

Invoking a Darwinian natural selection model to improve the quality of Indian journals

Many of us have witnessed Balaram's¹ serious effort to improve the quality of *Current Science* for more than two decades, making it both attractive and highly sensitive to the needs of the Indian scientists. Lakhotia² appeals for an altruistic behaviour from equally sensitive and determined leaders to enrich Indian journals by publishing their most important papers in them.

We know that coaxing will not work as most of our active leaders are deeply in a race for recognition of a different kind, though their students need a more scholastic trajectory for their career. Understandably mediocrity pervades in Indian journals. Lost in the piles of mediocre papers most of our works may appear redundant, soon being left far behind by the speed and vigour of the global community engineered by essentially unintelligent³, ever-narrowing technique of internet-dependent referencing for citation⁴.

A possible solution, however, may emerge if we do not demand an altruistic act but provide an incentive largely consistent with the present practices of evaluation of papers of new entrants for a scientific career in India. One suggestion based on working of a Darwinian-selection twist in the procedure that may be considered is as follows.

1. Give equal weight to publications in Indian and international journals in formal applications and interviews in an unreserved manner. This may appear a retrograde move to start with, but would

neutralize soon if the following two conditions are also met.

2. Candidates with publications in Indian journals should be screened for best contribution in them. Evaluation should be done by both national and international referees of repute confidentially or, if possible, transparently. (Remuneration for such evaluation will sustain the system.) More important will be its effect to set apace a healthy competition for publishing the best works in Indian journals by Indian and international teams, since many Indians abroad do wish to return.

3. In case of a contest between candidates with publication in both international and Indian journals, the merit of the work in Indian journals should be the *sole* criterion for selection. (A paper in an international journal should be given less weight if a more important paper in that or an allied topic has not been published by the candidate in an Indian journal.) This restriction may be a provisional one and relaxed or eliminated after the reputation of some Indian journals is well-established internationally.

These criteria will automatically penalize poor quality of research by a kind of Darwinian natural selection, and eventually push publications in Indian journals towards the levels comparable to those of good international journals. The emphasis of publication of good work by Indian scientists ensured by the embedded element of competition in this scheme will pay-off in material terms, and so is very

likely to work and boost the quality of Indian journals in the long run. The scheme does not plead for altruistic behaviour of some current leaders or sacrifice by the whole of scientific community both of which are, surely, non-starter propositions!

Arguably, in the initial stage of implementation there are going to be cliques among controlling members which may work against the intended spirit of the scheme to protect personal vested interests. Yet it is worth taking the risk because cliques are unlikely to set exemplary successful behaviour and are going to be necessarily temporary blocks. Moreover, keeping the selection process transparent at critical steps may efficiently suppress this human failing of group activity.

1. Balaram, P., *Curr. Sci.*, 2013, **104**, 1591–1592.
2. Lakhotia, S. C., *Curr. Sci.*, 2013, **105**, 287–288.
3. Carr, N., *The Shallows: How the Internet is Changing the Way We Think, Read and Remember*, Atlantic Books, London, 2010.
4. Balaram, P., *Curr. Sci.*, 2013, **104**, 1267–1268.

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Need to categorize journals for assessing quality of publications

Lakhotia¹ is perhaps right in stating that categorization of journals into national and international by the University Grants Commission needs to be relooked and the judgement on the quality of publications based on the journal impact factor (IF) is to be avoided. A distinction between national and international journals seems unreasonable because of the overlap among the journals published by many associations and publishing houses. Merely adding an adjective

'International' cannot qualify a journal to become truly International and merely a name based on a particular country cannot make it national as well. For example, the *Geological Society of America Bulletin* has an IF of 3.8. Will it come under national or international category? Similar is the case with the *Journal of the Geological Society, London*. The journal IF emerged in the 1970s as a tool to rank journals². Currently, it is a tool to assess the quality of publications and that

of a scientist. The IF is based on the number of citations which is at times manipulated by authors of the papers and editors of the journals. Thus, this cannot be taken as a measure of the quality of publication, unless citations of individual publications are assessed. Also, even a good publication may receive a sizable citation after many years of its publication.

The science being published in Indian journals, I believe, requires introspection. The quality of papers published in

any journal depends upon the attitudes of the authors, reviewers and editors. The quality of the journal depends upon the quality of the manuscript submitted to it. It is believed that authors submit their inferior papers to Indian journals, but this is not always true. Amateur researchers are not sure about the publication of their science in a journal of their choice, whether Indian or foreign. In particular, established scientists can make a choice and they should try to strengthen the Indian journals by publishing their work in them. The publication of a paper largely depends upon the reviewing of the manuscript by the peers. Thus, reviewers are vital and the most important link between the authors and editors. Also, editors of Indian journals are required to encourage those publications which report innovative and exciting

researches and those which offer unconventional interpretations. *Current Science* is one such journal and it will, I believe, maintain its tradition of reporting the best of science from India.

We must devise a mechanism for assessing the quality of publications for selection for university and college teachers and similar purposes. The best way is to read the papers published by a scientist for evaluating his research work. Reading every paper may not be practically feasible for assessing quality. Alternatively, in my opinion, journals should be classified into three different categories for this purpose. For example, papers published in reputed journals like *Cell*, *Nature*, *Science*, *PNAS*, etc. should be classified as category-I. Papers published in other *Science Citation Index (SCI)* journals should be classified as

category II, and those published in non-*SCI* journals as category III. A rational credit should be given for each category. The same can apply to journals published in social sciences and arts. This will reduce the bias related to national versus international and to the IF of individual journals.

1. Lakhota, S. C., *Curr. Sci.*, 2013, **105**, 287–288.
2. Balaram, P., *Curr. Sci.*, 2013, **104**, 1267–1268.

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Women biologists in India: challenges

Literacy, being the most potent tool for erasing poverty and inequality, is simply defined as the ability to read and write. It measures the economical and technological status of a country in today's scientific world. According to the Central Intelligence Agency (CIA) world fact book, a principal intelligence-gathering agency of the United States federal government, about 79.7% women around the world in the age group 15 years and above are literate whereas in India, literate women constitute 65.5% of the population in the age group 7 years and above¹⁻³. Time also has witnessed many women leaders in science and their contributions to research. Today, women constitute approximately 50% of the population across the globe. Table 1 gives the percentage of women calculated from the total enrolment at different stages and levels of education in India, according to a survey on education in 2009–10 by the Ministry of Human Resource Development, Government of India⁴.

With an almost equal ratio of population and fairly a decent rate of literacy, we ask why only a countable number of women continue their career in science, especially biology. Is it the physiology of a woman which makes her less ambitious or is it simply lack of interest? Has capability and choice of subjects anything to do at the DNA level? Or is it simply fam-

ily responsibility, gender bias, social discrimination or economic exploitation, which hinder the growth of a woman? Governments around the world, including India have strategized policies for the development of women in all sectors; be it education, employment or scientific growth. Also, there are many national and international science fora; we contemplate what percentage of women has been benefited from it? What is holding them back to live their dreams or be a successful entrepreneur? Is there something more to be done to save this prospective human talent? The scientific community does not wait for anyone and expects continuous growth and productivity. Thus it becomes a rough road for a woman to balance her family and work. Open-mindedness and sensitivity need to be applied while employing women scientists.

In 2009, we realized the need for a special forum to understand and motivate women members in our organization. We generated the Women in Biology (WiB) Journal Club (JoC) of Bioclues. Today with our continuous efforts in the form of monthly meetings, virtual discussions and voluntary projects our women are able to express themselves and contribute to the development of biology and bioinformatics. We have been privileged to have worked on six projects of which

two are published, three are under communication and one project is in the making⁵. Apart from this, our women have to their credit five posters and presentations at national and international levels, participate in competitions and events actively and a couple of them are also a part of the mentoring team which trained the Government of India, initiative – Biotechnology Consortium of India Limited (BCIL) trainees. We now look forward to take our forum onto a bigger platform to guide and assist women researchers in need, all around the world.

One thing we all have to understand is that our economy and growth also depend on the development of women. So conscious and sincere efforts need to be made to see that already set strategies

Table 1. Enrolment of women at different stages

Course enrolment	Women (%)
School education (Nursery–XII)	46.83
Higher education (general courses like arts, science and commerce)	54.62
Higher education (professional courses like engineering, medicine, law, etc.)	37.05
Ph D/M Phil	40.60