

Question Of Ethics In Indian Science

Shiju Sam Varughese

SCIENCE, TECHNOLOGY AND DEVELOPMENT IN INDIA: ENCOUNTERING VALUES

Edited by Rajeswari S. Raina

Orient BlackSwan, Hyderabad, 2015, pp. xviii+294, ₹675.00

Science and technology are often understood as socially disembodied and outside the cultural domain of values, although this view has been criticized by scholars working in the field of Science, Technology and Society (STS) Studies since the 1970s, and the scholarly endeavours resonated well with the civil society critique of the epistemology of modern science and the moral universe S&T was embedded in. In more recent times, there is strong public scepticism on the scientific and technological advancements which generate a spectrum of environmental and socio-economic risks. The perception and negotiation of the risks created by science and technology and the development pathways informed by them are often linked to a conflict of moral values. However, this aspect of public engagement with S&T is seldom acknowledged in the Indian policy discourse. It is in this context that the volume under review demands our attention. It poses the question of values vis-à-vis science, technology and development in the Indian context and brings in a variety of perspectives on the same.

In her introduction to the volume, Rajeswari S. Raina suggests the urgency of a critical evaluation of the values that inform the production of scientific knowledge and technological projects as well as the employment of S&T in development related decision making. On one hand, Raina suggests, scholarly attention should be on 'the hidden norms or values that we take for granted, which have been bred into our sciences, our policy making processes, our teaching methods or health services, our ways of working' (p. 9). On the other hand, the chapters of the volume are concerned about the need to seek better ethical practices in the contexts of knowledge production, shaping of technologies and developmental decision making that are informed by S&T. Together these two emphases, the volume suggests, will catalyse democratization of science in India.

From this perspective, the twelve essays in the volume are organized around four different themes, and each section consists of three essays. The first section ('Mores and Moral Communities') has essays focusing on the moral communities of science and the values nurtured by them—this includes scientists, engineers, technocrats, rural public, self-help groups or the bureaucrats. Agricultural development in India and its policy frames (A.R. Vasavi), the rare case of expert advice extended by the Indian scientific academies during the Bt Brinjal controversy (Gautam I. Menon and Rahul Siddharthan), and the moral negotiations over the Indian microfinance (Tara S. Nair) are the cases discussed. The section demonstrates how the Indian research community and science policy lack the self-reflexivity to attend to the hegemonic values that clandestinely shape their research and policy options.

The chapters in the second section ('Technical Fixes for Complex Problems') examine the debates and issues in the shaping of water policy (Ramaswamy R. Iyer), transformations in higher education (Dhruv Raina) and agricultural development (P.S. Vijay Shankar), while critically looking at the dominant trend of reducing complex, multi-dimensional problems to technical fixes, a trend that triggers off long-term social and ethical crises. This reductionism that fails to take into account the multiple dimensions of the problem at hand is well-captured by Iyer while stating that 'a project may be very good from an engineering perspective, but not so good from a broader environmental, ecological, social and human perspective. *In short, a marvel of engineering may not necessarily be good science; it may even be bad science*' (p. 92, emphasis as in the original).

Chapters in the third section ('We Can and Therefore We Ought to') are organized around the theme of technological dependence of developmental imagination; many of the projects and policies are executed exclusively because of the availability of technology, as the cases of agricultural biotechnology (Prajit Basu), Unique Identification (UID) Project (Usha Ramanathan) and Assisted Reproductive Technologies in India (Tista Bagchi) vindicate. A great optimism in the power of technology to solve societal problems persists even in the neoliberal phase of development in a country that faced severe setbacks in this regard in the previous decades, as the case of Green

Revolution demonstrates. While Basu examines the issue of ethics in techno-scientific practices and choices from a philosophical angle, the latter essays explore the moral dilemmas, ambiguities and pitfalls in such optimism in ready-to-use technological solutions through detailed case studies.

The last section of the volume ('Knowledge, Evidence and Development Burdens') discusses the inability of experts and policy makers to learn from past failures and the chapters demonstrate how the same old, obsolete and inadequate ethical norms and values inform new development projects and technical solutions offered. The chapters in the section have a special focus on climate change and discuss mitigation efforts in the context of rising sea levels (Sujatha Byravan and Sudhir Chella Rajan), the moral values and ethical norms that inform the global climate policy negotiations (D. Raghunandan), and the coping strategies in the agricultural sector (Rajeswari S. Raina). The first essay discusses the need for collective action to provide care to the climate exiles and migrants in near future and suggests that this is possible only if we develop a new ethical framework as a global community. The second and third essays challenge the false notion that science and ethics are mutually exclusive and emphasize the need for a new ethical paradigm to reset the 'policy jukebox' seemingly 'incapable of playing a new tune' (p. 242).

In her concluding remarks in the final chapter as the editor of this impressive volume, Rajeswari S. Raina reasserts the need 'to build ethically-informed S&T and development systems in India' (p. 262). She rightly points out that S&T and the development trajectory of India have never been value free or ethically neutral, and the immediate need hence is to build capacities among experts and policy makers to better engage with the question of values. Such an openness of science to place itself in a new ethical paradigm will make it more socially relevant and ethically robust, as the essays in the vol-

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With a foreword by Helen E. Longino

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Academic debates in India is seldom informed by the question of conflicting values that inform production of scientific knowledge, designing of technology and the very process and practices of science policy making and S&T governance. The present volume is a significant contribution that addresses this lacuna. Although a major focus of the book is on bringing out the hidden value-structures that shape the S&T-informed development discourse of the country, many of the

chapters of the volume give clues to unexplored or less researched areas of Indian STS, which have immense ethical implications. The structural transformations of Indian science in the neoliberal phase, for example, hint at the need to examine the changing (hidden) value structure of science, although the volume in general takes the position that the old values persist even in the current phase. Another area that demands more attention from the Indian STS scholars is the transformation in the relationship between state and science and its impact on the contract between science and society. More in-depth studies are required to understand the conflict of values during public engagement with science and technology in diverse contexts. Similarly, the volume strongly suggests the need to frame the question of values beyond Ethical, Legal and Social Impacts (ELSI) of S&T towards an enquiry into the democratization of science. This is extremely important today, for the 'ELSIfication' framework rather limits itself to the 'impacts' of S&T and fails to take into account the hidden 'background assumptions' and moral values and norms which guide the knowledge production process and technological designs.

Science, Technology and Development in India hence has great significance in prodding research scholars and students of STS to explore the question of values in knowledge production and the decision making process related to development in India, especially when the academic engagement with science, technology and innovation policies of the country hesitates to leave its state-centred analytical comfort zones.

Shiju Sam Varughese is Assistant Professor at the Centre for Studies in Science, Technology and Innovation Policy, School of Social Sciences, Central University of Gujarat, Gandhinagar.

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Speaking Tiger, 2015, pp 400, ₹399.00