

## Ethics and the scientist

Balaram has raised a relevant question about the propriety of authorship and their order of placement<sup>1</sup>. It is a fallacy that credibility of a scientist is usually reflected by the number of publications to his/her credit rather than the quality of work. Generally it is observed that earlier published paper is repeated in subsequent publications on the subject. Even a Ph D thesis, at times, results in the publication of several research papers. Strangely enough, all such papers reflect the same results and contents. Even figures and tables are reproduced from earlier publications. Ideally a research paper sent for publication is considered to be an original and that it did not appear earlier. A few journals insist on authenticity certificate. The opening page of a thesis also contains a similar certificate.

Plagiarism is defined as an act of stealing and passing off (the idea or words of another author) as one's own, use (a created production) without crediting the source or to commit literary theft or present as new and original an idea or product derived from an existing source (Webster's Ninth New Collegiate Dictionary 1983). Therefore, recycling of an idea or conclusions in more than one research paper even by the originator of an idea amounts to plagiarism.

With the cutting edge of science and technology, more and more collaborative projects having specialization in diverse streams like astrophysics, genetics, metallurgy, fibre technology, etc. become the need of the hour. Thus a project finding when presented in a journal or a seminar contains as many as a few hundred authors from several laboratories. Therefore, the convention of putting the name of project leaders in a footnote is a natural phenomenon and this practice is justified<sup>1</sup>.

Sometimes the tail of authors' list includes non-specialists and even bureaucrats are rewarded with authorship. Name of a research supervisor almost always precedes that of a Ph D scholar. In the scientific institutions also, status of a scientist in the hierarchy determines the order of placement. Inclusion of such names is justified when seniors have genuine contribution. Job security coupled with the doctrine of seniority has brought Indian science to its nadir<sup>2</sup>. Even the Prime Minister Atal Bihari Vajpai, while inaugurating the 90th session of the Indian Science Congress in Bangalore on 3 January 2003, emphatically stated, 'We have to ensure that our scientific institutions do not become afflicted with the culture of our Government agencies. The main cause leading to frustration among young scientists was seniority displacing merit and talent suppression.'<sup>3</sup> Balaram has rightly emphasized upon the exclusion of such honorary authors<sup>1</sup>. But who will dare to bell the cat?

Acknowledgement is expressed at the end of a research paper. But it shall not be merely offered to the head of the institutions unless the heads are directly engaged in the project. Nowadays, even names of such heads are prominently given in the acknowledgement. Even after leaving the institutions, researchers put the name of supervisors without their consent. It facilitates speedy publication in a journal of repute or acceptance in a seminar. It is a prevalent practice. J. S. Rajput expressed his ignorance for publications of such plagiarized articles purportedly sent by his student<sup>5</sup>. The forwarding letter shall bear the consent of all co-authors.

Co-authors take credit for publication, especially in a good journal. But when charges of plagiarism are put forward,

these authors take a U-turn and readily disassociate themselves from the principal author. In fact co-authors are deemed to be co-conspirators and deserve similar treatment as meted out to the main author. In November 2002, the American Physical Society drafted a guideline for co-authors<sup>4</sup>. It says, 'co-authors who are accountable for the integrity of critical data reported in the paper, carry out the analysis, write the manuscript, present major findings in the conference or provide scientific leadership' as bearing responsibility for all of a paper's contents. It is the responsibility of the scientific community to come forward with constructive suggestions on this matter of vital importance. Self-regulation will not be effective in India. It is proposed to have a Science Ethics Council of India in the line of Medical Council of India and Press Council of India. Both institutions are statutory bodies and formed by the Act of Parliament. The Medical Council of India is responsible for conduct of physicians and has the power to reprimand and even withdraw the registration, prerequisite to practice. Formation of Science Ethics Council of India will help in arresting phenomenal growth of plagiarism or recycling in India.

1. Balaram, P., *Curr. Sci.*, 2003, **83**, 6–7.
2. Barthwal, B., *Curr. Sci.*, 2001, **80**, 9.
3. Sen, N., *Curr. Sci.*, 2003, **84**, 12.
4. Dalton, R., *Nature*, 2002, **420**, 728–729.
5. *The Hindu*, 27 September, 2002.

BRIJESH BARTHVAL

C-203, Rohtas Apartment,  
Sector-9,  
Vikas Nagar,  
Lucknow 226 022, India  
e-mail: sadhna\_brijesh@yahoo.com

## Science in India—on the comments of Arunachalam

We never refuted<sup>1</sup> the decline in Indian science as has been pointed out by Arunachalam<sup>2</sup>. Rather, we provided reasons for the decline of Indian scientific output and a sudden increase in the Chinese scientific output.

Activity index is a technique used for the normalization of data. The values of activity index for India and China in tables 1 and 2 for the years 1998 and 2000 are different because the total output in the two tables is different.

We would like to mention that the absolute numbers presented by Arunachalam in table 2 of his paper<sup>3</sup> can be normalized in two different ways: (i) by taking percentage of the total output of different countries for different years