

The interpretation of physical theories

John Dougherty

SoSe 25

Meeting:	Fridays, 14:00–16:00 (s.t.) Ludwigstr. 31, Room 021
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Description

Philosophers of physics regularly provide interpretations of physical theories, and for the most part they seem to agree about the goals of interpretation and standards by which interpretations should be evaluated. However, interpretation is rarely theorized in the philosophy of physics. The need for a more explicit expression of the implicit standard account of interpretation is becoming more pressing: philosophers of physics have recently been increasingly critical of the standard account, and forward progress requires a more detailed location of this account's strengths and weaknesses. In this course, we will investigate the historical development and conceptual justification of the standard account of interpretation in the philosophy of physics, with an eye toward current controversies over this account.

Materials

The syllabus and list of readings for this course are available on LSF, along with the required readings.

Assessment

The evaluation for this course will be by means of a term paper submitted at the end of the semester. If you would like to submit a term paper, you must register through LSF during the registration period (30.06.–11.07.) and submit it to me by email by the term paper deadline (19.09.). Please note that extensions of this deadline are not up to me; if you need an extension, please contact Fabian Widerna (f.Widerna@lmu.de) at the Prüfungsamt für Geistes- und Sozialwissenschaften (PAGS).

Your paper should be on a topic related to the interpretation of physical theories. Near the end of the semester I will distribute a list of suggested questions and grading criteria. You may write your paper on topic not on that list; if you do, then I recommend speaking to me before writing the paper, so that I can advise on the topic and scope of your planned alternative. The term paper should be 3000 words for BA students and 6000 words for MA students. In either case, it should be written in 12pt font, with 1.5 spacing, 3cm margins on the left and right, and a standard academic typeface (e.g., Computer Modern, Times New Roman, Palatino, Calibri, etc.)

Resources

Questions about the administration of philosophy teaching at LMU should be directed to Thomas Wyrwich (thomas.wyrwich@lrz.uni-muenchen.de). The Erasmus coordinator for philosophy at LMU is Peter Adamson (office.peter.adamson@lrz.uni-muenchen.de). The list of women's representatives (Frauenbeauftragte) for the Philosophy Faculty can be found on the Faculty's

webpage (www.philosophie.uni-muenchen.de/fakultaet/frauenbeauftragte/index.html); the representative for the MCMP is Vanessa Carr. Issues regarding the economic, social, and cultural aspects of student life—including studying with a child or studying with a disability—are the responsibility of the Munich Student Union (<https://www.studentenwerk-muenchen.de>).

Schedule and readings

For longer texts, we will read only selections. The versions of the texts posted to LSF will indicate the parts that can be skipped.

Introduction

- 25.04.** Ruetsche, L. (2011). Exegesis saves. In *Interpreting Quantum Theories*, pages 1–18.
- *30.04. (16:00–18:00)** Campbell, N. R. (1920). Theories. In *Physics: The Elements*, pages 119–158.
- 09.05.** Stebbing, L. S. (1920). The symbolic world of physics. In *Philosophy and the Physicists*, pages 65–97.
- 16.05.** Quine, W. V. O. (1951). Two dogmas of empiricism. *The Philosophical Review* 60(1):20–43.
- 23.05.** Hempel, C. G. (1958). The theoretician’s dilemma: a study in the logic of theory construction. In Feigl, H., Scriven, M., and Maxwell, G., editors, *Concepts, Theories, and the Mind-Body Problem*, volume II of *Minnesota Studies in the Philosophy of Science*, pages 37–98. University of Minnesota Press.
- 30.05.** Feyerabend, P. K. (1958). An attempt at a realistic interpretation of experience. *Proceedings of the Aristotelian Society*, 58:143–170.
- 06.06.** Sellars, W. (1961). The language of theories. In Feigl, H. and Maxwell, G., editors, *Current Issues in The Philosophy of Science*, pages 57–77. Holt, Rinehart, and Winston.
- 13.06.** Sneed, J. D. (1971). The traditional view. In *The Logical Structure of Mathematical Physics*, pages 15–40. Reidel.
- 20.06.** Hesse, M. (1976) Truth and the growth of scientific knowledge. *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association*, 1976(2):261–280.
- 27.06.** Van Fraassen, B. C. (1980). To save the phenomena. In *The Scientific Image*, pages 41–69.
- 04.07.** Earman, J., and Norton, J. (1987). What price spacetime substantivalism? The hole story. *The British Journal for the Philosophy of Science*, 38(4), 515–525.
- 11.07.** Belot, G. (2018). Fifty million Elvis fans can’t be wrong. *Noûs*, 52(4):946–981.
- 18.07.** Williams, P. (2019). Scientific realism made effective. *The British Journal for the Philosophy of Science*, 70(1):209–237.
- 25.07.** Menon, T. (2024). The inferentialist guide to scientific realism. [philsci-archive:23011](https://philsci-archive.net/vol01/202407/23011)