

Public Lecture Series
Öffentliche Ringvorlesung

Shifting Patterns, Shifting Gender Norms in Science and Engineering

Wintersemester 2014/15

Abstracts

Women in Computer Science Education: A Western Problem or a Global One?

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Vortrag am 16. Oktober 2014

Lecture on October 16, 2014

Despite various initiatives by the National Science Foundation, information communication technology (ICT) companies like Google and Microsoft, and non-profit organizations such as the National Center of Women in Information Technology to achieve gender equality in computer science (CS), the proportion of women studying CS remains low in the United States. The same is the case in many parts of Europe. It is therefore no surprise that scholarly literature specifically on women in CS has grown. Most importantly, several studies show the CS field as dominated by the geek culture from which women distance themselves. Feminist scholars have gone one step further to contend that the CS is a masculine field. The paucity of women in CS and the masculinity of the CS field in the United States and Europe is challenged from the experience from the developing countries. Despite any special initiatives undertaken by the Indian government, ICT companies or non-profit organizations, there are large numbers of women studying CS in India. This suggests that there is a need to re-examine the universal portrayal of CS as a masculine field as done in the United States and Europe. By using examples of women in India, I explain how the situation in India is different for women in CS. I show how women in India are empowering themselves with the CS education. Yet, I discuss the prevalence of gender issues in CS despite a high level of women in CS in India. An analysis of the Indian context for CS and cultural/social meaning of gender in India will provide a better understanding of the construction of gender and CS.

Publikationen / publications:

Varma, R. (2007): Women in Computing: The Role of Geek Culture, In: Science as Culture, Vol. 16, No. 4, 359-376.

Varma, R. (2006 cloth, 2007 paperback): Harbingers of Global Change: India's Techno-Immigrants in the United States, Maryland: Lexington Books.

Varma, R., Prasad, A. & Kapur, D. (2006, 2008): Confronting 'Socialization' Barrier: Cross-Ethnic Differences in Undergraduate Women's Preference for IT Education, In: McGrath Cohoon, J. & Aspray W (eds.): *Women and Information Technology: Research on Underrepresentation*, Cambridge: MIT Press, 301-323.

Prenatal Ultrasound - a Technology Pregnant with Identities

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Vortrag am 23. Oktober 2014

Lecture on October 23, 2014

Prenatal ultrasound is not just a technology - at least not just a "technology" in the sense of an electronic device. It embraces a network of further technologies in a wider sense - for instance whole packages of statistics results and diagnostic indicators. Furthermore, it only works when, besides turning on the power switch, one turns on whole sets of practices, roles, relationships, and identities that surround the instrument and put it to use. In this lecture I will present some of these further technologies, practices, roles, relationships, and identities that are bundled together to form prenatal ultrasound. I will especially focus on some of the paradoxes and moral dilemmas these present. We may then discuss to what extent these dilemmas relate back to the electronic device at the core of the bundle and what moral responsibilities an engineer might have for the practices, roles, relationships, and identities that come to be bundled together with a device she has designed.

Publikationen / publications:

Solbjør, Marit; Skolbekken, John-Arne; Sætnan, Ann Rudinow; Hagen, Anne Irene; Forsmo, Siri. (2012): Mammography screening and trust: The case of interval breast cancer. *Social Science and Medicine*. volum 75 (10).

Sætnan, A. R. (2012): Enestående normalt: Ultralydscreening i individualismens tidsalder. *Helsesosiologi: Analyser av helse, sykdom og behandling*.

Sætnan, A. R., Oudshoorn, N., Kirejczyk, M. (2000): *Bodies of Technology - Women's Involvement with Reproductive Medicine*, Columbus: Ohio State University Press.

Does the Brain Have a sex/gender?

Catherine Vidal

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Vortrag am, 6. November 2014

Lecture on November 6, 2014

Despite tremendous advances in the neurosciences, the idea that innate brain differences are determinant for gender differences in cognition and behavior is still alive. Claims that the “female brain” is hard-wired for empathy and language skills, while the “male brain” is wired for mathematical and scientific occupations, are widespread in the media and among the general public. In contrast, our present understanding of the human brain has revealed the importance of neuronal plasticity and the role of environmental factors in shaping the brain via experience and learning throughout our lives. A major challenge is that of building an interdisciplinary dialogue across the biological, social, and human sciences to develop new approaches linking gender and the brain. The goal is to provide evidence refuting archaic beliefs in innate gender differences and to promote a positive image of current scientific research. The notion of brain plasticity is key for counteracting biological determinism and linking together neuroscience, gender, and society.

Publikationen / publications:

Vidal, C. (2014): Neuro-Pedagogy of the Gender Theory, in: Schmitz, Sigrid, Höppner, Grit (ed.): Gendered Neurocultures. Feminist and Queer Perspectives on Current Brain Discourses, Wien: Zaglossus, 321-336.

Vidal, C. (2012): The sexed brain: between science and ideology, In: Neuroethics, Vol. 5, No. 3, Dezember 2012, 295-303.

Vidal, C. (2007): Hommes, femmes: avons-nous le même cerveau?, Paris: Editions le Pommier.

Science as a Gendered Workplace: Two Estonian Case Studies

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Vortrag am 13. November 2014

Lecture on November 13, 2014

The workplace culture of scientific research gives insight into the relations between gender and knowledge production. Therefore, the talk will analyze local cultural aspects of gender-based inclusion and exclusion mechanisms in the work place.

Based on the examples of the empirical studies of Estonian physics culture in 2005-2008 and humanities culture in 2010-2013, I attempt to show how cultures in the research sites are gendered, and how the gendered cultures can lead to epistemic injustice, that is, to lack of epistemic recognition on the ground of social and cultural power relations. The step-by-step formation of the deficit of epistemic recognition may lead to mis-measurement of one's research progress and finally to the exclusion from the workplace. The concept of epistemic injustice enables one to explain how e.g. chilly workplace climate can change the gender balance in the long run, and thus impoverish the research group's perspectives for success by distorting the scale of internal critical perspectives.

The empirical cases provide examples of gendered stereotypes active in Estonian physics culture and a variety of different understandings of the role and identity of a researcher in the humanities.

Publikationen / publications:

Lõhkivi, E., Velbaum, K., Eigi, J. (2012). Epistemic Injustice in Research Evaluation: A Cultural Analysis of the Humanities and Physics in Estonia. *Studia Philosophica Estonica*, 5(2), 108 - 132.

Lõhkivi, Endla (2011). Identity and rationality: towards normative cultural studies of science. *Baltic Journal of European Studies*, 9(1), 97 - 110.

Lõhkivi, E. (2002): *The Sociology of Scientific Knowledge: A Philosophical Perspective*, *Dissertationes Philosophicae Universitatis Tartuensis*, Tartu University Press.

Was und wer ist "richtige" Physik? Geschlechtermarkierungen in drei Wissenschaftskollektiven der Physikgeschichte

Elvira Scheich

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der Geschlechterforschung“, Freie Universität Berlin, DE.*

[www.physik.fu-berlin.de/einrichtungen/ag/ag-
scheich/mitarbeiter_innenliste/prof_elvira_scheich/index.html](http://www.physik.fu-berlin.de/einrichtungen/ag/ag-scheich/mitarbeiter_innenliste/prof_elvira_scheich/index.html)

Vortrag am 20. November 2014

Lecture on November 20, 2014

Anhand drei unterschiedlicher historischer Beispiele soll aufgezeigt werden, welche Geschlechterverhältnisse sich in der Physik herausgebildet haben und welche strukturellen Ausschlussmechanismen dabei zum Tragen kommen. Betrachtet werden das Cavendish Laboratory in Cambridge (UK) gegen Ende des 19. Jahrhunderts, die Kaiser-Wilhelm-Gesellschaft im Berlin der 1920er Jahre und die Gruppe der am Radiation Laboratory in Berkeley (CA) von J. Robert Oppenheimer ausgebildeten WissenschaftlerInnen Mitte des 20. Jahrhunderts. Folgende Leitfragen sind angedacht: Wie situiert sich das jeweilige Wissenschaftskollektiv im kulturellen und politischen Umfeld? Welche spezifischen Arbeitsformen und Lebensweisen werden durch das institutionelle Gefüge geprägt? Wie gestaltet sich unter diesen Bedingungen das Selbstverständnis der beteiligten WissenschaftlerInnen? Ziel ist es, das „Gendering“ von Physik als systematisches Zusammenspiel höchst verschiedener, teils widersprüchlicher Faktoren zu erfassen.

Publikationen / publications:

Scheich, E. (2010): Modernisierung von Männlichkeit - Das Bild der Physik in der 2. Hälfte des 20. Jahrhunderts, In: Ernst, Waltraud (Hg.): Geschlecht und Innovation. Gender-Mainstreaming im Techno-Wissenschaftsbetrieb, LIT Verlag, 63-83.

Scheich, E. (2003): Von ‚Forschergewissen‘ und ‚Friedensfrauen‘ - Das politische Gedächtnis der westdeutschen Nachkriegsgesellschaft und die Wissenschaft der Physik. Zum politischen Kontext und den historischen Bedingungen des soziologischen Wissenschaftsverständnisses, Habilitationsschrift, TU Berlin.

Barbara Orland/ Elvira Scheich (Hg.) (1995): Das Geschlecht der Natur. Feministische Beiträge zur Geschichte und Theorie der Naturwissenschaften, Frankfurt/M.: Suhrkamp.

**iMedia.
The gendering of objects, environments and smart materials**

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www.gold.ac.uk/media-communications/staff/kember/

Vortrag am 27. November 2014

Lecture on November 27, 2014

The premise of this talk is that imedia (where the meaning of “i” proliferates even as Apple intends to discontinue it) are gendered and that theories of imedia have so far been largely gender blind. Theories of imedia have been oriented toward integrated systems of surveillance and marketing and the production of neutralized data subjects. Gender critique is subsumed within a criticism of neoliberalism or within masculinist, anarchist fantasies in which technologies of everyday control give way to emergent, self-organising, bottom-up rather than top-down systems. Such fantasies feminize technology along the lines set out in feminist studies on Artificial Intelligence and Artificial Life. Industry and academia alike present us with visions of a transparent, unmediated world of embodied intelligent media-without-organs. These visions are unhelpful in dealing with the prospect of electronic assistants and robot nurses in predictable, stereotypical female forms. Drawing on feminist science and technology studies and the wider field of feminist theory, the talk will examine the gendering of imedia materials such as glass and systems such as face recognition.

Publikationen / publications:

Kember, S. (2013): Gender Estimation in Face Recognition Technology. How smart algorithms learn to discriminate', *Media Fields Journal* Number 7, 1-10.

Kember, S. / Zylinska, J. (2012): *Life After New Media: Mediation as a Vital Process*. Cambridge, MA: MIT Press.

Kember, S. (2003): *Cyberfeminism and Artificial Life*, London/New York: Routledge.

Designing Gender

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Vortrag am 11. Dezember 2014

Lecture on December 11, 2014

Our material culture is imbued with gendered meaning. Various consumer products carry gendered symbols and norms and actively shape gender identities and norms. Think of shampoo bottles and shavers, mobiles and bicycles. These products are designed with ideas – sometimes explicit but often also implicit - about feminine and masculine identities and norms. One could say that designers not only create products but also gender relations. This lecture will use the concept of ‘gender script’ for analyzing material products on three levels: gender identity, gender structure and gender symbolism. This analysis also takes social, cultural and political aspects of gendered use practices into account. Yet, gender dichotomies are not seen as fixed or deterministic, but as contextualized, multiple, malleable and negotiable, and thus subject to change. Thus, product design too can contribute to changing traditional gender roles and norms by using gender sensitive design approaches.

Publikationen / publications:

Oost, E. van (2003): Materialized Gender. How Shavers configure the Users’ Femininity and Masculinity, in: Oudshoorn, N. & T. Pinch (Hrsg.): How Users Matter. The Co-construction of Users and Technology, Cambridge/London: MIT Press, 193-208.

Oost, E. van, Verhaegh, S. and N. Oudshoorn (2009). From Innovation Community to Community Innovation: User-initiated Innovation in Wireless Leiden. *Science, Technology & Human Values*, 34 (2), 182-205.

Rommès, E., Oost, E. van & Oudshoorn, N. (2001): Gender in the Design of the Digital City of Amsterdam, In: Green, E. & Adam A: Virtual Gender. Technology, Consumption and Identity. London and New York: Routledge, 241-261.

Unsichtbares sichtbar machen: Gender und Diversity in der Informatik

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Vortrag am 8. Jänner 2015

Lecture on January 8, 2015

Gender- und Diversityaspekte bleiben in der Informatik meist unsichtbar. Um sie aufzuspüren und mit zu bedenken fehlt InformatikerInnen der konzeptionelle und theoretische Hintergrund.

Im Vortrag soll das Gender-Extended Research and Development (GERD) Model vorgestellt werden. Es zeigt auf, an welchen Stellen im Forschungs- und Entwicklungsprozess welche Fragen gestellt werden können. GERD benennt sog. Reflexionsbereiche, die sich an grundlegenden Konzepten der Gender- und Diversity-Studies orientieren. Diese thematisieren z.B. die Relevanz der Forschung, zugrundeliegende Werte und Annahmen sowie ihren potentiellen Nutzen. Sie regen an zu reflektieren, welches und wessen Wissen in das Projekt eingeht, welche Sprache, Metaphern und Szenarien verwendet werden, welches Menschenbild die Technikgestaltung bestimmt und wie das Projekt hierarchische Strukturen im Anwendungskontext aufnimmt. So ermöglicht das Modell mit seinen umfangreichen Fragenlisten, die Vielfalt von Menschen, Kontexten und Wissensressourcen im F&E-Prozess mit zu denken.

Publikationen / publications:

Wajda, K., Draude, C., Maass, S., Schirmer, C. (2013): GERD - Wo Gender, Diversity und Informatik zusammentreffen, In: Boll, S., Maaß, S. & Malaka, R. (Hrsg.): Mensch & Computer 2013, München: Oldenbourg Verlag, 301– 304.

Rommes, E., Bath, C., Maass, S. (2012): Methods for Intervention: Gender Analysis and Feminist Design of ICT, In: Science, Technology & Human Values, Vol. 37, No. 6, November 2012, 653-662.

Zorn, I., Maaß, S., Rommes, E., Schirmer, C., Schelhowe, H. (Hrsg.)(2007): Gender Designs IT: Construction and Deconstruction of Information Society Technology. Wiesbaden: Verlag für Sozialwissenschaften VS.

Bodies Out of Order: Transcorporeal Encounters, Feminist Science Studies, and Ethics of the Posthumanities

Cecilia Åsberg

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GEXcel International Collegium, Department of TEMA, Linköping University, SE.*

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Vortrag am 15. Jänner 2015

Lecture on January 15, 2015

Bodies are not what they used to be. Life after the Life Sciences takes on new forms, teach us new words, like epigenetics, neuroplasticity and translational medicine, while also evidencing a highly ambivalent form of “transcorporeality” (Stacy Alaimo) that is not new at all, but was there all along. Perhaps we are slowly awakening from a modern illusion that kept nature from culture, human from animal, technical from biological, and word from world. Less divided, more differentiated. In that case, we need to recalibrate and reinvent our analytical tools, including the category of gender – perhaps even change our conversational habits across the arts and sciences. When we are always already becoming with others, with the world, the posthuman ethics of entanglement entails both responsibilities, opportunities and limitations. In this paper, I will first explore a present bodyscape in the open-ended posthuman register of transcorporeal reciprocity. I will then halt in particular at the paradoxical natures and cultures of Alzheimer’s Disease for how they suggest thinking beyond recognition, derogatory difference and the flattening equality of sameness. Finally, I suggest some strange methodological alliances, drawing on work within feminist theory and science studies to inform a kind of posthumanities of critique, creativity, and onto-ethical entanglement.

Publikationen / publications:

Åsberg, C. (2014): Resilience Is Cyborg: Feminist Clues to a Post-Disciplinary Environmental Humanities of Critique and Creativity, In: *Resilience: Journal of Environmental Humanities*, 2014:1, 5-7.

Åsberg, C. (2013) "The Timely Ethics of Posthumanist Gender Studies", in *Feministische Studien* 2013:1, 7-12.

Åsberg, C., Johnson, E. & Koobak, R. (2011): Position Paper: Beyond the Humanist Imagination. In: *NORA: Nordic Journal of Feminist and Gender Research*, Vol. 19, No. 4, 218-230.

Feminist Practices for the Lab

Deboleena Roy

Ph.D., Assoc. Prof. of Women's, Gender and Sexuality Studies and Neuroscience and Behavioral Biology, Graduate Program Director, Emory University, Atlanta, USA.

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Vortrag am 22. Jänner 2015

Lecture on January 22, 2015

As a feminist scientist trained in neuroscience, molecular genetics, and reproductive biology, my intention is to move beyond feminist critiques of science and to develop feminist practices for the lab. Goals of my research include integrating feminist epistemologies and methodologies into scientific practices, and using research in the sciences to reconfigure feminist theories of materialism. In this lecture, I will discuss how this work contributes to discussions in new materialism and grapples with recent projects within feminist STS to return to the matter of biology. I am interested in examining some of the tensions that may arise while attempting to make this return, including ontological, epistemological and ethical concerns for the feminist scientist. Drawing from standpoint theory, situated knowledges, the methodology of the oppressed, agential realism, and cosmopolitics, my hope is to create joint conversations and productive encounters between scholars in the humanities and natural sciences.

Publikationen / publications:

Roy, D. (2014): Developing a new Political Ecology: Neuroscience, Feminism, and the Case of the Estrogen Receptor, in: Schmitz, Sigrid, Höppner, Grit (ed.): Gendered Neurocultures. Feminist and Queer Perspectives on Current Brain Discourses, Wien: Zaglossus, 203-219.

Roy, D. (2012): Neuroethics, Gender and the Response to Difference, In: Neuroethics, Vol. 5, No. 3, 217-230.

Roy, D. (2008): Asking different questions: Feminist practices for the natural sciences, In: Hypatia: A Journal of Feminist Philosophy, Vol. 23 No. 4, 134-157.