tion depends on the quantum of publicity made about the person and his work.

Under such a situation the subjectivity in recognition-making is large. The quality of publications of a person has not been given due weightage in the mechanism in respect of the reputation of a journal in which the publication is made, because it is the journal which determines the quality of work. Incidentally, this could be one of the criteria for recognition even for a non-expert, provided the journals are categorized by a committee of experts with appropriate weightage in each category. By this one does not mean that this should be the sole criterion, but that this could be a foolproof criterion to some extent. Hence, attention with due weightage to the journals of publication should be given for making the recognition. The impact factor of a publication, which is given weightage presently for any consideration of recognition, is objective, but this also suffers from the prejudice of current popularity/demand or like/dislike of a subject rather than depending on the quality of work based on ingenuity, precision, critical analysis and thoroughness. The impact factor of a publication does not necessarily reflect the true quality of work. All that one can say is that it has credibility under the circumstances. Hence undue weightage to impact factor overplays the quality of work, so that one can say that if at present any consideration is being made for publication, it is not truly objective.

The number-factor has its role too in determining the quality of work. How is one going to make an assessment of the quality of work when the number of committee experts is fewer and the number of areas of research is much larger? It is then the quality or reputation of the journals and the number of publications in them that determine the quality of work. Several workers in Chemistry (I know of this subject only) with several good publications have been left out in comparison to those recognized with lesser publications. To elaborate the point further, persons with three/four publications in the journals of *American Chemical Society* or *Chemical Society, London* or equivalent journals, have been recognized in preference to or in absence of knowledge of persons with sixty/seventy publications in the same journals. Can difference in the area of work matter to such an extent for the quality of work?

Apart from research, one area which has so far been ignored for recognition, is scientific education. One who spends his life in spreading, propagating or creating an awareness of science in masses or in innovating science education at secondary/undergraduate level, should also be considered for recognition by the highest scientific body in the country. Bharati has rightly pointed out this fact in her letter. It is therefore necessary that all awards/recognition-making institutions or bodies should strike a balance amongst various areas of recognition in a subject, including that of scientific education and adopt some objective criteria, e.g. the quality of publication in terms of category of journals to compensate the subjectivity of the mechanism of recognition.

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Improving research in India

Y. K. Gupta (*Curr. Sci.*, 2001, **80**, 808) has given some suggestions for improving research in India through spiritual 'Karma'. His solution can prove to be helpful in a limited way, e.g. at the project level dissertation in a professional course. Peer review is always helpful for budding researchers. There is no substitute for general facilities and infrastructure for carrying out research at the international level. An up-to-date library, laboratory and workshop are necessary for experimental research. But the competence of the investigator-in-charge or the research supervisor cannot be ignored. What we need the most for promotion of research in Indian universities is networking of research groups with national laboratories where library, laboratory and other infrastructure facilities are available in abundance. DST and other funding agencies must evolve a strategy for networking the research centres. A lot of money can be saved in this way by joint collaborations. All major research projects should be sanctioned only after a thorough survey is made about the infrastructure facilities available with the principal investigator.

It is also pertinent that Indian journals should improve the standards of peer review as suggested by Gupta. I feel that there is a lot of personal bias which discourages young researchers to publish in Indian journals. There are no competent reviewers in some emerging areas of research. As a matter of fact, when an Indian reviewer rejects our paper, we publish it in a foreign journal of repute as its quality is improved in the review process.

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Need for popular science books

Popular science books play a crucial role in kindling the scientific attitude, outlook and perception towards pursuing a scientific career. I fully agree with Dilip Salwi's views (*Curr. Sci.*, 2001, **80**, 331–332) that in India popular science books have still not caught on among the young as well as the general readers. A lot is desirable in this front to popularize reading as well as publishing of quality popular science books.

In general, these books can be classified into two categories – one which caters to the young readers between 6 and 17 years and the other for general readers of any age. Scientists like Feynman, Paul Davies, Stephen Hawking, Penrose, Capra and many more have benefited millions by their books, as they had visions to popularize science among the laymen and understood the importance of populariza-