

PHIL7060: PHILOSOPHY OF SCIENCE

WHY IS THERE ANYTHING BUT PHYSICS?

Spring 2016

I. **PROF. POLGER**

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Office Hours: open door and by appointment

II. **LOCATION & TIME**

210 McMicken Hall

Tues, 2:00-4:45

III. **COURSE OBJECTIVES**

Why is there anything but physics? Why are there sciences other than the physical sciences? What sort of questions are these, anyhow? Answers and approaches from the mid-20th century through today are examined. Students will learn to write professional conference papers.

IV. **TEXTS**

All readings are provided via Blackboard in PDF format.

V. **ASSIGNMENTS**

There will be two kinds of assignments for this class:

A. *Final Papers*. All students will prepare a paper written according to American Philosophical Association (APA) Eastern Division submission standards (online). The most crucial bit of information about the format is that the *approximate* and *maximum* length is 3,000 words (approximately 10-12 typed double-spaced pages.)

All papers will have a specific format and be submitted on a specific schedule. Each paper is to have three sections: (I) Explanation of one argument from the text; (II) Formulation of one strong objection to the argument; and (III) Assessment of what resources (if any) remain available for a response by the argument's author. A draft of (II) is due on February 23. A penultimate draft of both (I) and (II) is due on March 29. The completed final paper—sections (I)-(III)—is due April 26. Further explanation of this structure will be discussed in class.

Philosophy Ph.D. students beyond their first year may propose to write a paper with a different structure, or to write a paper of 5,000-7,000 words, or a co-authored paper (with another advanced student in the class) of 9,000-10,000 words. (I do not promise to accept all proposals.)

The details of such a paper will be negotiated with me on a case by case basis, but it will still be submitted in segments.

B. Presentations. Presentation assignments will be made in class, and in advance. Students will each make two presentations to the class in which they assess *one* argument that was put forth in *one* of the readings for that week. Each presentation will be no more than fifteen minutes long, after which the floor will be open to discussion. (I will cut you off at fifteen minutes.) Every presentation should be accompanied by a handout of no more than two single-sided pages. (You should accomplish this by efficiency, not by using 6 point font. You can copy them two-sided; the point is that the total should not be more than two sides.) Powerpoint slides will not be permitted for this purpose. You will be graded on your presentation style as well as content. Handouts should be prepared as if you were going to pass them out at a professional conference.

If, in preparing for your presentations, you discover that some reading other than but related to the one assigned (e.g., by the same author, commenting on the assigned reading, recently published on the same topic) is better or more appropriate, you may suggest that we change the assigned reading. For best effect, you should suggest this more than a week in advance so that other students have time to read the thing(s) you suggest.

Late assignments will be penalized at a rate of 30% per calendar day, starting the moment that the assignment is due.

V.

GRADES

Grades for this class will be based on four factors. These will contribute to the final grade as follows:

Presentation 1	10%
Presentation 2	15%
Paper Draft: Section II	20%
Paper Draft: Sections I-II	30%
Completed Paper: Sections I-III	25%
Participation	can modulate your grade +/-

In addition there is an expectation of class participation which may modulate your final grade by as much as one increment from its computed value, e.g., turn either a B+ or an A into an A-. Evaluation of participation is subjective and wholly determined by the instructor.

Attendance is mandatory. If you miss two meetings, your final grade will be penalized 20%. If you miss three meetings then unless you can document extraordinary circumstances you will fail the class if you do not withdraw.

VI.

THE FINE PRINT

You are responsible for knowing and following all University and College regulations, for example with respect to registration, drop or withdrawal, and grading status. It goes without saying, but we will nevertheless, that this course will be conducted according to the University's Student Code of Conduct. Any student who is academically dishonest will *at least* fail the course; further actions may be taken. Please familiarize yourself with the University's guidelines on academic integrity, online at <<http://www.uc.edu/studentlife/conduct/guide.html>>.

Any student who, because of a disabling condition, needs special arrangements to meet course requirements must contact us *immediately* so that the appropriate arrangements can be made. (All disabilities must be documented with the University and us.)

Any student who requires accommodation for religious observances must notify the instructor in advance.

You are expected to show respect for your classmates and the instructors. This means that you will turn off telephones before class, and only use laptop computers and other electronic devices for class-related activities. Checking email, sending and receiving text messages, and listening to music are not among the permitted class-related activities. Texting is always disruptive.

You should expect to be treated with respect and fairness by the instructor and by your classmates.

The readings and schedule are subject to change.

Philosophy of Science: Why Is There Anything But Physics?

1. January 12. Introduction.

Oppenheim, P. and H. Putnam. 1958. The Unity of Science as a Working Hypothesis. In H. Feigl et al. (eds.), *Minnesota Studies in the Philosophy of Science*, vol. 2, Minneapolis: Minnesota University Press.

2. January 19. Origins and Codification of the Received View

Polger & Shapiro, *The Multiple Realization Book*, Chs. 1-2

Putnam, H. 1973. Philosophy and Our Mental Life. Reprinted in H. Putnam (ed.) (1975), *Mind, Language, and Reality: Philosophical Papers, Volume 2*. Cambridge: Cambridge University Press.

Fodor, J. 1974. Special Sciences, or the Disunity of Science as a Working Hypothesis. *Synthese* 28: 97-115.

3. January 26. Multiple Realization and the Received View

Polger & Shapiro, *The Multiple Realization Book*, Chs. 3-4

Putnam, H. 1967. The Nature of Mental States. Reprinted in H. Putnam (ed.) (1975), *Mind, Language, and Reality: Philosophical Papers, Volume 2*. Cambridge: Cambridge University Press.

Alternative: Kitcher, P. 1984. 1953 And All That: A Tale of Two Sciences. *Philosophical Review* 93 (3): 335-373.

4. February 2. Evidence for Actual Multiple Realization

Polger & Shapiro, *The Multiple Realization Book*, Chs. 5-6

Bechtel, W. and J. Mundale. 1999. Multiple Realizability Revisited: Linking Cognitive and Neural States. *Philosophy of Science*, 66: 175-207.

5. February 9. Evidence for Multiple Realizability

Polger & Shapiro, *The Multiple Realization Book*, Chs. 7-8

Piccinini, G. and S. Bahar. 2013. Neural Computation and the Computational Theory of Cognition. *Cognitive Science* 34 (2013) 453–488.

Chirimuuta, M. 2014. Minimal Models and Canonical Neural Computations: The Distinctness of Computational Explanation in Neuroscience. *Synthese* 191: 127–153.

Extra: Piccinini, G. 2015. *Physical Computation*. Oxford: Oxford University Press. Ch. 7

6. February 16. Idealization and its Consequences

Polger & Shapiro, *The Multiple Realization Book*, Ch. 9

Klein, C. 2008. An Ideal Solution to Disputes about Multiply Realized Kinds. *Philosophical Studies* 140 (2): 161-177.

Haug, M. 2011. Abstraction and Explanatory Relevance; or, Why Do the Special Sciences Exist? *Philosophy of Science* 78 (5): 1143-1155.

7. February 23. The Autonomy of the Special Sciences

Polger & Shapiro, *The Multiple Realization Book*, Ch. 10

Antony, L. and Levine, J. 1997. Reduction with Autonomy. In J. Tomberlin (1997), *Philosophical Perspectives 11: Mind, Causation, and World*. Boston: Blackwell Publishers.

Antony, L. 1999. Multiple Realizability, Projectibility, and the Reality of Mental Properties. *Philosophical Topics* 26 (1/2): 1-24.

8. March 1: TBD

9. March 8. More “Autonomy” of the Special Sciences

Fodor, J. 1997. Special Sciences: Still Autonomous After All These Years. In J. Tomberlin (1997), *Philosophical Perspectives 11: Mind, Causation, and World*. Boston: Blackwell Publishers.

Aizawa, K. and C. Gillett. 2011. The Autonomy of Psychology in the Age of Neuroscience. In Phyllis McKay and Illari Federica Russo (ed.), *Causality in the Sciences*. Oxford University Press: 202-223.

Hemmo, M. and O. Shenker. 2015. The Emergence of Macroscopic Regularity. *Mind and Society*, 14 (2) :221-244.

10. March 15. Why Is There Anything But Physics?

Loewer, B. 2009. Why is There Anything Except Physics? *Synthese*, 170 (2): 217-233.

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: Oxford University Press.

11. March 22: UC Spring Break.

12. March 29. There Are No Things But Physical Things, or Not Them Either

Ladyman, J., and D. Ross. 2007. *Every Thing Must Go: Metaphysics Naturalized*. Oxford: Oxford University Press. Ch. 1

Rosenberg, A. 2011. *The Atheist’s Guide to Reality: Enjoying Life Without Illusions*. New York: Norton. Chs. 1-2.

13. April 5. Model-Based Science and Philosophy

Godfrey-Smith, P. 2006. Theories and models in metaphysics. *Harvard Review of Philosophy*, 14: 4-19.

Godfrey-Smith, P. 2012. Metaphysics and the philosophical imagination. *Philosophical Studies*, 160: 97-113.

14. April 12. Model-Based Metaphysics?

Kornblith, H. 2009. Timothy Williamson’s *The Philosophy of Philosophy*. *Analysis Reviews*, 69 (1): 109-116.

Paul, L. 2012. Metaphysics as Modeling: the Handmaiden’s Tale. *Philosophical Studies*, 160: 1-29.

Williamson, T. forthcoming. Model Building and Philosophy. In R. Blackford and D. Broderick (Eds.), *Philosophy’s Future: The Problem of Philosophical Progress*. Oxford: Wiley.

15. April 19. Concluding Discussion