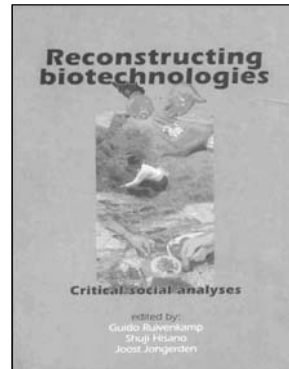


Book Review

Reconstructing Biotechnologies: Critical Social Analyses

Guido Ruivenkamp, Shuji Hisano and Joost Jongerden
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The debate on biotechnology in developing countries has been more or less a polarized debate with supporters and opponents discussing the usefulness and relevance or the problems with biotechnology respectively. Biotechnology is either seen as a boon or as a bane and often it is assumed that technology is a major determinant with society having little role in shaping it or directing its development. Over the last two decades different approaches and theoretical frameworks have been developed in sociology of science, Science and Technology Studies (STS), anthropology of science and technology and in sociology of development to study the nexus between technology and society and of these, Social Construction of Technology (SCOT) framework and Actor-Network-Theory (ANT) are well known. These theories and frameworks reject technological determinism and grand narratives about technology, development and progress. They posit that technology and society influence each other and there are technological alternatives and paths that are not chosen, not because of technical factors alone. Although the influence of post-modernism is evident, they cannot be reduced to a sub-stream of post-modernist thought. Feminist perspectives on science and technology, including feminist critiques of science and technology, have also contributed to this debate. But in most debates on biotechnology and society, these perspectives are invisible or do not get the importance they deserve. This results in not only a polarized debate but also in a poorer understanding of the issues. This volume rectifies this absence to a great extent. But the articles in the volume are informed by different perspectives and the sub-title critical social analysis is an apt one.



The volume is divided into six parts, preceded by a lengthy introduction. The editors introduce the four core issues addressed by the volume and the need for developing a multi-perspectival critical social theory. Guido Ruivenkamp's article puts forth a critical-theoretical approach and discusses the possibility and potential for re-appropriation and democratization of life-sciences technologies. He underscores the need for a situational politics to understand and (re)shape the biotechnologies. His theoretically rich analysis should be developed further. But any proposal for alternative technology trajectory should also include the question of value preferences and technological choices. Considering technology as a force for emancipation is an enchanting idea but in the globalized science and technology the scope for oppositional forces getting co-opted is high. In one sense his analysis is too heavily influenced by dialectic, historical-materialist and critical approaches to take into account critical perspectives from other disciplines like bio-ethics and environmental ethics.

Rachel Schurman and William Munro, in their article question some of the assumptions of Guido on technology and the role played by those who oppose technology. They examine how the anti-GM movement politicized agricultural biotechnology and challenged the assumptions made by the state and Multinational Corporations (MNCs) on acceptance of technology. They argue that this resistance has had a profound impact and the resistance was not confined to Europe. This protest, they contend, also led to search for non-GM alternatives. Although the two articles differ considerably in their perspectives on biotechnology and the scope of the intervention, both when read together indicate the need for critical perspectives on technologies. In my view resistance to biotechnology may be necessary but not sufficient to develop a critical perspective on all aspects or applications of biotechnology. For example, the resistance or opposition to agricultural biotechnology in Europe did not result in a similar opposition to medical biotechnology or health sector biotechnology. Thus, the resistance was not to biotechnology *per se* but applications in a specific sector. The other issue which both articles ignore is the evolution of regulatory responses to technologies and how they affect the acceptance or resistance to a specific technology.

Franz Seifert analyses the opposition to GMOs in two countries, i.e. France and Austria and describes how different the opposition was. In France the attitude of the opposition was against biotechnology anywhere,

not just France while, in Austria it was NIMBY(Not In My Back Yard). In Austria the issue of contamination is raised to protect organic farmers and organic farming and organic farmers are not in the forefront of opposition to GMOs. In France the major group that was in the forefront of the opposition placed the opposition in a larger context and in ideological terms.

Les Levidow, whose writings on biotechnology regulation in Europe, particularly in UK are well known, examines the state sponsored exercises in Technology Assessment (TA) and in enhancing public participation on debates on biotechnology. The state is not a neutral player and its policies are in favour of agro-biotechnology. Participatory TA under the auspices of TA becomes an exercise in enhancing the legitimacy and acceptance of agro-biotechnology than a TA on technological choices, and, society's needs. In other words, the framing of the issues more or less decides the outcome of the participation by public. Democratizing technological choices is not an easy task and participatory TA can be used creatively but TA is not a process of technological development. But unless the larger question of technological choices and democratic decision making is addressed, there can be no satisfactory solution to this issue. Since democracy is also a question of numbers and as the choice(s) of the majority count more than that of the minority the bigger question is whether the current models of democracy provide enough space for alternative technological choices to compete equally and be assessed.

Joost Jongerden provides a sweeping overview of the peasant question and modernity. According to him the destruction of peasant production system was a goal of the modernity and it was an outcome of the modernity project. A reconstructionist approach would ultimately question the nature of the modernity and its objectives. But peasants seem to have survived the modernity project and not all observers are as skeptical as Joost is. Perhaps the reconstructed modernity will allow peasant system to survive and flourish as an alternative technological system of food production or may co-opt it and contain the resistance and opposition to the modernity project.

Wietse Vroom's article examines the attempts to develop appropriate biotechnologies for potato farmers by International Potato Centre in Peru. She contends that alternative and empowering technological trajectories are feasible. Shuj Hisano's article cautions against the 'add ethics and stir' approach to incorporating ethical concerns and stress the need to politicize the ethics of biotechnology.

Les Levidow compares and contrasts the Knowledge Based Bio-Economy (KBBE) and the Alternative Agri-Food Networks (AAFNs) approaches to agriculture and society in Europe. AAFNs challenge the quality agriculture discourse of KBBE and project an alternative framework on bio-economy. In this GM-Free is not just an expression of a technological choice for consumption but also a preference for alternative mode(l) of agricultural production and consumption.

The next three articles discuss the new food networks, regional initiatives for production and distribution of high quality food products and the symbolic and communicative aspects of food and its embodiment in a socio-cultural matrix. These articles indicate the emerging perspectives on food and agriculture and how alternative discourses challenge both the assumptions on modernization of agriculture and food and the role technology plays in it. The local and regional networks and experiments in alternative models of food production and consumption in Europe in one sense can be understood as the return of the repressed. But these models may end up as just models without bringing in major changes in technological and social organization of food production and consumption. Only sustained efforts and innovative approaches of alternative technology development that value some choices over mere productivity will take them forward. I wish that there was an article on similar experiments in USA and Canada on organic food production and community supported agriculture.

William Munro's article on the experience of small holders with GM cotton in South Africa indicates how biotechnology could become a contested terrain. In the process new spaces are created and the growers do not always consider themselves as mere consumers of technology. George Essgbey discusses the biotechnology in six countries in Africa and points out the need for developing appropriate biotechnologies in these countries. Msuya analyses GM cotton in Tanzania and argues that existing technologies are unlikely to be of much benefit to resource poor farmers and what is needed is the biotechnology that is reconstructed and appropriate.

Thus the articles in the five parts question the normally held assumptions about agricultural biotechnologies and their relevance. While some call for development of appropriate technology and stress the need for reconstructing biotechnology to suit needs of various types of farmers in developing countries, some question the very logic of applying biotechnology as a solution and discuss the alternative frameworks. The

contrast in these is evident. The question is how to reconcile these views and still argue that biotechnology deserves to be reconstructed as an appropriate technology. If the criticisms of those who support quality agriculture based on local/regional production and consumption is valid, then the issue is more of finding non-biotechnology alternatives than that of reconstructing biotechnologies. But the analyses based on the experiences in developing countries call for reconstructing biotechnologies than for switching over to regional/local food production and consumption. Does it indicate that some parts of hyper-(post)modern Europe are more suitable for returning and reinventing local/regional food production and consumption arrangements than other parts of the world? The tension between calls for rejection of agri-biotechnology and calls for re-constructing biotechnology deserves an extensive analysis and critical social analysis can help us in this.

The articles in the next section discuss common property, commons and the appropriate rights regime. Eric Deibel draws on the theoretical frameworks developed Marx, Foucault and advocates an open source approach. Kate Milberry examines the various examples of technology activism including free software, Indymedia, and the Wiki revolution. She concludes with the observation that whether these could result in radical transformation of technical sphere or not, they do indicate that another world is (still) possible. Niels Louwaars argues for developing tailoring rights in such a way that hyperownership does not erode the policy space or the rights of farmers and breeders.

Thus the volume covers a whole range of issues from different perspectives and this makes it a very interesting volume. The task of de/re constructing biotechnologies as envisaged by various contributors to this volume is not an easy one. While some authors have discussed theoretical frameworks, many others have examined the situation in the ground and the need to reorient and reconstruct biotechnologies. In sum this volume calls for a rethink of the traditional approach to biotechnology and development issues. It provides food for thought and tools for analysis. The publishers should bring out a paperback version at affordable price as early as possible so as it increase its availability and accessibility.

One would recommend it to any one interested in biotechnology and development issues.

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