Student: I have heard it said that according to Vedic ontology, the soul is marginal. Do the jiva souls in the marginal or tatastha position have knowledge that there is an upper and a lower world, that there is suffering in the material world and divine service in the spiritual world?

Srila Sridhar Maharaja: A jiva soul has adaptability of both sides; marginal means “endowed with adaptability towards both the spiritual and material worlds without participation or any experience of either.” The marginal soul (tatastha-jiva) has only seed adaptability towards both. He is situated in the margin between the spiritual and material worlds, and the margin strictly means that one is in a position to analyze adaptability. He can go towards the spiritual world and he can come towards the material world. The possibility of either is there in potentiality, but he is left to exercise his freedom. Because the soul is a conscious unit, he has free will. Freedom is inseparable from consciousness. A conscious unit and freedom are one and the same. Conscious atom means endowed with freedom. Without freedom, it is matter.

Student: The soul has freedom, but does it have knowledge of the different aspects of reality?

Srila Sridhar Maharaja: Because the soul is very small, his freedom is also imperfect; a soul in the marginal position is very vulnerable. Freedom does not mean absolute freedom. Because the soul’s existence is small, his freedom is defective; there is the possibility of committing a mistake. Freedom of the minute soul does not mean perfect freedom. Complete freedom would be perfect reality, but the minute soul is endowed with the smallest atomic freedom. This is the position of the atoms of consciousness, and this is why they are vulnerable. They may judge properly or improperly; that is the position of those who are situated in the marginal position. If the soul were not endowed with the freedom to determine his position, we would have to blame God for our suffering. But we cannot blame God. The starting point of the soul’s suffering is within himself. The suffering of the soul in bondage is similar to the suffering of one who is addicted to a drug. Before one begins taking intoxication, the first step towards addiction is curiosity. Then after one has taken intoxication for a certain amount of time, he cannot do without intoxication. Our attachment to maya, or misconception, is like addiction to a drug. At first we are curious, but when we become habituated to the intoxication of misconception, we are forced to continue using that intoxicating substance. Before beginning the habit it might never have begun. But once you have begun, as much as you cultivate an addiction, the intoxication will devour you.
Many thoughtful scientists will agree that chemical evolutionists do not actually study life. They only study how biomolecules such as RNA, DNA, proteins, etc., might have formed early on earth. But their combinations do not seem to lead to life and it is highly doubtful that scientists will ever be able to create life from the interactions of lifeless molecules.

Leslie Orgel, in a 1998 review article entitled, “The Origin of Life: a review of facts and speculations” has summarized our current state of affairs in regard to life and its origin as – “There are several tenable theories about the origin of organic material on the primitive earth, but in no case is the supporting evidence compelling. Similarly, several alternative scenarios might account for the self-organization of a self-replicating entity from pre-biotic organic material, but all of those that are well formulated are based on hypothetical chemical synthesis that are problematic.”1

Thus it seems that the scientists are not able to generate life by a combination of biomolecules in the laboratory. It suggests that knowledge of DNA or any bio-molecule will not be able to explain what life is. Rather life could be beyond the assembly of biomolecules. Werner Arber, a well-known microbiologist and Nobel Laureate in Medicine and Physiology from the University of Basel, Switzerland has commented as, “It is an important discovery of Thomas R. Cech and Sidney Altman…. that RNA could act as a catalyst. However, I am not sure about its significance with regard to the study of origin of life. RNA alone is not life…. for me it may always remain as a mystery that how many different molecules could come together to form a primordial cell.…. I think that life could be beyond the assembly of biomolecules.”2

It would be, therefore, worthwhile to examine alternative paradigms of life. Schrödinger, one of the founding fathers of quantum mechanics, also felt that life required some extraordinary laws to explain it. He said, “We must be prepared to find a new kind of physical law prevailing.”3

Michael Polanyi, a scientist and thinker of the twentieth century expressed more profoundly: “The recognition of certain basic impossibilities has laid the foundations of some major principles of physics and chemistry; similarly, recognition of the impossibility of understanding living things in terms of physics and chemistry, far from setting limits to our understanding of life, will guide us in the right direction…. such a demonstration would help to draw a truer image of life and man than that given us by the present concepts of biology.”4

Genes are the coded instructions to make organisms’ bodily structures, and the genome is the library of these instructions. But even an entire genome by itself is not alive. Life is much more than the genome. Werner Arber, the Nobel Laureate microbiologist from the University of Basel, Switzerland remarked, “I think that life could be beyond the assembly of biomolecules.”5 Dr. W. French Anderson,6 one of the leading geneticists in the world and father of Gene Therapy, also expressed, “Can we alter our human-ness by this kind of manipulation? Can we alter what is uniquely important to us as a human race by engineering our genetic machinery?” He felt that it is not possible to change one’s human-ness by genetic engineering because of the presence of “that non-qualifiable, spiritual part of us that makes us uniquely human.” “We do have a religious, a spiritual aspect to our being. This would be difficult to quantitate, but it exists.”7

Thus we can say, Human Person ≠ Human Body or Human Genome

Rather, according to Vedantic world view, Human Person = Human Body + Mind, Intelligence & False Ego + Spiriton (Life particle)

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

(Physical) + (Subtle Matter) + (Life particle) + (Material Body)

Life: Spiritual particle or Spiriton

According to Vedanta, the ancient spiritual science of India, all living beings are animated by the presence of a non-chemical or non-molecular fundamental spiritual particle – “spiriton” (called atman in Vedantic terminology; the term ‘spiriton’ is coined by the author). Vedanta mentions that ‘spiriton’ or the spiritual particle has the following properties:8

a) It is the spiritual energy as opposed to the material energy of God.
b) It is a transcendental particle and is ontologically different from matter.9
c) It is only due to the interaction between the spiriton and material elements that the material body appears to be active and lively.
d) Its fundamental qualities are: (i) Consciousness (ii) Free will (iii) Intention and (iv) Purpose.
e) It is beyond ordinary sense perception but it can be inferred. Consciousness is the most visible symptom of life, spiriton. Matter, however complex it may be, can never be conscious.
f) It exists eternally and it cannot be created or destroyed.
g) It has a will to acquire knowledge.
h) It has a will to be blissful.
i) It has attractive powers not only with individual beings but also with matter. The attractive power or force between a mother and her baby is due to the interaction of spiritons. However, when the baby is dead, the attractive power will be lost because the spiriton is no longer there within the body of the child.

Further, when someone dies, one can experience the symptoms of the passing of the “spiriton” through the eyes, mouth, rectum, or through the skin holes of the head along with life air.

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 mate-
rual terms and feel such limitations intuitively. James Watson, the co-discoverer 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…. You can find genes for behaviors, but that doesn’t tell you how brain works…. we still don’t know how the brain works ….?”10 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.”11 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 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 any cell starts dividing at the first place? Why a fertilized egg (after the sperm cell unites with egg cell) undergoes divisions which results in the formation of the whole body? Vedanta describes that due to the presence ‘spiriton’ the body is animated and active and undergoes six types of transformations.12 It takes birth, lives for some time, grows, produces some offspring, gradually dwindles, and at last vanishes into oblivion.13 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 spiritual 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 machines that make up the body are still intact.

Srimad Bhagavad-Gita mentions about ‘spiriton’ being different from matter as follows: bhumir apo ‘nalo vayuh kham mano buddhir eva ca ahankara itiyam me bhima prakritir astadha

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 (spiritions) who are exploiting the resources of this material, inferior nature.”14According 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-guhya pavitram pavitram idam uttaman prayyakshavagamam dharmyam su-sukham kartum avvayam, 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.”15 According to Vedanta, the ultimate purpose of human life is to find our real spiritual identity and our relationship with the Supreme.

It seems that biologists will have to change their views of life being comprised strictly of matter only. Laplace also thought that the physical sciences of matter would be able to completely explain the Universe, but that view has changed. It seems that biological science is following in the footsteps of physical science and will begin to see the need to include spiritual elements in the study of life sciences. As John Eccles, the Nobel Laureate in Medicine and Physiology remarked, “I maintain that the human mystery is incredibly demeaned by scientific reductionism, with its claim in promissory materialism to account eventually for all of the spiritual world in terms of patterns of neuronal activity. This belief must be classed as a superstition…. we have to recognize that we are spiritual beings with souls existing in a spiritual world as well as material beings with bodies and brains existing in a material world.”16

References
6. Dr. W. French Anderson is the Director of Gene Therapy at the University of Southern California’s medical school where he also serves as Professor of Biochemistry and Pediatrics. A preeminent researcher in the field for more than two decades, he presided over the first experimental treatment of a human in 1990.
9. Ibid., verse 2.23 – nainam chindanti sastrani nainam dahati pavakah na ca itam kledayanty apo na sosayati marutah, meaning, “the soul can never be cut to pieces by any weapon, nor burned by fire, nor moistened by water, nor withered by the wind.”
10. A Conversation with James Watson, Scientific American, 2003, 288(4):66-70. Also refer to the extended version of this conversation at Scientific American’s website www.sciam.com
11. Lecture by Stephen Hawking on “Gödel and the End of Physics” at Texas A&M University in College Station, Texas, March 8, 2003; adapted from http://www.damtp.cam.ac.uk/strst/dirac/hawking
12. We should note that some religious traditions do not accept the existence of the soul and some others proclaim that the soul is present in human beings only. However, ancient Vedic science of India does not accept such statements and states very firmly that all living entities have spirit souls.
13. Bhagavad-Gita As It Is, verse 2.20 purport, Ibid.
14. Ibid., verses 7.4-5.
15. Ibid., verse 9.2.
Hegel often uses the example of a flower in explaining the significance of philosophy. A flower is, of course, a finite existence and therefore not a proper object of philosophy, but it does serve as a ready example to illustrate its principles.

In his *Encyclopedia Part 2 - Nature* (EN246) Hegel describes the difference between empirical science (physical science) and philosophical science (Philosophy of Nature).

What distinguishes the Philosophy of Nature from physical science is, more precisely, the kind of metaphysics used by them both: for metaphysics is nothing else but the entire range of the universal determinations of thought, as it were, the diamond net into which everything is brought and thereby first made intelligible. Every educated consciousness has its metaphysics, an instinctive way of thinking, the absolute power within us of which we become master only when we make it in turn the object of our knowledge.

Philosophy in general has, as philosophy, other categories than those of the ordinary consciousness: all education (Bildung) reduces to the distinction of categories. All revolutions, in the sciences no less than in world history, originate solely from the fact that Spirit, in order to understand and comprehend itself with a view to possessing itself, has changed its categories, comprehending itself more truly, more deeply, more intimately, and more in unity with itself.

Here Hegel attributes all revolutions in science as well as in world history to changes in the categories of thought. (We will bring this point into focus at the end of this article.) Thomas Khun established the term “paradigm” to indicate scientific conceptual frameworks that can change due to fundamental alterations in the categorical foundations of physical sciences. The French revolution was inspired by the Reformation, according to Hegel, where individual conscience rather than external authority became the center of faith. This central conception of modernity achieved its philosophical expression in the cogito of Descartes.

Spinoza’s attempt to attribute thought to the Absolute, and thereby again establish its infinite form, was only partly successful. By merely “attributing” thought to the Absolute by the fact of his own, as it were, empirical experience of thought, he properly understood its ultimate origin had to be located within the Absolute, but because he conceived the Absolute as Substance, he did not derive its own inherent pure thinking essence from the Absolute itself. Thus, along with extension, thinking remained for Spinoza a mere attribute of the Absolute as Substance. But Kant along with other philosophers of this period ignored this insight of Spinoza’s—perhaps because of the imperfect or “empirical” form in which he held this principle—and pursued the subjective, empirical thinking that it seemed Descartes espoused.

The result of this dramatic change, as Hegel acknowledges in his EL62 was that, “...now, at length, even the thought-forms are pronounced anthropomorphic, and thought itself is described as a mere faculty of finitization.” It was in this way that subjective or psychological thinking entered philosophy, and such thinking was consummated in the philosophy of Kant.

Along with the rise of anthropomorphic thought-forms another associated principle became effective, namely, the significance of intuition or direct experience, especially as the basis of empirical science.

Of course, finite thought or subjective thought is appropriate for finite understanding, but it has no jurisdiction in the sphere of Absolute Truth. Fichte, Schelling and Hegel all recognized the proper status of infinite thinking that Aristotle had long since established as noesis noesios, or the self-thinking thought of the Absolute. But it was only Hegel who actually showed how the Absolute establishes itself as self-determined self-thinking Subject as well as Substance. This is fundamental to understanding how Philosophy can ever become scientific, i.e. systematic. As long as philosophy remains based upon subjective thinking, it remains within the sphere of finitude, and the Absolute is that which it can only know “about” but never know in its infinite being in-and-for-itself. Absolute knowing can only be conducted on the Absolute platform. The *Phenomenology* was written for the purpose of raising thought to that platform, by dissolving all entrenchment in the immediacies of sensuousness, understanding, consciousness, self-consciousness (ego), family, society, art, religion. This liberation from all conditional finite existence is necessary to enter the ether of science - the freedom of self-thinking thought - thought that has only itself as its object.

Much of this is explained very clearly in the section “With What Must Science Begin?” in Hegel’s *Science of Logic* (SL88-122). Such absolute thinking is necessary for philosophy as a science, however empirical thinking must remain on the finite level. Still the principles that limit such empirical thinking must be known and recognized by empirical scientists. Without such knowledge of philosophy it leads to further problems, as Hegel continues in EN246.

Now the inadequacy of the thought-determinations used in physical science can be traced to two points which are closely bound up with each other.

(1) The universal of physical science is abstract or only formal; its determination is not immanent in it and it does not pass over into particularity.

(2) The determinate content falls for that very reason outside the universal; and so is split into fragments, into parts which are isolated and detached from each other, devoid of any necessary connection, and it is just this which stamps it as only finite.

If we examine a flower, for example, our understanding notes its particular qualities; chemistry dismembers and analyses it. In this way, we separate colour, shape of the leaves, citric acid, etheric oil, carbon, hydrogen, etc.; and now we say that the plant consists of all these parts....

This glaring discontinuity requires that we become more aware of the proper estimation of intuition (sense-perception) and its relation to rational thought, and the way we might overcome this cleavage. Thus Hegel offers the following:
Spirit cannot remain at this stage of thinking in terms of detached, unrelated concepts (Verstandesreflexion) and there are two ways in which it can advance beyond it.

(a) The naïve mind (der unbefangene Geist), when it vividly contemplates Nature, as in the suggestive examples we often come across in Goethe, feels the life and the universal relationship in Nature; it divinates that the universe is an organic whole and a totality pervaded by Reason, and it also feels in single forms of life an intimate oneness with itself; but even if we put together all those ingredients of the flower the result is still not a flower. And so, in the Philosophy of Nature, people have fallen back on intuition (Anschauung) and set it above reflective thought; but this is a mistake, for one cannot philosophize out of intuition.

(b) What is intuited must also be thought, the isolated parts must be brought back by thought to simple universality; this thought unity is the Concept, which contains the specific differences, but as an immanent self-moving unity. The determinations of philosophical universality are not indifferent; it is the universality which fulfils itself, and which, in its diamantine identity, also contains difference.

We want to explicitly understand what is this “universality which fulfills itself,” and also “contains difference.” But the first problem seems to be, how to get over the apparent permanence and solidity of immediate experience or immediate thought (such as we find in the atom, gene, or even the empirical self, etc.) and establish its unity or continuity within the whole of which it is a part. Hegel addresses this problem in his remarks to EN246.

“The difficulty arising from the one-sided assumption of the theoretical consciousness, that natural objects confront us as permanent and impenetrable objects, is directly negatived by the practical approach which acts on the absolutely idealistic belief that individual things are nothing in themselves. The defect of appetite, from the side of its relationship to things, is not that it is realistic towards them, but that it is all too idealistic. Philosophical, true idealism consists in nothing else but laying down that the truth about things is that as such immediately single, i.e. sensuous things, they are only a show, an appearance (Schein). Of a metaphysics prevalent today which maintains that we cannot know things because they are absolutely shut to us, it might be said that not even the animals are so stupid as these metaphysicians; for they go after things, seize and consume them. The same thing is laid down in the... theoretical approach ..., namely, that we think natural objects. Intelligence [Understanding] familiarizes itself with things, not of course in their sensuous existence, but by thinking them and positing their content in itself; and in, so to speak, adding form, universality, to the practical ideality which, by itself, is only negativity, it gives an affirmative character to the negativity of the singular. This universal aspect of things is not something subjective, something belonging to us: rather is it, in contrast to the transient phenomenon, the noumenon, the true, objective, actual nature of things themselves, like the Platonic Ideas, which are not somewhere afar off in the beyond, but exist in individual things as their substantial genera.”

Here, the theoretical conception of the solidity of sensuous things is “negatived” or negated by practical activity - such as eating. Furthermore, we should not make the mistake of thinking that eating is just the chemical dissolution of objective substance. Assimilation is the essence of eating, and this assimilation is actually the transition of objectivity into the subjective vitality of life (EN365). By thinking, the object is also negated and raised from singularity to universality.

In this way the finite is idealized, and such idealism is the basis or maxim of philosophy (EL95).

In the general idea or universality of a flower there is the continuity or integral unity of the flower as such. In the determination of its parts is given the differential particularity of the flower’s constituents. That which unifies the universality and particularity is the actualized singular individuality of the flower. To articulate and comprehend the explicit thought by which this universality, particularity and individuality are united is the task of philosophical science. It is this unitive process of the universal, particular and individual aspects that forms the fundamental basis of the Concept. (EL162)

In the previously cited quote, Hegel states,

“This universal aspect of things is not something subjective, something belonging to us: rather is it, in contrast to the transient phenomenon,...the actual nature of things themselves,...not somewhere afar off in the beyond, but existing in individual things as their substantial genera.”

Thus the universal (the flower as such) is the substantial genus of which the individual existence of the flower is transient - it grows, reproduces, and dies. Therefore, the universal (genus) is the permanent (eternal) while the individual is changing. Because it is universal, it does not exist in its universality as a single individual sensuous or immediate object. The universal is eternal, therefore it does not exist, as such, in time. It is only the transient individual instantiation of the universal that is found in nature.