

**Waltraud Ernst & Ilona Horwath (eds.) (2014). *Gender in Science and Technology. Interdisciplinary approaches*. Bielefeld: transcript.**

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A couple of weeks ago, in November 2016, I went to the kick-off event of a transdisciplinary research project on security for people in cyberspace. Researchers in mathematics, computer sciences and engineering, who have been working for decades on securing the digital society, felt their efforts to compute 'the human factor' have failed and will cooperate with linguists, psychologists, anthropologists and other social scientists. My friend, who participates in this research project, is a professor of anthropology of knowledge. At the dinner later that evening, she told me of a PhD job interview she held for this project. A male candidate, a trained computer scientist, addressed my friend's male colleagues by their titles and names, but my friend only by her first name. The candidate immediately corrected himself and apologized noting that he is not used to women being professors. I found this anecdote interesting for it points to a continuing easy and pervasive blindness to the working of categories of an analytic social awareness amongst mathematicians, computer scientists, and engineering — and that is worrying.

The question of gender participation in science and technology has been discussed widely, but how to address it without contributing to a binary gender distinction and stereotyping? This is the starting point for the book edited by Waltraud Ernst and Ilona Horwath. The book emerged from a lecture series conducted in 2011-2012 at the Johannes Kepler University in Linz, Austria. Written by authors of which each has a background in at

least one scientific discipline, the book provides an introduction to analytic approaches from feminist technoscience to different fields of scientific research and technological innovations. If widely read by mathematicians, computer scientists and engineers, it has a capacity to make a difference.

The table of content specifies eleven chapters grouped in three parts. The first part, "Gender in design processes" is guided by the question of how new technology can be developed to foster equal opportunities for all genders. The second part, "Gender in epistemological foundations of science and technology", discusses how gender becomes an issue in scientific research. Research on un/equal participation is designated to the third part, "Reflecting un/equal conditions for participation". Among the eleven chapters, are many of interest for researchers in the STS. I chose to discuss two of them.

Els Rommes's chapter "Feminist Intervention in the Design Process" is among the chapters of the first part. She follows the question 'Is it enough to design products that include more women, or should feminist designs include efforts to proceed for changes in gender relations?' (2014: 41). Part of her chapter is presenting results of a previous research project about technology designs such as computer games, websites and mobile phones, which was conducted within the European research project "Strategies of Inclusion; Gender in the Information Society (SIGIS)" (2014: 41). She explores what it is that is referred to by gender-inclusive design and asks for design

methodologies which will lead more easily to gender-inclusive products (2014: 42). Rommes discusses the term 'gender-inclusive' which she opposes to 'feminist products'. By claiming that gender-sensitive products may reinforce sex stereotypes, she argues for products that display gender as dynamic and fluid, which are gender transgressive rather than reinforcing stereotypes. She also presents her categorized strategies by which gender-inclusive and gender-transgressive products were designed.

One of the strengths of Rommes' chapter is her commitment to the concept of gender transgression. She describes how different strategies of designing gender-inclusive or gender-transgressive products lead to a variety of gendered products. She shows what is at stake when one design strategy is applied or another. By doing so, she wonderfully emphasises the ontological politics (Mol, 1999) of the design processes. I enjoyed reading this chapter, yet, I would have wished for more situatedness in order to understand the options in the decision making processes. By situating her research data and her own position she would have responded to my questions which were raised when she asked "Is it *enough* [for whom] to design products that include more women, or *should* feminist designs include efforts to proceed for changes in gender relations [in order to do or to attain what]?" (my emphasis and insertion).

My criticism of lacking situatedness is directed to various chapters in the book and it's also my main criticism of the book. While some authors develop their claims by acknowledging their impact on the knowledge, I was left with a sense that not just the claims of those authors, but most claims in the book are too general for a STS readership. Often, it remains unclear if they are supposed to have validity beyond the actual research situation, and if so how the claims' transfers from one situation to another is managed. Another, rather disturbing, consequence of lacking situatedness is that 'gender inequality' becomes a vague, all-purpose concept and by this it appears removed from the experiences of those written about.

Wendy Faulkner's chapter "Can Women Engineers be 'Real Engineers' and 'Real Women'? Gender In/Authenticity in Engineering" pays

tribute to this experience. It is the first of three chapters of the third part 'Reflecting 'unequal conditions for participation'. Faulkner argues for multiple, fluid and relational genders in engineering while describing the making of the duality of men and women. She faces this challenge by pointing to the practices and dynamics that constitute femininities and masculinities in engineering. Faulkner describes how women engineers were made visible as women and invisible as engineers by applying the concept of 'gender in/authenticity'. Faulkner coined this concept to highlight "*the apparent congruence or non-congruence of gender and engineering identities for man and women engineers respectively*" (emphasis in original, 2014: 189). This concept provides a sensitive framing of gender-constituting interactions and their consequences for engineering identities. By describing these practices, Faulkner shows how specific genders were performed. Yet, I would have wished for more visibility of materiality in the chapter; and not only in this chapter. Other chapters too mention a rather abstracted materiality - abstracted brains and abstracted hormones. Although they criticise understandings of technology as gender neutral, materiality's contribution to gendering is barely discussed.

The editors (and authors) did not set out to address researchers in STS as their primary readership. Instead, "the book was written especially for those students and scholars of science and engineering who are ready to confront unreflected assumptions about women and men and who want to learn about methods and strategies to develop research and innovation serving all genders and enable them to collaborate on equal terms" (2014: 8). For me, the book provided insights in currently conducted research projects on gender in science and technology and theoretical tools. It has encouraged me to frame the aforementioned scene between my friend and the applicant from computer science as one offering itself as a site for generating a new ordering of genders in the technosciences. The book provides inspirations to work towards a more differentiated understanding of the interactions of genders in the working of the technosciences. It is an effective contribution, and I feel that I now have a book that I can recommend to my friend, suggesting she in turn recommends it to her fellow technoscientists.

**Reference:**

Mol A (1999) Ontological politics. A word and some questions. In: Law J & Hassard J (eds) *Actor Network Theory and After*. Oxford: Blackwell, 74 – 89.