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Guest Editorial

SUPERSTITION VS SCIENCE

More sinned against than sinning

There is a widespread notion among the educated in India, distinguished scientists included, that to be superstitious is "not to be guided by cerebral considerations" and that there is something about cultures in which superstition abounds that impedes the march of science. Is there evidence that Superstition and Science are incompatible with each other?

There are two aspects to the problem: a. the motives of those who promote a particular superstitious belief despite informed opinion to the contrary and b. the *inherent* cultural tendency to hold on to the belief in disregard of evidence against it. The former is a straight forward problem of enforcement of criminal law. But the second warrants more critical examination.

Firstly, there are some tentative statements to be made about the origins of superstition. Carveth Read in the book "Man and His Superstitions" surmised that one class of superstitions may have arisen from the primitive man's need for predictive sign indication event of importance to him. "The savage who depends for his life upon a knowledge of signs, driven by anxiety to observe them and unable to distinguish coincidence from causation should imagine himself to have discovered many more signs than are comprised in the order of nature." The anxiety might result in dependence on coincidental signs, thus making way for superstitions. But note that essentially it is the same process that hastens perception of *true* causation between a valid sign and an useful event. The behaviourist B.F. Skinner postulated that organisms learn useful behaviour that is followed by rewards of value to their survival and propagation. But the interesting fact is that the number of times the reward needs to be contingent on the behaviour before it is learnt varies. In highly evolved animals such as primates and man, and when the value of the reward is high, just one occasion may be sufficient to establish the causal relationship. To quote Skinner,"--- it is only because organisms have reached the point at which a single contingency makes a substantial change (to the likelihood that the behaviour will be acquired) that they are vulnerable to coincidences." Like Read, Skinner went on to conclude,"-- there appears no way of preventing the acquisition of non-advantageous behaviour through accident." In the above quotes, for 'coincidences' and 'non- advantageous behaviour' read superstitions and for 'acquisition', read learning.

The purpose of this essay is certainly not to promote superstition; it is to defend it against charges of misdemeanour that it has not been guilty of, perhaps even given it a little credit for having done some good. It seems from the foregoing that superstition is not the enemy but the mother of reason! Nevertheless, if a culture abounds in superstition, it is well worth examining what selectional advantages were available to the culture in the bargain, so it turned a bind eye to the superstitions that were in the package.

One possibility emerges from the writings of that remarkable psychosocial scientist and spiritual Sri Aurobindo: he pointed out that Science can be viewed as an occultism. This is roughly equivalent to Read's equation of the Scientist with his forerunner the wizard-priest. He wrote. "Science itself is in its own way an occultism; it brings to light the formulas which Nature has hidden and it uses its knowledge to set free operations of her energies which she has not included in her ordinary operations, and to organise and place at the service of man her occult powers and processes, a vast system of physical magic--- " The suggestion here is clearly that to pursue science is to harness the more unusual operations of Nature for the purpose of exploitation by man. He went on to say,"--- there is and can be no other magic than the utilisation of secret truths of being, secret powers and processes of Nature. It may even be found that a supraphysical knowledge is necessary for the completion of physical knowledge----".

This extraordinary exposition of the nature of science as a subjective human activity takes much reflection before one can completely absorb its implications. But in simple terms, the argument is some what like this: electricity existed before Faraday, Franklin and Edison- primitive man was surely aware and respected the ferocious beauty of lightning- but it was for the great scientists to have worked out the 'formulas' that enabled them to *harness* the power to light homes and warm them. Similarly, mind has many experiences which come to it almost invariably but rather unusually-sudden inspirations, *deja vus*, unaccountable joy and the like. But it was only in the East that these were systematically explored and 'formulas' to *harness* the powers of the mind were evolved to produce similar and more intense experiences. The corresponding 'technologies' took the form of mystical practices- rituals, mantras, meditation, yoga- whose scientific basis is no longer in doubt, only their scope and expanse. Frits Staal in his commendable volume *Ritual and Mantras* summarizes the work that establishes that they are well-structured and rule- governed. They have a grammar that is generative in the sense that by applying the rules, one can generate procedures which have the properties of admissible rituals even if the procedures cannot actually be carried out. The thousand-year sacrifice *sattra* is an example. *Baudhayana Shrauta Sutra* is considered by Staal as a science of vedic ritual in this sense. Rituals and mantras, according to him through the mediation of '*Mimamsa*', form the foundation of logic and sciences in India unlike in the West, where logic has an altogether different origin.

Herein lies the answer to why superstition has grown in the Indian culture more than in the West. Every science generates its own brand of by products. In 'science-forming' cultures in the Western sense, science fiction arises rather than superstition. We witnessed a few years ago how the American public was taken in by the misinformation regarding spy planes in the '50s and '60s. Both science fiction and superstition have nevertheless a function to perform. *They set goals for their respective parent enterprises.* UFO's stimulate search for extraterrestrial life and time machines interstellar travel. In our brand of science, occult superstitions are the rule and they have the function of defining the process of psychological techniques for new states of consciousness. This is because of the peculiar properties of the parent science of ritual where form is important and meaning is plastic and even metaphorical.

Thus it transpires that Superstition does not interfere with human sciences, native to the Indian mind, any more than science fiction interferes with the natural sciences, native to the Western intellect. Rather, superstition is informative about how the Indian mind is structured, just as visual illusions are informative about the organization of the visual system. As occurrence of illusions does not make the visual system unfit for efficient vision, so superstitions do not indicate a distorted cognitive system but an unusual instantiation of its normal working.

One thing is now clear about the Indian scientist: with his natural obsession for form, he is more interested in the structure of a problem rather than its content: in the words of a generative grammarian, he is more 'syntactically' minded than 'semantically'. This is typical of the approach in human sciences as against in natural sciences, as we have seen. This also explains why he tends not to be thorough about his facts as also why he often tends to derive philosophical tenets from his research too soon, a result of metaphorical thinking. In the common man we have seen that this attitude manifests as superstitions. Two questions arise as corollaries at this point. Firstly, has science in the Western tradition ('Western science') suffered from the same handicap in human sciences ? And secondly, what can be done about Indian practice of the Western sciences, where meaning and content of words and actions are all important?

Let us answer the first question first. We cannot but take note of a startling fact about Western psychology: that *it has not so far given us a technology for creating new states of mind to match the Indian Samadhi, Turiya or the Supermind.* It has by and large remained explanatory of the normal mind and, at best reparative of damaged mental states. This fact matches the lack of creativity of the Indian natural and medical sciences, no matter what one may say in defence of Western Psychology or ancient Indian Physics and Medicine.

Now for the second question. The obvious solution is that the scientist should change his investigative strategy and be more content-oriented. The individual

scientist's reluctance to change his strategy partly comes from the organisation of scientific endeavour in our setting: it tends to be feudalistic and discourages the hard pursuit required of content-oriented research. The point has been often made but only with reference to the logistic inconveniences of such an organization rather than the psychological consequences to the scientist in terms of his approach to a scientific problem.

In conclusion, the bias against Superstition as a basic constitutional defect of the Indian mind, responsible for failure of development of Indian natural sciences, is untenable. It is also untrue that the Indian mind has to be strained and cajoled through puerile science-popularising programmes on the television in order to turn it from Superstition to Science. Most superstition is harmless and is compatible with practice of good science. What is further required then is a change of psychological strategy by the scientist and this calls for a reorganizing of the feudal structure of the science-generating administrative machinery. Perhaps what the self-appointed reformers of the 'superstitious Indian mind' theory have for the basis of their condescension, is the frequency with which science frauds arise in India- herbal petrol, cancer cures, AIDS therapies etc. They attribute the ease with which the perpetrators of fraud succeed in attracting public attention, and at times funds, to the readiness of the superstitious Indian mind to believe anything -even statues of deities drinking up milk. But science is an endeavour where leaders are vastly more important than commoners. It is leaders who have to transform themselves. That the Indian leader has the requisite cultural endowment is beyond the pale of doubt.

P. S. RAO

Department of Physiology,
All India Institute of Medical Sciences,
New Delhi – 110 029