

are indexed in the *SCI-CD* version. However, the *JCR* covered 47 journals from India during 2000 (Table 2).

With this backdrop, one of us (NCJ) while presenting the paper in the IX International Conference on Scientometrics and Informetrics held at Beijing, the People's Republic of China during 25–29 August 2003, appealed to fellow participants to use *Web of Science* data while reporting the country data as it gives a 'true' picture of papers published as seen from the ISI database. There is a need to exercise utmost care to use appropriate dataset before making generalizations.

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1. Garfield, E., *Curr. Sci.*, 2003, **85**, 425.
 2. Jain, N. C., *Curr. Sci.*, 2003, **84**, 863.

3. Arunachalam, S., *Curr. Sci.*, 2003, **83**, 107–108.

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Response:

I would be the last to criticize anyone for recommending caution in the use of these databases and the need to educate users in the significance of the differences in the various forms of *SCI*.

The objections to various aspects of the *JCR* data and other derivatives of the *SCI* come mainly from bibliometricians and not from general users. This does not mean that *ISI* should not seek to improve the data in one way or another. I have worked towards that end and I am confident that future versions of *JCR* and *SCI* or *WOS* will reflect the many improvements that can be made in such a large database. Various normalization techniques have been proposed in utilizing these data. Indian users, like all others, should not hesitate to make their constructive suggestions directly to *ISI*. I myself, like the authors, am just an observer and have often published warnings about the uninformed use of *JCR* or other data.

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On publication indicators

According to Satyanarayana and Jain¹ 'the scientific community is not satisfied with the existing quantitative indices like the *SCI* and its twin publication, the *JCR*'. I wonder how many scientists they polled to arrive at this conclusion. If this were the case, Thomson-ISI would have gone out of business long ago; in reality though the company is thriving and the revenue brought in by citation index databases and their derivatives is on the rise. Since the early 1990s, *SCI* has spawned half a dozen field-specific citation index databases (for neurosciences, biotechnology, materials science, etc.) and Thomson-ISI is now extending their database back to 1900 so one can trace the evolution of ideas over a much longer period. The idea that the cognitive link between citing and cited documents provides a far better handle for retrieving related documents than mere keywords was originally exploited by Gene Garfield in the early 1960s. It has since been picked up by other database producers and new services such as *CrossRef* have come up. If scientists were unhappy with *SCI*, these developments would not have taken place. The citation databases of ISI are used widely by scientists in many countries, as evidenced by the large number of subscribers. I myself subscribe to CD ver-

sions of three citation databases from the early 1990s. Besides, as *SCI* is a truly interdisciplinary database – which covers a wide range of fields spanning science, engineering and technology, agriculture and medicine, unlike subject-specific databases – it has gained wide acceptance among the science policy and indicators communities as well.

Satyanarayana and Jain¹ have expressed their dissatisfaction with the use of publication counts obtained from the CD-ROM version of *SCI* for measuring the publication output of nations. As pointed out in an earlier paper², both Robert May³, a former President of the Royal Society and Chief Scientific Advisor to the Government of UK, and Noble Laureate Ahmed Zewail⁴ have used publication data from the restricted-coverage version of *SCI* while making international comparisons of scientific research in the not-so-distant past, and both the *Science and Engineering Indicators* of the US National Science Board and the *European Report on Science & Technology Indicators* of the European Commission use *SCI* fixed journal set data regularly. These are not the only examples. Many other eminent scientists and well-known national and international organizations also use publication counts

obtained from the restricted-coverage version of *SCI* to get a rough idea of the research output of nations.

Satyanarayana and Jain wonder which version of the database should be used – the CD version of *SCI* or the larger *Web of Science (WoS)* – when counting the number of papers originating from a country. How can both be right, they wonder. As Garfield and others, including yours truly, have pointed out time and time again, one has to use such indicators with caution. One must be clear what one is measuring and state how the measurement is made. After all, it is impossible to measure 'the research output of a nation as a whole' accurately. What we measure is usually a surrogate, viz. research papers published in professional journals. There are two definitional problems here, one pertaining to journals and the other pertaining to papers:

(1) How many journals are there? Do all serial publications count as professional journals? Can we count the science page in *The Hindu* and *The New York Times* or magazines like *Computers Today* and *PC Quest* as journals? Journals clearly differ in quality, and in the perception of a majority of scientists, including Indian scientists, *Nature* and *Science* are way