

## Philosophy of Science: Scientific Realism

New York University  
Laura Franklin-Hall  
Spring 2009

Class Time: Wednesday, 11:00 – 12:15, 3<sup>rd</sup> floor seminar room  
Office Hours: Friday, 11:00 – 1:00 (5 Washington Place, 407)

### Course Sketch

After a brief historical introduction, this course will survey the contemporary debate about *scientific realism*. While there is no uncontroversial statement of the realist position, the debate is broadly about the proper stance to take towards mature scientific theories and the unobservable entities that they purport to describe. Why should we take scientific theories to be true, or nearly true? Why should we believe that all the entities posited by our best theories are real? Why not take such theories to be mere instruments for the systemization and prediction of observable phenomena? Or why not just suspend judgment as to the truth of the assertions that theories make about unobservable entities and believe only that theories are empirically adequate?

Although it is not officially labeled as such, this course will be offered at the level of an *Advanced Introduction* rather than as a highly specialized research seminar. The bulk of the semester will be spent getting acquainted, in broadly chronological order, with the major positions and arguments in the scientific realism debate.

### Requirements

- Participation in seminar
- One presentation in class
- Progress report on term paper (due March 23rd)
- Term Paper (due May 6th)
- No incompletes

### Readings

Readings will be available in PDF form on Blackboard.

I've placed a number of books on reserve at Bobst library for those who want a supplemental text or complete works from which we are reading small sections. Books on reserve include:

Stathis Psillos, *Scientific Realism: How Science Tracks the Truth* (1999)  
Andre Kukla, *Studies in Scientific Realism* (1998)  
Bas Van Fraassen, *The Scientific Image* (1980)  
Arthur Fine, *The Shaky Game* (1996)  
Kyle Stanford, *Exceeding Our Grasp* (2006)

### Reading Schedule

This schedule is subject to change. The official schedule and all PDFs will be posted on Blackboard. **Avoid the temptation of relying on this schedule by recycling it as soon as you've received it.**

Week 1 (1/21): *INTRODUCTION AND FORMALITIES*

*"the positive argument for realism is that it is the only philosophy that doesn't make the success of science a miracle"*(Putnam 1975, 73)

Week 2 (1/28): *The Miraculous Theory Argument*

- a. Chapter 6 of *The Structure of Science*, Ernest Nagel (1961)
- b. Chapter 2 of *Philosophy and Scientific Realism*, J. J. Smart (1973)
- c. Section from *Mathematics, Matter and Method*, Hilary Putnam (1975)

Week 3 (2/4): *IBE and its critics*

- a. "Inference to the Best Explanation" Gilbert Harman (1965)
- b. Chapter 4 of *Inference to the Best Explanation*, Peter Lipton (1994)
- c. "Inference to the Best Explanation: Salvation by Laws?" Bas van Fraassen (1989)

Week 4 (2/11): *Boyd's Miraculous Choice Argument*

- a. "The Current Status of Scientific Realism", Richard Boyd (1984)
- b. "Scientific Realism and Naturalistic Epistemology", Richard Boyd (1980)
- c. "The Miraculous Choice Argument for Realism", Eric Barnes (2002)

Week 5 (2/25): *Constructive Empiricism*

- a. Chapters 1 through 4 of *The Scientific Image*, Bas van Fraassen
- b. "What is Constructive Empiricism?" Gideon Rosen

Week 6 (3/4): *The Empirical Stance*

- a. *The Empirical Stance*, Bas van Fraassen, lecture 2 (2004)

Week 7 (3/11): *The Pessimistic Meta-Induction*

- a. "A Confutation of Convergent Realism" Larry Laudan (1981)

NO CLASS (3/18): SPRING BREAK
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(3/23) *Progress report due*

Week 8 (3/25): *Structural Realism*

- a. "Structural Realism: The Best of Both Worlds?" John Worrall (1989)
- b. "What is Structural Realism?" James Ladyman (1998)

Week 9 (4/1): *Structural Realism Cont.*

- a. same as last week

Week 10 (4/8): *Exceeding our Grasp*, Kyle Stanford (2006)

- a. Chapters 1 and 2

Week 11 (4/15): *Exceeding our Grasp*, Kyle Stanford (2006)

- a. Chapters 3 - 5

Week 12 (4/22): *Exceeding our Grasp*, Kyle Stanford (2006)

- a. Chapters 6 - 8

Week 13 (4/29): *The Natural Ontological Attitude*

- a. "The Natural Ontology Attitude" (from *The Shaky Game*), Arthur Fine (1996)
- b. "NOA—Fine for Realism" Alan Musgrave (1989)

Week 14 (5/6): *"Internal Realism"*

- a. Chapter 3 of *Reason, Truth and History*, Hilary Putnam (1981)

(5/6) *FINAL PAPER DUE*