

## Probing misconduct

The incisive editorial<sup>1</sup> and the accompanying correspondences leave a lay reader with the impression that no extent of analysing the published photographs from the printed versions in the journal could have proved the 'alleged' misconduct beyond reasonable doubt. Examining the original autoradiograms along with the other evidence appears to be the only way to proceed. But the peremptory unilateral withdrawal of the paper in question by *JBC* appears rather unusual. In stark contrast stands the recent 'not guilty' verdict<sup>2</sup> in a similar case concerning the paper claiming 'to find evidence for so-called multipotent adult progenitor cells in mouse bone marrow'<sup>3</sup> from the group led by Catherine Verfaillie, now director of the Stem Cell Institute at the Catholic University of Leuven, Belgium, and permitting the publication of a corrected figure as a corrigendum<sup>4</sup>. Was this due to the difference in standards of *JBC* and *Nature* regarding resolution of alleged ethical conflicts, the stature of the principal investigator or, perish the thought, the ethnicity of the alleged perpetrator? Does it reflect racist arrogance or exasperation with the strident badgering from individual(s)/group(s) posing as the guardians of scientific moral for India? Whether this action of *JBC* is a case of 'India bashing' or not, does not really matter. One can keep wondering. More importantly, this incident, whatever is the cause, must harden the resolve of Indian biologists to continue to hit these bastions, as they have been doing with increasing success since the 1990s, rather than receding into the cocoon of patriotic futility of publishing only in Indian journals. We must win as the Japanese did and the Chinese are beginning to.

Unfortunately, such allegations, even when baseless or not provable beyond reasonable doubt as the current case seems to be, do cause enormous anguish to the serious researchers as well as disorient our quest for competence as a nation. Therefore, as we get about implementing the rather recently practised moral/ethical standards of the West in science, perhaps the major science societies and academies need to be more proactive in this area by acting as role models, so that the initiative stays with the science community at large. Otherwise, the void is likely to get usurped by small, vocal groups

strident in enforcing their activist agenda, as we have recently endured in regulating use of animals in biomedical education and research in this country. We are yet to recover fully from the resultant trauma.

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1. *Curr. Sci.*, 2007, **92**, 1467–1473.

2. *Nature*, 2007, **447**, 763.

3. *Nature*, 2002, **418**, 41.

4. *Nature*, 2007, **447**, 879.

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I have read with much dismay and concern the editorial and accompanying letters<sup>1</sup>.

I believe the crucial issue in this case is the report of the Padmanaban Committee appointed by the Director of NCCS, Pune. The question is whether the report was an honest technical one submitted entirely on the basis of technical and professional evaluation of the available information, or whether it was written under some kind of duress or desire to protect someone who was otherwise guilty. I would surely like the former to be true, especially as I personally know all the members of the Padmanaban Committee and have great respect for their professional expertise. If the former is true, the Padmanaban Committee should have protested to the *JBC* against the withdrawal of the second paper by Kundu, giving sound technical and professional reasons for their protest. After all, when we send a paper for publication to a reputed journal and receive adverse comments from reviewers which are not, in our opinion, justified, we reply to the reviewers comments. I am aware of a large number of cases, including some of my own where, following such reasoned reply, the paper was finally published.

I am, therefore, intrigued – both as one who has been in the business of science in the country for seven decades and one who has also been President of the Society for Scientific Values in the past – as

to why the above-mentioned protest was not made by Padmanaban on behalf of the Committee that he chaired. Any protest made in any other way excepting directly to the editor of the journal has no meaning. Further, the protest should have been made within a reasonable time of the withdrawal of the second paper by *JBC*, and as one's own decision, rather than on account of all that has appeared in public space since then. Irrespective of the result, a strong protest would have cleared the Padmanaban Committee of any charge of bias. Lack of the above protest in time, therefore, does, most unfortunately and regretfully, cast aspersions on the bases on which Kundu was totally exonerated by the Padmanaban Committee – unless there is a reasonable explanation for the Padmanaban Committee not writing to the journal on its own, immediately after learning about the withdrawal of the paper.

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With reference to the recent editorial<sup>1</sup>, consider the nature and the substance of the report on IPR recently submitted to the Government. Plagiarizing an IPR-related publication is taking the 'art' to its extreme. Our media gave it the treatment it deserved. Legal experts judged our value systems on the internet. Political parties demanded that the report be summarily rejected. And foreign specialists and statesmen showed no hesitation in taking a stand against its anti-people conclusions. Our 'scientocracy' remained a mute spectator. This may explain why the concerned scientist while openly acknowledging lifting published material, failed to admit plagiarism. There were *explanations*, but no remorse.

'Fish rot head down', according to a Russian adage. Transparency and fairness need to be demonstrated at the top in order

that the desired value system percolates to the bottom. The Code of Ethics adopted by the Academy may serve as a blueprint to be enforced by all institutions, requiring every student, researcher and academic to study, endorse and follow healthy practices that will inevitably lead to quality publications.

The NCCS case reinforces the need to get our basics right. Figures or data that appear strikingly similar to those obtained previously present an opportunity as well as a problem. The opportunity is in researching their striking similarity and drawing conclusions. When authors fail to acknowledge and explain strikingly similar data, it is at best boring and at worst, controversial (both good reasons for rejecting a manuscript).

The reverse problem is that of irreproducibility. In a previous case covered by *Current Science*, no amount of repeat experiments was able to assist the concerned scientist in obtaining data similar to what he had reported earlier (even though all the data in repeat experiments were similar between themselves). By a remarkable coincidence, another national committee of equally reputed scientists was required to conclude that the phenomenon *itself* was difficult to reproduce! As aptly cited by my mentor, 'If you do not get your facts right, facts will get you'. The advance of science is facilitated by observation of reproducible phenomena. Researchers go to work driven by this promise.

Unreliable equipment, uncalibrated instruments, or the plain non-availability of a particular machine or process to obtain quality results cannot serve as an excuse for irreproducible or erroneous results, just as poverty cannot justify theft. Mature researchers are clear about where hard evidence ends and speculation begins. By failing to document the limitations of their study and potential errors in results, they may be misleading the reader, or, inviting controversy. Were the authors in the NCCS case aware of the glitches sys-

tematically introduced into results? Does it require a national committee to discover this possibility?

An investigation of alleged scientific misconduct should likewise cover all aspects, both scientific as well as administrative. It should clearly document what evidence and arguments were considered and what was ignored (and of course, *why*). The goal again is transparency and reproducibility, to ensure that if someone *else* were to repeat the investigation, he or she would come up with the *same* observations. The formal NCCS investigation appears to have shortcomings in this regard.

Why were laboratory records not available when the first (internal) investigation was conducted? What arguments formed the basis to initially conclude a *prima facie* case of misconduct? What eventually rendered these arguments invalid? Was SSV called in to present its case? If not, why? Did the committee seek these inputs? If it did not, it should explain why.

The committee could have set an example by meeting all those demands that are made of a scientific study. Unfortunately, a casual observer is entitled to conclude that the committee failed to scrupulously follow processes required for a conclusive scientific study. This was precisely what happened in the previous case cited in the editorial.

Reproducibility and originality of results in a manuscript are certainly necessary, but by no means sufficient to ensure acceptance for publication. Journals are equally concerned about the *intellectual value* carried by a paper. It may have been inappropriate for the committee to make a public plea for reinstatement of the controversial paper. If the paper indeed deserves to be published it can surely be submitted elsewhere. How about *Current Science*?

Rather than shoot the messenger, let us focus on the message. After all, SSV does not carry any authority. Those who make open allegations put their own

credibility on the line. Their role stands exemplified given the thunderous silence of the Indian scientific community with regard to the IPR report cited in the beginning.

As Balaram rightly points out, deterrents do not prevent malpractices. But they do shrink the iceberg. We may be fooling ourselves by suggesting that (a) misdeeds in scientific research are difficult, if not impossible to prove, and that (b) the situation is no different elsewhere. Make no mistake. If we only keep our house in order, we can have the entire flattened global economy at our feet. A conscience of convenience will only nudge us to its edge.

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With reference to the Kundu episode<sup>1</sup>, a number of learned people have made many comments, and there is little that I can add in terms of rights and wrongs.

Nevertheless, I cannot resist making a prediction about future events, and will only say that Kundu will now be deluged with a barrage of further high awards and distinctions from our scientific system, which after all is well known for its impeccable standards.

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## Discussing misconduct

When I heard that Balaram had written an editorial<sup>1</sup> on scientific misconduct in the latest issue, I thought to myself 'Well, finally we face up to what has happened'. But I was wrong – the editorial was

*not* about the Mashelkar affair but about a matter of far lesser importance and one where the facts are far more unclear. Why is it that, when there has been so much written about the Mashelkar Report

in the popular press and in magazines like *Frontline*, there has been a deafening silence on the part of *Current Science* and the Indian scientific community? A community that endlessly debates, in