

# CURRENT SCIENCE

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GUEST EDITORIAL

## Ethics and Indian science

On the international scene, the practice of scientific ethics has evolved rapidly in the last couple of decades. Today, one sees a sustained and proactive effort to inform, advise, guide and caution members of the academic fraternity, coupled with a credible investigation and redressal mechanism that operates whenever misconduct is suspected. For our research to command respect in the world outside, we Indian scientists must display a similar degree of evolution in our thinking and actions. While we all agree with the principle that the academic workplace has to be an ethically strong environment, we have been somewhat complacent about its implementation. It is increasingly urgent for us to take this step in a forthright and professional manner.

The global evolution towards proactive monitoring of ethics has many causes, one of which is the increased possibility for committing fraud. After all, the internet is an invaluable resource for an intending plagiarist. The flip side, of course, is that it also provides the resources to detect plagiarism through the use of software. Other reasons for this evolution include a rapid increase in the number of academic researchers, journals and publications, as well as an era of heightened expectations. These have led to intense competition for resources, fame and money, and in the same proportion, to more frequent malpractice. Finally, there has been a welcome improvement in the standards of what constitutes fairness in academia. Less than a century ago, women were banned outright from faculty positions in many universities around the world, but today any sort of discrimination against women is rightly forbidden in several countries.

A search for 'ethics' on the website of world-renowned universities such as Princeton<sup>1</sup>, Oxford, Ecole Normale Supérieure, Tokyo University, or just any reputed university in a developed country, readily brings up a detailed ethics document. This sets out what practices the institution considers to be ethical and unethical, and prescribes guidelines to be followed by faculty, staff and students. Some of the issues covered in such documents are laboratory safety, plagiarism and publication ethics, management of data, sharing of facilities, human and animal ethics, conflict of interest and the ethics of science management. Procedures for redressing the complaints as

well as appropriate punitive actions are carefully spelt out.

In contrast, web searches at Indian science institutions and universities reveal a somewhat disappointing scenario, with the vast majority of institutions providing no ethical guidelines at all (human/animal ethics is an exception, as explained below). A few institutions offer rules and regulations addressed exclusively to students that include brief warnings about plagiarism and related matters. Only a tiny fraction has formulated comprehensive guidelines covering diverse areas such as those listed above. Similarly, most of the various science, engineering and medical academies in India do not seem to have a comprehensive ethics document.

Mention must be made here of a voluntary organization in India called the Society for Scientific Values<sup>2</sup>, committed to 'promote integrity, objectivity and ethical values in the pursuit of science'. This is a welcome initiative; but because it has no official mandate, it cannot substitute for the responsibility of institutions where scientists work, or of the academies which are quasi-official bodies.

One area where Indian institutions have shown considerable diligence is in the detection of plagiarism and duplication in essays, term papers and theses produced by students. Nowadays, in a number of institutions these documents are run through specialized software that scans them for evidence of malpractice, and this is very much to our credit. While the monitoring of student output is important, ethical requirements cannot be addressed solely to one segment of the community; rather they must be applied at all levels. In particular, the senior-most office-bearers in every institute, such as Deans, Directors and Vice-Chancellors, have a special responsibility to maintain a high standard of ethics in their own functioning. In developed countries this concept tends to be obvious, but in India, it is often met with a certain hesitation and discomfort. The unfortunate truth is that there have been notable cases of academically unethical practices at high levels in India, including guest authorship and plagiarism, as well as conflicts of interest involving friends, relatives, funding agencies and private companies. These violations, more than an occasional slipshod act of plagiarism by a young student, severely

damage the ethical environment and thereby the credibility of Indian science.

There is a specific area of science for which ethical guidelines are commonly found in India, namely biomedical research, and testing on humans and animals. Presumably, this area faces several sensitive, ethical questions due to the nature of the subjects involved. The codification of such guidelines surely constitutes a commendable initiative by the relevant community and one must also commend the Government of India which has, for example, set up the Committee for the Purpose of Control and Supervision of Experiments on Animals under the Ministry of Environment, Forest and Climate Change and hosts a detailed website<sup>3</sup>. However, being specific to one area of research, such initiatives do not address the need for a more wide-ranging set of guidelines covering all aspects of academic ethics.

Some of our institutions appear to confuse ethical guidelines with 'codes of conduct' or 'honour codes'. These differ both in style and substance: ethical guidelines are objective, rationally presented and widely applicable, while codes of conduct in India tend – in the best of cases – to preach and sermonize (in the worst cases they are fairly draconian!) to students and sometimes faculty. For example, the 'code of ethics' of a leading Indian university advises its faculty to 'Be aware of social problems and take part in such activities as would be conducive to the progress of society and hence the country as a whole'. This sort of content-free advice does little to advance the cause of academic ethics. For comparison, it is worth examining – just to pick one example – the ethics document of the University of North Carolina, USA<sup>4</sup>, which is divided into the following sections: some causes of academic misconduct, violations and sanctions, ethical issues in research, ethics in scholarship, ethics in teaching, university policies affecting graduate student research, and finally a bibliography containing no less than 16 technical references.

Thus a change is urgently required in our country. While each society has different sources for its ethical principles, rooted in the intermingled strands of history, religion, philosophy and cultural practice, the very claim that science is universal commits scientists to accept principles that are global in nature and appropriate for modern science. Such principles must, first and foremost, recognize and highlight the goals of science itself, and address themselves to how these goals can be furthered

with honesty and integrity. They should communicate the rationale of academic ethics in a spirit of openness and equality, address specific issues with due attention to detail, and focus on actions rather than individuals. A clear distinction must be made between practices merely encouraged or deprecated, and those that are categorically required or forbidden. Minimal and explicit lines must be drawn to demarcate the latter. Procedures for the fair and impartial investigation of violations must be laid down and followed. While necessarily it is for the head of an institution to take the final decision following an ethics investigation, she/he should remain independent of the investigating committee and not attempt to influence the investigation process in any way.

In addition to the preparation of ethical guidelines and the formation of an investigative committee, institutions also need to introduce regular sensitization and training programmes for students, faculty and staff. There are many degrees of ethical misconduct, and some of the lesser ones are nowadays recognized as 'accidental' or 'inadvertent'. Institutions must work hard towards their prevention. Investigations of ethical misconduct have often revealed that if the perpetrator had been better informed, misconduct could have been avoided.

In summary, the key to implementing ethical standards is a proactive approach towards information, sensitization, investigation and – hopefully in rare cases – punitive action. The driving force for this must come from institutional heads, whose duty it is to maintain the integrity and image of their institution, while the actual implementation requires concentrated effort as well as professionalism and objectivity. Only if the scientific community supports a greatly intensified effort in this direction can India succeed in its aspiration to be a global leader in science.

1. <http://www.princeton.edu/pub/rrr/index.xml>
2. <http://www.scientificvalues.org>
3. <http://cpcsea.nic.in/Auth/index.aspx>
4. <http://gradschool.unc.edu/academics/resources/ethics.html>

Sunil Mukhi

Indian Institute of Science Education and Research,  
Dr Homi Bhabha Road, Pashan,  
Pune 411 008, India  
e-mail: sunil.mukhi@gmail.com