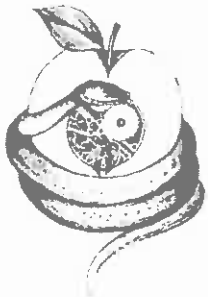
is science a religion?

by Dr. Ram Murty



The question I would like to discuss with you today is whether science is a religion. The famous quotation of Albert Einstein that "Science without religion is lame and religion without science is blind," comes to my mind. Indeed, science, without the religious impulse cannnot go forward and hence lame. Religion, without the scientific attitude is blind, since, it cannot see where it is going.

However, to understand Einstein's quotation, we must understand the meaning of both science and religion. To answer the question, we must examine the meaning of both of these words.

In his lectures on Raja Yoga, the 19th century Indian philosopher, Vivekananda, writes, "Religion, as it is generally taught all over the world, is said to be based upon faith and belief, and in most cases, consists only of different sets of theories, and that is the reason why we find all religions quarrelling with one another. These theories, again, are based upon belief. One man says there is a great Being sitting above the clouds and governing the whole universe and asks me to believe that solely on the authority of his assertion. In the same way, I may have my own ideas, which I am asking others to believe, and if they ask a reason, I cannot give them any. This is why religion and metaphysical philosophy have a bad name nowadays."

Again, in his essay on "Realization", Vivekanada writes humorously, "Suppose a cow were philosophical and had religion. It would have a cow universe and a cow solution of the problem." That is, the cows would assume there is a big cow, a holy cow, ruling the universe. This, more or less, is the present position of all faith-based religion.

Science, on the other hand, has a good name these days. But, I submit that it too is based on faith and belief. The atomic theory is the foundation of physics. No one has

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seen an atom, or a proton or an electron. However, the basis of theoretical physics is that these exist. The vast majority of the human race now believes in these things.

The atomic theory is a working hypothesis, supported by experimental data. It explains the observed phenomenon and makes further predictions that can be tested again by experiment. The power of science is rooted in observation and experiment. Scientific authority has this for its basis. When a scientist makes a claim and this claim is corroborated by other scientists, we assume that the claim has been tested in the crucible of experiment.

There was a time in history when science did not enjoy the reputation that it now enjoys. There was a time when religion enjoyed a greater reputation than science and many scientists had to do their work in secret. The most famous example that comes to mind is that of Galileo. As most of you know, Galileo improved upon the telescope and using the telescope, verified the theories of Kepler and Copernicus regarding planetary orbits. Through his telescope, Galileo discovered new planetary worlds. He verified that the earth moves around the sun and invited others to verify for themselves the assertions that he was making. The Church State did not respond kindly to this because all of this went against biblical teachings. The fact that the earth moves, moreover that it moves around the sun, was heretical. They asked Galileo to recant his statements and when he refused to do so, banned his writings, accused him of heresy, threatened him with torture and put him under house arrest for the rest of his life. All of this took place on the 12th of April, 1633.

A recent historian of science commented that this inquisition of Galileo virtually put an end to the emerging scientific tradition in Italy. With the advent of Newton's Principia in 1687, England and other European nations (excepting Italy) made rapid advances in the new frontiers of science. It is interesting to note that the Church State confiscated Galileo's telescope, not to look at the starry heavens, but to look out into the seas for approaching enemy ships.

The sad part of this episode is the charge of heresy against Galileo. Nothing could have been further from the truth. He was a deeply religious man. In fact, Galileo felt, along with many other scientists that came before him (as well as after him) that he was revealing God's beauty through his discoveries.

In subsequent centuries, the authority of the church in scientific matters was diminished and science gained supremacy. This supremacy was hard won. Many scientists had to sacrifice their lives to this end, Galileo being only one example. It is remarkable that the experimental method of verification took so long in becoming part of the intellectual tradition. Thus began the age of enlightenment. For many scientists and mathematicians, the new science was their religion, in the sense that we understand the word today.

For many scientists, mathematical law became God. When the scientist explores the universe and finds the hidden structure

and mathematical law, he can only marvel at the mystery, the beauty of the patterns and the inherent logical consistency. This sentiment can be traced back to Plato, when he wrote "God always geometrizes." This feeling traveled over the centuries and we find it echoed in Spinoza's writings, "God and the universal laws of structure are one and the same reality." In recent times, this idea is again repeated in the writings of Bertrand Russell who writes, "Mathematics, rightly viewed, possesses not only truth but supreme beauty – a beauty cold and austere, like that of sculpture, without appeal to any part of our weaker nature, without the gorgeous trappings of painting or music, yet sublimely pure, and capable of stern perfection such as only the greatest art can show."

Shortly after Bertrand Russell and Alfred North Whitehead set out to write their magnum opus of mathematical logic known as the Principia Mathematica, a mathematician by the name of Kurt Godel began his work of examining the foundations of mathematical logic. He asked himself the basic question: what is meant by mathematical proof? Mathematics is based on a set of axioms, and by a mathematical proof is meant a sequence of logical consequences using these axioms ultimately leading to the proposition to be deduced. Godel's famous incompleteness theorem is that no matter what set of axioms you begin with, there will always be propositions that can be neither proved nor disproved using that axiom system. Not only that, a celebrated theorem of Alan Turing shows that there is no way of predicting before hand the entirety of such propositions. The "stern perfection" of mathematics that Bertrand Russell was seeking is not there. What may be termed as "mathematical fundamentalism" was shattered by Godel's theorem.

Returning to our point, we must guard ourselves against scientific fundamentalism just as we guard ourselves against religious fundamentalism. In this context, it is worth noting that as early as 1900, Vivekananda wrote in his essay 'Hints on Practical Spirituality,' "I must ask you to bear in mind that as there is religious superstition, so also there is superstition in the matter of science [...]As soon as a great scientist's name, like Darwin or Huxley, is cited, we follow blindly. It is the fashion of the day. Ninety-nine percent of what we call scientific knowledge is mere theory. [...] True science asks us to be cautious. Just as we should be careful with the priests, so we should be with the scientists. Begin with disbelief. Analyze, test, prove everything and then take it. Some of the most current beliefs of modern science have not been proved. Even in such a science as mathematics, the vast majority of its theories are only working hypotheses. With the advent of greater knowledge, they will be thrown away."

The most horrible examples of scientific tyranny are the so-called eugenic theories of intelligence that preceded both of the world wars.

Thus, we must proceed with caution. Just because an individual claims to be a scientist we cannot take it for granted that they always adopt the scientific attitude. There are historical cases of great scientists who were initially persecuted by other scientists and they had to suffer many hardships before their theories and findings were accepted. There were some who, unable to bear the persecution, were driven to suicide.

The words 'science' and 'religion' can be better understood if we break them down

to their etymological roots. The word 'religion' is derived from the Latin word, 'religio' which means 'that which unites', 'that which brings together.' The word 'science' is derived from the Latin word 'sciere', which means 'to know.' However, one can trace this back even further to the word 'scindere' which means 'to cut.' The origins of 'scindere' can be traced back to the Greek word 'schizein' meaning 'to split' and this in turn can be traced back to the Sanskrit word 'chinatti' meaning 'he splits.' Thus, the basic method of science is 'to cut,' 'to break apart,' 'to analyze'. The Latin roots of the word 'scissors' and 'science' are the same. Therefore, science can be viewed as analytic in its approach whereas religion can be viewed as 'synthesis' in that it tries to bring together a unification in our viewpoint. By going to the etymological roots of the words 'science' and 'religion', we arrive at the notion of 'analysis' and 'synthesis' as their respective meanings.

To understand the world we live in, as well as the world within our mind, we need both analysis and synthesis. Knowledge involves a simultaneous perception: we must view the unity as well as its component parts, both at the same time.

Coming back to our original question of whether science is a religion, we see that the answer is 'no' from a purely etymological perspective. Science is analysis and religion is synthesis and so they are not the same. From this linguistic perspective, science and religion are complementary approaches to the understanding of the world. However, the scientist is aware of the synthetic nature of his investigations.

On the other hand, the public perception of science and religion is not from this vantage point. Though the answer from the etymological perspective is clear and the answer is 'no', from the perspective of the scientist, the answer is 'yes.' From the general perspective, the answer is not clear.

If by religion, we understand a force which "brings together" or "that which unifies," we find science meets this criterion both in its relation to its discipline as well as those who engage in science. Science is a search for truth, both in the internal world of the mind and the external world of the physical universe. Its basic method is empirical and experimental. Using mathematical theories, it seeks to explain external phenomenon, first by studying its component parts as accurately as it can, and then by unifying it under a single mathematical principle. From this position, science is very much a religion.

It is a religion from the social dimension as well. In its endeavor to understand, science has no national boundaries. It is international. In its passionate search for truth and understanding, it recognizes no race, no nation, no particular individual or individuals who have a monopoly on truth.

The recent CERN experiment involving high particle accelerator brought together scientists from a 150 nations. Great minds from diverse countries put their knowledge together in a common scientific endeavor. This has been the inherent virtue of science from the beginning.

Looking at the political history of the world, we see that religions, on the other hand, have often bought discord. By identifying religions with certain races and geographical regions, humanity was unable to absorb the synthetic aspect of true religion. In fact, it is oxymoronic to refer to the 'Christian religion' or 'the Islamic religion'

or the 'Hindu religion.' It is a contradiction in terms, as Indian philosophy (more precisely, Vedanta philosophy) emphasized centuries ago. "Ekam sat viprah bahudah vadanti." That which exists is One; sages express it variously. This verse from the Rig Veda has embodied the spirit of Vedanta from time immemorial.

The source of religious conflict is an absence of the scientific spirit. Vivekananda recognized this defect and tried to bring the scientific attitude into religion. When we enter the temple of religion, we need not check reason at the gate, as many fundamentalist religions require. True religion asks one not to abandon reason but to refine reason, to push reason as far as it can go. In Chapter 7 of his book, "Raja Yoga," Vivekananda writes, "We must take up the study of the superconscious state just as any other science. On reason we must have our foundation, we must follow reason as far as it leads, and when reason fails, reason itself will show us the way to the highest plane."

Returning to our original question: is science a religion, we see that the answer is now yes and no. Religion, viewed from a scientific perspective refers to a search for truth within ourselves. If we discipline our mind and take it to higher levels, we will find truth and ultimate self-knowledge. Science, in its common usage, has only the domain of the external world for its field of investigation. Religion, from time immemorial, has emphasized the internal universe of mind for its inquiry, especially as expressed in Raja Yoga. Reason, as embodied in the scientific spirit, is the instrument. If faithfully used, reason will take us to the higher realms of the mind.

We often forget that self-knowledge and self-realization must be preceded by self-improvement and self-discipline. The spiritual texts of all religious traditions are manuals for this science. Sri Ramakrishna spoke jokingly about the almanac and the forecast of rain that you will find in it. But however much you squeeze the almanac, you will not get a drop of rain. In the same way, the Bibles, the Korans, the Gitas and so forth, are merely manuals. They are manuals for self-improvement and introspection.

It is said that the greatest discovery of science is science itself. What is meant here is the scientific method of observation and experiment. Vedanta teaches that the same method must be applied in the realm of religion. Vivekananda puts it in a comical way by saying that if you go into a room and cry "Astronomy! Astronomy!" astronomy will not come to you. You must take a telescope and make careful observations and out of that will come a knowledge of astronomy. The same applies to the realm of religion. It is a matter of realization. This realization can come if we reflect, introspect, admit our shortcomings, and take steps to improve ourselves. Self-discipline and self-improvement form the basis of the science of human possibilities.

Human evolution is one of progression. As we advance in our knowledge, we must modify the way we look at the world and the way we look at ourselves. In the past, certain perspectives or paradigms were valid. They were deposed with the advent of the scientific age. In times to come, science too will evolve into something higher and I believe we are converging to that end. This is the essential spirit of Vedanta. Just as science does not refer to a particular book or a particular nation, Vedanta does not refer to a particular book or a particular nation. It

refers to the human thirst for knowledge, to understand, to unify and bring together all of humanity and transcend our limitations, our sense of finiteness.

There is a famous story about circus elephants. If you go to a circus, you will see that the elephants are tied with a rope to a small stake thrust in the ground. Given the weight and strength of the elephant, it can easily pull itself away, stake and all, but it doesn't do so. Why not? It seems all circus elephants are acquired shortly after their birth and when the elephants are young, they are tied to the ground by such an arrangement. When the elephant tries to tear itself away, it cannot do so because the stake is planted very firmly in the ground. After attempting to tear itself away, it gives up. The idea is planted in its memory that it cannot pull away. It grows up with the idea and never makes the attempt again.

In a similar way, we grow up with certain preconceived sense of limitations. We must examine to see what ropes of conditionings are keeping us down. Vedanta says there is an infinite dimension to our personality. We must awake to that dimension. We forget that self-realization is preceded by self-discipline and self-improvement. That is the message of Vedanta.

In this endeavor, we can use any wholesome system that will help us in our self-discipline. However, we must be wary of being trapped by a system.

There is a profound story about the devil and his friend walking along when they happen to see a man picking up something from the ground. The friend asks the devil, "What did that man pick up?" to which the devil replies, "That is a piece of truth." "Isn't that bad for you?" asks the friend. "Not at all," retorts the devil, "I will help him systematize that truth and make a religion out of it."

We must remember that all systems of thought, all disciplines of knowledge are just that, convenient partitions we have made to organize the tangled, mangled jungle of knowledge and experience. As such, all systems are not contradictory; they are complementary. If we remember this, we can protect ourselves from the trappings alluded to above in the allegorical story.

In his essay 'Maya and Illusion,' Vivekananda writes, "All religions are more or less attempts to get beyond nature – the crudest or the most developed, expressed through mythology or symbology, stories of gods, angels or demons, or through stories of saints or seers, great men or prophets, or through the abstractions of philosophy (to which we may add all scientific theories) – all have that one object, all are trying to get beyond these limitations." Through self-discipline and introspection, we can go beyond these limitations.

To conclude our discourse, we see that science is a religion and religion is a science. The human being needs both, the scientific attitude of analysis and the religious feeling of synthesis. The human mind cannot be enclosed by scientific theories or religious dogmas. We must transcend both.

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