

FIL4200: Epistemology and Philosophy of Science

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Office Hours: By arrangement

Spring 2023

Note: This course description is *dynamic*. Whilst it won't change much from this version, please check the syllabus each week as I will modify it (e.g. if there's too much/little reading, a correction needs to be made, or if a question arises that I think needs to be on here).

1 Course description

Philosophers have long been interested in epistemic questions and various doxastic states (e.g. knowledge and belief). In the contemporary world, science is often regarded as especially precise and rigorous—and in particular we have theories that are able to make very good predictions. Moreover, they are *useful*—such theories can be employed in developing technologies that allow us to (among other things); produce wallet-sized devices that enable almost instantaneous communication across the globe, put large vehicles for transporting people and goods up in the sky, and generate nicely typeset course descriptions.

However, how epistemology and science interact is a difficult area of study, and the exact epistemic payoffs of science are far from obvious. In this masters level course we'll study three main themes:

- (1.) Epistemic states other than knowledge (in particular, suspension of judgement and ignorance).
- (2.) How suspension and ignorance might be addressed by different kinds of inference (and in particular *inference to the best explanation*).
- (3.) If and how all this might feed into scientific pluralism/perspectivism.

2 Prerequisites

While the course can be studied and enjoyed with no previous philosophical training, it is pitched at a masters level. Students will find things much easier

if they have already completed undergraduate courses in epistemology, metaphysics, and introductory logic.

3 Objectives

By the end of this course you should be able to:

- (i) Understand and use the central concepts in contemporary debates in the philosophy of science and epistemology.
- (ii) Use these concepts to outline various central positions.
- (iii) Evaluate these texts, positions, and ideas.
- (iv) Construct your own novel (and hopefully rigorous) arguments for various positions.

4 Temporal and spatial location

Time: Mondays 14:15–16:00 and some Thursdays 16:15–18:00.

Room: Seminars are all in Georg Morgenstiernes hus, either Lite seminarrom 141 (Mondays) or Seminarrom 152 (some Thursdays).

5 Assessment

Questions. There will be an online forum. In order to take the course for credit, you *must* ask at least one question **and** answer at least one of your colleagues' questions for at least 8 of the sessions. Deadline for questions: 23:59, three days before seminar, for answers 23:59, two days before seminar. (So if the seminar is on the 15th of the month, the question should be in by 23:59 on the 12th, and the answer by 23:59 on the 13th.)

Essay. A term paper of approximately 10–12 pages, references not included. **Deadline:** 14:00 15 May 2023

Draft/Plan. If you want comments on a draft or plan of your essay, it must be submitted to me (via email) at least a month before the deadline (get it to me by 23:59 on 15 April 2023). I'll provide some comments on the drafts.

6 Materials

Book: Many of the readings on ignorance are taken from Kourany and Carrier (eds.) *Science and the Production of Ignorance: When the Quest for Knowledge Is Thwarted*, MIT Press, 2020.

Selected papers/chapters: Available online and on Canvas. Please use the version I post so that we have the same page numbers.

7 Readings for each week

I have marked the core reading for each week with an asterisk (this is the reading that you should minimally accomplish). Other readings are optional—you are certainly not required to read everything for every week.

(1.) **Mo. 23. Jan.** Introducing agnotology

- (*) Kourany, Janet and Carrier, Martin (2020) 'Introducing the Issues'. In *Science and the Production of Ignorance*.
- (*) This course description.

(2.) **Th. 26 Jan.** Kinds of ignorance

- (*) Wilholt, Torsten (2020) 'On Knowing What One Does Not Know: Ignorance and the Aims of Research' in *Science and the Production of Ignorance*.
- Le Morvan, Pierre and Peels, Rik (2016) 'The Nature of Ignorance: Two Views', in *The Epistemic Dimensions of Ignorance*, eds. Peels, Rik and Blaauw, Martijn.
- Nottelmann, Nikolaj (2016) 'The Varieties of Ignorance', in *The Epistemic Dimensions of Ignorance*, eds. Peels, Rik and Blaauw, Martijn.

(3.) **Mo. 30. Jan.** Science as a possible *producer* of ignorance.

- (*) Carrier, Martin (2020) 'Agnotological Challenges: How to Capture the Production of Ignorance in Science' in *Science and the Production of Ignorance*.

(4.) **Th. 2. Feb.** Ignorance as virtuous

- (*) Kourany, Janet (2020) 'Might Scientific Ignorance Be Virtuous? The Case of Cognitive Differences Research' in *Science and the Production of Ignorance*.
- Solomon, Miriam (2020) 'Agnotology, Hermeneutical Injustice, and Scientific Pluralism: The Case of Asperger Syndrome' in *Science and the Production of Ignorance*.
- Anderson, Elizabeth (2020) "Feminist Epistemology and Philosophy of Science", *The Stanford Encyclopedia of Philosophy* (Spring 2020 Edition), Edward N. Zalta (ed.), <https://plato.stanford.edu/archives/spr2020/entries/feminism-epistemology/> (a survey of some of the literature in feminist philosophy of science).

(5.) **Mo. 6. Feb.** Suspension of judgement I: Friedman

- (*) Friedman, Jane (2017). Why Suspend Judging? *Noûs* 51 (2): 302-326.
 - Friedman, Jane (2013). 'Suspended judgment'. *Philosophical Studies* 162 (2): 165-181.
- (6.) **Th. 9 Feb.** Suspension of judgement II: Masny and Avnur (**Note:** This is the last Thursday class.)
- (*) Masny, Michal (2020). Friedman on suspended judgment. *Synthese* 197 (11):5009-5026.
 - Avnur, Yuval 'Denial, Silence, and Openness'. *The Meaning and Power of Negativity* (2017/2021). Ingolf Dalferth, Editor. Mohr Siebeck: Tübingen.
- (7.) **Mo. 13. Feb.** Getting ready to infer: Theoretical virtues
- (*) Schindler, Samuel (2018). Theoretical Virtues, Truth and the Argument from Simplicity. In *Theoretical Virtues in Science: Uncovering Reality through Theory* (pp. 5-38). Cambridge: Cambridge University Press.
 - Kuhn, Thomas S. (1977). Objectivity, value judgment, and theory choice. In *The Essential Tension: Selected Studies in Scientific Tradition and Change*. University of Chicago Press. pp. 320–39.
 - Keas, Michael (2018). Systematizing the theoretical virtues. *Synthese* 195 (6):2761-2793.
- (8.) **Mo. 20. Feb.** Inference to the best explanation
- (*) Thagard, Paul R. (1978). The best explanation: Criteria for theory choice. *Journal of Philosophy* 75 (2):76-92.
 - An introductory video on Bayesianism: <https://youtu.be/HZGCoVF3YvM>
 - Cartwright, Nancy (1980). 'The Truth Doesn't Explain Much'. *American Philosophical Quarterly* 17 (2):159 - 163. (Cartwright argues that truth does not provide a good explanation.)
 - White, Roger (2003). 'The epistemic advantage of prediction over accommodation.' *Mind* 112 (448):653-683. (An abductive argument to the effect that predicting theories are to be preferred above accommodating ones.)
- (9.) **Mo. 6. Mar.** Pluralism I: Incommensurability
- (*) Hoyningen-Huene, Paul (2020) 'Strong Incommensurability and Deeply Opaque Ignorance', in *Science and the Production of Ignorance*.
 - Kuhn, Thomas S. (1970), *The Structure of Scientific Revolutions*, chapter 9

- Kuhn, Thomas S. (1970), *The Structure of Scientific Revolutions*, chapter 10 (Two chapters from Kuhn's magnum opus; chapter 9 covers revolutions, and chapter 10 the incommensurability thesis. It's a wonderful book, and also widely read outside philosophy.)
- Bird, Alexander 'Thomas Kuhn', *Stanford Encyclopedia of Philosophy*, especially sections 4 and 6.2 (Useful summary: See section 4 for incommensurability, and section 6.2 for some critical responses to it.)
- Toulmin, Stephen. (1970), 'Does the distinction between normal and revolutionary science hold water?', in Lakatos and Musgrave (eds), *Criticism and the Growth of Knowledge*, 39–47.

(10.) **Mo. 13. Mar.** Pluralism II: Cartwright

- (*) Cartwright, Nancy (1994), 'Fundamentalism versus the patchwork of laws' *Proceedings of the Aristotelean Society* 94:279-292. (Cartwright argues against the idea of there being a fundamental science.)
- Cartwright, Nancy (1999). *The Dappled World: A Study of the Boundaries of Science*, Introduction. Cambridge University Press. (Provides a clear overview of some pluralistic ideas.)

(11.) **Mo. 20. Mar.** Pluralism III: Chang

- (*) Chang, Hasok (2012), *Is Water H₂O? Evidence, Realism and Pluralism*, Ch. 5. *Boston Studies in the Philosophy and History of Science*. (Here Chang advocates an *epistemological* account of Pluralism.)

(12.) **Mo. 27. Mar.** Perspectivism

- (*) Giere, Ronald N. (2006). *Scientific Perspectivism*, Chs. 1 and 2. University of Chicago Press. (Giere presents the idea that science is essentially *perspectival* and supports this with an examination of colour vision.)
- Ruphy, Stéphanie (2016) *Scientific Pluralism Reconsidered A New Approach to the (Dis)Unity of Science*. (A complex but nuanced account of scientific perspectivism, partly building on work of Giere.)
- Jacoby, Franklin 'Persepctivism in Science', *Internet Encyclopedia of Philosophy*, <https://iep.utm.edu/persp-sc/> (an introductory survey of perspectivism in the philosophy of science).