

# SCIENCE AND CULTURE

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EDITORIAL

## FAITH FATHOMS



In today's world faith and belief are gradually becoming a discreditable quality of anyone's personal attributes. Our life revolves around belief and faith. In fact our life starts with faith. We all know our fathers through our mothers. Faith is the basic tenets of life. It may sound surprising but it is true that science, religion

including political affiliation depend on faith.

Faith in religion to most of us is essentially hereditary. I was born in a Hindu family and so I am a Hindu, probably without even knowing what Hinduism means. The same is true for Christians and Muslims. This is overtly true in most of the cases for all religions. Religion is intimately connected with the life of a man from birth till death with some rare exceptions. It would perhaps be not an exaggeration to say that religion to most of us is nothing but observance of some rules and practices. We follow the practices and rituals of the faith that we belong to. Does religion really matter to us? How many of us go deep into it to understand the philosophy and doctrines of each religion and decide which religion to follow? History reveals that not too many

people switched from one religion to another on the basis of understanding of the philosophy of the religion. Conversion from one religion to another depends not necessarily on the understanding of the philosophy or doctrines of a particular religion but occurs more commonly out of frustration such as improper treatment received in a community of a particular faith or sometimes to gain some advantage or could even occasionally be from threat or coercion.

Faith prevails in politics also. What is commonly seen is that children of a family usually follow the same political belief that as that of their parents or that of an elderly relative in the family. In a sense, political belief starts growing in young minds based on faith. Let me cite here an interesting (true) story as has been narrated by Amartya

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Sen in his essay *The Play's the thing*, which he heard from his late ex-wife Eva Colorni. The story concerns a political recruiter from the Fascist Party trying to persuade a rural socialist that he should join the Fascist Party instead. "How can I", said the rural socialist, "join the Fascist Party? My father was a socialist. My grandfather was a socialist. I can not really join the Fascist

Party." The Fascist recruiter is exasperated by such a silly argument devoid of any political logic. "What kind of an argument is this?" he asks. "What would you have done, if your father had been, say, a murderer and your grandfather had been a murderer too? What would you

have done then?”. “Ah then”, said the rural socialist, “then of course, I would have joined the Fascist Party”. The story reveals that change over to another political line or accepting another political line after growing up with an orthodox belief is not an easy job. The above story also subtly hints at an undermining of the party of tyranny.

What about science? What we, the common people, call as faith, scientists call it axiom. Science begins with axioms. Axioms cannot be proven but can be verified by an experiment or demonstration. The universal law of gravitation, for example,

can not be proved but it has been found to be true to explain many of the natural phenomena. Some physical laws are imprinted in our minds so much so that it is hard to imagine that heat will flow tomorrow morning from cold to hot object. So many of us, while doing experiments, have discarded data, which appeared ‘not correct’, without any proper explanation to reject. According to Nobel Laureate physicist Charles Townes who invented the maser and was the co-

inventor of laser, “Science, like religion, requires faith. We believe that the laws of physics are reliable—that’s a kind of faith. We create experiments that can test and verify these laws”. Higgs boson, in recent times, is one of the best examples where the large hadron collider was built collectively to verify the belief of its existence by a group of scientists.

Faith in religion is a subjective reality which can not be verified whereas faith in science is an objective reality. Political belief falls in between. The political doctrines can be verified to a limited extent in the sense that their validity is more prone to failure compared to scientific laws. Scientific axioms found to be correct remain correct over time and space, which can not be said of political doctrines. Validity of political doctrines depend on many external situations. Communism in spite of its logically decent doctrines failed in experimentation. A time may come when people will start believing again and show faith in communism.

There is nothing wrong in having faith or belief in something as long as someone is not rigid and shows patience in hearing or understanding other’s arguments. In fact belief or faith helps scientists to start with and make progress in checking the correctness of their faith. We have to learn to accept inconsistencies in science, religion and politics. Charles Townes moved a step further and said that revelation happens in science too, which he called ‘a flash of genius, a new creation’. In his own words, “because we don’t know does not mean ‘it can’t be’, it is better to say ‘because we don’t know, we don’t know’”.

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Revelation, which is akin to intuition, is what sages had in interpreting many mysteries of matter which have been found to be true by modern science in later years. Such an intuitive scientist in the modern era was Swami Vivekananda. His concept on unification of science and Vedanta revealed to him that the four parameters space, time, matter and energy are interrelated and interdependent. He persuaded Nicola Tesla, a

famous physicist, to formulate the necessary theory related to energy and matter and their inter-convertibility. Swamiji was hopeful that Tesla will be able to prove that matter is simply the potential energy. Swami Vivekananda in a letter to an English friend wrote, “Mr. Tesla thinks he can demonstrate mathematically that forces and matter are reducible to potential energy. I am to go and see him next week to get this new mathematical demonstration”.

The mathematical proof of the principle of matter energy relationship which Swamiji was looking for came after three years of his death when Albert Einstein published his paper on relativity. Einstein himself had acknowledged the contribution of Swami Vivekananda by stating that “there is one *Kananda* (as the western papers often referred to Swamiji) who predicted that energy and matter are interchangeable.” As was noted by T.G.K. Murthy in his book *Swami Vivekananda An Intuitive Scientist* “so it is not hyperbolic to say that Swamiji had

laid the foundations of the theory of relativity, a major paradigm shift in thought process in human history”.

Intuition is said to be different from instinct, reasons and intellect. While instinct is a naturally born tendency found in all living creatures including man, reason is a faculty exhibited only by human beings. Intuition comes to human beings living at a higher plane. Instinct dictates what is right within its own realm, intuition is distinct cognition of truth in all things and reason is the balance between instinct and intuition.

Intuition comes only to those who are pure in mind and thought. Vedic *rishis* enunciated truth of nature by sheer intuition which remained qualitative and subjective until science confirmed it. This was possible only because of their purity of mind and thought. Here is a mind boggling example. A fourteenth century Indian scholar Sayana while

commenting on a hymn of *Rig Veda*, probably the most ancient scripture of India, said, “With deep respect, I bow to the Sun, which travels 2202 *yojna* in half a *nimesha*”. A *yojana* is defined as about nine miles and a *nimesha* is 16/75 seconds. Using a very elementary knowledge of arithmetic one arrives at a number 1,85,794 miles per second which is close to the accepted value of 1,86,000 miles per second as the velocity of light. It makes us ponder how a scholar who died in 1387 AD could predict the velocity of light with such a precision. Readers may think of it as an act of intuition or may ignore it as a wild guess. However, I will end this writing with a quotation from the greatest scientist of modern science—Albert Einstein. He said, “The intuitive mind is a sacred gift and rationalism a faithful servant. We have created a society that honours the servant and has forgotten the gift.” □

**S.C. Roy**