

# NATIONAL SYMPOSIUM ON THE ETHICS OF SCIENCE

## A DRAFT NOTE

### 0100 PREAMBLE

The Indian Academy of Social Sciences (ISSA) will hold a **National Symposium on The Ethics of Science**, with both ethics and science construed in a broad sense. The Symposium has the following aims. (1) To highlight the emerging challenges to society arising from new and developing scientific knowledge, products and practices. These are of increasing consequence to society, but their impact and full implications for the overall well being of society may not be readily comprehensible to an average citizen. (2) To explore how to develop a culture of ethics among scientists as a key societal safeguard in the situation where a few experts guide societal choices of new science and technology. (3) To explore ways to eradicate information poverty about new scientific and technological developments among society at large. This is essential to enable all sections of society to derive equal benefits from science. This would also ensure that science and its applications are used to improve the quality of our material, social, and cultural life, with a better understanding of the longer-term implications of new technologies. Finally, this is the only way to combat the disinformation which accompanies the burgeoning influence of ever new technologies in our life and work.

### 0200 OBJECTIVES

1. To conceptualize the quintessential elements of an ethics of science, and their co-evolution with social and cultural values.
2. To explore the interactive influences between socioeconomic ideologies and ethics of science.
3. To explore theories of the ethics of science.
4. To formulate new democratic institutional systems designed to encourage, evaluate, monitor, and regulate the praxis of **ethical science**
5. To explore effective ways to evolve an informed, responsible and responsive citizenry as a bulwark against unethical praxis of science.

## **0300 PERSPECTIVE**

With the passage of time, society evolves new values, norms of behaviour and conduct, followed by their integral expression in its laws. The ethics of a society, which could involve both universal as well as relativistic elements, responds to these changes. Thus, while the ethics of a feudal society differ from the ethics of a capitalist society, some attributes, notably those related to privilege, are, to an extent, common to both. Institutionalized science in India, as yet another example, still retains a strong feudalistic element despite its fairly strong interface with international science.

The praxis of science is inevitably subject to its societal ambiances, even as it strongly influences the progression of society itself. The social status of those who put their labours to science preferentially influences the science produced by that society. Dominant groups controlling science have been known to arbitrarily influence the directions of new scientific advances according to private or group prejudices and interests, and without caring for its wider or longer-term social implications. Science, and prevailing ethical or unethical practices, both, are played out in the public domain, more intensely interactive than ever before. Thus, greater clarity about the nature of their relationship is imperative and a pre-requisite for designing productive approaches towards sustaining a wholesome nexus between science and society. This is the rationale behind the holding of this symposium

## **0400 THE CONTEXT**

Our society is increasingly driven by new scientific developments and their ever hastened, and therefore often uncritical, applications. Genetically modified organisms, for example, are rapidly invading our ecological and nutritional space even as their potential long-term risks to human health and natural eco-systems remain to be critically examined. Gadgets like the TV, computer, cellphones, cars, even processed food are thus ubiquitous among the middle class today, and often constitute the cherished aspirations of the yet unprivileged. An average citizen spends a good part of the day unquestioningly engaging with one or the other of these.

But, even for these widely accepted technologies some of the negative consequences have already reached threatening proportions. Urban pollution, arising from an exponentially increasing use of cars, eventually forced enactments of new regulatory laws, but environmental degradation nevertheless continues. This adversely impacts the ecosystem, and possibly also the earth's climate system. This may have potentially grievous consequences to the stability of agro-meteorological zones in a country like India where rain-fed agriculture is still the mainstay. Insufficient attention was paid to inventing and adopting energy-efficient models of development.

Do our decision-makers arrive at informed decisions while acquiring a new technology or promoting an existing one? Do they take a balanced decision in deciding what kind of science needs to be promoted to address the specific problems of society? These problems might include an effective treatment of region-specific endemic diseases, or design of wholesome, conservative waste disposal systems, or availability of safe drinking water to all. Scientists, today, are increasingly under pressure to produce only the sort of science that can be quickly converted into profitable technology, which is often insidiously hyped as contributing to human welfare. However, it is unclear whether every car added to Delhi roads increases the sum total of human happiness. What it unquestionably does is to increase the sum total of profits for the various associated big businesses. Thus, the number of cars continues to increase inexorably while cleaner methods of transport stay neglected. And, all the while, a debate on the longer-term consequences languishes on the margins.

Likewise, the Cyber laws, necessitated by the increasing use of computers and the Internet to facilitate on-line business transactions are invasive and potentially disruptive of elementary civil liberties. Yet, most people are unaware of all the civil liberties they lose by the simple act of purchasing a computer and connecting to the Internet. The situation for more controversial technologies, such as stem-cell therapy, are even more complex. Even the lawmakers are not clear about what laws ought to be used to regulate these technologies. They rely on “experts” who may unwittingly or otherwise, push in a number of questionable features into these laws, as has happened with the Cyber laws.

There is no question that society needs new science and its innovative applications for a better life for all its citizens. Equally, it needs to ensure transparency in the decision-making process. This requires that “experts” whose opinion is sought, are knowledgeable, critical and honest enough to offer a rigorously considered opinion. Society needs social instruments immunized from overbearing official influences, which would make it possible to question and evaluate the opinions offered, to debate them publicly, and to demand and expect uncompromising accountability. These are some of the topics that the symposium proposes to explore. The context is the ubiquitous pattern common to the processes of technology-infusion into society, often without being authentically examined, and without due regard to their longer-term consequences. When these longer-term consequences become manifest, they are, then, belatedly sought to be controlled, introducing even newer problems.

Technologies are often supported by large private enterprises. Since such enterprises are driven by short-term profit, they rarely attempt to comprehensively design or exhaustively analyze emerging technologies. Instead, whatever technologies emerge are hyped as being acquired for the greater good of humanity or the nation, though little may be known about their longer-term fallout: whether of carbon pollution, radioactivity, drug-resistant diseases, nano-pollution or genetic waste.

Moreover, power and privilege are used to exploit the widespread illiteracy of the average citizenry to road-roll an inadequately researched technological product or system, by making use of disproportionately influential official positions often feeding on an uncritical media.

## **The Quality of “Experts” and Science Managers**

Acquisition of a new technology is inevitably guided by the opinion of “experts” (produced behind closed doors) and not by any publicly-debated analysis of the costs and benefits to society. Witness the relentless bureaucratic efforts to dilute the provisions of the Right to Information Act.

Most people are scientifically illiterate, and unable to judge the validity of the opinion offered by these “experts”, often obfuscated by public airing of casually offered contrary opinions, or an unsound piece of statistical inference used to justify a new drug. The role of socially-responsive and honest scientists, thus acquires a special significance in such societies. Society ought to get as much clarity on contentious issues as possible, by calling upon imaginative and rigorous minded thinkers to resolve perplexing issues.

But, in India, a science manager is typically confounded with a super scientist, particularly endowed with knowledge and wisdom. To the contrary, it is a matter of commonsense that those occupying administrative positions are too involved in mundane administrative matters to have time for a creative and contemplative approach to societal issues. Furthermore, they are rarely so bold as to scrutinize the direction, pace and ethics of the unwieldy institutions they preside over, and end up spraying much untruth about the quality of scientific accomplishments at the numerous ceremonial occasions they appear to avidly dominate.

Administrative positions, therefore, tend to correlate inversely with the scientific knowledge and analytical capacity of the individual occupying them. In league with politicians, this leads to a mutually comfortable situation of uncritical co-existence, while trivializing issues of significant social priorities and well-being. Just because science managers in India are often chosen more for their visibility or political initiatives, than for their knowledge and competence, there are several oft-recounted instances of top science managers publicly demonstrating their ignorance of even elementary science, which any school child would be expected to know. But far from being questioned or corrected, they get widely aired by the media and admired by a large group of sycophants.

This is of course a piece of the sociology of science in post-independent India, which has not been very successful in shedding a feudal past. But, most regrettably, this has resulted in depriving the nation of the services of the most creative and the talented in academic and scientific institutions. Witness the

current unedifying state of Indian scientific and educational institutions (Desiraju, *Economic and Political Weekly*, May, 2008).

The recent case of a top science administrator illustrates some of the dilemmas involved. On the one hand, there is the fact of his numerous foreign trips funded by a foreign organization which probably spent more money on him than the salary paid to him by the government of India. On the other, there is his “expert” opinion which was so closely aligned to that of the same foreign organization, that it turned out to have been directly plagiarized. (It was on such “expert” opinion that our laws related to intellectual property were to be founded.)

Regrettably, unethical scientific practices in India, even in the cases where they have been indubitably proved, are treated by the scientific establishments with indulgence. In most such cases of proven misconduct, the errant scientists have been retained instead of being ostracized out of the scientific enterprise, thereby providing much encouragement to their growing tribe. While Indian society may tolerate corruption in various quarters, in the circumstance of a scientifically illiterate society guided by the decisions of a few experts, this is a very dangerous situation which needs to be corrected on an urgent basis. This can only be done by infusing a culture of ethics.

There are other complex issues involved. What should be done in cases which have international ramifications? Institutional mechanisms here suppose bilateral or multilateral cooperation and agreement on ethical issues. However, given the involvement of our own top scientific administrators in unethical and ethically suspect actions, they often lack the credibility or the desire to do anything even in serious cases here. This can be a potential drain on the national investment in R&D, if the fruits can so easily be unethically smuggled abroad, taking advantage of the absence of an institutional mechanism to rectify matters.

## **Cultural dimension**

Tied with the issue of unedifying science management in the country is the neglected cultural dimension. The various new laws that are drafted to address new technological issues are most often just replicas of similar laws in the West. These are rarely assessed for their potential cultural impact. Such assessment, considered necessary today even for a web page, is not considered necessary for our laws, and was not carried out in the case of the recent cyber laws, for instance.

This culturally-insensitive approach to legislation, in matters related to science and technology, could prove grievous to society when complex matters such as genetic cloning, call for legislative guidance. The bureaucratic culture of mimesis is unsuited for dealing with innovations, and may create a variety of

subtle and non-so-subtle cultural problems. Unhappily, we have simply no fora where issues concerning the interaction of science and culture can be articulated, developed, and discussed. But it is clear that laws regulating technology that are not crafted with vision, foresight and planning to streamline with cultural specificities, eventually lead society through a painful process of maladjustment and much degradation of its cherished values.

In summary, society relies increasingly on science and technology. Every new technology has associated with it a complex chain of both intended and unintended consequences. The social value of these technologies, often driven by big business unconcerned with their longer-term consequences, is typically assessed in a scientifically illiterate society by “experts” who may be neither knowledgeable nor honest. Something must be done to ensure at least the latter, possibly by setting up fora to document and monitor ethical norms in scientific research and management. There are precious few such in India, and those that there are, function in a non-transparent way and involve persons with dubious backgrounds who might merely be acting as “fixers”. Given the difficulty of proving ethical violations, this situation provides a free hand for social exploitation of the sort which is disadvantageous to people at large, and puts future generations to serious risk.

The Symposium will provide an opportunity to explore a some of the critical issues of ethics that impinge on the relationship between science and society, and the need to sensitize the respective communities in the physical, social and legal sciences to help create an ambience of ethical science in the country.