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EDITORIAL

BRINGING SCIENCE TO THE MASSES

WHILE I am writing this article, some young minds are occupied with learning the art of communicating science to the masses under a training course organised by ISNA. I ponder sometimes about the role played by the mass media and also scientists in bringing science to the masses and feel that the scientific community (which also includes me) owes more to their country. In a country where more than half of the population is illiterate, and deeply immersed in various forms of religious faiths and beliefs, myths and superstitions, it is of utmost importance to instill a scientific temperament and bring in some amount of scientific awareness among the masses. The role of media in this context is extremely vital.

What the media usually does in the name of science communication to the masses (commonly known as 'popular' science)is to present an enormous amount of information compressed in the form of a palpable pellet to be consumed. In the print media, in particular, the tendency is to present as much science information as possible in as short time as possible as if to establish a hegemony over others. This stems from the traditional view of popularization of science as a process of communication whereby scientific information is disseminated to the public at large. Controversial or unconfirmed claims are sometimes published in the media resulting in further confusion in public mind. In recent controversies surrounding mobile phone electromagnetic fields, the measles-mumps-rubella (MMR) vaccine, and genetic modification of foods, the proliferation of scientific information did not resolve dilemmas about evidence. Social surveys indicate that, on the contrary, the public felt very short of guidance about what conclusions to draw. The publication of such results should be accompanied with the detailed results both in favour and in contradiction so that the public can ask questions, interact with other scientists and use their own judgment. In mass media, science should not be placed as a product to be consumed, but as a process to develop scientific temperament so that public can learn to think, to distinguish between right and wrong. Popular science needs to be concerned with the 'everyday', both as an object of research and as the terrain for activity.

Scientists can also play a big role in communicating science to masses. However, what we see in this country is not very encouraging. It is to be understood that science and scientists in this country are primarily supported by public money. Fortunately for the scientists, most of the common people in this country are ignorant about the system of funding and have therefore never questioned scientists about the utilization of this money or what they are paying back to the society in lieu of the investments. In a sense, it is their duty to make science understandable to the common man, to advocate its benefits and utilization in society. It is an unwritten social obligation for scientists to bring down science from the 'scientist's laboratory' to the 'man in the street'. it is not uncommon to find that most scientists in this country are reluctant to spend time even on a professional endeavour, which is not directly related to their career.

In most countries of the world, reputed scientists like Carl Sagan, Leon Lederman, Richard Feynman, Steven Weinberg, Richard Dawkins, Stephen Hawkins, Stephen Jay Gould, are found to be the "popularizers" of science. unfortunately in India, with the rare exception of a scientists like Satyendra Nath Bose, we do not find too many reputed scientists seriously involved in taking science to the door of the common public. One may argue that we live in a scientific community where a popularizer of science does not earn respectability in the scientific community. In fact, the scientific success of a scientist could very well get obscured if one is seriously involved in popularizing science to the masses. This is a global phenomenon as happened in recent times to Carl Sagan, the founding father of effective popularization of science, who was denied membership of the National Science

Academy of the United States. In spite of his very successful scientific career at Harvard, being the Director of Cornell's Laboratory of Planetary Studies, his scientific colleagues complimented him with the disparaging title the "popularizer of science" and refused him membership. The academy appeared to repent and relent the decision two years later, and awarded Sagan its Public Welfare Medal for "distinguished contributions in the aplication of science to public welfare." In reality, his appearances on the "Tonight Show", his "Cosmos" series on Public Television, his books numbering more than twenty on subjects as diverse as 'astronomy' to 'brain' are equally, if not more illuminating that his research contributions. His articles in science magazines found a huge worldwide audience who got their first taste of the wonder and excitenment of scienc,e and even after his death continue to enrich society, by bringing science to doors of the masses, young and old, rich and poor.

In 1985 an ad hoc group set up by the Royal Society published a report entitled 'The Public Understanding of Science' which is the current terminology of 'popular science'. Science pervades our society, it said, and our national prosperity depends upon it. Improving the public understanding of science is not a luxury, it declared, but 'an investment in the future'. Scince and technology have implications for most public policy issues, and some understanding of the underlying science would also help many personal decisions (for example, about diet, hygiene and vaccination). The recommendations in the report included more science in schools, more science in the media, more scientists in management, more information from industry, and more meetings of the Parliamentary Scientific Committee. While the keyword is more, the public understanding of science should not merely be about more knowledge and more information but also the power that goes with it. In effect, what we need is not the popularisation of science but the democratisation of science. ❐

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