

**Queer perspectives on psychological studies
on the relationship between sex and intelligence**

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When coming across the topics of gender and comparisons between men and women in everyday life, discussions mostly revolve around differences. Despite the wide range of explanations, aspects of evolutionary and biological differences are regarded as highly legitimate explaining gender differences in debates on the street, in public, and in various sciences. One argument enjoying great popularity is medical and psychological knowledge regarding cognitive functions and abilities. This is, among other reasons, due to the fact that in the past two decades brain research has been among the most important and well-financed research fields worldwide. Between 2002 and 2009, the European Commission funded 153 brain research projects with a budget of over 639 million Euros (European Commission 2011). One facet of scientific knowledge on the brain being produced in studies is knowledge on sex differences in brain functions and capacities. Some results and aspects of this knowledge find their way into popular media, at times being oversimplified and shortened. Nevertheless, the overlying theme of essential differences between the sexes maintains, as book titles like “Why Men want Sex & Women need Love” (Pease & Pease 2010), “Why Men don’t listen and Women can’t read Maps” (Pease & Pease 2001), “His Brain, her Brain” (Larimore & Larimore 2008) or TV shows like “Typisch Frau – Typisch Mann” (“Typically female – typically male”) on the German station RTL reveal.

Regarding the above outlined topics of scientific knowledge production several questions can be asked from a critical STS standpoint. While processes of the popularization of scientific knowledge as being discussed by Sigrid Schmitz (2006) stay aside here, the focus of this paper lies on the production of scientific knowledge itself. By thoroughly examining two psychological studies on the relationship between sex and cognition/intelligence which are used as examples here the following questions are being answered: What theoretical standpoint on sex and gender do the researchers hold? What methods do they use? Which results are being emphasized and which ones are being ignored? The goal is to show which gender knowledge has been given priority in the outline of the researches because it is related to the empirical outcome of the studies which, therefore, needs to be treated with caution.

Theoretical frame: Queer studies and gender knowledge

The following analysis of the two psychological studies by Weiss et al. (2003) and Nyborg (2005) is based on a queer perspective combined with an ongoing discussion about forms of gender knowledge (Dölling 2003, 2005; Wetterer 2008). When Irene Dölling first used gender knowledge in 2003 (114), she referred to “various types of collective knowledge circulating in a society on differences between the genders, the justification of their obviousness and evidence, the (pre)dominating normative notions on the “right” relationships and the division of labour between men and women” (Dölling 2003, 114). Gender knowledge as it is used in this paper is not automatically equivalent to knowledge on the differences, but Dölling’s definition reflects the general emphasis in society on sex/gender differences. In 2005, Dölling formulated the first classification of gender knowledge, differentiating between (1) everyday knowledge and knowledge made by experience, (2) knowledge produced in institutions (e.g. the sciences, religions, law), and (3) popularised knowledge that is being disseminated through the media, political parties, and guidebooks (Dölling 2005, 51). Angelika Wetterer (2008) offers another classification by distinguishing between (1) everyday (gender) knowledge, (2) (gender) expert knowledge, and (3) scientific (gender) knowledge. These two systematizations are useful when asking *who knows what?* One can say that any scientist working on the production of scientific knowledge enters the workplace with an array of everyday (gender) knowledge, which is also true for (gender) experts who have to break down scientific knowledge to a practical level in order to use it in their daily work.

Dölling and Wetterer were not the first one to categorise and analyse gender knowledge. In 1996, Stefan Hirschauer wrote an article on the sex/gender binary as a knowledge system consisting of three types of knowledge: (1) cognitive-lingual knowledge, (2) pictorial, and (3) practical knowledge. Contrary to the prior question of *who* knows what, Hirschauer deals with the question of *how* gender is known. Cognitive-lingual knowledge is made up of several elements with everyday knowledge being one. Part of this everyday knowledge is the unquestionable notion that all humans are constantly (throughout their entire lives) and naturally (due to physical reasons) one or the other sex (Hirschauer 1996, 243). Scientific knowledge on the nature and genesis of sex/gender differences also has a cognitive-lingual form. As to that, Hirschauer again underlines the influence of everyday knowledge on the outline of scientific studies and subsequently on scientific knowledge (244). Parallel to discourses on the genders, powerful visualisations constantly reproduce the system of sexual binary, for example pictures in advertising or in sciences and the daily enactments by members of society. Last but not least, the dichotomous sexuality is part of the practical knowledge of members of society, part of their embodiment of gender. The sex of someone is said to be detected by the way of walking, sitting, talking, etc. which refers to embodied knowledge on the part of the viewer and the actor.

How can the concept of gender knowledge be combined with a queer perspective to obtain a useful framework for analysing scientific knowledge productions? Following a queer perspective, first and foremost, what has to be criticised is the social practice of distinguishing between two and only two sexes in a way that excludes overlaps, variations, and the wide range of possibilities. This practice of producing knowledge on the differences between the sexes cuts short on real social life and the large spectrum of what happens in this world. Through this and other practices that will be named in the next section the gender binary constantly gets reproduced.

Psychological studies from a queer viewpoint

As indicated in the prior section, it is almost impossible to escape gender knowledge in one or the other form, especially everyday knowledge that has already been incorporated by oneself or others. In scientific work, too, one needs to be very self-reflective and sensitive to the practice of doing gender in order to prevent everyday gender knowledge to influence research outlines, hypothesis, and the interpretation of results. After a search through psychological studies on the relationship between cognition and sex two studies were chosen by the authors as mere examples of the practice of gender knowledge production in a scientific field. These two studies by Weiss et al. (2003) and Nyborg (2005) do not display the wide range of psychological studies in this research area, but instead are used as prototypical examples because they contain knowledge, assumptions, and practices that must be seen critical from a queer STS standpoint².

The study by Elisabeth Weiss et al. (2003) aimed at gaining clarity in the question of sex differences in cognitive functions by using common tests for general, verbal, and visual-spatial abilities on 97 students. Even though the authors show a good awareness of the influence of socio-cultural factors on sex/gender differences in the paper's introduction, this awareness has no effect on the experiment or its interpretation. Additionally, the expressions "gender" and "sex" were used synonymously and alternated without any systemic order. What must be criticized, too, is the method of the study. Since there is no mentioning in the paper, one can suppose that the sexual makeup of the tested groups was not regarded. In experimental psychology controlling the sex is very important to prevent stereotype threat (Steele & Aronson, 1995). In this study, stereotype-charged abilities like visual-spatial skills or verbal intelligence were tested in mixed-sex groups, so it is possible that stereotype threat has influenced the experiment's outcome. Another problem frequently occurring in scientific research is the over-interpretation of non-significant results. Weiss et al. (2003) could not succeed in finding a significant difference between men and women in the visual-spatial factor. Nonetheless, they wrote that men outperformed women in visual-spatial tasks which implicates the researchers' desired outcome rather than the actual study results.

While Weiss and her colleagues (2003) seem to have walked into some theoretical and methodological traps rather accidental, Helmuth Nyborg (2005) wants to explain why “males dominate the upper strata in all known societies” (Nyborg 2005, 497) through differences between men and women in brain size and consequently in general intelligence. Nyborg's starting assumption is that men dominate in all social areas like education, occupation, and politics, and by that he already makes clear which scientific and everyday gender knowledge he accepts as true. According to Nyborg, the empirical inconsistency in studies dealing with intelligence stems from conceptual and analytical problems in empirical research. Gender equality, a lead of women in general intelligence or socio-cultural aspects of sex and gender are not considered. Instead, he formulates the hypothesis that “the proper analytic approach will identify a male lead in general intelligence g” (499) and as proper he only ranks one other existing study besides his one. The postulated male dominance in society is explained by a male lead in the general intelligence g – a difference of 3.6 IQ points between women and men. Looking at the IQ score distribution, one finds 96% of all people achieving a score between 70 and 130 which makes a difference of 3.6 points to be very small. It seems far-fetched to relate cultural and social differences between men and women to the critically viewed concept of general intelligence and a marginal score difference. Instead, a lot of research exists showing that male dominance in society and occupation is influenced by socialization and the outcome of practices such as career barriers for women (Kanter, 1977; Wirth, 2001).

Résumé

Weiss et al. (2003, 863) concluded in their study that “the overlap in the distribution of male and female scores is much greater than the difference between them”, a common result. Notwithstanding, many scientific fields are highly concerned with trying to find empirical prove of sex/gender differences. Through the examination of psychological studies we tried to show (1) how the eagerness of trying to find sex differences influences the interpretation of results and the acknowledgement of other research, (2) how everyday gender knowledge finds its way into empirical research, and (3) how scientific knowledge that is often cited in media is produced. Unfortunately, gender studies experts pointing at gender being a production, being acts and practices of doing differences, lack in power. Their critique of scientific knowledge production stays rather unheard by the media who prefer to leap at any study showing differences between men and women. This fact, though, is our engine to continue conducting research in the field of STS and not to stop showing how gender knowledge production and dissemination in society works.

Notes

¹ For more detailed information on the two examined studies please see the original papers or the German article by Scheer et al. (forecoming).

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