

# Introduction

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For more than a generation, scholarship on gender and/in science was predominantly dedicated to two strands of discussion. While one prominent line of research has been concerned with women's inroads into science and their careers within its system, another branch of research remains focused on the problem of how science, its content and its cultural practices are coloured by gender. Gender and science studies have principally been concerned with the study of recruitment to research and professional organisations and of science's content and cultural style. These approaches reflect both the scope of "gendered ways of knowing" and their limitations.

Its scope is indicated by studies which are concerned with questions of gendered exclusion from and inclusion in sciences, their organisation and practices. To this end, gender studies have not only been concerned with the study of the relationships between the sexes and the social and scientific creation of gender and gender roles, but also with the gendering of ways of knowing themselves: in particular when comparing methodologies and presuppositions in natural sciences and humanities, a certain way of grasping reality along the boundaries of sexual difference is noticeable. The objective, rational, apparently omniscient perspective of modern sciences is shaped by a distinctive masculine approach, which has an impact on natural sciences and humanities as well as their research cultures. The metaphors of linear scientific progress and the hermeneutical circle testify to this gendering of scientific fields, instruments and scholars.

Despite this intriguing and differentiated research, "gender" has acquired a somewhat stable and taken for granted meaning of sexual difference. "This something gender" (Barbara Duden) has become a given assumption, so that the practices of using gender are no longer reflected: using gender without observing the difference it implies at-

tributes an ontological quality to an analytical tool (Stefan Hirschauer). Since gender has a conceptual and practical history in the life of science, “gendered ways of knowing” reflect the scope of this approach while, at the same time, testifying to its limitations.

This means, among other things, that it is necessary to discuss questions such as: how and in what context are representations of masculinity and femininity produced? At what moment in the conceptual life of sciences and politics did distinctive categorisations of maleness and femaleness emerge and to what extent have they become established and how are they being used? And, how did these meanings acquire cultural relevance and become stabilised as belief systems that are now taken for granted? The point of how meaning and representation succeed in becoming structures and how they gain evidence in our understanding of social relations is central to the view of gendered ways of knowing. Against this background, the contributions to this volume are written from different perspectives with respect to both theoretical approaches and fields of research.

The first section offers different views on the term “gender”, its construction, meaning and use, raising the question of its stabilisation or destabilisation as a category of analysis. Barbara Duden opens the debate with a critical reflection from a historian’s viewpoint on the origins of the term “gender” and its uses since the beginnings of the second feminist movement, focusing on the transformations in meaning it has since undergone. Duden hypothesises that the current understanding of gender as an identity to be individually and continuously constructed, as she observes it in society at large, interacts in uncanny ways with neo-liberal agendas while contributing to a re-feminisation of burdens that goes unnoticed and unreflected.

Drawing on a sociology of knowledge approach Stefan Hirschauer focuses on social studies of sciences and gender regarding its epistemological implications. He discusses the problem in gender studies that they often do not observe their use of the sexual difference itself as a cultural practice of which they are an integral part. Against this background, he suggests to posit “social studies of sexual difference” as a specific crossing between science studies and gender studies. Deconstruction is then not simply a critical procedure of the cultural sciences, it rather belongs to the repertoires with which the cultural practice of sexual differentiation works on its own ontological aggregate state – whether in the medium of test tubes and operation rooms or in drag parties and travesty shows.

M. Cristina Amoretti and Nicla Vassallo provide a critical philosophical discussion of the notion of standpoint and its relation to gendered ways of knowing. While recognising that standpoint theory is important in its stress on the context and situatedness of knowledge, they criticise its assumptions of a prominent feminist epistemological viewpoint through which standpoint theory and the gender studies applying it contribute to a gender concept that is taken for granted. In order to avoid the problems of standpoint theory while maintaining its advantages, they propose a shift from epistemological claims to those of organisational practices, i.e. a “democratisation” of knowledge making and greater interaction between different sciences in order to achieve strong objectivity in their results.

In her contribution, Theresa Wobbe argues that it is of particular interest to investigate the very specific conditions and contexts of classificatory processes in order to distinguish the ways in which they generate schemata of sexual difference, and to explain their significance for science. Through the lens of a sociology of knowledge, she shows how statistical categories have contributed to the gendering of social fields at a distinct point in the history of both gender and science. They generate patterns of difference because their objectifying procedures gather disparate things into classes under particular headings: around 1900, social sciences added to the statistical knowing of the new concept of gainful work, which is highly contingent while resulting in differences that are still prominent for gender inequality.

The second section is concerned more particularly with scientific attempts to establish boundaries between men and women. Neurobiologist Catherine Vidal presents a critical analysis of examples of research that emphasise deterministic explanations to account for sex differences in cognition and behaviour, showing that their results are less than reliable for reasons of methodology or falsification through further studies. Reflecting on the consistent success of such deterministic views of sexual difference despite the evidence of brain plasticity, Vidal encourages ethical reflections on the social and cultural implications of neuroscientific findings on sex/gender through interdisciplinary dialogue and responsible communication of scientific results to the public.

The scientific construction of sexual difference is also the topic of Marlen Bidwell-Steiner’s contribution, which combines literary and historical methods. In an analysis of selected scientific texts from different historical periods that discuss and confirm differences between men and women she shows how in spite of changing scientific methodologies

and paradigms, knowledge about sexual difference has always been shaped by misogynistic ideas about the inferiority of women – up until contemporary neurosciences. Bidwell-Steiner proposes that a reason for this might be the attempt to maintain a given, gendered socio-political system with the help of a selective application of scientific knowledge about gender differences.

In the third section, Sandra Harding and Heidemarie Winkel broaden the scope of gendered ways of knowing by going beyond the Western realm. Philosopher Sandra Harding's contribution shows how gender and science studies have often been blind to the Western bias of their basic categories, while postcolonial science studies have not always taken account of how sciences and their results impact men and women in different ways. While the triangulation of gender, science and postcolonial studies might not be easy, their constructive interaction can be helpful to develop new strategies for facing the challenges that natural and social changes on a global scale pose today.

Heidemarie Winkel's sociological analysis of gender knowledge in the Arab-Islamic context, as it was developed in both medical and religious discourses, and of its clash with Western knowledge systems about gender relationships clearly shows how often discussions about gender presume a meaning of gendered difference and a normative concept of gender relations that is situated in the Western context without reflecting it. This prevents, as Winkel shows, the constructive study of the organisation of gender relations in other contexts, because they are read through a Western lens.

The papers collected in the last section are concerned with the organisation of sciences, research and work with respect to gender on different levels. Sociologist Annalisa Murgia's paper echoes in interesting ways Wobbe's observations about the gendered categorisation of work and employment: Murgia's empirical study of people working in research institutions with non-standard contracts shows how classical modern gendered models of work are still prominent points of reference for the construction of gender identity in contemporary society in spite of changes in the organisation of work. Alternative models are available, yet their realisation is not supported by work organisations and social discourses.

Attempts at changing cultures of work and research are made on both national and international levels. From a sociological perspective, Teresa Rees outlines the strategies – and their limitations – employed

by the European Union in order to raise the percentage of women working in academia and to mainstream gender on all levels of research and research culture, both with respect to how research is conducted and with respect to its contents. Rees underlines the importance of the integration of gendered ways of knowing not only for the benefit of the men and women concerned, but also for the quality of research itself.

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This volume brings together a number of different perspectives and ways of discussing and understanding gendered ways of knowing that challenge, question and complement each other in important ways. Theologian Stefanie Knauss's final contribution is therefore not intended as a conclusion to the volume's discussion, which we hope will continue in different ways and forms, but as an opportunity to reflect on some particularly intriguing issues brought up by the contributions.

We are grateful to the authors for their participation in this discussion and their cooperation in the publication of this volume. We would also like to thank the Fondazione Bruno Kessler in Trento (Italy) for hosting the conference "Gendered Ways of Knowing? Gender, Natural Sciences and Humanities" in December 2010 from which the articles in this volume have originated. To the Facoltà di Lettere e Filosofia and the Centro Studi Interdisciplinari di Genere, both of the University of Trento, which were also involved in the organisation of the conference, and to all the participants and speakers at the conference our thanks. Thank you also to the staff of FBK Press for their assistance in the publication process, to Sean Ryan for his editorial support and to Kris Fritz, Christina Wolff and Jakob Zwiers from Potsdam University (Germany) for their help with proofreading.