

Technobrat. Rukmini Bhaya Nair (with Ramnik Bajaj and Ankur Meattle). Harper Collins Publishers India. 1997. Rs 350.

Rukmini Bhaya Nair (RBN in what follows) was educated in Calcutta and at Cambridge University, UK, where she acquired a PhD in linguistics. She is currently an Associate Professor in the Department of Humanities and Social Sciences at IIT, Delhi. RBN is also a practising poet and has published a book of poems titled *The Hyoid Bones*. In 1990 she won the first prize in the All India Poetry Society/British Council Poetry competition.

In her book *Technobrat* (written with contributions from two of her students) RBN describes her experience in teaching a one-semester undergraduate course (16 weeks in duration) on 'Technology & Culture' at IIT, Delhi. Her teaching methodology, as well as the structure of her book discussing her experience in teaching this course, are, to say the least, unconventional and pathbreaking.

The book is not a straightforward narrative detailing the course HU484 through its various class-room sessions in chronological order. It is a collage of excerpts from scholarly articles, magazine cuttings, and other texts distributed to the students for their study and reactions; examination answer-scripts handed in by the students; discussions among and with the students; all with a view to probing the students attitude to, and forcing the students to articulate and become aware of their own attitudes to, various facets of the main themes of the course 'Technology & Culture'.

According to the official course description, 'The objective of this course is to impart knowledge on the historical and contemporary ideas of the nature of technology. The basic knowledge and understanding of technology and its impact on culture will help students towards a more sensible application of technology to benefit society

The texts distributed to the students by RBN for their study and reaction span a very wide spectrum: from Nehru, Mahatma Gandhi and Tagore, to excerpts on Zen, sociobiology, computers & computability, and so on, all bearing on technology, tradition, and culture. *Technobrat* is a somewhat difficult book to read since it interweaves continually RBN's views

of IIT students, the student's views of themselves and the themes of HU484, and the views of the authors of the handouts. A shorter more accessible version of *Technobrat* appeared in *The India Magazine*, Oct.-Nov. 1996, pp. 48-56. In this brief review I shall draw on both the book and the earlier magazine article and restrict my comments to a couple of issues brought up by RBN and her student co-authors that may be of wider general interest.

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'Why do I call the IIT student a "brat"?' asks RBN and answers her own question: 'The IIT undergraduate is not sassy, he is in control, he is well-mannered and polite in class. [However], under this suave surface I suspect other qualities: a ruthless competitiveness, emotional attrition, an extremely narrow view of social goals, relentlessly instrumentalist attitudes, and an annoying complacency'. And again: 'To be brutal, I would assert not only that the IIT undergraduate has a distinct tendency to be selfish but that he sees such selfishness as essential to success.'

RBN (ironically?) identifies the typical IIT undergraduate with the Rgvedic *Tvashtri*: 'the divine artisan, the most skilful of workmen, well-versed in all wonderful and admirable contrivance'. Throughout the book she refers to her students as *Tvashtris*. According to her: '*Technobrat* is about the *mentality* of the technologist who might begin life as a hatchling in an Indian IIT, but whose wings span the world.'

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This leads us directly to the first major issue that I want to consider. In RBN's words: 'When the IITs were set up in the fifties and sixties, they symbolized India's most optimistic projections for a technocratic future. They were created by an act of Parliament - which is, I suppose, quite a bit like an act of God - and declared among our "Institutes of National Importance". As Nehru put it at the time, the IITs were intended "to provide scientists and technologists of the highest calibre who would engage in research, design, and development to help build the nation towards self-reliance in her technological needs"

RBN, wryly, adds: 'They did produce technologists who were able to hold their own anywhere in the world. The irony lay in the fact that their world, by the

very virtue of their education, was no longer confined to India. "National self-reliance" meant less and less to them, individual self-reliance more and more.'

What are the students' own views on this vexed question? Ramnik Bajaj, one of the student co-authors comments: 'Talking of IITs, I bet not just Gandhi, even Nehru would collapse with shock if he saw them today. IITs cannot even foster a desire to stay in India. Anyone who can contribute to science and technology, just leaves.' Nehru said: 'The IITs are for us. We have taken "us" to be "U.S."

He goes on: 'With the entry of MNCs, opportunities here have definitely grown, but the dream of immigrating is alive in the IITian mind both by night and day. From the training that final year students undergo, they form a negative opinion about the professional environment in India. [Their attitude is]: "While we are young, we might as well earn some cash" A desire to return something to IIT, if ever possible, does exist but that they would be betraying the country by migrating is NOT the opinion of the IITian. And while these arguments proceed, a large percentage of IITians quietly leave.'

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'Technology literacy' - that is, a thorough understanding of the potentials and implications of existing and emerging technologies - is an essential prerequisite to effective diplomacy. Notwithstanding this, technology considerations play a negligible role in the shaping of our national policies - whether economic, political, or developmental. What has been the role of IITs in building up technology literacy among its students?

Here is Ramnik again. 'The hard fact is that most of the to-be-engineers graduate from IIT without coming across any speculative writing whatsoever on technology, and then, as technocrats, make policy decisions with this attitude, or rather, with this ignorance. In my view education in the philosophy of technology and its cultural history should be a requirement for every student in this age of technology.'

RBN asks: 'How many technologists, whatever their contributions, have the towering intellectual reputation that attaches to an Einstein, a Raman, a Chandrasekhar, a Bose, or a Hawking? What, then, might be the qualities among en-

engineers that resist mythification and leave them, as it were, out of history? And how might we read the cultural status of engineers?

Of course, this supposed invisibility of engineers – compared to pure scientists – is not strictly true historically and globally. One can point to Edison (a folk hero adulated in children's literature in USA), or the heroes of the early industrial revolution in England, or, coming to more recent times, Babbage, and, of course, in our own country, Visvesvaraya.

Nevertheless, one must agree with RBN when she claims: '... this "silence of the engineers" has a long-standing cultural tradition behind it, involving all kinds of complex social attitudes, both "Indian" and "Western"'. (How many of us have heard of Brunel, for example, who has a university named after him in England?)

I shall end this brief review with RBN's own summing up of the book: 'To ascertain just how fragile, how dangerous, and how necessary a place technology

holds within our cultures, perhaps we need first to humanize it. In *Technocrat*, we have attempted a preliminary step in that direction by holding the mirror up, not so much to nature, as to the nature of engineers.'

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MEETINGS/SYMPOSIA/SEMINARS

IV CME in Haematology and Haemato-Oncology

Date: 2–5 May 1998
Place: Mumbai

IV Continuous Medical Education is oriented towards PG students and senior staff members from pathology, paediatrics and medicine. It would cover both diagnostic and therapeutic aspects.

Contact: Dr M. B. Agarwal
Programme Director – IV CME in Haematology
Haematology Centre, Vijay Sadan
168B, Dr B. Ambedkar Road, Dadar TT
Mumbai 400 014
Tel: 022-4144453; Fax: 022-4140058

National Seminar on Integrated Management of Plant Resources

Date: 23–24 January 1998
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Topics include: Strategies for integrated management of plant resources; Cultivation, marketing, trade and utilization of medicinal and aromatic plants; Biofertilizers; Biological control of pests and weeds; Microbes in medicine; Mushroom production technology, marketing and trade; Plant-based anti-microbials; Extension strategies.

Contact: Organizing Secretary
National Seminar IMPR
Department of Botany
Danielson College
Chhindwara 480 001
Tel: 07162-2210, 2610; Fax: 07162-43237

National Seminar on Pharmaceutical Biotechnology: Current Status and Future Prospects

Date: 31 Jan. and 1 Feb. 1998
Place: Ahmedabad

Distinguished scientists from academia and industry will give lectures on therapeutic, diagnostic, pharmaceutical and commercial aspects of biotechnology.

Contact: Dr Anisha Pargal
Convener, National Seminar on Pharmaceutical Biotechnology
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National Conference on Biomedical Engineering (NCBME 98)

Date: 9–11 April 1998
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Topics include: Medical instrumentation and measurements; Biomedical signal processing; Medical imaging and image processing; Physiological systems and modelling; Neural networks and fuzzy systems; Medical informatics; Rehabilitation engineering; Biomechanics; Biomaterials; Biomedical engineering education.

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