

SPIRITON

The Fundamental Particle of Life

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Science comes from the Latin word *scientia*, meaning to know or to have knowledge. In line with this, the 19th century Indian scholar, Kedarnath Datta¹, writes that the accurate knowledge of the distinctive qualities inherent within an existing object is known as science. Scientific knowledge and discovery is generally accepted after undergoing the rigors of the scientific method (Fig. 1); nothing is accepted based on dogma, hearsay, or superstition. Rather, the paradigm or observation is first questioned and tested. A question is asked and the possible answer to the question is proposed as a hypothesis. This hypothesis is tested and attempts are made to falsify the hypothesis. As the hypothesis holds its ground to different tests, without being falsified, the hypothesis moves on to become a theory and over time, a scientific law. Thus, the scientific method is based on the systematic analysis of direct evidences and making inferences based on these evidences. However, can this method be utilized to understand life?

At this stage, no one really knows what life is. According to the Vedantic model, as proposed in the previous issue, life is made possible by the presence of a spiritu-

Understanding Life

al spark, or a spiriton, which is beyond the realm of the senses and the mind. If this were even hypothetically true, the scientific method, as we know it, would fail to allow the comprehension of life, as by definition, its nature is non-material. Being beyond the realm of the senses, observation of the life particle is impossible and but its existence may be plausibly inferred based on its symptoms. But is this sufficient to make accurate conclusions on life? Probably not!

To make viable inferences, some particular experience or pattern needs to be established from which the inference can be made. However, in the study of life, no such experience or pattern is available. We may understand the steps involved in the development of the fetus in the womb, but life itself, which is the topic in question, which sets matter in motion during development, is unknown.

As such, the Vedantic paradigm proclaims that though the main epistemological components of the scientific method, namely direct perception and inference, are valid methods to acquire knowledge, they are

limited and not universal in acquiring all types of knowledge. It asserts that there is another category of knowledge acquiring method called *sabda*. *Sabdha* is based on accepting knowledge from higher sources such as the writings from the scriptures and those coming from self-realized persons.

These writings are said to be coming from *Continued on page 2...*

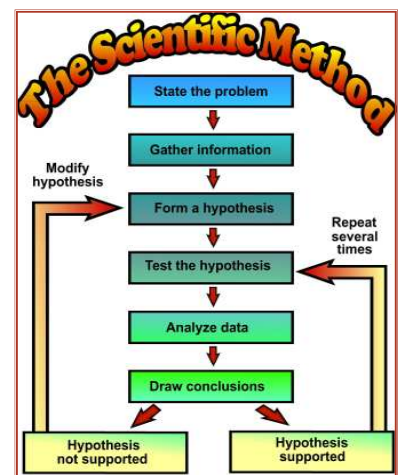


Figure 1ⁱⁱ: Pictorial representation of the scientific method. Can this method be used to understand life, which could be beyond our sensory perception?



Quote

"There are two kinds of reality or existence; the existence of my consciousness and the reality or existence of everything else."

by Eugene Wigner, Nobel Laureate in Physics

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a realm beyond the manifest universe are said to be void of human defects. Some examples of sabdha, as propounded by the Vedanta, are the teachings of the Bhagavad-Gita and the Sri-mad Bhagavatam. Since the bygone ages, these literatures have elucidated fundamental axioms of life and matter (Table 1), which to date remain irrefutable.

An axiom, by definition is a premise that is accepted to be true without controversy, on which other points and arguments are based. If there is truth to these Vedantic axioms, could we, in this age of science and technology, advance our knowledge by synthesizing this ancient wisdom with scientific pursuits? Though this is a theoretical possibility, it will probably not come to pass very soon. The present conditioning of modern scientists and their adherence to the scientific method will not permit them to accept canons coming from ancient sources that are connoted to be religious in nature. For this to occur, scientists need to be open to knowledge coming from others sources, not dogmatically, but by liberally accepting knowledge for what it is, and scientifically questioning the validity of such knowledge. Such a scientist should not lose his scientific rigor, but should be broadminded enough to accept (at least theoretically) that there is knowledge beyond the scope of the

senses, and thus work with this 'newly accepted' paradigm with the same rigor exhibited in the current sphere of scientific work.

By Dr. V. Krishnan-Kutty

...the Vedantic paradigm proclaims that though the scientific method, heavily comprising of direct perception and inference, are valid methods to acquire knowledge, they are limited and not universal in gaining all types of knowledge.

Table 1: Distinction between matter and life from the Vedantic perspective (figure taken from Life, Matter and their Interactions)ⁱⁱⁱ



A Glimpse into The Marvels of Life

The Dutch anatomist and pioneer microscopist Jan Swammerdam (1637-80) painstakingly studied artistic design of small living organisms, in particular the studies of the metamorphosis and developmental patterns of insects. His impression was of indescribable awe and wonder in the face of nature's beauty. For him the source of this artistic design, complexity and natural order could only be divine, and his only response was rapture. While putting down his observation on the anatomy and metamorphosis of butterflies, he remarked:

“How then can we avoid crying out, O God of miracles! How wonderful are all thy works! How beautiful are the ornaments! How well adapted the powers which thou hast so profusely bestowed upon thy creatures!”

(Adapted from Life, Matter and their Interactions, By Dr. T. D. Singh)^{iv}

The Axioms of Life and Matter *(from the Vedantic Perspective)*

by Dr T. D. Singh

Matter and life are two distinct kinds of energy (Table 1). Life is not an emergent product of evolution of material particles. The Bhagavad-gita (Bg 7.4-5) refers to this as follows:

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

The spiriton or atma may be thought of as a fundamental quantized part of the absolute living being possessing the irreducible property of consciousness.

Matter and life are fundamental categories of reality. Matter is the inferior unconscious energy of the Supreme and

life is a superior, conscious energy of the Supreme. The source of both is the Supreme. Life is designated as the superior energy because it possesses the fundamental feature of consciousness, whereas matter does not. Both of these energies are eternal, and both are composed of basic elemental units. Both satisfy principles of conservation similar to those in modern physics. Matter is essentially an insentient substrate from which temporary forms can be constructed by atomic combinations. It derives its properties from the absolute truth, and its transformations are governed by laws emanating from this source. However, it is qualitatively inferior to its source of emanation, since it lacks the inherent property of consciousness.

Life consists of innumerable fundamental units, which may be referred to as spiritons or atmas or atmans, or living entities. These are described in Figure 2. The spiriton or atma may be thought of as a fundamental quantized part of the absolute living being possessing the irreducible property of consciousness. The spiriton may thus be compared to the electron, which is regarded as the fundamental quantum of electricity. These quanta of life share the qualities of their absolute source - including consciousness and purposefulness - in minute degree, and are

thus regarded as the superior energy of the absolute truth. Both life and matter operate according to the natural laws, or ultimate causative principles. However, certain laws are more specifically associated

Figure 2: Properties of the spiriton

with life, and others are more specifically associated with matter. The simple push-pull laws of physics and chemistry undoubtedly have some bearing on the behavior of matter, especially in circumstances where life is not significantly involved (inanimate matter). However, these are at best limiting cases of more general laws that are involved with life.

The interaction of life with matter ultimately depends upon higher order principles that cannot be reduced to any mathematical formulation. Essentially, the conscious, superior energy interacts with the inferior energy through the consciousness

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GOD, INTELLIGENT DESIGN AND FINE-TUNING



Is God no longer necessary in a world that is increasingly influenced by a scientific temper? Or, on the contrary, have the findings of modern sciences forced us to approach the question of the existence of God in new ways? God, Intelligent Design and Fine-Tuning is a profound exchange between Dr. T. D. Singh and prominent biochemist Prof. Michael J. Behe from Lehigh University, Pennsylvania, USA, exploring how recent advancements in science points amazingly towards God.

Over the past four decades, modern biochemistry has uncovered the secrets of cells and has revealed to us the marvellous design even at the molecular level. Advancements in science have also shown us some of the precise laws and unique fundamental constants in the universe. All these facts and observations point to a fine-tuned and specially designed universe with a purpose by a Supreme Being of God. As one journeys through the newly discovered marvels of the cosmos and life discussed in this volume, one will be compelled to re-examine his opinion concerning the origins, evolution and essence of this wonderful world in which we live.

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of the absolute truth. This interaction cannot be completely described in quantitative terms, but it can be understood and investigated. It entails fundamental psychological principles such as free will, purpose, and value. Ultimately, this interaction can be understood as the direction and supervision of the individual spiritons by the Paramatma (the Supreme Lord). As the individual spiritons develop various desires and psychological states in the course of their experiences, the Paratnatma observes these and adjusts the material situation accordingly.

Thus, the distinction between matter and life is the quality of consciousness. This is the main reason why scientists have had such difficulty in defining life. They either try to avoid consciousness completely, or they try to imagine generating it by molecular combination of inanimate matter. Thus, an approach of both scientific and scientific thinking is called for in order to understand the distinction between matter and life.

By Dr. T. D Singh.

Adapted (with modifications) from *Life, Matter and their Interactions*, Chapter 9

Next Issue ...

Chirality and Life

References and Further Readings

ⁱ Dasa, Shukavak N. (1999), *Hindu Encounter with Modernity: Kedarnath Datta Bhaktivinoda, Vaiṣṇava Theologian* (revised, illustrated ed.), Los Angeles, CA: Sanskrit Religions Institute, ISBN 1-889756-30-X

ⁱⁱ Science Posters / ScientificMethod.jpg. (n.d.). Science Posters / ScientificMethod.jpg. Retrieved July 9, 2014, from http://www.irc.vbschools.com/fortheweb/Science/pages/ScientificMethod_jpg.htm

ⁱⁱⁱ Singh, T. D . *Life, Matter and their Interactions*. Kolkata: The Bhaktivedanta Institute, 2006, P.87.

^{iv} Singh, T. D . *Life, Matter and their Interactions*. Kolkata: The Bhaktivedanta Institute, 2006, P.68.

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