

## **“Journals, Open Access, Copyright, Repositories – Some viewpoints from an Academy”**

**Invited key note address at the Conference on ‘Scholarly Communication in India in the Age of the Commons (Open Access)’ on 26 March 2009, National Aerospace Laboratories, Bangalore**

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1) Dr. Upadhyaya, Dr. Goudar, Prof. Arunachalam, Dr. Poornima Narayana, Prof. Chan, Prof. Willinsky, Prakash, Chandramohan from the Academy, distinguished invitees, ladies and gentlemen, may I on behalf of the Indian Academy of Sciences express a warm welcome to all of you to this one day Conference on ‘Scholarly Communication in India in the Age of the Commons’. This is the Academy’s Platinum Jubilee Year, and for NAL it is the Golden Jubilee; and it is a pleasure for the Academy to join NAL and the ‘Centre for Internet & Society’ in hosting this meeting. Thanks also to Dr. Goudar and Prof. Arunachalam for their initiatives in organizing this event. I am here substituting for Prof. D. Balasubramanian, President of the Academy, as he has to be at a meeting at Chennai today. If only the fanciful Many Worlds interpretation of quantum mechanics were correct, the world could have split into two copies, and Prof. Balasubramanian also into two copies, one in Chennai and one here; and he could have spoken in both places simultaneously! In the tea break, I can tell you more about this interpretation of quantum mechanics, if any of you are interested.

I am used to giving seminars and colloquia, on subjects of my research, but never have I given a key note address or an Executive Summary. These are new to me. Also, as you all know, President Obama always needs a teleprompter while giving his fine speeches. Similarly, I cannot speak without a written text in front of me, so please permit me this luxury. Let me also add that I believe in the well-known saying — levity is the soul of wit.

2) The Academy’s efforts in the Open Access direction go back to 1998. It was then that the journal *Pramana* was made available on the Academy website completely free for all to read. Thereafter all the other Academy journals have also been made freely available online, so now all ten Academy journals are available. Quite recently the speed of access has been considerably improved. In 2006 the Academy entered into an agreement with Springer to co-publish the international online and print editions of the ten journals, but with the proviso that world-wide open access on the Academy website would continue. So now there is the version on the Academy site, which is accessible world-wide and free, and also the value-added SpringerLink version available to paid subscribers. This arrangement is working quite well. The download figures from both sites are quite encouraging, and in any case the visibility of the journals world-wide is much better than it used to be. INSA by the way has signed the Berlin Open Access Declaration and its journals are also freely accessible.

3) Two important things happened in April 2008, just about a year ago. INSA arranged a meeting on Open Access and Copyright issues on 26th April, 2008, again thanks to Prof. Arunachalam's initiative; and Prof. Balaram wrote an editorial in Current Science on 10th April 2008 on the subject 'Science Journals: Issues of Access'. I must confess I am completely ignorant and totally naive in all these matters, so whenever necessary I turn to one of Prof. Balaram's numerous beautiful editorials – and get educated about the finer points of English literature at the same time – I also read some of the steady stream of emails from Prof. Arunachalam which arrive each day. He is constantly exhorting us to do various things – like Mr. This or Mr. That we should give him the honorary title "Mr. Open Access", it is a one-point agenda with him. So I learn a lot from both these sources which are at least openly accessible to me. Incidentally a collection of Prof. Balaram's editorials is likely to be published soon, and several of us have been asked to write editorials to introduce his editorials on various subjects.

Science journals are proliferating in number and spiraling in costs. So these raise difficult problems of affordability for libraries and institutions. There are also issues of judging quality, and looking at the economics of the entire process, the whole information chain – overall costs of dissemination of research results, journal publishing and production, refereeing, circulation... who pays for what, who profits, is it reasonable or exorbitant? There is the impact of technologies on all this – these are times of extremely rapid changes, with new undreamt of opportunities appearing all the time. These are true of other arenas of life as well – in education, governance, entertainment, in news communication and so on. As a physicist I cannot help remembering that all this began in 1948 with Claude Shannon's Classical Theory of Information – a major conceptual revolution which showed that information could be measured, and so could its transmission and fidelity and so on. Such a beautiful set of ideas – a fascinating mathematical structure embedded within the classical theory of probability. And this was accompanied and later followed by technical advances, transistors (1947), semiconductors and so on.

Balaram's view is that Institutional Repositories are more easily achievable than Open Access. This may greatly change the structure and traditional roles of libraries as we know them, at least as far as the sciences are concerned. He mentioned the recent much-heralded Harvard University faculty decision which 'authorizes Harvard to place a faculty member's work in a repository that will be available to all at no cost'. The Massachusetts Institute of Technology has taken a similar even wider step very recently, on the 18th of this month.

There is also discussion of who pays – or should pay – for the costs of publishing research results – a shift from the traditional 'researcher pays' era through ever increasing subscription costs to a new 'author pays' arrangement. The idea is that agencies that fund research – whether private or public – should include costs of publication in their support. Balaram mentions that for some high impact journals, the cost to the author for one paper can be as much as Rs. 2.5 lakhs! When I saw this, I could not help wondering – what would someone like Albert Einstein do in

such a situation? He was working in a Patent Office in Berne as an assistant third class about a hundred years ago, and of course he had no research funding of any kind; but in his spare time he wrote papers that revolutionized physics! His papers were all published, he even received free reprints – but how would he fare today? One gets the impression that subscription costs for well-known journals in those days were quite reasonable; and in historical accounts one reads that people like Julius Springer were in frequent contact with figures like Arnold Sommerfeld and others in a mutually beneficial and enlightened atmosphere.

It seems we have to accept and acknowledge that the methods of doing science, the costs, the sociology of the scientific enterprise, have all changed enormously. It has become intensely competitive, one can even say that cut-throat methods are common, it seems the scientific enterprise is no longer the domain of scholars alone. Claims for priority are severe. In a piece that appeared on 9th February 2009 in the New York Times, celebrating the 200th birth anniversary of Charles Darwin, the writer said:

“One of Darwin’s advantages was that he did not have to write grant proposals or publish 15 articles a year. He thought deeply about every detail of his theory for more than 20 years before publishing ‘The Origin of Species’ in 1859; and for 12 years more before its sequel, ‘The Descent of Man’, which explored how his theory applied to people.”

The old times are gone forever, the times of Darwin and Einstein. The game has become a game, with new rules of play. The new patterns and methods however seem more natural for the younger generation to adjust to, but some of us of an older generation cannot forget the past so easily.

4) The INSA meeting discussed many aspects including the need to educate working scientists about their rights with respect to copyright. There is a recent email from Arunachalam on this from Amsterdam. Again I think younger scientists are aware of their rights more than old fogeys like me, we are the ones needing education. There is a need for change in Copyright patterns, especially for books out of print, to decide when something should move into the Public Domain, and so on. Some of the major INSA recommendations are to granting agencies to mandate Open Access for results of publicly funded research, and to scientists to publish in Open Access journals by choice.

Some tasks are set for the Academies too, such as setting up Institutional Repositories, and to work toward Open Access in all possible ways. In this context, it is possible that the three national Science Academies of India – IASc, INSA and NASI – may try to cooperate in these matters, as they have been doing in the case of science education recently.

5) From its inception, publication of journals has been a major effort of the Indian Academy of Sciences. There has always been a striving to maintain standards. Today

we can say about our ten journals, they are reasonably good, about the best from India. The main concerns – in these times of very rapid change and impact of new technologies – are: how do we maintain refereeing and review standards, how to tackle increasing cases of plagiarism, and while coping with all these how do we move in the Open Access direction? Quality of journals is most precious for the Academy, this is hard to achieve and to maintain, the whole enterprise seems to be under pressure.

6) Let me end by returning to Balaram and INSA and mention a recent initiative of the Academy. With generous help from the Indian Institute of Science, we are trying and hoping to set up an Institutional Repository covering all publications of all Fellows past and present. Starting since 1934 – the total number of Fellows is about 1500, 900 present and 600 past. And the total number of research publications may be around 60,000 or 75,000. The hope is that in this Platinum Jubilee year this effort should get started and make some progress. We should try to get a substantial number of entries into the Repository within this year, catch up as soon as possible, then make it an ongoing automatic process. Otherwise many of us here today will also become past Fellows before the job is done. Getting titles and abstracts seems easy, with full text there may be problems, but here Arunachalam tells us authors have more rights than they realize. Let us see what we can do. It seems about 50 institutions in India already have set up such repositories, but we have miles to go before we sleep!

I am happy to have given the first key note address of my life today – I am sure the day's discussions will be full of ideas and fruitful. It has been a pleasure to have been here, my thanks to Dr. Goudar and Prof. Arunachalam for inviting me, and most of all to Prof. Balasubramanian for asking me to be here in his place.

Thank you.