The Privilege of Creating Resonance*

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My thanks to Sathyamurthy, Sury and Reverend Father Dr Melwyn D Cunha for planning this celebration of 25 years of Resonance, and inviting me to speak. It seems hard to believe that what some of us created together in 1995 is now 25 years old. I will relate briefly some history, some details, and then some hopes for the future.

2) In 1994 summer, Roddam Narasimha, the President of the Academy, set up a Committee to look at the state of post-school science education in the country, prepare a report and make recommendations to the Academy and more widely. Some of the Committee members were J Chandrasekhar, R Gadagkar, A Sitaram, S Datta Gupta, M K Chandrashekaran and M Vidyasagar.

3) After some discussions and meetings with invited speakers, we prepared a report and submitted it to the Academy in December 1994. Among the suggestions to the Academy were to start educational programmes, and a journal devoted to science education. This latter idea came from Gadagkar. The report was accepted and put into operation.

4) In January 1995, the new President of the Academy Professor P Rama Rao asked me to plan and produce a new journal to appear by January 1996. He gave us one year to achieve this. And this is how I got the privilege of creating a new journal.

5) With some advice, I approached the usual suspects and assembled a group of ten Editors – Vani Brahmachari, J Chandrasekhar, Mohan Delampady from ISI, R Gadagkar, U Maitra, R Nityananda from RRI, G Prathap from NAL, V Rajaraman, and A Sitaram from ISI. All of them readily agreed to my invitation. Then we also put together a large group of Corresponding Editors spread all over the country.

6) The year 1995 was very exciting. Our group of ten met very frequently in Gadagkar’s office to discuss and plan every detail of the journal, helped by delightful snacks and drinks. Srinivas Bhogle of NAL joined us for page design and layout, Ayan Guha (then a physics PhD student in

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IISc) came in as an art expert creating logos for different types of content and page headings. At one point, P N Shankar from NAL joined us, and over a weekend created the familiar waveform logo.

7) At one of our meetings I said: “Whatever the name of the journal, the second line should be ‘journal of science education’, now someone fill in the blank above”. Then when J Chandrasekhar said ‘Resonance!’, everyone felt it was perfect, why did we not think of it before? He wrote a page on this in the first issue. The efforts of Bhogle and Guha have been retained till today; even now Guha sends each month his topical cartoon from the USA where he has settled. Featuring one past scientist each month was a collective decision, it still goes on. In the early years, Prema from Gadagkar’s Centre drew many of the portraits, then Subhankar Biswas came in and raised the portrait quality and overall cover design of each issue to a very high level.
8) The inaugural January 1996 issue was released at the Indian Science Congress at Patiala, with U R Rao as General President. Professor Rama Rao, Gadagkar and I were present. It featured Fermat, whose last theorem had just been proved, and the printing was done at Thomson Press, Delhi, at that time a leading press in the country. It had a Foreword by President Rama Rao, then an Editorial. All of us were very excited when copies came – and happy and proud to see them! But in comparison to any recent issue, it seems so primitive. There is such a vast improvement in the production quality, printing, cover design; so good to look at now! Resonance has achieved a colourful, attractive appearance issue after issue today, thanks to Subhankar Biswas. Over the years, Sujatha, Rajlakshmi, Chandramohan, Srimathi, Pushpa and now Geetha, have worked with dedication to make Resonance look like what it does today.

9) Now to some points from me as a physicist. All along, I had a model in my mind – the American Journal of Physics. This is highly respected by students, teachers and research physicists alike, with material close to research level aimed at undergraduate, Masters and even PhD students. It is very valuable for both students and teachers. Could we try to produce something like that, but covering all the sciences and mathematics? That is what we tried to achieve, with each reader being able to learn something about all the sciences.

10) In the early years, we had many excellent series of articles – by J V Narlikar, Kapil Paranjpe, Madhav Gadgil, T P Radhakrishnan, and some others. Such series seem to be less now.

11) Quite soon we became aware of a hierarchy in subjects: mathematics, then physics, then chemistry, then biology. Authors and Editors in each area were critical of the way concepts were explained and used by the next one. The levels of ‘rigour’ were not the same. Physics uses mathematics in sometimes intuitive ways; Chemists seem to use quantum mechanics in a rather cavalier fashion compared to physicists. All this seems inevitable due to the natures of the different areas. For quite a while, there were frequent complaints that the level of mathematics articles was unreasonably high. We handled these situations as well as we could, but they probably continue to be present even now!

12) The series articles are very valuable. But the question is: how well are they known and read today? It would be good to know this. In a sense, there are many treasures in ‘older’ issues of Resonance, but are they largely forgotten? If so, an effort is needed to bring them back to everyone’s attention and use.

13) More generally, there have been many special landmark issues on several occasions, including featuring many Indian scientists. There is a whole series on quantum mechanics – on Heisenberg, Dirac, Schrödinger, Bohr, Pauli, and Sommerfeld. These could be a rich resource for serious students and teachers. They need to be revived and brought out into the open, so to say, so that they are used well. In 2005 we had two special issues devoted to Einstein’s
miraculous year. In biology, I recall issues on Darwin, Haldane, Fisher, Wright, Ernst Mayr, Dobzhansky and other great expositors of the theory of evolution. Fortunately, many of these have been put together in a compilation by T N C Vidya. In mathematics, a few such collections in a few areas were brought out in the early years. These are different from the Masterclass series, devoted to one author at a time. It would be good to bring out periodically such theme-based collections in physics and chemistry too, putting together well-written articles over the years.

14) So a general suggestion and hope for the future is to make efforts to see that high-quality articles from the past are not forgotten but constantly brought to the attention of motivated students and teachers, to enrich their classroom experiences.

15) In the same spirit, I recall that up to some years ago Springer would give figures annually for the number of full-text downloads worldwide from Resonance. Sometimes as many as 30000 or 40000 complete article downloads were reported. Can we trace who and where these users of Resonance are, how many students and how many teachers, and how they use Resonance material? This kind of information may be useful in planning the future shape of Resonance.

16) One other lesson we learned, not a surprise – the gift of writing well at Resonance level is not very common in India; it has to be cultivated and supported. Sometimes I have found even good writers do not recall the past accurately. As a physicist, it is sad to read that Heisenberg proposed his Uncertainty Principle in 1925, or that Dirac discovered his wave equation in 1930. Such errors get propagated. My successors as Chief Editors – Rajaraman, Chandrashekaran, Mahadevan, Sebastian, Rajaram Nityananda, and now Sathyamurthy – have dealt with such issues, as well as the overall quality of writing, very attentively. We need a good supply of good writers and articles all the time. It may be that things are improving now. It seems some reader abroad said there is no other journal anywhere quite like Resonance. It has acquired a world wide status and reputation, but that needs continuous effort to be maintained.

17) To sum up: it has been indeed a privilege for my early colleagues and me to conceptualise and create Resonance. The support from the Academy staff has been superb. Production quality has increased enormously over the years. The overall design and presentation has been maintained. I hope all this will continue to improve in the future.

My thanks again for this chance to recall some history, and to make some suggestions for the future. Thanks to Sathyamurthy, Sury and St Joseph’s for their efforts in arranging this celebration and inviting me to be here.

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