

Proseminar: The Core Debates in the Philosophy of Science

Michael Baumgartner

Universität Osnabrück, Summer semester 2013, Wednesday 10-12

Description

In this course, we study the core debates in the philosophy of science of the 20th century. Among the covered topics will be instrumentalism, logical positivism, falsificationism, empirical under-determination, holism, psychologism, constructive criticism, and the problem of spelling out the notion of scientific explanation.

To pass the course a minimum of 4 (short) essays must be written over the course of the semester on questions about the texts discussed in the seminar, and you must give a 20-minute presentation to set up the discussion of one of the meetings. The presentation will count for 30% of the final grade, the essays for 17.5% each.

All texts discussed in the course can be downloaded from StudIP. This is also where the weekly essay questions are uploaded. Essays must be sent to me by email by Tuesday evening 22h at the latest:

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Introductory literature

- GODFREY-SMITH, PETER, *Theory and Reality*, Chicago: University of Chicago Press 2003.
- PSILLOS, STATHIS, *Philosophy of Science A–Z*, Edinburgh: Edinburgh University Press 2007.
- CHALMERS, ALAN F., *What is This Thing Called Science*, St. Lucia: University of Queensland Press 1976.

Program

10.4. Introduction

- DUHEM, PIERRE, Physical theory and experiment, in: FEIGL, H and BRODBECK, M., editors, *Readings in the Philosophy of Science*, New York: Appleton Century Crofts 1953 (1906), 235–252.

17.4. Logical Positivism/Empiricism I: Instrumentalism

- MACH, ERNST, *Die Mechanik in ihrer Entwicklung: historisch-kritisch dargestellt*, 9th edition. Leipzig: F. A. Brockhaus 1933.
- MACH, ERNST, *Erkenntnis und Irrtum*, 2nd edition. Leipzig: Johann Ambrosius Barth 1906.

▷ From Mach (1933) we discuss pp. 457–471, from Mach (1906), pp. 449–463.

24.4. Logical Positivism/Empiricism II: Physicalism

- CARNAP, RUDOLF, Die physikalische Sprache als Universalsprache der Wissenschaft, *Erkenntnis*, 2 (1931), 432–465.

8.5. Falsificationism I

- POPPER, KARL R., *Logik der Forschung*, Tübingen: J. C. B. Mohr 1994 (1934).
- ▷ We discuss chapter 1 and §§13-16 of chapter 3.

15.5. Falsificationism II

- POPPER, KARL R., *Logik der Forschung*, Tübingen: J. C. B. Mohr 1994 (1934).
- ▷ We discuss chapters 4 & 5.

22.5. Empirical Underdetermination, Holism

- QUINE, WILLARD VAN ORMAN, Two dogmas of empiricism, *The Philosophical Review*, 60 (1951), 20–42.

29.5. Psychologism I: Normal Science

- KUHN, THOMAS S., *The Structure of Scientific Revolutions*, Volume 2, International Encyclopedia of Unified Science, University of Chicago Press 1962.
- ▷ We discuss chapters 2–4.

5.6. Psychologism II: Crisis and Paradigm Shifts

- KUHN, THOMAS S., *The Structure of Scientific Revolutions*, Volume 2, International Encyclopedia of Unified Science, University of Chicago Press 1962.
- ▷ We discuss chapters 6 & 12 (optional reading chapter 7).

12.6. Constructive Criticism I: Problemshifts

- LAKATOS, IMRE, Falsification and the methodology of scientific research programmes, in: WORRALL, J. and CURRIE, G., editors, *The Methodology of Scientific Research Programmes*, Cambridge: Cambridge University Press 1978 (1970), 8–101.
- ▷ We discuss pp. 8–37.

19.6. Constructive Criticism II: Research Programmes

- LAKATOS, IMRE, Falsification and the methodology of scientific research programmes, in: WORRALL, J. and CURRIE, G., editors, *The Methodology of Scientific Research Programmes*, Cambridge: Cambridge University Press 1978 (1970), 8–101.
- ▷ We discuss pp. 47–55, 68–78, and 86–93.

26.6. Explanation I: The DN Model

- HEMPEL, CARL GUSTAV and OPPENHEIM, PAUL, Studies in the Logic of Explanation, *Philosophy of Science*, 15 (1948), 135–175.
- ▷ We discuss §§1–3 and §§6–7.
- HEMPEL, CARL G., Two models of scientific explanation, in: BALASHOV, Y. and ROSENBERG, A., editors, *Philosophy of Science: Contemporary Readings*, London: Routledge 2002, 45–55.
- ▷ We discuss pp. 49–51.

3.7. No Class**10.7. Explanation II: The Unificationist Model**

- KITCHER, PHILIP, Explanatory unification and the causal structure of the world, in: BALASHOV, Y. and ROSENBERG, A., editors, *Philosophy of Science: Contemporary Readings*, Routledge 2002, 71–91.