

The Logic in Philosophy

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Class Hours: Wed 12-14 Class Room: L208

Course Description

Important philosophers have been captivated by the revolution in formal logic during the 20th century. Many of their arguments rest on new mathematical discoveries. Hilary Putnam has argued that the Löwenheim-Skølem theorem refutes the existence of an objective and mind-independent world. Bas van Fraassen has contended that arguments in the philosophy of science against empiricism are ineffective against a semantic approach to theories. W. V. O. Quine has maintained that the distinction between analytic and synthetic truths is trivialised by the fact that all theories are reducible to theories in which all theorems are analytic. In this seminar we will analyse these arguments and the basic logical facts undergirding them. We will examine in particular key notions such as theory, equivalence, translation, reduction, and model.

Required Materials

- Halvorson, Hans . (2019). *The Logic in Philosophy of Science*. Cambridge University Press

Prerequisites

- The seminar will be held in English
- An introductory logic course treating basic predicate logic.

Course Structure

We will read mostly original research articles. Participants will alternate to give presentations. Each presenter will have to produce a written document, *e.g.* a handout or slides to be projected, which we will then upload to the Moodle site of the seminar. We will use Halvorson's monograph as a reference and the instructors will sometimes present technical material from the textbook that is presupposed in the texts to be read the following weeks.

Evaluation

The evaluation for this course depends on the module for which it is taken:

- MA6: Term paper (~ 25 pages) and defence.
- MA7: Term paper (~ 12 pages) and oral presentation during the seminar.
- MA8 (half-module): Term paper (~ 12 pages) or oral presentation during the seminar.

Schedule

Week 01, 23/09: Introduction to the course

- Halvorson (2019), *The Logic in Philosophy of Science*, Introduction (pp. 1-18)

Week 02, 30/09: Theoretical equivalence

- Sklar (1982), Saving the Noumena, *Philosophical Topics*, 13, 1, pp. 89-110

Week 03, 07/10: Theoretical equivalence

- Glymour (1970), Theoretical realism and theoretical equivalence, *Proceedings of the Biennial Meeting of the PSA*, pp. 275-288

Week 04, 14/10: Theoretical equivalence

- Putnam (1983), *Realism and Reason: Philosophical Papers Volume 3*, Equivalence (pp. 26-45)

Week 05, 21/10: Implicit definition and the analytic/synthetic distinction

- Quine (1964), Implicit Definition Sustained, *The Journal of Philosophy*, 61, 2, pp. 71-74
- (Optional reading) Quine and Goodman (1940), The elimination of extra-logical postulates, *The Journal of Symbolic Logic*, 5, 3, pp. 104-109

Week 06, 28/10: Implicit definition and the analytic/synthetic distinction

- Wilson (1965), Implicit Definition Once Again, *The Journal of Philosophy*, 62, 14, pp. 364-374
- (Optional reading): Van Fraassen (2011), Logic and the Philosophy of Science (pp. 45-55 only), *Journal of the Indian Council of Philosophical Research*, 27

Week 07, Fall Break

Week 08, 11/11: Ramsification

- Halvorson (2019), *The Logic in Philosophy of Science*, Ramsey Sentences (pp. 247-257)
- (Optional reading) Carnap (1966), *An Introduction to the Philosophy of Science*, The Ramsey sentence (Ch. 26, pp. 247-256)

Week 09, 18/11: Ramsification

- Lewis (1970), How to Define Theoretical Terms, *The Journal of Philosophy*, 67, 13, pp. 427-446

Week 10, 25/11: Putnam's paradox and metaphysical realism

- Putnam (1977), Realism and Reason, *Proceedings and Addresses of the APA*, 50, 6, pp. 483-498
- (Optional reading) Button (2013), *The Limits of Realism*, (pp. 7-18)

Week 11, 02/12: From metatheory to philosophy

- Halvorson (2019), *The Logic in Philosophy of Science*, (pp. 257-283)

Week 12, 09/12: Quantifier variance

- Hirsch (2002), Quantifier variance and realism, *Philosophical Issues*, 12, pp. 51-73

Week 13, 16/12: Special guest: Hans Halvorson