

Epistemology and Philosophy of Science – Module 2: Scientific Explanations

Instructor: Andrea Oldofredi (Lancog, CFUL)

October 15, 2024

In order to schedule a meeting with me please write an email at:

Email Address: aoldofredi@letras.ulisboa.pt

Handout for Tuesday October 22

Seminar 1, Part I: 14:00–15:20

- Announcements
- Brief introduction to philosophy of science: we will provide a working definition of what philosophy of science is by looking at what questions such a discipline answers to. We will mention the relationship between science and philosophy, as well as the mutual influence of one over the other.

Optional Reading: “Why Philosophy of Science?” in Alex Rosenberg, *Philosophy of Science. A Contemporary Introduction*, Routledge, 2005, pages 1–13,

- **Essay 1:** *Rudolf Carnap, “The Value of Laws: Explanation and Prediction”*. I will comment in detail on Carnap’s paper, explaining the main concepts of scientific law mentioned by the author, and their relations with scientific explanations.
- **Essay 2:** *Carl G. Hempel, “Two Basic Types of Scientific Explanation”*. I will introduce the two main models of scientific explanation provided by Hempel. We will study the main differences between deductive and statistical explanations.

NB: The students are required to read Carnap and Hempel’s essays by Tuesday October 22. Both articles are included in Martin Curd, J.A. Cover *Philosophy of Science. The Central Issues*, 1998, W.W. Norton and Company, pages 678–694.

Coffee Break: 15:20–15:40

Seminar 1, Part II: 15:40–17:00

- **Essay 3:** *Carl G. Hempel, “Inductive-Statistical Explanation”*. Given the complexity of this essay, I will explain it in class. We will examine some examples of statistical explanations and their logical form. This essay is included in Martin Curd, J.A. Cover *Philosophy of Science. The Central Issues*, 1998, W.W. Norton and Company, pages 706–716.

NB: this reading is not required before the seminar.

- General discussion on a research question selected by the instructor: in the final part of each seminar we will discuss a question arising from the discussed essays in order to develop analytic and reasoning skills.