Bridging Religion and Science

Swami Samarpanananda

It has become fashionable for many to denounce religion and praise science. Some have even turned this denunciation into a career! The general argument is that religion has no scientific basis and hence is wrong. It matters little if most people know nothing of religion, or for that matter how science truly works.

The modern division between science and religion may be attributed to René Descartes (1596–1650), who first brought in the concept of the divide through his x-axis and y-axis. This divide was later called Cartesian, and it was through this divide that people started looking at matter and mind, God and world, science and religion as separate. The persecution of the scientific yet religious minds, such as Giordano Bruno and Galileo Galilei by the church, did not help matters. Then one saw Voltaire adding to the growing discord between the two. By the eighteenth century God had become a 'hypothesis' for the scientific community.

Swami Vivekananda tried to bridge this divide. It is through his works that one can understand the underlying unity between the two. During his travels in the West, he met not only religious leaders but also some leading scientists and inventors like Nikola Tesla, Hiram Maxim, Lord Kelvin, and others.

A Closer Look at Religion and Science

The *Mundaka Upanishad* categorizes knowledge into *para vidya*, higher knowledge, and *apara vidya*, lower knowledge. All the sciences belong to *apara vidya*. *Para vidya* is the knowledge that makes a person divine. Can science make one divine? Going by the present definition of science this is impossible, since science is all about the world, while religion is all about transcending the world. Science teaches us how to turn the wheel of the world; religion teaches us how to stop our inner wheel. Hence, no advancement in science can ever encroach upon the realm of religion.

The crucial difference between the approaches of science and religion lies in science being reductionist—the whole is equal to the sum of its parts—and religion being holistic—the whole is more than the sum of its parts. Who is right is the debate that has been raging since ancient times.

Science depends on models, which help it adjust new data and findings, while religion does not require a scientific model to explain God, though it uses a doctrine to explain the universe—the principal goal of religion is not to explain the universe but to make an individual divine, here and now. It is a fact that religion mixes spiritual truths with religious myths to produce a potable concoction for the masses. But science also mixes facts with scientific myths! Without propagating these myths scientists will fade from public memory, and their funding will stop. Many conclusions of science are still theories, and it is interesting to read 'decisive' statements from scientists and non-scientists on these topics.

Scientific theories are developed in two ways. One is by reaching a conclusion through a string of successively derived statements from initial theorems known as axioms. These axioms can be arbitrary, or even absurd, though mutually consistent. When we say that science is born of logic and reasoning, we forget that there are limitations

of the reasoning processes, which are the mechanisms of the proofs and theorems of science. Kurt Gödel (1906–78) mathematically proved the limitations of mathematical reasoning, and Ludwig Wittgenstein (1889–1951) argued that both language and thought have definitive limits. Religion, on the other hand, is never axiomatic, derived, imagined, or thought out. The prophets speak what they experience. Hence, if we declare that the experiences of a pure mind are wrong, then what right have we to consider the perception of an emotionally coloured mind correct? The other method used by scientists is to relate observed phenomena through a theory. In most cases, however, these theories are not laws but mere models, which undergo a change once different kind of data come in. For example, the clockwork universe of Issac Newton was definitive till it was overthrown by Albert Einstein's universe of space-time's fourth dimension and the unity of matter and energy. Today's universe of quantum physics is probabilistic.

How does religion gain its knowledge? There is a near total misconception about this even among scientists. In general, scientists think that religion and religious perception is about extrasensory perception. This idea is completely wrong. Extrasensory perception and all other such hocus-pocus may be anything else, but are not religion. These are mere attention-grabbing antics by the charlatans of religion. Every religion has its roots in the transcendental experience of the major and minor prophets, mystics, and sages. When these great teachers of humanity give up all worldly connections and desires, their minds become pure. It is in such a mind that they experience the light of God. Hinduism describes this state as transcending the mind, as in this state the mind does not function the way we understand it. This transcendental state is known as samadhi, and the knowledge gained in it is true and free from doubt. Being of the nature of fullness, this knowledge does not evolve. Only when a person has gained, in samadhi, the knowledge of pure Consciousness or God can he or she become truly competent to talk about God.

Hence, while science evolves to better and better models, religious knowledge does not have to evolve because it does not offer theories based on sensory or observed facts. Every religion is firmly entrenched in the intuitive knowledge of God, as described by its prophets and sages, and therefore it develops its explanations backwards from what the prophets and sages experienced in the depths of their meditation.

Scientists raise questions about the superconscious realizations of the sages. Yet scientists forget that many famous inventions and discoveries belong to the realm of either instinct or intuition. For example, much scientific knowledge has come serendipitously, such as that of the dynamite by Alfred Nobel (1833–96) or antibiotics by Alexander Fleming (1881–1995). Discoveries sometimes come through dreams, as that of Friedrich Kekulé's (1829–96) structure of the benzene molecule. Even James Watson's (b.1928) discovery of the DNA's double helix structure was not solely due to logical processes.

Religions in general, and Vedanta in particular, rely on the validity of *pratyaksha*, direct perception, and *anumana*, reasoning, the two mental tools that are essential for scientific growth. Acharya Shankara, the great exponent of Vedanta, repeatedly asserts in his commentaries that the validity of direct perception cannot be negated by even a thousand scriptural utterances. The third method of knowledge is known as *shabda*, knowledge gained through the words of the scriptures. The ideas about God, soul, rebirth, creation, and so on cannot come through direct perception or reasoning, hence one must depend on what the sages have said about these. The sages

had no ulterior motive to mislead people—they had the purest of characters. They were also supremely unselfish and had brilliant minds. The strife between science and religion lies in that science will not accept the scriptures as valid sources of knowledge, nor would religion give up the scriptures. Interestingly, scientists keep swearing by 'the sages of science', even when some of these sages are proved wrong.

Creation, Life, and Death

Creation is a difficult area for science and religion. People want to know where they have come from and where they are going. The most popular answer by religion is that we come from God and go back to God. The popular answer by present-day science is that we are here because of the Big Bang and are going towards infinite expansion for ever.

The Vedas also speak of creation; the 'Purusha Sukta'[1] states that creation came out from the Purusha; the 'Nasadiya Sukta' (10.129.1–7) takes up the concept of the subtle becoming gross, which then acts on itself—*prana*, the cosmic energy, hammers at *akasha*, the finest primal matter, to produce the universe. Almost every teaching of creation in Hinduism—except the *ajatavada*, the philosophy that there is no creation—can be boiled down to these two hymns.

Swami Vivekananda was fascinated by the concept of creation in the 'Nasadiya Sukta', which says: '*Anidvatam svadhaya tadekam*: that one thing, breathless, breathed by its own nature' (10.129.2). Swamiji translates it as 'it vibrated without vibrations.'[2] From this Swamiji explained the concept of *prana* and *akasha* emerging from a common source, the *dyu loka*, electric sphere, 'in which the Prana is almost inseparable from Akasha, and you can hardly tell whether Electricity is force or matter' (5.102). Nikola Tesla (1856–1943) was fascinated by these ideas of Swamiji in 1896, but humanity had to wait for another ten years for Albert Einstein to work out independently the equivalence of matter and energy in his now famous equation $E=mc^2$.

Interestingly, scientists of Einstein's generation ridiculed him for trying to find out the unifying principle of nature. The same 'Nasadiya Sukta' throws up its hands in despair at the impossibility of finding out the truth behind creation and concludes with this question: '*Ko addha veda ka iha pravochat kuta ajata kuta iyam vishrishti*; who verily knows and who can here declare it, whence it was born and whence comes this creation?'[3]

This inexplicability of creation is a standpoint accepted by every religion and religious philosopher, whose most common answer to the question of creation is that 'it is God's will'—or, in other words, 'I do not know the answer'. Acharya Shankara says that if the goal of the scriptures had been to describe creation, then all of them would have described exactly the same thing, which is not the case. According to him, the one and only aim of every scripture is to teach human beings their divine nature.

A lot of confusion between science and religion is caused by the concept of a single creation, popular in Semitic religions. What scientists cannot believe is in a God who sets the world in motion at some point of time. According to Biblical calculations, creation took place sometime in 4000 BCE. But is it conceivable that the infinite God will create something that is hopelessly limited in time and space? Well, only the naive can believe this story, and that is why many Western thinkers, including Immanuel Kant (1724–1804), refused to accept this kind of theology for schoolboys. There is a doctrine in Hinduism and Buddhism maintaining the idea of cyclic creation. According to it, an infinite number of universes are created, destroyed, and are existing at any given point of time. The idea of a multiverse and cyclic creation has just started seeping into science.

But one of the main questions placed by scientists is whether religion is rational and consistent at all. The fact is that science assumes axiomatic truths, which may prove false, while religion begins with the words of prophets, which have not been proved wrong. Religion, particularly Vedanta, is consistent and does not suffer from contradictions; it brings meaning to life and is universally applicable. Is this not scientific? To give an example, we can look at the problem of infinity as seen by the Vedic sages who came with the idea of '*Purnasya purnamadaya purnam-eva-avashishyate*; taking the infinitude of the infinite (universe) it remains as the infinite (Brahman) itself.'[4] Interestingly, religion has contributed to the *syadvada*, probabilistic outcome, of Jainism, and the *neti-neti*, process of negation, of Vedanta, which are the two powerful tools of reasoning.

Commenting on the role played by religion in the development of science, Freeman Dyson (b.1923) writes:

> Western science grew out of Christian theology. It is probably not an accident that modern science grew explosively in Christian Europe and left the rest of the world behind. A thousand years of theological disputes nurtured the habit of analytical thinking that could be applied to the analysis of natural phenomena. On the other hand, the close historical relations between theology and science have caused conflicts between science and Christianity that do not exist between science and other religions.[5]

Various religious philosophies have tried to relate the world of physics and what lies beyond it in the form of metaphysics. One of the popular explanations is by the Sankhya philosophy, according to which the world of experience evolves from Prakriti through *mahat*, cosmic intelligence, and *asmita*, cosmic egoism. But Prakriti is inert, while Purusha is pure Consciousness. How can one know pure Consciousness? Consciousness is eternal and unchangeable. It is beyond

***Scientist's Last Supper*, by Nick Farrantello**
From left to right: Galileo Galilei, Marie Curie, J Robert Oppenheimer, Isaac Newton, Louis Pasteur, Stephen Hawking, Albert Einstein, Carl Sagan, Thomas Edison, Aristotle, Neil deGrasse Tyson, Richard Dawkins, and Charles Darwin

subject, object, or action. It is not the intelligence of the mind—though the mind acts as the best reflector of Consciousness. Everything other than pure Consciousness belongs to the realm of Prakriti, internal and external. Thus the entire world of science belongs to the realm of Prakriti, while metaphysics takes one beyond it to the state of pure Consciousness.

According to science, the intelligence that we see around us is an evolutionary product of matter. Referring to this great chasm between religion and science on this issue Swamiji says:

> Every religion has the idea that the universe comes out of intelligence. The theory of God, taking it in its psychological significance, apart from all ideas of personality, is that intelligence is first in the order of creation, and that out of intelligence comes what we call gross matter. Modern philosophers say that intelligence is the last to come. They say that unintelligent things slowly evolve into animals, and from animals into men. They claim that instead of everything coming out of intelligence, intelligence itself is the last to come. Both the religious and the scientific statements, though seeming directly opposed to each other are true. Take an infinite series, A—B—A—B—A—B, etc. The question is—which is first, A or B? If you take the series as A—B, you will say that A is first, but if you take it as B—A, you will say that B is first. It depends upon the way we look at it. Intelligence undergoes modification and becomes the gross matter, this again merges into intelligence, and thus the process goes on. The Sankhyas, and other religionists, put intelligence first, and the series becomes intelligence, then matter. The scientific man puts his finger on matter, and says matter, then intelligence. They both indicate the same chain. Indian philosophy, however, goes beyond both intelligence and matter, and finds a Purusha, or Self, which is beyond intelligence, of which intelligence is but the borrowed light.[6]

This effort at the grand unification between the discordant notes of religion and science is one of Swamiji's great contribution to humankind.

Bridging the Divide

In the *Mundaka Upanishad* we come across a question that has troubled the human mind for thousands of years: '*Kasmin-nu bhagavo vijnate sarvam idam vijnatam bhavati-iti*; O adorable sir, (what is that thing) which having being known, all this becomes known?'[7] Many wrongly interpret this verse saying that the knower of the Atman becomes *sarvajna*, all-knowing in the worldly sense, but that is not the case. If a person wants to know about all the possible forms that, for example, gold can take, then there cannot be an end to that knowledge, as there would be infinite number of forms. However, if one realizes that many ornaments are made of gold, then by knowing the characteristics of gold, one would know all that is worth knowing about the various ornaments. That is what science is also trying to do. Swamiji says:

> Science is nothing but the finding of unity. As soon as science would reach perfect unity, it would stop from further progress, because it would reach the goal. Thus Chemistry could not progress farther when it would discover one element out of which all others could be made. Physics would stop when it would be able to fulfil its services in discovering one energy of which all the others are but manifestations, and the science of religion becomes perfect when it would discover Him who is the one life in a universe of death, Him who is the constant basis of an ever-changing world. One who is the only Soul of which all souls are but delusive manifestations. Thus is it, through multiplicity and duality, that the ultimate unity is reached. Religion can go no farther. This is the goal of all science. All science is bound to come to this conclusion in the long run.[8]

(*Continued on page 353*)

economically, socially, and culturally. Acquisitiveness can be countered by the *anuvrata*s. On the other hand, the *anuvrata*s cry a halt to unbridled hedonism that makes humans mere pleasure-seeking beings. These codes constantly remind us that we are travellers on the road to Truth. They become a means for removing hypocrisy in personal and professional life.

The objective of the *anuvrata*s is to exhort people universally to observe self-restraint and to establish the values of friendship, unity, peace, and morality. Though the *anuvrata*s seem meagre, in them lies a tremendous power that can change the world. A whole socio-philosophical structure can be raised on these practical vows. Many of our actions, however high they may be, are under the control of the ego, which makes all such actions worldly. But one who takes up the *anuvrata*s becomes genuinely unselfish and cosmo-centric. Immanuel Kant's idea of moral action or conduct that is 'duty for duty sake' is a partial understanding of the *anuvrata* code of conduct. These *anuvrata*s of conduct and actions are moral not only because they do good to others but also because they uplift one's consciousness, leading one from the miseries of the world to spirituality.

Dynamism of the Anuvratas

The *anuvrata*s are not passive but dynamic, and to be an *anuvrati* sustained practice of the vows is demanded. Most of the problems in individual lives are due to spiritual alienation. This fractured human psyche is healed with the maintenance of the *anuvrata*s, which bring peace and happiness.

A question may arise, whether the moderation of the *mahavrata*s into the *anuvrata*s for the laity is just a moderation or an ethical compromise. Does the toning down of the *mahavrata*s diminish their relevance to some extent? Again, one can also question the basis for such moderation, which is the principle of *anuvrata* itself, and that if this moderation is so fluid, then these vows may further change in the future. Such questions are superfluous when we remember the Jain concept of the *triratna*, mentioned in the beginning of this paper. In Plato's *The Republic*, Socrates speaks of morality as being the ultimate basis of justice and wisdom. This is also true in the ethics of Jainism, as one finds in the *triratna*—wisdom and knowledge are blended with morality. 'Right conduct' means 'right faith' together with 'right knowledge', blended through the observance of the *anuvrata*s. The observance of these vows puts individual and social life on a firm basis and leads people to the highest goal.

(*Continued from page 349*)

It matters little what we call that state of unity, but the fact remains that the goal of all knowledge, philosophy, science, religion, and the goal of all endeavour is to find that unity. Consciously or unconsciously we are all moving towards that grand unification. At the more practical level, one has to know that there is no Cartesian divide between matter and mind, God and world, science and religion, and that by opting for a balance between religion and science one can bring a high level of synergy in one's life.

References

1. Rig Veda, 10.90.1–16.
2. *The Complete Works of Swami Vivekananda*, 9 vols (Calcutta: Advaita Ashrama, 1–8, 1989; 9, 1997), 3.399.
3. Rig Veda, 10.129.6.
4. Shanti mantra of the *Brihadaranyaka Upanishad*.
5. Freeman Dyson, 'Is God in the Lab?', *New York Review of Books*, 45/9 (28 May 1998), 8–10.
6. *Complete Works*, 1.252.
7. *Mundaka Upanishad*, 1.2.3.
8. *Complete Works*, 1.14.