

## REVIEW

## Gendered Opportunities in Biotech

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Laurel Smith-Doerr, *Women's Work: Gender Equality vs. Hierarchy in the Life Sciences* (Boulder, CO: Lynne Rienner Publishers, 2004), 205 pp., £35.50/€175.75/\$49.95. ISBN 1-58826-264-2 (hbk).

This book could not be timelier, given the brouhaha in the USA and European press over Larry Summers' claims that 'genetic differences' between women and men are responsible for the lack of women in senior positions in science. Dr Summers' opinions matter because he is the President of Harvard University and, under his term of office, the number of women professors appointed at that institution has declined considerably. Moreover, there is mounting evidence from the USA, Europe and elsewhere that despite the fact that women now constitute the majority of all undergraduate students, and more specifically, of those in the life sciences, their progress in scientific careers remains stubbornly slow (Valian, 1997; Osborn et al., 2000; Greenfield et al., 2002; RübSamen-Waigmann et al., 2003). Why is this the case?

This book draws upon both qualitative and quantitative data to explore these issues, and throws light on the relative progress that women make in the academy, the big pharmaceutical corporations and in the small but growing number of biotech companies in the USA. Smith-Doerr reports on what is probably one of the first detailed qualitative studies of gender relations in the small and highly flexible biotech companies that are developing a very different modus operandi and organizational culture to the other major employers of scientists. She concludes that women prosper in the flexible, network-based, inter-disciplinary way of working that characterizes biotech companies. It is a fascinating, closely argued study, drawing upon literature from a range of disciplines, contextualized in national statistical databases and illustrated through the voices of women (and also men).

The results of the study are counter-intuitive. The larger corporations and universities in the USA have been characterized by formal bureaucratic approaches to human resource (HR) management, which should

imply a degree of transparency in recruitment and promotion processes that benefits women. However, the very bureaucracy and rules-based approach to HR that builds-in attention to equality issues appears to be less effective than the more flexible culture of biotech companies. Indeed, Smith-Doerr argues that 'female scientists working in dedicated biotech firms have a much higher probability of being in a position to lead research teams than do their female colleagues in more hierarchical life sciences organisations' (p. 6).

Smith-Doerr begins her argument by rehearsing the supply- and demand-side explanations for women dropping out of scientific careers. On the supply side, she critiques human capital theory, socialization explanations, the leaky pipeline argument and the 'revolving door' account of how women become lost from scientific careers. On the demand side, she examines evidence of discriminatory employers before focusing on general structural theory. She makes an impassioned plea for organizational studies and gender studies to converge in their quest to understand how organizational context shapes opportunities for women in science, engineering and technology professions. This is an argument well made. There are by now plenty of biographical accounts of women's experiences in academe; these need to be analysed theoretically in the light of organizational theory. A recent account of the 100 years since Trinity College Dublin first allowed women to enter as students, despite reservations that they would be a 'danger to the men', provides an especially rich vein of experiences of direct and indirect discrimination among students and staff (Parkes, 2004).

Next, the book contains a useful description of the brief history of the development of the life sciences industry in the USA. This is a sector that has experienced remarkable growth and has attracted high-calibre scientists because of the quality of research that is undertaken and, perversely, because it provides the freedom to follow curiosity that is supposed to characterize academic life. In the latter, the reality is of course that much energy is consumed in applying for research grants.

The book then unpacks three narrative forms of the biotech company: resources, social networks and 'asset of newness' – the latter ingredient essential to providing commercial success. However, the author identifies the institutionalization of the network form of organization in the biotech company as being especially different from the culture of the university or big pharma company. Because the networks operate across disciplines and within the firm, and because this encourages teamwork rather than individual competitiveness, women have more opportunities to lead their own research teams. The culture is more favourable to those who are good at communicating and comfortable with being flexible and working in teams. Moreover, women have more access to biotech companies because they do not appear to be characterized by the 'gender queuing' that is part of recruitment in other new or attractive sectors, where men are always preferred. Indeed, Smith-Doerr offers a modification to queuing theory along the lines that 'the significance of gender queues will decrease in

knowledge-expanding fields (for example, high-tech industries) where women have access to the same educational advantage as men' (p. 94).

Drawing on national US data, the author concludes that in universities and big pharmaceutical companies, women scientists are 60% less likely than men to run a laboratory. By contrast, women scientists in biotech companies are eight times more likely than those in hierarchical organizations to direct scientific projects or manage the firm. This is attributed to job ladders with flatter profiles, cross-specialization, team-working and the avoidance of formal bureaucratic rules. The flexibility of organizational boundaries, of project teams and of work-roles, militates against the gender discrimination of more rigid hierarchies. Smith-Doerr comes to this conclusion by conducting qualitative interviews and observations in a small biotech company to understand the daily gendered dynamics of the working organization.

The book is accessibly written and casts light on the working culture of a rapidly growing sector in the economy. But what are the implications for those scientific super-tankers, the university and the big pharmaceutical corporation? It is not entirely obvious that there are lessons to be learned by these large bureaucratic organizations for improving the position of women in scientific careers. However, without improving their record, it is clear they will lose good women scientists to the biotech companies. Women scientists at MIT have already, and very publicly, drawn attention to the direct discrimination they were experiencing in size of laboratory, office and salary in a highly bureaucratic university where equality is supposed to be embedded in systems and structures (Hopkins et al., 2002)

There is scant reference in the book to literature on women in science, engineering and technology in Europe, in particular the studies commissioned by the Women and Science Unit of the Research Directorate-General of the European Commission (Osborn et al., 2000; Blagojević, 2004; European Commission, 2005) or even substantial individual empirical studies like that by Glover (2000), which compares women's scientific careers in the UK, France and the USA. There is, however, reference in the book to a considerable body of literature on the deleterious impact of the 'old boy network' on women in science, including a discussion of the Swedish study that demonstrated how nepotism and patronage were cutting across the peer review system in the Medical Research Council (Wenneras & Wold, 1997).

The author's main argument is that the network-based way of working in the small biotech company she observed benefited women. This is a very challenging finding and needs exploring in different case studies. It means reconceptualizing networks and networking analytically in order to understand better the gendered dimension of networking patterns and their effects on women's careers in science.

In summary, this is a very useful addition to the literature on women and science and a most interesting account of life in a biotech industry and how the new ways of working appear to be beneficial for women's careers

as scientists. It should certainly be required reading for women PhD students in the life sciences who are considering where to begin their careers! Its relevance is much wider than this, however. If the argument generalizes to other companies, it suggests that, despite their explicit equality policies, universities and big pharmaceutical companies will face fierce competition in recruiting and retaining the best-qualified women life scientists.

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