THEORIES OF SCIENCE KULT8850/8851

Spring 2023

About the course

The course gives a broad introduction to theories of science and relevant social science and humanities scholarship, with an emphasis on the history and philosophy of science, the social organization, and the dynamics of various academic fields, including their strategies for producing knowledge, their efforts to provide epistemic authority, and the interaction between research and society. It also focuses on the epistemic aspects of scientific and scholarly communication practices, above all their role in the establishment of scientific validity and reliability. Research ethics, postcolonialism, and feminist perspectives on science are prominent topics in this regard.

The overall aim of the course is to help the participants to successfully conduct their PhD project, which obviously depends on the quality of their own scientific activities, but also on the institutional, societal, and political contexts within which scientific knowledge is produced in contemporary societies. The course engages with issues such as philosophical assumptions underlying high-quality scholarship, making claims about truth and objectivity, professional and societal relevance of science, and navigation of academic challenges. To better understand contemporary academic work, insights into the history of science and academic scholarship and the key features of the modern university are needed. Moreover, the course provides one of the few arenas in which PhD students from a wide variety of disciplines meet and work together, which increases their interdisciplinary sensitivities.

Formalities

The course is given over six days, with lectures on the following 3 x 2 days, from **09.15** to **15.45:**

I. 21-22 March: Philosophy and research ethics
II. 11-12 April: Theories about science in context
III. 8-9 May: Critical perspectives

In addition, the conference papers are presented in a public conference organised by the course taking place on **26 May.**

Venue for lectures and conference: Dragvoll campus, room TBA:
https://link.mazemap.com/TBA

The course consists of lectures, group work, and plenary discussions. To ensure sufficient engagement with the course's content, to enable peer-learning and to encourage networking across disciplines physical attendance is mandatory and no digital alternatives for participation are provided. Participants can apply for shorter leaves of absence that should altogether not be longer than one day.

You will be given access to the course literature in a Dropbox folder. Designated core texts should be read *before* the course days.

Lecturers

Professor Thomas Berker (course responsible: thomas.berker@ntnu.no), Associate Professor Terje Finstad, Professor Jonathan Knowles, Associate Professor Elisabeth Stubberud, Professor Knut H. Sørensen, Professor Siri Øyslebø Sørensen, Professor May Thorseth, and Research Professor Govert Valkenburg.

Credit points

To pass the course, you need to attend the lectures, present a paper at the course conference, and deliver a course assignment text (see below). The deadline for the course assignment is August **31st, 2023**.

- KULT8850 gives 7,5 credit points, which presupposes a presentation at the course conference and delivering an extended abstract (1000-2000 words).

- KULT8851 gives 10 credit points. In addition to the presentation at the course conference a conference paper has to be delivered (4000-5000 words).

Required readings

Readings are listed under each of the lectures. All the literature is accessible online or will be made available to the participants in a drop box folder to which they will be given access to. Reading and preparing for lectures: All the essential literature must be read before the lectures. Please make sure to prepare some comments/questions for the readings.

Program and readings

Tuesday March 21 (day 1)
Philosophy and Research Ethics I

0915 Welcome, structure of the course, course assignment, and other practical information

0930 Presentation round: My Ph.D. project in three sentences

1000 Break

1015 Group work: Getting to know each other

1045 Break

The following lectures on day 1 and 2 will take up philosophical questions about method and truth in relation to natural science, social science, and the humanities, rounding off with a discussion of general research ethics.

1100-1545 (Lunch 1200-1300): Jonathan Knowles: Philosophy of Science: Objectivity, Method, and Truth

This session introduces the classical issues of the philosophy of science, framed through the lens of the nature and possibility of objectivity in research.

Essential readings:

- Gaukroger, Stephen. 2012. Objectivity: A Very Short Introduction. Oxford: Oxford University Press, Chapter 1.
- Jonathan Knowles, Theory of science: A Short Introduction: 'Logical Positivism' (p. 21-30).
- Popper, Karl. 1972. The Bucket and the Searchlight: Two Theories of Knowledge. Appendix to Objective Knowledge. An Evolutionary Approach. Oxford: Oxford University Press.

- Kuhn, Thomas S. 2012. Postscript - 1969. In The Structure of Scientific Revolutions, 173-208. Fourth edition. Chicago: University of Chicago Press.
- H.G. Gadamer 'The universality of the hermeneutical problem' in his Philosophical Hermeneutics, ed. D. Linge, California UP 1976.
- S Harding '"Strong objectivity" and socially situated knowledge' Chapter 6 of her Whose Science? Whose Knowledge? Cornell UP 1991.

Additional readings:

- Jonathan Knowles, Theory of science: A Short Introduction: Ch. 4: Further Developments in Philosophy of Science: Lakatos, Feyerabend, Laudan, The Sociology of Scientific Knowledge.
- M. Foucault 'The Discourse on Language' Appendix to The Archaeology of Knowledge. New York, Pantheon Books 1972, http://commons.princeton.edu/shakespeares-language/wp-content/uploads/sites/41/2017/09/Foucault-The-Discourse-on-Language.pdf

Wednesday, March 22 (day 2)
Philosophy and Research Ethics II

0915-1200: Mattias Solli: The Role of the Body and Literacy in Research

This session deals with two enabling factors within science and their impact on our understanding of science: The body and literacy.

- What role does the body play in the production of scientific knowledge?
- How does the customary association between literacy and academic knowledge influence how we theorize about science?
- What if things were different – what can we learn from knowledge systems that incorporate the knowing body in more articulate ways than we usually do in the Western academic tradition, without any involvement of literacy?

Essential readings:

- Molander, B. (2015). Chapter 2: Tacit Knowledge and Silenced Knowledge. The Body, Culture, Action—and Language. In The practice of knowing and knowing in practices (pp. 35-70). Peter Lang Edition.
- Ong, W. (2013). Chapter 1: Transformation of the Word and Alienation. In Interfaces of the Word: Studies in the Evolution of Consciousness and Culture (pp 17-49). Cornell University Press.

Additional reading:

- Merleau-Ponty, M. (1964). The primacy of perception and its philosophical consequences. In The primacy of perception (pp. 12-27). Northwestern University Press.

1200-1300: Lunch

1300-1545: May Thorseth: Research ethics

This session deals with three levels of research ethics:

1. Quality of research – good research conduct and the ethos of science
2. Protecting persons and/or groups affected by research
3. The social responsibility of research (broad research ethics)

Essential readings:

- Kaiser, M (2014) The integrity of science. Lost in translation? Best practice & Research Clinical Gastroenterology. 28(2):339-347. https://doi.org/10.1016/j.bpg.2014.03.003.
- Ruyter, K.W. (2019) The history of research ethics. Available at : https://www.forskningsetikk.no/en/resources/the-research-ethics-library/systhematic-and-historical-perspectives/the-history-of-research-ethics/.
- Guillemin, M & Guillam, L (2004) Ethics, reflexivity and "ethically important moments" in research. Qualitative Inquiry. 10(2):261-280. https://doi.org/10.1177/1077800403262360. · Sarewitz, D (2016) The pressure to publish pushes down quality. Nature. 533:147.

Additional reading:

- Browse through the NESH guidelines, available in both Norwegian: https://www.forskningsetikk.no/retningslinjer/hum-sam/forskningsetiske-retningslinjer-for-samfunnsvitenskap-og-humaniora/ or English: https://www.forskningsetikk.no/en/guidelines/social-sciences-humanities-law-and-theology/guidelines-for-research-ethics-in-the-social-sciences-humanities-law-and-theology/

1545 End of day

Tuesday, April 11 (day 3)
Theories about science in context I

0915 Thomas Berker: Introduction: History, institutions, practices

1000 Break

1015 Berker cont.

1100 Terje Finstad: History of science and changes in scientific life. Situating and historicizing your own discipline/subject.

Essential readings:

- William Clark. 2008. *Academic charisma and the origins of the research university*. University of Chicago Press, p. 435-476.

Additional readings:

- Lorraine Daston and Peter Galison. 1992. The image of objectivity. In: Representations 40, p. 81-128
- Steven Shapin. 2010. Never pure. Historical studies of science as if it was produced by people with bodies, situated in time, space, culture, and society, and struggling for credibility and authority. The Johns Hopkins University Press, p. 1-15.

1200 Lunch

1315 Group work and plenary: present your discipline.

Participants will receive written instructions in advance.

1400 Govert Valkenburg: Science as practice

Essential readings:

- H.M. Collins and Steven Yearly (1992). Epistemological Chicken, pp. 301-326 in Andrew Pickering (ed.): *Science as Practice and Culture*, Chicago: University of Chicago Press
- Michel Callon and Bruno Latour (1992). Don't throw the baby out with the Bath School! A reply to Collins and Yearley, pp. 343-368 in Andrew Pickering (ed.): *Science as Practice and Culture*, Chicago: University of Chicago Press
- Noortje Marres (2018). Why We Can't Have Our Facts Back. *Engaging Science, Technology and Society,* vol. 4, 2018.

Additional reading:

- Valkenburg, G. (2021). Engineering as a socio-political practice. In D. P. Michelfelder & N. Doorn (Eds.), *The Routledge Handbook of Philosophy of Engineering*. Routledge. [While strictly about engineering and not scientific research, much of this chapter resonates and pertains to science.]
- Suchman, L. (2014). Reconfiguring practices. In C. Coopmans, J. Vertesi, M. E. Lynch, & S. Woolgar (Eds.), *Representation in scientific practice revisited* (pp. 333-335). MIT Press.

1445 Break

1500 Valkenburg, cont.

1545 End of day

Wednesday April 12 (day 4)
Theories about science in context II

0915 Knut H. Sørensen: The university as a place and a context for research: Academic freedom and autonomy, the quest for excellence, and strained collegiality.

Essential reading:

- Knut H. Sørensen and Sharon Traweek: *Questing Excellence in Academia: A Tale of Two Universities* (forthcoming, Routledge). Chapter 3. In the Shadows of Excellence and Neoliberal Interventions: Enactments of Academic Autonomy and Strained Collegiality (33 p.)

1000 Break

1015 Sørensen, cont.

1100 Break

1115 Sørensen, cont.

1200 Lunch

1300 Thomas Berker: Introduction to groupwork: Your scientific practices

1315 Groupwork

1400 Break

1415 Groupwork

1500 Break

1515 Presentation groupwork

1545 End of day

Monday, May 8 (day 5)
Critical perspectives I

0915 Elisabeth Stubberud: Decolonizing knowledge production and objectivity

Essential readings:

- Fjellheim, Eva Maria (2020) 'Through our stories we resist', https://www.taylorfrancis.com/chapters/oa-edit/10.4324/9780367853785-12/stories-resist-eva-maria-fjellheim
- Kuokkanen, Rauna (2008) 'What is hospitality in the Academy? Epistemic Ignorance and the (Im)Possible Gift' in Review of Education, Pedagogy, and Cultural Studies vol. 30(1), pp. 60-82. https://doi.org/10.1080/10714410701821297
- SAIH: An introduction to decolonization https://saih.no/assets/docs/Avkolonisering/Avkolonisering-ENG.pdf
- Bhambra, Gurminder K. (2014) 'Postcolonial and decolonial dialogues' in Postcolonial Studies Vol. 17(2), pp. 115-121. https://doi.org/10.1080/13688790.2014.966414

Additional reading:

- Dankertsen, Astrid (2022) ' Avkolonisering av akademia fra et samisk perspektiv' https://nordopen.nord.no/nord-xmlui/handle/11250/3038295

1000 Break

1015 Stubberud, cont.

1100 Break

1115 Stubberud, cont.

1200 Lunch

1300 Siri Øyslebø Sørensen: Situated knowledge and feminist critique of science

In this session we will work on the concept of objectivity based in feminist critique of universality in science and discuss the relevance and importance of acknowledging researcher positionalities.

Essential reading:

- Collins, Patricia Hill 1986. Learning from the outsider within: the sociological significance of black feminist thought i Social Problems 33(6): 14-32 https://www.jstor.org/stable/800672
- Haraway, Donna 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective" Feminist Studies, 14(3): 575-599 (24 s) https://www.jstor.org/stable/pdf/3178066.pdf?refreqid=excelsior%3A764992d6e6cdb51420%208857639557edb6
- Harding, Sandra, 2001 "Feminist Standpoint Epistemology" in Lederman, M. & Bartsch, i The Gender and Science Reader, London: Routledge: 145-165 (pdf)

Additional readings:

- Alcoff, Linda .M.,2009: The problem of speaking for others. In A. Jackson and L. Mazzei (eds) Voice in Qualitative Inquiry: challenging conventional, interpretative, and critical conceptions in qualitative research. London: Routledge, pp. 117-136 (pdf) - kommer
- Longino, Helen E. 1993. Feminist Standpoint Theory and the Problems of Knowledge (Review essay discussing Smith, D., Stanley, L., Hekman, S. and Harding, S.), Signs: Journal of Women in Culture and Society 1993, vol. 19, no. 1: 201-2012 http://www.jstor.org/stable/3174750
- Mellor, K. 2022, 'Developing a decolonial gaze: Articulating research/er positionality and relationship to colonial power', Access: Critical explorations of equity in higher education, vol. 10, no. 1, pp. 26–41 (pdf)

1345 Break

1400 Sørensen, cont.

1445 Break

1500 Course assignment work

1545 End

Wednesday May 10 (day 6)
Critical perspectives II

0915 Thomas Berker: The many uses of science: engagement, interdisciplinarity, innovation and sustainability

Essential reading:

- Wynne, Brian. 2006. Public Engagement as a Means of Restoring Public Trust in Science – Hitting the Notes, but Missing the Music? Public Health Genomics 9 (3): 211–20.
- Pfotenhauer, Sebastian M., Joakim Juhl, and Erik Aarden. "Challenging the 'Deficit Model' of Innovation: Framing Policy Issues under the Innovation Imperative." Research Policy, New Frontiers in Science, Technology and Innovation Research from SPRU's 50th Anniversary Conference, 48, no. 4 (May 1, 2019): 895–904. https://doi.org/10.1016/j.respol.2018.10.015.
- Berker, Thomas. "Negotiating research norms between academic and industrial research. The case of a research centre on zero emission buildings in Norway", to be published in Nordic Architectural Research.
- Collins, Harry, Robert Evans, and Mike Gorman. "Trading Zones and Interactional Expertise." Studies in History and Philosophy of Science Part A, Case studies of expertise and experience, 38, no. 4 (December 2007): 657–66. https://doi.org/10.1016/j.shpsa.2007.09.003.

Additional reading:

- Collins, H.M. and Robert Evans. 2002. The Third Wave of Science Studies: Studies of Expertise and Experience. Social Studies of Science 32 (2): 235–96.

1000 Break

1015 Thomas Berker cont.

1100 Break

1115 Thomas Berker cont.

1200 Lunch

1300 Thomas Berker: Introduction and group work on the course assignment

1545 End of day

Save the day for the course conference: May 26!