

Prof. Christian Wüthrich
Prof. Marcel Weber
Département de philosophie
christian.wuthrich@unige.ch
marcel.weber@unige.ch

The Fundamentality of Physics and the Autonomy of the Special Sciences

Autumn semester 2023, Wednesdays 12-14, L208, SE MA2a/MA5a

Program:

20 Sept	No class (EPSA 2023 in Belgrade)
27 Sept	Oppenheim and Putnam (1958)
4 Oct	Nagel (1961)
11 Oct	Fodor (1974)
18 Oct	Kitcher (1984)
25 Oct	Waters (2008)
1 Nov	Kim (2007)
8 Nov	No class (semaine de lecture)
15 Nov	Hofer (2003)
22 Nov	Ladyman and Ross (2007)
29 Nov	Loewer (2008, 2009)
6 Dez	Hüttemann and Love (2011)
13 Dez	Batterman (2018)
20 Dez	Ney (2020)

Descriptif :

Philosophers of science are puzzled by the fact that, according to a robust scientific consensus, everything (material) consists of the same kind of matter subject to the same physical laws, yet there exist numerous sciences with their own principles that appear to be independent of fundamental physics, such as biology, psychology, economics, etc. Even some areas of chemistry, condensed matter physics and thermodynamics have resisted a reduction to fundamental physics. In what sense, then, is physics fundamental? And how can we explain the autonomy or the sheer existence of the “special sciences”? This seminar will approach these questions from two different angles, namely the philosophy of physics and (mainly) the philosophy of biology.

Bibliography

Batterman, R.W. (2018). Autonomy of theories: an explanatory problem. *Noûs* 52: 858-873.

Fodor, J.A. (1974): Special Sciences or the Disunity of Science as a Working Hypothesis. *Synthese* 28:

97-115.

Hofer, C. (2003). For Fundamentalism. *Philosophy of Science* 70: 1401-1412.

Hüttemann, A., and A.C. Love, 2011, "Aspects of Reductive Explanation in Biological Science: Intrinsicity, Fundamentality, and Temporality", *British Journal for the Philosophy of Science*, 62: 519–549.

Kim, Jaegwon (2007), *Physicalism, or Something Near Enough*. Princeton University Press [Chapter 4]

Kitcher, P. (1984): '1953 and All That. A Tale of Two Sciences', *Philosophical Review*, **93**, pp. 335–73.

Ladyman, J., and D. Ross (2007). *Every Thing Must Go: Metaphysics Naturalized*. Oxford University Press [Sections 1.4-1.6, pp. 38-57]

Loewer, B. (2008). Why There *Is* Anything Except Physics. In J. Hohwy and J. Kallestrup (eds.), *Being Reduced: New Essays on Reduction, Explanation, and Causation*. Oxford University Press, pp. 149-163.

Loewer, B. (2009). Why is There Anything Except Physics?. *Synthese* 179: 217-233.

Nagel, E. (1961): *The Structure of Science. Problems in the Logic of Scientific Explanation*, London: Routledge and Kegan Paul [Chapter 11]

Ney, A. (2020). The Fundamentality of Physics: Completeness or Maximality?. *Oxford Studies in Metaphysics* 12: 203-227.

Oppenheim, P., and H. Putnam (1958). Unity of Science as a Working Hypothesis. In H. Feigl (ed.), *Concepts, Theories and the Mind-Body Problem. Minnesota Studies in the Philosophy of Science*, Volume 2. Minneapolis: University of Minnesota Press, 3-36.

Waters, C.K. (2008), Beyond Theoretical Reduction and Layer-Cake Antireduction. In M. Ruse (ed.), *The Oxford Handbook of Philosophy of Biology*. Oxford: Oxford University Press.