in science as well as religion. However, when one becomes forgetful of the original basis and purpose behind the development of various departments of knowledge in science and religion, then difficulties arise which can lead to big problems like war, terrorism, arms race, religious hatred and violence. Moreover, the conflict that arises between science and religion is also due to this forgetfulness of the original purpose and basis behind their development. Science and different religions are manifested because we are genuinely inquisitive to know the ultimate reality. Hence to establish a lasting world peace and harmony it is very essential that human beings should be educated not only in the external content of the literature in science and different religions but also they must deeply study and realize the original purpose and basis on which science and different religions are developed. As the original basis of the development of both science and different religions are one and the same, i.e. to develop knowledge about the absolute reality, this study will certainly bring the entire human race to a common platform irrespective of nationality, religion and bodily appearance.

Several attempts are being made today worldwide to bring the entire humanity to a common ground. Organizations like, the Bhaktivedanta Institute, United Religions Initiative and Metanexus Institute are among the pioneers in making efforts and attempts to

bring humanity to a common platform in order to achieve a lasting world peace and harmony. Dr. T. D. Singh (Srila Bhaktisvarupa Damodara Swami) the Founding Director of the Bhaktivedanta Institute (1937 – 2006) is a distinctive visionary and is an inspiration in this direction. Dr. T. D. Singh lead Bhaktivedanta Institute over the years in collaboration with institutes like United Religions Initiative and Metanexus Institute to prepare a world wide common platform for humanity to establish lasting world peace and harmony. Dr. T. D. Singh has organized many world congresses and international conferences, and has also written several books for this purpose. These conferences were well attended by many prominent world leaders from around the world belonging to different religious as well as scientific backgrounds such as Professor Werner Arber, Nobel Laureate in Physiology and Medicine, Professor Richard R. Ernst, Noble Laureate in Chemistry, Professor John Eccles, Nobel Laureate in Physiology and Medicine, Professor Charles H. Townes, Nobel Laureate in Physics, Fritjof D. Capra, Physicist and systems theorist, a founding director of the Center For Ecoliteracy, Berkeley, Professor George Wald, Nobel Laureate in Physiology and Medicine, Prof. John Searle, Slusser Professor of Philosophy at the University of California, Berkeley, His Holiness The Dalai Lama, Ayatollah S. M. M. Damad, Dr. Robert Muller, Former Assistant Secretary General of the United Nations and Dr. A. P. J. Abdul Kalam, former President of India.

Dr. T. D. Singh, by the instruction and guidance of Srila A. C. Bhaktivedanta Swami Prabhupada envisioned a unique university,

which aims at bringing the education of the science of peace and harmony to people around the world. He has named it as "University of Bhagavat Culture." The foundation stone for the University was laid by Dr. T. D. Singh on 22nd March 1991. The main goal of this university is to prepare a common platform for humanity so that a lasting world peace and harmony can be established. To fulfill the noble vision given by Dr. T. D. Singh all his sincere students are working hard and due to their sincere efforts Bhaktivedanta Institute is organizing the opening ceremony of the main center of University of Bhagavad Culture at Imphal, Manipur, India on 21th November, 2007. On this all auspicious occasion the Bhaktivedanta Institute is also organizing a one day conference entitled "Peace Conference" in the honor of Dr. T. D. Singh on 23 – 24 November, 2007. The main focus of this conference is to build a worldwide common platform for achieving lasting world peace and harmony. The conference will be attended by many delegates from around the globe belonging to various scientific as well as religious backgrounds. Bhaktivedanta Institute takes this opportunity to invite all to participate in this unique event.

To participate in this event one needs to send the duly filled and signed registration form (download [Registration Form](#) in doc format) along with registration fees of **Rs. 500** for Indian participants and **US\$ 100** for international delegates on or before **15th November 2007**. On spot registration is also open, however the organizers do not take the responsibility of accommodation for on spot registration candidates. If the booked accommodation is

available at the time of on spot registration then the candidates can avail that facility otherwise they have to make their own accommodation arrangements. It is highly recommended that the participants willing to attend the event should register well in advance before the dead line (**15th November 2007**). The international delegates should contact organizers well in advance (**before 17th November 2007**) to make their Manipur Entry Visa ready. It may be noted that Indian participants do not need Manipur entry Visa. The food and accommodation charges are included in the registration fees. To learn more about this event please click [Here](#).

Peace Summit

Understanding the Spiritual
Dimension of Science
and
The Scientific Dimension of Religion

November 23 – 24, 2007
Imphal, Manipur

<http://www.binstitute.org/peace>

The Science of Happiness

M. A. Marchetti, Ph.D.

"Feeling and longing are the motive force behind all human endeavor and human creation, in however exalted a guise the latter may present themselves to us." – Albert Einstein

Modern science only studies that which is immediately given to our senses - that which we call matter. But there would be no such thing as science if there were only matter or existence. Science requires that in addition to existence there be cognition of existence, or consciousness. Without consciousness of existence, science would never come into being. Thus we must admit that at least two features of reality are necessary for scientific knowledge - (1) existence or being and (2) consciousness of existence.

But there is still a third feature of reality upon which the first two are dependent. We can call this satisfaction or the fulfillment of being. If there were mere existence without consciousness of existence, we could say nothing about such existence. But even mere consciousness of existence would also be a passive, indifferent existence. It is only because we seek satisfaction, fulfillment, and enjoyment that we create science, philosophy, culture, religion, etc. If there were no need for fulfillment or satisfaction then all these activities would never arise. There would be no need, no desire, no lack or negativity, and therefore non-differentiation.

Thus, it is this fundamental quality that characterizes life: it seeks satisfaction or fulfillment. It is from this basic quality that all activity arises. We can call this the Ultimate Principle of Reality. By



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inquiring into where this principle comes from and why it exists, we will be able to understand how to achieve the greatest satisfaction and happiness. It is this type of inquiry that produces what is called the science of happiness.

Observation leads us to conclude that one specific and obvious quality of life is that it seeks to continue living. No one wants to die. Life struggles to maintain itself even against the greatest odds. Thus it appears as an inseparable and intrinsic principle that is basic to life. Yet there is no scientific law or biological theory that explains this principle. The law of conservation of mass and energy applies to matter. But matter, as we have noted, pertains only to immediate existence. Matter does not explicitly possess the

principles of consciousness and fulfillment that we find in living entities.

By understanding that satisfaction or fulfillment underlies the existence of all life, we can conclude that life struggles to maintain itself because it enjoys living. If enjoyment is obstructed or taken away from life, then life no longer continues to maintain itself. Even in the case of suicide, self-destruction is impelled by the same inherent quality of life that seeks happiness and fulfillment, but in this case is misconceived as being achieved by the negation of life instead of the negation of distress. Thus we can conclude that the conservation of life is based on the fundamental principle of fulfillment.

Another general quality of life we observe is that it exhibits an awareness or consciousness of its environment. When an ant confronts an object in its path, it goes around it and continues on its intended trajectory. A marble rolling down an inclined plane may encounter the same object and simply crash into it, bringing its forward trajectory to a halt. This brings us to recognition of another fact - the movement of the marble is produced only by an external force (gravity in the case of moving down an inclined plane), but the ant can stop at the obstacle and then start moving again by dint of its own automotive force.

This ability to move itself is a quality specific to life and thus living entities are referred to as animate, whereas non-living matter is called inanimate since it does not possess this automotive ability.

According to Newton's laws of physics, a body at rest will continue to remain so unless it is moved by an external body or force. These laws pertain to matter. Although the body of a living entity may also be made of matter, another principle seems to be involved by which such living bodies are automotively impelled; it is called free will.

Now one may argue that an automobile is also automotive - it propels itself by consuming gasoline, just as a living entity consumes food to produce the energy by which it moves itself. But the automobile does not possess free will. It does not make choices to do anything. A driver is required for that purpose, and the driver, as a living entity, does possess free will.

So what is free will?

First of all, why do we call it free? Freedom means that it does not act by any other cause than that of its own self. Freedom means that it is self-determined, self-originated, and self-motivated. Another word for this concept is "spontaneous." It simply moves itself on its own. It does not require a force outside of itself in order to move. This is actually what we mean by animate: it animates itself. Such animate entities are called living, in contrast with those entities that do not spontaneously move themselves, which we call inanimate or matter.

Thus "free" refers to the fact that it is its own cause, it is the cause of itself, or it is self-caused. Whatever it does is caused by itself

and not by any other cause external to itself. This is what we mean by free will, spontaneity, or animate, which is the symptom of a living entity. Inanimate matter is not characterized by these symptoms.

The activity within an atom may also be considered to be spontaneous or animate matter. The zero-point energy, or energy of the atom at absolute zero, may thus be considered spontaneous, but no one would claim that the atom exhibits free will. Thus while freedom is an essential principle, the will is also a distinguishing aspect of the explanation of life.

We have explained what we mean by freedom but what is the will?

Generally, the psychological or mental functions are distinguished by three categories: thinking, feeling and willing. These are also referred to as cognition, emotion, and volition. If you ask someone what they are doing when they think, most will find it very difficult to answer. Although it is something we do all the time, most people will not be able to explain what it is they "do" when they think.

The subject concerning the nature of "thinking" is a very difficult and deep one. Although we may consider it an activity, it is not the same kind of activity we refer to as when things move. The words "think" and "thing" have more than most of their letters in common. But at the same time they are quite opposite in nature. In fact, we can say they are the negation of one another, or, in other words, they are negatively



related. Things that are opposites are negatively related. For example, night and day, North and South, head and tail, positive and negative, etc.

We will not analyze what "thinking" is in this article, because it is a big topic on its own. But at this point, we will simply say that it is the negation of things. When we think a thing, the thing must be negated in order to become a thought, since the thought is no longer something material like the original thing. We can see and touch the thing with our external senses, but we cannot do that with the thought of the thing. It is in this way we can say that they are negatively related. Negation doesn't mean annihilated. The thing is not annihilated by thinking it. Negation thus refers only to the particular relation thinking has to things. In other words, in order to get from thing to thought we have to go by way of negation. It is in this sense that negation is being used. It is also in this sense that thinking is sometimes referred to as negative activity.

The subject concerning "feeling" or emotion is another very difficult and deep conception. All we will say in this article is that it implies a more practical or concrete sense of action than thinking. While thinking implies a non-material or abstract type of activity, emotion has the actual word "motion" in it. Hegel wrote that without passion or emotion, nothing great can be achieved in this world. So while thinking implies a more theoretical sense, emotion or feeling carries a more practical meaning. This is a very crude distinction, because deeper study of these subjects will reveal that both thinking and feeling are very intimately related.

Finally we come to willing or volition which is the third type of psychological or subtle activity. These are called subtle phenomena because they do not occupy space, do not have weight and are not detectable by the senses. Certainly thinking and feeling are intimately involved in willing, but the sense of practical activity is strongest in willing than in any of the other mental functions. As soon as we will something, activity is immanent. We may think and feel something, but acting on them can be checked by a strong will. On the other hand, when we will to do something, then it is very difficult to check it.

Observations of our inner self are called introspection or looking within. Thinking, feeling and willing are observed as being subtle or subjective activities within the self, distinct from the gross or objective activities of things outside ourselves. However, observation of inner experience is no less objective than that of outer sense experience. In other words, thinking, feeling and willing are universal or objective experiences since everyone can experience them. Although they are internally private experiences, as opposed to external public ones, nonetheless they can be experienced by everyone. In this way we can also refer to them as objective, and therefore they can be studied scientifically.

These considerations lead us to conclude that the inner world of mind has a differentiated structure that can be studied scientifically. The subtle or non-sensuous nature of the different types of activities or movements that are studied does not mean that they cannot be observed or experienced. In fact, it is because they can

be experienced and observed that we can call them material, i.e. they are the subject matter or content of consciousness, as much as the experiences of the senses, which are called gross (or sensuous) in order to distinguish them from the subtle (or mental).



There are five senses including smelling, tasting, seeing, touching, and hearing. In Sankhya philosophy the five senses are also connected with their objects that are called earth, water, fire, air and ether, respectively. Those elements that are observed or detected by the senses are called the gross material elements. In addition to these five gross elements Sankhya philosophy specifies three subtle elements called mind, intelligence and false ego (*manas, buddhi, ahamkara*). We have already mentioned that the mind is characterized by the three functions of thinking, feeling and willing. The intelligence is the discriminating faculty. The false ego is the identification of the conscious self with the gross and subtle material elements.

It is important to distinguish the real self from the false ego. As previously mentioned, whatever is observed or experienced is called matter. Above matter is the consciousness that is observing or experiencing. Because it is above matter it is called non-material. In other words, we experience the "seen" but we don't experience the "seer." We experience the "known" but we do not experience the "knower." The self, the consciousness, the seer, the knower - all these refer to a different category than the objects that

are observed or experienced, i.e. the things that are seen, known, etc.

At a higher level of spiritual development one can also experience the self or consciousness, in which consciousness becomes object to itself. This is called self-consciousness or the self, and is experienced when thought can think itself. Aristotle identified this stage as pure form without matter or in Greek, *noesis noesios*. This is a higher stage of experience and is called spiritual, to distinguish it from the ordinary experiences of material phenomena. When consciousness is conscious of itself, when thought can think itself, then we enter a world that is non-material, and which no longer deals with the duality of observer and observed. In the spiritual plane observer and observed are simultaneously one and different. The subjective self is objective to its own self. This is possible to achieve by cultivation of the science of the self. In other words, the scientist or subject is also to be studied along with the objects of science. This is lacking in empirical science, but only by including this higher experience of the self can we have a complete scientific understanding of reality.

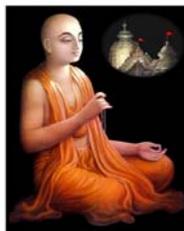
The spectrum of electromagnetic radiation extends well beyond the range of visible white light. In a similar way the spectrum of experience extends beyond the material to the spiritual. Thus to limit scientific investigation to the merely material range is like arbitrarily cutting off the spectrum of all experience. There is no reason for this. The science of spirit is well known and extensively studied in the Vedas and its corollaries. It has a much longer history than modern material science. The problem is that modern

is overcome in the spiritual realm where there is simultaneous identity and difference of subject and object. This means that the content or object of consciousness is not merely object but is of the same substance as consciousness itself.

Around 1500 AD the great spiritual revolutionary, Sri Chaitanya Mahaprabhu, taught this principle as *acintya bedha abedha tattva* - simultaneous difference and non-difference. We find this principle is present in consciousness that is conscious of itself, or object to itself. Thus it is pure consciousness or *cit-shakti*. This spiritual existence is distinguished from the material sphere in which the object of consciousness is non-conscious or material. Of course, even in the material world consciousness of a living being or human being is also consciousness of a consciousness. This is partial spirituality in the sense that we are also conscious of the material or non-conscious body of the living entity. But in the spiritual plane, everything is made of the same conscious principle. One has to study the science of consciousness very carefully in order to come to that platform.

Although this type of knowledge is not taught in the science classes, it is not lost to vedantic science. For instance, in the Upanisads we find the following verse:

asato ma sad gamaya tamaso ma jyotir gamaya



science has taken the world by storm, and the study of the oldest science has been gradually ignored and forgotten. Yet, because the spiritual range of experience is always part of complete spectrum of reality, we can only ignore it for a limited time before we begin to recognize that something very fundamental is missing in our attempt to understand the world and ourselves within it.

All of these considerations are important in understanding and developing the science of happiness. In the above mentioned description we have noted that the self is a non-material principle - a spiritual entity or spirit-soul. It is a pure identity that is to be distinguished from all matter including mind, intelligence and false ego, as well as all sensuous being. But this gives us only a negative definition of the soul. How are we able to understand what kind of world the spiritual soul lives in? Only then will we be able to understand what kind of real happiness the real self can enjoy.

Matter was described as what is experienced by us - what is observed, what is the object of consciousness. The spiritual is the experiencer, the observer and the subject. If the spirit-soul is to have any life, it may seem that its world cannot be experienced or observed by it because it would then become material. Then what kind of world does it live in?

As we mentioned previously, consciousness can experience itself; the subject can become object to itself. Thus what is spiritual can be object to itself, and this means that a spiritual world must exist in which the object is spiritual and the subject is also spiritual. The duality of observer and observed that we have in the material world

mrityor ma amritam gamaya

Translation: "I am within the realm of transient existence; take me to eternal existence. I am in the darkness of ignorance; take me to the light of knowledge. I am suffering and in misery; guide me toward joy and happiness."

Here we see the three features of existence, knowledge and happiness clearly articulated. Likewise, in *Sri Brahma Samhita*, Ultimate Reality is described as *sat cit ananda vigraha* - having the form of eternal existence, knowledge and bliss. Thus these three principle features of reality were recognized and clearly determined by the ancient vedantic scientists.

But beyond the individual's existence, knowledge and fulfillment there is also the whole world of spirit of which the individual is but a part. That complete whole spiritual reality or truth is also made of the same conscious substance as the individual, and that conscious being is denominated as Krishna in the *Brahma Samhita*, and other Vedic literatures:

isvara parama Krishna sat cit ananda vigraha

anadir adi Govinda sarva karana karanam

It is also confirmed in the first aphorism of *Srimad Bhagavatam*, which is the natural commentary on *Vedanta-sutra*, that the ultimate reality is a supremely cognizant Being:

janmadasya yato 'nvayad itaratas chartesu abhijna svarat

Thus the same qualities that are found in the parts and parcels of the spiritual world are certainly present in the Complete Whole that consists of the same conscious substance. It is for this reason that the Absolute Truth or Ultimate Reality is not only Substance, but

Subject, which is denominated as Krishna, the ultimate resting place or ground of all existence, and from which all existence has its origin. All cognitive potency or consciousness can only have its origin in absolute consciousness. No one has ever explained how consciousness can possibly arise from unconscious

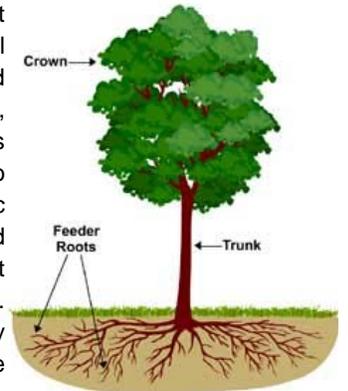


substance. Why try to establish such an unnecessarily difficult and impossible scenario?

Likewise, *ananda* or fulfillment has its origin in the Absolute Subject only. Because of the reciprocal relation between part and whole, the whole imparts its qualities to the part, and the part expresses the qualities of the whole. In this way true happiness can be realized in the relation of the infinitesimal part to the Complete Whole. This principle is amply manifested in Nature.

Nature, as the externality of spiritual substance, has spiritual potency implicit within it. Absolute Subject or Spirit implies the existence of reason or a rational system. A system means that its intrinsic parts are organized according to a unitive principle or rational necessity. This principle may be called End or Purpose, that permeates the parts individually in an overarching unity, without merging them into an undifferentiated monism, i.e. an oneness without difference. Rather each part is mastered by the unitivity of the system that holds the system together as a system.

Thus we find, for example, that watering the root of a tree will supply water to all its leaves and branches. On the other hand, water applied only to any of its other parts will cause the tree to die. This means that a specific system exists in the plant, and without proper knowledge of that system, fatal results can follow. Food nourishes the body, but only if given to the mouth (or the



stomach), not to other parts of the body. Thus understanding the proper system is essential for realistically achieving satisfaction.

Through an ontological study of consciousness it can be shown that there is a relation of the innumerable conscious living entities to the independently conscious Absolute Whole. A scientific understanding of their relationship thus proves necessary to achieve actual satisfaction. This system is elaborately explained in the Vedantic literature and commentaries of the vaishnava teachers. Sufficient details are provided to systematically develop both the principles and technical application of such a spiritual science.

Science should not be limited merely to the study of impersonal mechanistic processes that have nothing to do with life. Life is a more essential subject for scientific understanding than matter, yet matter has taken central interest in science. This imbalance has to be corrected, and in the natural course of development of human knowledge the scientific study of life is now being considered the next frontier that will complement our knowledge of matter.

Life and Its Deeper Reality

Phalguni Banerjee, M. Tech and P. Suresh Kumar, M. Tech



What Modern Science Does Not Know!

Science Magazine in its 125th Anniversary Issue came up with the title "[What Don't We Know?](#)" where it listed 125 crucial questions facing science over the next quarter-century. A major question of foundational importance that is listed is, "How and Where Did Life on Earth Arise?" Some of the other interesting questions that were listed are, "Can the Laws of Physics Be Unified?", "What Determines Species Diversity?", "How Will Big Pictures Emerge from a Sea of Biological Data?", "How Far Can We Push Chemical Self-Assembly?", "What Are the Limits of Conventional Computing?", "Do Deeper Principles Underlie Quantum Uncertainty and Nonlocality?" and "What is the Biological Basis of



Consciousness?" The magazine also noted the statement of 2004 Nobel Laureate in Physics, David Gross, that "Fundamental questions are guideposts; they stimulate people." Thus hundreds of years of the glorious history of modern science have failed to provide any satisfactory answer regarding life and its deeper reality. Science without knowledge of the scientist (life) who is exploring Nature is thus incomplete.

Vitalism: A Mistake in the Basic Conception

The theory of vitalism has its roots in ancient thought. This theory is opposed to any mechanistic conception and claims that the functions of a living organism are due to a special or a vital principle that is beyond physical and chemical forces. Many scholars have suggested that vitalism can be found in the works of Aristotle and many other great philosophers of the world. Generally vitalism proposes self-causation or self-determination. Many ancient

systems of medicine in the world, which have used the concept of a vital principle, like those of Eastern traditions, posited that an imbalance in the vital energies of the living entity leads to diseases of various kinds. Thus in Eastern traditions there were concepts like *pranasakti* and *qi*. In the Western traditions, Hippocrates is widely regarded as the founder of medicine, who proposed the concept of four humors.

In the Eighteenth century Franz Anton Mesmer popularized a vitalist conception which is known as "animal magnetism." But after the acceptance of germ theory, which conceived that microorganisms may be the cause of some or all of the diseases, the role of vitalism in Western medicine was challenged. The germ theory was explored vigorously mainly due to the invention of the microscope in the 17th century, which aided the study of the function of organs within the human anatomy. Thus the life processes, in relation to the functions of organs of the body were studied vigorously in the revolution of modern science during the post renaissance period. Thereafter the vital theory became quickly outdated in mainstream scientific study. The basic concept of the vitalist ideas at these times was that organic matter was produced from a vital force and that they could not be prepared from inorganic substances. They could be produced only in a living system which possessed the vital principle. However the synthesis of urea in the laboratory from inorganic substances completely undermined that very premise and vitalistic theory came to be rejected in mainstream science.

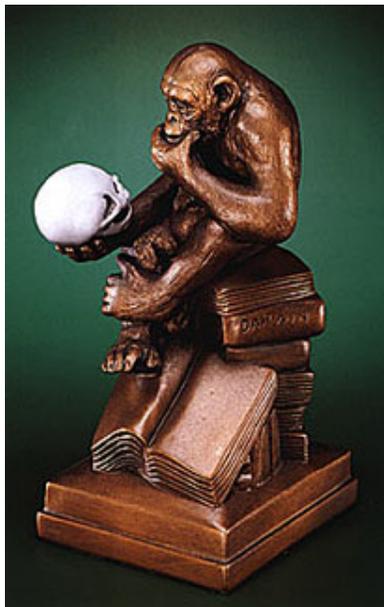


We can take a simple example: it is possible to accurately predict the projectile motion of a dead bird by utilizing the laws of mechanics, but we have no way to predict the motion of a living bird by any mathematical law.

Although vital theory supposedly has its origin in ancient traditions in Greece and Egypt, we find that in Western science of the modern era there were repeatedly failed attempts to explain life in terms of their understanding of matter, forces (like magnetism), energy or electromagnetism, which follow the material laws of mechanics. Thus it seems that there may have been an incorrect understanding of the vital theory by many scientists in the first place. Generally, ancient thought was oriented toward comprehending life as a categorically different reality than that of dead matter. From this perspective any attempt to understand life in terms of force, energy or electromagnetism would be a misconception that is bound to fail. We can take a simple example: it is possible to accurately predict the projectile motion of a dead bird by utilizing the laws of mechanics, but we have no way of predicting the motion of a living bird by any mathematical law.

How far has modern science progressed on the basis of Darwin's theory ?

In 1828, the German chemist Friedrich Woehler synthesized urea, from ammonium cyanate, a purely inorganic compound. This profoundly influenced the minds of chemists and they began to accept a completely materialistic view of life. In 1859 Darwin published "The Origin of Species". His claim was that all existing organisms are the descendants of simpler ancestors that lived in the distant past. He proposed a completely materialistic theory of evolution in which natural selection is main force driving this evolution. This provided further support to the wholesale materialistic and mechanical conception that life could have arisen as an emergent by-product of material combinations. Darwin thought that his theory of evolution would, "serve to bring together a multitude of facts which are at present left disconnected by any efficient cause."

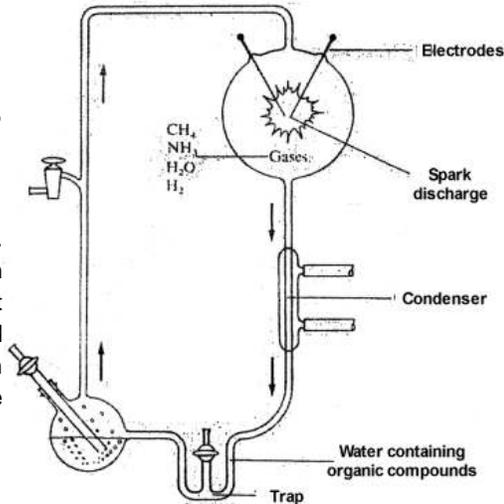


In natural science, abiogenesis is the theory of the origin of life that considers life on Earth might have emerged from non-life. It is generally assumed by modern scientists that it might have happened sometime between 2.7 to 4.4 billion years ago. Almost 150 years have passed since modern science adopted an approach based upon Darwinian evolution as the basis of all their efforts at understanding life and its deeper reality. But it seems that we are witnessing that over all these years modern science has failed to give us a clear understanding of how life originated. This is evident from the 125th Anniversary Issue of *Science Magazine*, where it has listed 125 questions for which modern science has no tangible clue to their answers. One of the questions is, "How and Where Did Life on Earth Arise?" In this regard Hubert Yockey, an information theorist argued that, "One must conclude that, contrary to the established and current wisdom, a scenario describing the genesis of life on earth by chance and natural causes, which can be accepted on the basis of fact and not faith, has not yet been written."

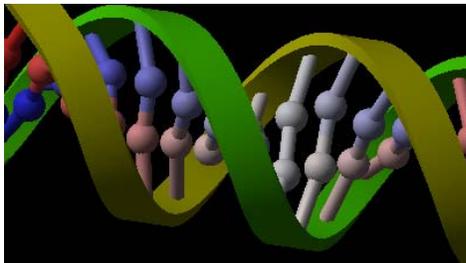
Suppose scientists were given all the necessary chemicals - could they create a living cell in the test tube?

Until now there is no universally accepted theory that has been adopted by science as being a proven model for the origin of life. However, evolutionary scientists have generally attempted to explain the origin of life by a strongly reductionist approach. Often they claim that soon they may be able to generate life in the laboratory. Often, in this regard, evolutionists want to discover the

so-called 'ancestor molecule' that might have led to the emergence of life. Darwin's evolutionary theory has greatly influenced the scientific and philosophical conception of life during and after the second half of the nineteenth century. The scientists have proposed many different hypotheses. Some of them include Eigen's hypothesis, Wächtershäuser's hypothesis, RNA world hypothesis, autocatalysis, Panspermia, Lipid World, polyphosphate model, ecopoiesis model, etc. There have been many significant advances and breakthroughs in various fields like genetics, biotechnology, genetic



engineering, etc. The discovery of the DNA structure in 1953 by Watson and Crick is one of the most significant milestones in modern scientific research. This has led to many more significant achievements in the study of the synthesis of genes, discovery of



postulate genes-first and others postulate metabolism-first. There are other difficulties that random processes fail to explain like homochirality, which is essential for the formation of functional ribozymes and proteins.

The RNA world hypothesis contains many difficult aspects needing explanation. Every other idea of the chemical evolution of life also give rise to many intractable questions. There are many unknowns in the chemical pathways. Over the years in an attempt to understand life, modern science has made extensive attempts to understand only the molecular constituents like RNA and DNA in the bodies of living entities. In this regard Dr. TD Singh, founder-director of Bhaktivedanta Institute, attended a lecture on the origin of life by the world-renowned reductionist, Professor Stanley Miller. Dr Singh asked him during the question and answer session, "Suppose I were to give you all of the ready-made bio-molecules -- DNA, proteins, lipids, sugars, etc. -- would you be able to produce life within a test-tube by combining these molecules?" Professor Miller replied, "That I don't know." Louis Pasteur made a similar

restriction enzymes, cloning, genome sequencing and the human genome project.

In 1960's, Crick, Carl Woese, Leslie Orgel and some other biologists proposed the ancestor molecule was RNA and neither DNA nor protein. According to them RNA could have catalyzed reactions necessary for replication. RNA may also have provided the genetic information necessary to replicate itself. In the early 1980's Thomas Cech and Sidney Altman independently discovered a kind of RNA (now known as ribozymes) that catalyzes a reaction. Walter Gilbert, published an article in *Nature*, in 1986 where he portrayed the primordial world as 'RNA world.' In this theory RNA molecules catalyze their own synthesis. Thus RNA world proposed a general concept that it is RNA first, DNA and protein later.

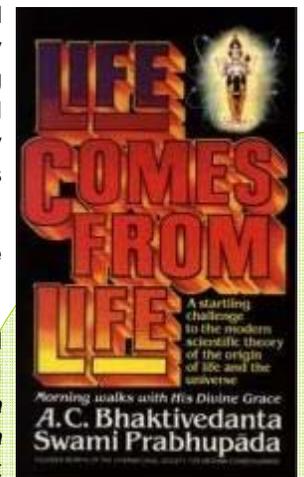
In 1953 Stanley Miller passed an electric discharge through a gaseous mixture of methane, ammonia, hydrogen and water vapor. Amino acids such as glycine, alanine, and aspartic acid were found as some of the components in the reaction products. Thus Miller's experiment provided a great boost to the idea of chemical origin of life. Thereafter many different types of claims were made by different scientists about the pathways by which life could have emerged. Yet even now no one has yet produced any protocell in the laboratory. Manfred Eigen (a Nobel Laureate) and Peter Schuster proposed a principle of natural or chemical self organization and proposed some connection with biological evolution. Thus there are many hypotheses. Some of them

argument, "How do you know that the incessant progress of science will not compel scientists ... to consider that life has existed during eternity, and not matter? ... How do you know that in 10,000 years one will not consider it more likely that matter has emerged from life?" Hence it can be concluded that the attempts to understand only the molecular constituents of the living body in all these years has not helped modern science in developing any tangible understanding of life and its deeper reality.

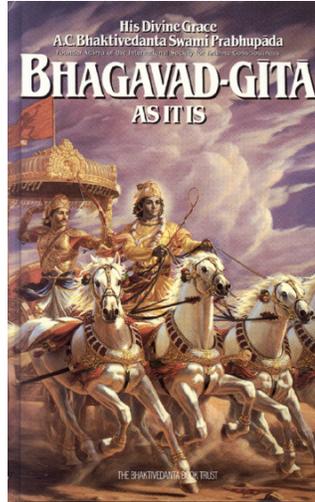
Life comes from Life: An alternative Paradigm for Origins

Vedanta is the topmost scientific and philosophical treatise of the spiritual and cultural heritage of India. *Vedanta* means ultimate knowledge. *Vedanta* refers to all the Vedic literature that

describes the conclusions of the Vedas, specifically the *Bhagavad-Gita*, *Srimad-Bhagavatam*, the *Upanisads*, *Vedantasutra* etc. According to *Mundaka Upanisad*, *sa brahma-vidya sarva-vidya pratistha*, or it is the spiritual science which is the basis of all knowledge. In *Vedanta* there is never a conflict between science and spirituality as their domains are clearly defined and understood. It is unique in Indian thought. The vedantic idea is directly opposite to the idea of chemical evolution. This idea is



presented in the 20th century by Srila Prabhupada in a very profound and simple way as, "Life comes from Life." Furthermore matter also comes from life. According to *Taittiriya upanisad*, *asadva idamagra asit* or Brahman or Consciousness existed before the manifestation of the material world. Thus Vyasadeva, the compiler of all Vedic literature exhorts that the prime duty of the human form of life is to inquire into the original basis of existence, which is Brahman or consciousness, "*athato brahma jijjnasa*". Furthermore consciousness is one of the prime symptoms of life. Thus according to *Vedanta* life is really a very deep reality and the full realization of the characteristics, meaning and purpose of life requires the conception and help of more than any material principle. In the vedantic paradigm material nature and life are distinct and separate energies of the Supreme or Original Life, which is the *Parabrahman*. In *Bhagavad-Gita* the Lord says to Arjuna, His surrendered disciple and student, *etad-yonini bhutani sarvanity upadharaya aham krtsnasya jagatah prabhavah pralayas tatha*, "Of all that is material and all that is spiritual in this world, know for certain that I am both its origin and dissolution." According



to *Vedanta*, the material body is called the field, and one who knows this body is called the knower of the field. And the Supreme Life or *Parabrahman* is the original knower in all bodies. Thus *Vedanta* accepts the reality of the existence of Supreme Life as well as minute life. Furthermore there is no truth beyond the original life or *Parabrahman*, *mattah parataram nanyat kincid asti dhananjaya*. The ancient Vedic literature addresses in detail knowledge of life and its deeper reality. In *Srimad Bhagavad Gita* it is stated [B.G. 15.7],

mamaivamso jiva-loke jiva-bhutih sanatanah

manah-sasthanindriyani prakrti-sthani karsati

The living entities in this conditioned world are the Supreme Personality of Godhead's eternal, fragmental parts. The word *mamaivamsah* (fragmental parts and parcels of the Supreme Lord) is very significant. The fragmental portion of the Supreme Lord is not like some material broken part. In the Second Chapter of *Bhagavad Gita* it is stated:

nainam chindanti sastrani nainam dahati pavakah

na cainam kledayanty apo na sosayati marutah

The spiriton can never be cut into pieces by any weapon, nor can he be burned by fire, nor moistened by water, nor withered by the wind. Hence it is to be understood that the spiriton, which is a fragmental part and parcel of Supreme Personality of Godhead is not materially conceived. It is not like matter, which can be cut into

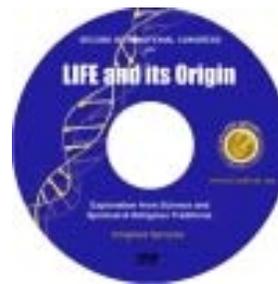
pieces and joined together again. That conception is not applicable here because the Sanskrit word *sanatana* (eternal) is used.

Thus *Vedanta* clearly indicates that the life particle, spiriton follows completely different principles like eternity, cognizance and free will, which we cannot observe in dead matter. Thereby any attempt in understanding spiriton within laws of material domain is completely rejected. Hence according to *Vedanta*, Supreme Life is the original source of both life as well as matter.

Conclusion

The modern scientific approach tries to understand life from a materialistic view. On the other hand, according to Vedic knowledge the nature of dead matter and life are completely different. For example, consciousness is one of the symptoms of life which dead matter does not possess. The major problem, which appears in the present approach of modern science, is that it assumes (without having sufficient scientific evidence) that life is of the same nature as that of matter and then tries to understand life. This approach has been adopted by science for years and due to that 'till date we don't have any theory in modern science which could give us a clear scientific idea about life. Scientifically, the origin of matter as well as of life is not known. This fact is also evident from the questions listed by *Science Magazine* in its 125th anniversary issue. There is no final theory of matter. Scientists – physicists and chemists – only try to understand the properties of

different chemical components that make up the various lumps of matter and their physical and chemical properties. Biologists and biochemists, following the footsteps of physicists and chemists, are also on the wrong path – because they borrow the concept that life is a product of chemical evolution. So in reality, they don't study life. Therefore they cannot go much further. If this one sided assumption can be removed from the studies on life and if the studies are carried out following the



indications given in the Vedic literature regarding life then modern science may be able to provide many breakthrough findings on life and its deeper reality. Interested readers can read the book *Life, Matter and Their Interactions* by T.D. Singh or can watch the DVD of the 2004 International Conference on *Origin of Life* for more extensive knowledge on the topic. For further information about the book *Life, Matter and Their Interactions* and the DVD concerning the International Conference on *Origin of Life* please click [Here](#).

