



International Journal of
Gender, Science and Technology

<http://genderandset.open.ac.uk>

**Review of 'Gender and the Science of Difference:
Cultural Politics of Contemporary Science and Medicine'
Edited by Jill A Fisher**

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PUBLICATION DETAILS

Date: 2011

Published by: Rutgers University Press

ISBN: 978-0813550473

REVIEW

'Gender and the Science of Difference' is a collection of chapters that depict contemporary science and medicine as gendered institutions reflecting society's cultural values. The book is organised into four parts which this review will discuss in turn. The introductory chapter by Jill Fisher not only introduces the different sections of the book and explains why the book is original, but also gives the reader a thoroughly enjoyable insight into the history, although brief, of the gendering of science. This brief history starts from early philosophy with Aristotle through to how science is gendered in contemporary society including post-feminist thought. This introductory history sets up the premise for the book and the rest of the sections and chapters in an engaging way. My interest in this book stems from my general interest in gender and science. I am from a psychology and women's studies background and I have a particular interest in gendered occupational segregation and women's under representation in the science, engineering and technology sector. My recent doctoral research looked at women working in the male dominated computer games industry. The topics covered in this book are not my areas of expertise, but I found all of the chapters engaging and accessible for a novice reader. I also feel the book would be equally engaging and appealing to readers with more insight on the subject.

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SECTION ONE: INVESTIGATING DIFFERENCE

This section includes three chapters considering the hardwiring of gender/sex differences. The section starts with a chapter by Lesley Rogers looking at genetic explanations for gender differences suggesting differences between the genders are unchanging and unchangeable. The chapter gives an overview of recent studies in the area providing a good up to date review of the topic; including human development, evolutionary psychology and animal behaviour.

Chapter three moves onto critiquing a biological determinist approach to sexuality discussing Dennis McFadden's research and methodological approach to finding a biological cause of homosexuality. The authors, Bonnie Spanier and Jessica Horowitz, put forward a number of conceptual and methodological errors in the study of difference. For instance, they suggest errors within biological determinist claims include reification, choice of definition of "difference", questionable categories and assuming "universal" behaviours. The final chapter of this section by Claudia Wassman provides an interesting discussion of how functional magnetic resonance imaging (fMRI) reinforces gender norms. The chapter has two essential questions; to what extent are gender norms being perpetuated, enforced or revised in fMRI studies? And how did these very norms shape the design of brain imagining research? The chapter questions the concept of the 'female brain'. This chapter gives a good overview on stereotypes including gendered difference of empathy, depression, maths ability, spatial ability and language. The chapter discusses a number of sex differences in biology, highlighting how biological differences between the sexes are generated by contemporary neuroscience. All three chapters in the section highlight the need to not ignore the overlap and similarities between the sexes rather than solely focusing on the differences.

SECTION TWO: ANIMAL OBSESSIONS

This section again has three chapters which highlight how human behaviour is imposed on the study of nonhuman animals in order to understand both human and nonhuman behaviour. The first chapter by Lynda Birke explores how scientific claims about gender differences relate to how we think about nonhuman animals. Birke questions whether animal studies actually tell us much about sex differences in humans. The chapter discusses how human observers of animals bring with them values and expectations based on sex stereotypes. The chapter focuses on studies using laboratory animals and how they are kept and handled affects their behaviour. According to Birke how the animals live and are used within the labs 'contributes to what might be called a standardization of gender within scientific thought' (p92). This contributes indirectly to how gender stereotypes inform research outcomes. Birke suggests that both the people and the practices of a lab impact the animals and experimental results.

The next chapter in this section by Angela Willey and Sara Giordano discusses the 'monogamy gene' in the research produced by Larry Young's Lab, with a review of 16 publications published by researchers of the lab between 2001 and 2009. The research focuses on the monogamy of voles and has received a lot of press due to the suggestion of a 'monogamy gene' linked to the hormone

oxytocin which is associated more often with females while vasopressin is associated most often with males. The authors conclude that sex assumptions impact research of the hormones and monogamy due to the sex specific connotations of the hormones despite both hormones being present in male and females. The final chapter of this section is by Smila Ebeling and Bonnie Spanier and focuses on male gay penguins in a German and a US zoo, highlighting how people interchange human and nonhuman animal lives through language, picture and reasoning.

SECTION THREE: CATEGORISING BODIES

The first chapter of this section, by Iain Morland discusses trauma caused by medical treatment and intersex management. From a feminist standpoint this chapter discusses intersex anatomies through a discussion of the social construction of ambiguity and the medical construction of gender. The chapter highlights the differences and similarities between medical and feminist perspectives on intersex bodies and gender. The chapter concludes that medicine views gender construction as starting and ending in childhood; whereas feminism views gender construction as on-going. In particular the chapter focuses on the work of two feminists on the area of intersex, that of Fausto-Sterling and Kessler. Morland puts forward a theory he calls 'conservative constructivism' which suggests intersex surgery facilitates the current social construction of gender.

Chapter nine critiques the work of two scholars, Evelyn Blackwood and Saskia Wieringa, looking at anatomically-female and transmasculine individuals. The chapter author Sel Hwahng suggests they impose Western notions and rely on Western categorization of gender and sexuality in their work on non-western, predominantly Asian culture. Hwahng critiques the authors research in the area due to, amongst others things; the power imbalances imposed, ideological domination, that the bodies studied are devoid of their social context and because Blackwood and Wieringa objectify these non-western bodies within a 'fetishistic gaze'.

SECTION FOUR: MEDICAL INTERVENTIONS

The first chapter of this section looks at facial surgery of male to female people. The author, Heather Laine Talley argues that facial feminization surgery (FFS) is about surgically constructing gender. The author argues that this is different to cosmetic surgery in that the aim of cosmetic surgery is in achieving a prettier face whereas facial feminization surgery inscribes a face that is perceived as female to all (p192). FFS relies on what distinguishes a male and female face. The author discusses the topic and attended seminars by facial feminization surgeons in order to discuss how medical practice defines gender, concluding that the static notions of gender embed what it means to be male and female within medical practice.

Chapter eleven by Shirlene Badger discusses the research on genetics and obesity, focusing on the genetics of obesity study (GOOS) and its research interest in the identification of human obesity disorders resulting from a genetic disruption of the leptin-melanocortin pathways, taking into discussion the work

of GOOS of rare and extreme children with obesity. The chapter includes a historical discussion of the research and includes ethnographic research by the chapter's author.

The final chapter, by Emily Wentzell discusses the problems of male sexuality, Mexican masculinity and the embedded implications of erectile dysfunction (ED) treatments. The chapter is based on interviews with over 250 Mexican male urology patients and ethnographic observations conducted in a Mexican urology department over a 10 month period. The author used hybridity theory to see how patients and doctors apply male sexuality, masculinity and medical knowledge to explain erectile function change in a social context. Medical treatments embody ideal ways of being a healthy man or a woman. The chapter highlights how treatments are encoded with health norms, showing the contradictions treatments and social knowledge can incur. The chapter includes a case study of a 40 year old male seeking ED treatment viewing his lack of desire as unmanly and ED drugs as unhealthy.

Overall the book was an easy and enjoyable read, covering a range of subjects in the science and medicine area. The book provides the reader with a clear understanding of the research and theory of current issues with regards to the gendering of science and medicine and leaves the reader with thought provoking questions for future research around this subject. The book also highlights how feminist thought may help reduce the effects of this bias. I would recommend this book to anyone interested in the gendering of science and medicine and feminist thought.