

An Interview with Biman Basu

by **Manoshi Goswami** - Friday, May 08, 2015

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Renowned scientist, science communicator and former editor of “*Science Reporter*” **Biman Basu** is a pioneer working in the field of popularising science and scientific temperament across the country. Deeply committed to popularizing science through print and electronic mass media, Mr. Basu is still very much active on spreading the message of scientific reasoning and thinking among all the sections of the society, so that the menace of superstitions can be erased from India. Few days back, I was privileged to discuss some issues related to superstition and traditional beliefs and scientific temperament with him for an online Assamese magazine – “[Xahitya](http://www.xahitya.org)” (www.xahitya.org) as the guest editor of the December, 2014 issue of the magazine. This discussion, [translated version of which](#) was published in the aforesaid magazine depicts the scientist’s take on reality and necessity of scientific reasoning and temperament in a country like India and also on the menace of superstitions.

I offer my heartfelt gratitude to Mr. Basu for his kind and immediate response as well as to the editorial board of the magazine for their consent and support. – **Manoshi Goswami.**

Sir, on behalf of xahitya.org family; I welcome you to our discussion.

? Thank you.

Sir, you are associated with popularising science across the country through different activities for more than three decades. How did you develop an interest in such works?

? I was interested in science right from my childhood. I used to read lots of popular science books, especially those by eminent authors like Isaac Asimov, Arthur C. Clarke and science fiction stories by H.G. Wells, Jules Verne and others. I started writing popular science quite late, after I joined Hans Raj College in Delhi as a lecturer. I mainly used to write on new developments in science and technology in a popular language for the general reader. I got an opportunity to take up popularising science as a career after I joined the Council of Scientific and Industrial Research as assistant editor of the popular science monthly *Science Reporter* in February 1970.

Being actively associated with science popularising activities, what is your opinion about the status of scientific thinking in the country?

? In my opinion it is really pathetic. A large section of our people is still steeped in superstitions and

obscurantist beliefs and fails to look at the world in a rational way. Religious dogmas rule over rational thought. That is why we have so many followers of the so-call 'babas' and 'godmen' many of whom have turned out to be frauds. But people still believe them. This is very unfortunate.

There have always been some conflicts between science, religion and traditions, if we talk about rational analysis of them. What is your view in this regard?

? I believe religion is a purely personal matter. If one believes in God and prays for his or her own mental peace, there is nothing wrong. But if people believe that God will solve their problems, make them rich or cure their illnesses then it is irrational because everything that happens in this world is decided by the forces of nature and acts of humans. Earthquakes, floods and droughts are caused not by divine forces but by natural forces that are explainable and there is no evidence that God can prevent such disasters. Wars and riots are the result of human conflicts. Interestingly, most communal riots are the result of clashes between followers of different religions and their Gods cannot prevent such conflicts that take huge toll of life. In my opinion, God is something most people use as an alibi to do whatever they like – right or wrong – and even kill. I don't see any reason why people should be killed in the name of God, yet it's happening every day. God has no control over such acts. And talking about the omnipotence of God, why do we need human commandoes to protect religious places? Can't God protect himself? God survives only because of blind faith. Belief in God may give mental peace to some, but rational thinking can do a lot of good for the common people.

Are astrology, feng-shui or vastu science? How do you view them?

? None of these can be considered as science simply because they don't follow the scientific method in arriving at a result. Astrology cannot answer simple questions such as why different attributes are ascribed to the planets although today we know that they are made from simple chemical elements and are inanimate objects. There is nothing sacrosanct about the zodiacal constellations or rashis used by astrologers. The astronomical constellations are not real objects. They are creations of the human imagination in an effort to make identification of the stars easier. The stars that 'make up' a constellation as seen from Earth are not located at the same place but are at vastly different distances from Earth and can never 'act' in unison as a 'unit'. Also, astrology does not explain the mode of action of the celestial bodies. The only way the distant planets can influence humans on Earth can be through extremely weak gravitational forces that can never produce selective effects on individuals, as claimed by astrologers.

Feng-shui and vastu both deal with architecture, especially the direction and location of doors, windows, kitchen, bathroom, and so on. Here, too, there is a fundamental flaw. A good architectural design is primarily aimed at making the optimum utilisation of the available space keeping in consideration proper ventilation, natural lighting, etc., which differs widely from location to location. For example, the front of a house on the coast of the sea or lake would always face the sea or lake irrespective of the direction. Most houses on hill stations like Shimla would have bedrooms in the south direction for ample sunlight. It would be utterly illogical and unscientific to build a bedroom facing north even if vastu mandate it.

In any city, buildings in a housing colony always are built face to face; that is, if the front of one house faces east then the one opposite it will face west. All the facilities in the two houses, e.g., bathrooms, kitchen, bedroom, etc., would be oriented in opposite directions. If vastu really worked then people living in the two houses should have opposite conditions – good or bad. The same is true of shops on two sides of a road – shops one side of the road should always have good business while those on the other side may not do so well. In fact, practitioners of vastu are unable explain why, for example, locating the bedroom in a particular corner or side of the house should be better than any other location except by invoking obscurantist concepts like positive energy, etc., which they don't know how to detect or measure. Vastu principles are not backed by any verifiable scientific theory.

But, we always see that many people, who call themselves experts of these practices mix some scientific concepts superficially to establish the reliability of these practices. Many a times, we see also some scientists (!) patronising such activities and ignorant people fall prey to such concepts. Your opinion in this regard?

Unfortunately, it is easy to fool the public in the name of science, as we see daily in the commercial ads on TV. People who don't have basic knowledge of science easily fall prey to such tactics. But many people who have science degrees and are practitioners of science also tend to believe in astrologers or divine power, probably because they suffer from some sort of insecurity in work or at home. We have seen the head of our space organisation visit a temple with a replica of a rocket to seek blessings. The question remains, if there is a technical flaw in the rocket, can any divine power rectify it to assure the success of the launch? In my opinion, believing in obscurantist practices is a personal decision. If an educated individual prefers to ignore rational logic and goes for these practices, not much can be done.

Superstition is a serious issue in our society. Many a times, we see that in extreme cases, superstitious beliefs lead to death of people. What according to you should be done in eradicating such superstitions and beliefs?

? Most of the myths and superstitious beliefs cannot be explained by rational arguments. In general, there is a general propensity of people to have blind faith in myths and superstitions, mainly because of a total lack of scientific temper.

Blind faith in superstitions is so strong that some people would make us believe that cats can decide our fate. Otherwise why would anyone be scared to see a black cat crossing the road? It is common knowledge that few drivers would dare to drive their vehicle and continue on their journey after seeing see a black cat crossing the road, but they cannot explain why they do it. Again, here too, there is no rational explanation and only unfounded fear and a lack of scientific temper prevents people from questioning such baseless myths.

Another common myth is that if someone sneezes before setting out on a journey or starting some work, there will be some obstacle coming in the way. It is usually advised to stop for some time after someone sneezes. Here also there is no scientific basis for such a belief. Normally, people sneeze when an irritant enters the nasal cavity or, sometimes, on sudden exposure to bright light; it has nothing to do with the success or failure of any human activity.

In some parts of India, little babies aged one to two years are thrown from roof top to a spread bedsheet below as part of a ritual that is believed to ensure good health and prosperity for their families. It is said that, with high child mortality rates, especially in India's rural areas, many people resort to such rituals which they believe can ensure their children's health, not realising that it is a highly dangerous practice that can endanger the life of the child.

There are many superstitions and taboos associated with solar and lunar eclipses which have no scientific basis, but people believe in them out of fear of harm.

The only way to eradicate people's belief in superstitions is through education. But unfortunately in India the education system makes no effort in this direction. If children are properly told at an early age why superstitions are unscientific and why they should not believe in them, this menace can be eradicated in course of time.

Is there any proper steps taken by government to eradicate or control menaces of superstitions like witch hunting? What is your level of satisfaction in this regard?

? I can say, to a limited extent through the efforts of National Council for Science and Technology Communication, which funds government organisations and NGOs engaged in spreading scientific awareness through workshops and training camps. But the impact of these efforts is very limited in view of the much larger exposure of obscurantist practices like astrology, etc., through the mass media, which entice viewers to go for certain kavach or yantras to solve their problems and become rich. Unfortunately, the government has taken no steps to stop telecast or publicity of such nonsense. Personally I feel irritated when I see such utter falsehood propagated on TV, but can't do anything.

You have also contributed immensely in the field of science popularisation as an editor of Science Reporter for more than three decades. How do you analyse the role of mass media in India in eradicating superstitious believes or pseudoscience? Do you think our media is taking a very strong role? Are they playing their role properly?

? Unfortunately, no. Our mass media is more interested in sensationalization of even trivial items rather than publish informative science material. The electronic media, especially TV, are more concerned about their TRP rather than content. Although the electronic media can be the most powerful tool for spreading science and scientific awareness, they are the least utilised in India for that purpose. There is scope more coverage of science and technology in the media that has to be utilised.

What is your expectation from new generation in the context of scientific and rational thinking? Do you foresee any problem in this regard?

? Despite the apathy of the mass media, individual efforts and the efforts of the NCSTC and several

NGOs who are active in spreading the message of science among the masses, a small change in the attitude of the younger generation is visible. Many of today's younger generation do not believe in unscientific things and practices that their parents and grandparents believed in and are more rational in their attitude towards what they see and do. This is certainly encouraging. But to consolidate whatever we have achieved so far it is essential that public display of anything that goes against scientific thinking and promotes obscurantist beliefs through mass media must be stopped forthwith. Unless this is done no amount of effort by science communicators and groups engaged in spreading the message of science can rid this country of dubious beliefs and practices.

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