

Reductionism PHI 750 (SU) / PHL 515 (UR)

Fall 2009

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Introduction

Physics claims to be a science that can provide a true, fundamental, and comprehensive theory of our world. But if this is the case, what room is there for the so-called “special sciences”—biology, psychology, economics? What can they contribute to the story physics tells? And what is their relation to fundamental physics?

We will start the semester by looking at classic models of reduction that were defended in the 20th Century. The bulk of the semester, including the weeks when we have visitors present, will focus on contemporary topics: how philosophers understand reduction today, the prospects for reducing the special sciences to fundamental physical science, and the philosophical obstacles to reductionism.

Major funding for the course has been provided by the Mellon Central New York Humanities Corridor, an Andrew W. Mellon foundation initiative and the SU Humanities Center.

Structure of the course

The course is constructed around visits from four leading philosophers who work on the topic. Information about the visitors is below. Other meetings of the seminar will follow an unorthodox schedule. There will be three Saturday ‘super-classes’ that compress what would otherwise be several weeks of classes. Students will be expected to do a substantial amount of preparation for these classes. A more detailed schedule is available below.

We have limited funding to support accommodation for students and faculty at various points during the seminar—in particular for the Thursday nights on weeks when we have a visitor present. More information about this will be made available during the first class meeting.

Website and course readings

There is one required textbook for the course. It will be available for purchase at the University of Rochester bookstore and the Syracuse University bookstore.

Strevens, Michael. 2008. *Depth: An Account of Scientific Explanation*. Harvard University Press.

All other course readings will be posted on a course website:

<http://web.me.com/kevaned/reductionism/>. Accessing the website requires a username (“reductionism”) and password (“reductionism”).

Course requirements

Evaluation in this course will be assessed on the basis of course attendance, four short written assignments, and a final term paper.

As usual for a graduate seminar, attendance at each session is mandatory. This includes all of the sessions on Thursday evenings as well as the three Saturday classes. The Friday afternoon lunches with the visitors are highly recommended but not mandatory.

Students will be required to turn in four short written assignments, and one final term paper. The short assignments will be due early in the week of each guest's visit, and should critically evaluate their work, placing it in the context of the background literature you have already read. This will involve clear exposition of the author's position. These assignments should be on the order of 1500 words and by no means longer than 6 pages double-spaced. They will be due by email to your home institution's instructor by the following dates:

Assignment #1: Tuesday, September 29

Assignment #2: Tuesday, October 27

Assignment #3: Tuesday, November 10

Assignment #4: Tuesday, December 1

Under no circumstances will these written assignments be accepted late.

For the term paper, students will choose one of these earlier assignments to develop into a longer paper of APA conference length, ~3000 words.

Visitors

John Bickle (Mississippi State University)

John Bickle is well-known for defending a self-consciously anti-metaphysical approach to reduction, one that focuses on the details of specific cases of reduction in neuroscience. Bickle argues that if we pay attention to reduction-in-practice—the reductions we find neuroscientists actually pursuing—we see that most of the philosophical models of reduction on offer are unsatisfactory. Bickle is the author of two recent books investigating the nature of reduction: *Psychoneural Reduction: The New Wave*, (MIT, 1998) and *Philosophy and Neuroscience: A Ruthlessly Reductive Account* (Springer, 2003).

Jaegwon Kim (Brown University)

Jaegwon Kim is one of the world's most pre-eminent philosophers of mind. His recent work is particularly well-known for defending reductionism vis-à-vis specific aspects of the mind (excluding consciousness). Kim is the author of *Mind in a Physical World* (MIT, 1998) and *Physicalism, or Something Near Enough* (Princeton, 2005), among other works.

Barry Loewer (Rutgers University)

Barry Loewer is known for his work in the metaphysics of mind, the philosophy of science, and the philosophy of physics. In recent work, Loewer has defended a form of anti-reductionism about the mind that critically engages the arguments found in Kim's work. Loewer defends his

own positive view about the relationship between “higher level” sciences (such as psychology) and fundamental physics, allowing us to see what special sciences like psychology add to physics. Loewer is the author of many papers in philosophy of mind, philosophy of science, and philosophy of physics, including a co-edited book (with Carl Gillett) called *Physicalism and its Discontents* (Cambridge University Press).

Michael Strevens (New York University)

Michael Strevens is the author of two recent books on topics having to do with the relationship between the special sciences and fundamental physics: *Bigger than Chaos* (Harvard, 2003) and *Depth: An Account of Scientific Explanation* (Harvard, 2008). In the latter, Strevens develops an account of explanation that gives an important role to fundamental physics. In many ways, Strevens’ approach bridges the gap between reductionists like Kim and anti-reductionists like Loewer. For Strevens, special science laws are in effect abstractions from a fully-detailed, physical causal story.

Schedule

Thursday, Sept. 3	7 - 10pm	Seminar	SU (HL 101)
Saturday, Sept. 26	12 - 4pm	Seminar	SU (HL 201)
John Bickle visit			UR
Thursday, Oct. 1	7 - 10pm	Seminar	Morey 506
Friday, Oct. 2	12 - 2pm	Discussion/lunch	Lattimore 413
Friday, Oct. 2	3:30 - 5:30pm	Colloquium	Dewey 2110E
Saturday, Oct. 17	12 - 4pm	Seminar	Lattimore 531
Jaegwon Kim visit			SU
Thursday, Oct. 29	7 - 10pm	Seminar	HL 101
Friday, Oct. 30	12-2pm	Discussion/lunch	HL 538
Friday, Oct. 30	4 - 6pm	Colloquium	HL 500
Saturday, Nov. 7	12 - 4pm	Seminar	UR Lattimore 531
Barry Loewer visit			SU
Thursday, Nov. 12	7 - 10pm	Seminar	HL 101
Friday, Nov. 13	12 - 2pm	Discussion/lunch	HL 538
Friday, Nov. 13	4 - 6pm	Colloquium	HL 500
Thursday, Nov. 19	7 - 10pm	Discussion	SU (HL 101) / UR (Latt 531)
Michael Strevens visit			UR
Thursday, Dec. 3	7 - 10pm	Seminar	Morey 506
Friday, Dec. 4	12 - 2pm	Discussion/lunch	Lattimore 413
Friday, Dec. 4	3:30 - 5:30pm	Colloquium	Dewey 2110E