PHILOS 5: Science and Human Understanding

Fall 2017

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Classes:

- 3 lectures each week: 10-11am M/W/F, Stanley 106
- 1 section each week

Materials:

- No books required! All readings will be made available on the bCourses course site.
- Students will need access to argument mapping software by Rationale. Go to https://www.rationaleonline.com, create an account with your Berkeley email address, and purchase an "Education Basic" or "Education Extra" subscription. PHILOS 5 students receive a discounted rate of $19 for Basic and $25 for Extra. You will receive an email from me with the code for this discount.

Assessment:

- Levels system: 50%
- Final paper: 35%
- Class participation: 15%

Academic Integrity:

- I strongly encourage you to discuss the material in this class with other students.
- Your papers and argument maps should then be your own work. This means that, having talked about your ideas with friends, you should sit down on your own and write the paper or map yourself. It's fine to get feedback from other students on drafts, but you should then revise the draft on your own. The other student should not re-write anything for you.
- Please see the UC Berkeley statement on academic integrity: http://sa.berkeley.edu/conduct/integrity.

Policy on Sexual Violence and Harassment:

- Sexual violence and sexual harassment have no place in a learning environment. Therefore, in alignment with Title IX of the Education Amendments of 1972, it is the policy of the University of California to prohibit sexual harassment, sexual assault, domestic/dating violence, and stalking. The UC Sexual Violence and Sexual Harassment Policy requires that the University immediately implement interim remedies and permanent support measures, when necessary, for victims/survivors. If you or someone you know experiences sexual violence or harassment, there are options, rights, and resources, including assistance with academics, reporting, and medical care. Visit survivorsupport.berkeley.edu or call the 24/7 Care Line at 510-643-2005.

Course Overview:

There is no doubt that scientific progress over the past 400 years has transformed our understanding of the world around us and our place within it. But what exactly does scientific progress consist in? A widespread conception of science is that it delivers objective, value-free knowledge about a wholly material world. While popular within the scientific community, this conception has been challenged from at least two quarters. First, the idea that science has shown that the world is *wholly material* is rejected by certain theists who believe that, to the contrary, there is evidence from within science itself that the world was designed and created by a supernatural being. Second, the idea that science delivers *objective and value-free* knowledge is rejected by certain relativists who insist that science is infused with personal and cultural influences; that scientific theories are not a pure reflection of the world as it is in itself, but instead reflect something of our own biases and values. Much of this course will investigate these two challenges, and in doing so we will cover a number of core themes of 20th century philosophy of science. (Disclosure: I don't agree with theists or relativists, though I do think their challenges are more serious than is often recognized.) The course will end by examining some philosophical issues raised by one of the most transformative sciences of our time: Artificial Intelligence.

More specifically, the course is organized around five topics:

1. Is there a scientific explanation of our existence?
2. The epistemology of science
3. The metaphysics of science
4. Science, values, and society
5. The philosophy of Artificial Intelligence

For details and readings see the class-by-class schedule below. Readings marked ** are optional; all others are required.

TOPIC 1: IS THERE A SCIENTIFIC EXPLANATION OF OUR EXISTENCE?

Weds Aug 23 **Introduction to argument mapping**

Fri Aug 25 **Biological complexity I: Paley's watch**

- Sober, "Creationism", pp. 27-36
- **William Paley, selection from *Natural Theology*
- **Garcia, "Teleological and Design Arguments"

Mon Aug 28 **Biological complexity II: Design vs natural selection**

- Sober, "Creationism", pp. 36-42
- Dawkins, *The God Delusion* chapter 4: "Why There Almost Certainly is No God", pp. 129-141.

Weds Aug 30 **Biological complexity III: Creationism and pseudoscience**

- Sober, "Creationism", pp. 42-57

Fri Sept 1 **Fine tuning I**

- Collins, "God, Design, and Fine-Tuning"

Mon Sept 4 **LABOR DAY, NO CLASS**

Wed Sept 6 **Fine tuning II: The anthropic principle**

- Sober, "The Design Argument", pp. 133-141
- **Dawkins, *The God Delusion* chapter 4: "Why There Almost Certainly is No God", pp. 141-151.

Fri Sept 8 **Fine tuning III: The multiverse**

- Sober, "The Design Argument", pp. 126-127
- Parfit, "Why Anything? Why This? Part I", first half.

Mon Sept 11 **Why is there anything at all? I: Scientific explanation**

- Albert, "On the Origin of Everything"
- **Andersen, interview with Krauss

Wed Sept 13 **Why is there anything at all? II: Theistic explanation**

- Rowe, "The Cosmological Argument"
- **Aquinas, "The Five Ways"
- **Clarke, "A Modern Formulation of the Cosmological Argument"

Fri Sept 15 **Why is there anything at all? III: No explanation**

- Parfit, "Why Anything? Why This? Part I", second half
- Parfit, "Why Anything? Why This? Part II"

TOPIC 2: THE EPISTEMOLOGY OF SCIENCE

Mon Sept 18 **Hume's problem of induction I: Background**

- Salmon, "An Encounter with David Hume", p. 245-257
- Leith "Nothing Like the Truth"

Weds Sept 20 **Hume's problem of induction II: The scope of the problem**

- Feldman "Skepticism", pp. 130-134
- Harman, "Inference to the Best Explanation", pp. 88-91

Fri Sept 22 **Hume's problem of induction III: Responses**

- Salmon, "An Encounter with David Hume", p. 257-263
- Feldman, "Skepticism", pp. 135-141
- Strawson, "The 'Justification' of Induction", pp. 256-263

Mon Sept 25 **The new riddle of induction**

- Goodman, "The New Riddle of Induction", pp. 72-83

Weds Sept 27 **Epistemic relativism I**

- Boghossian, *Fear of Knowledge* Chapter 1: "Introduction"
- Boghossian, *Fear of Knowledge* Chapter 5: "Epistemic Relativism Defended"

Fri Sept 29 **NO CLASS**

Mon Oct 2 **Epistemic relativism II**

- Boghossian, *Fear of Knowledge* Chapter 6: "Epistemic Relativism Rejected"

Weds Oct 4 **Epistemic catastrophe I: Evolution**

- Plantinga, *Warrant and Proper Function*, Chapter 12: "Is Naturalism Irrational?"

Fri Oct 6 **Epistemic catastrophe II: Thermodynamics**

- Carroll, "Why Boltzmann Brains are Bad", pp. 4-11

TOPIC 3: THE METAPHYSICS OF SCIENCE

Mon Oct 9 **Realism vs anti-realism about geometry I**

- Sklar, *Space, Time, and Spacetime* Chapter 2, "The Epistemology of Geometry" pp. 79-87

Weds Oct 11 **Realism vs anti-realism about geometry II**

- Reichenbach, *The Philosophy of Space and Time* Chapter 1, "Space", pp. 10-19 and 35-37
- Sklar, *Space, Time, and Spacetime* Chapter 2, "The Epistemology of Geometry", pp. 119-125

Fri Oct 13 **Metaphysical realism vs anti-realism I**

- Rorty, "Relativism: Finding and Making"
- Cowling, "Resemblance", pp. 1-6

Mon Oct 16 **Metaphysical realism vs anti-realism II**

- Boghossian, *Fear of Knowledge*, Chapter 4: "Relativizing the Facts"
- Cowling, "Resemblance", pp. 6-11

Weds Oct 18 **Scientific realism vs anti-realism I**

- van Fraassen, *The Scientific Image*, chapter 2: "Arguments Concerning Scientific Realism", pp. 6-19

Fri Oct 20 **Scientific realism vs anti-realism II**

- van Fraassen, *The Scientific Image*, chapter 2: "Arguments Concerning Scientific Realism", pp. 19-25

TOPIC 4: SCIENCE, VALUES, AND SOCIETY

Mon Oct 23 **The value-free ideal**

- Kuhn, "Objectivity, Value-Judgment, and Theory Choice", pp. 356-364
- Lacy, *Is Science Value Free?* Chapter 1: "Introduction", pp. 1-12

Weds Oct 25 **Against the value-free ideal I**

- Douglass, "Values in Science", pp. 1-11
- Mitchell, "The Prescribed and Proscribed Values in Science Policy", pp. 249-251

Fri Oct 27 **Against the value-free ideal II**

- Longino, "Gender, Politics, and Theoretical Virtues"
- **Okruhlik, "Gender and the Biological Sciences, pp. 21-31

Mon Oct 30 **Epistemological anarchy**

- Feyerabend, "Against Method", pp. 17-21, 26-29, and 54-64
- **Boghossian, "What the Sokal Hoax Ought to Teach Us", pp. 1-4

Weds Nov 1 **Science and democracy I**

- Kitcher, *Science in a Democratic Society* Chapter 1: "The Erosion of Scientific Authority", pp. 15-31

Fri Nov 3 **Science and democracy II**

- Kitcher, *Science in a Democratic Society* Chapter 5: "Well-Ordered Science"

TOPIC 5: THE PHILOSOPHY OF ARTIFICIAL INTELLIGENCE

Mon Nov 6 **Progress in Artificial Intelligence**

- Chalmers, "The Singularity", pp. 1-15
- **Brynjolfsson and McAfee, "The Dawn of the Age of Artificial Intelligence"

Weds Nov 8 **Simulation Argument I: Substrate independence**

- Bisson, "They're Made Out of Meat"
- Chalmers, "The Singularity", pp. 33-40
- **Block, "The Mind as the Software of the Brain", section 1
- **Chalmers, "Absent Qualia, Fading Qualia, Dancing Qualia", pp. 231-236

Fri Nov 10 **VETERANS DAY, NO CLASS**

Mon Nov 13 **Simulation Argument II: Indifference**

- Bostrom, "Are You Living in a Computer Simulation?"
- Trasancos, "What If We Lived in a Simulated Universe and Worshiped a Pimply Teenager?"

Weds Nov 15 **Simulation Argument III: The experience machine**

- Pryor, "What's Wrong With Living in the Matrix?"
- Nozick, "The Experience Machine"

Fri Nov 17 **Mind Uploading I**

- Schneider, "Future Minds: Transhumanism, Cognitive Enhancement, and the Nature of Persons"
- Dennett, "Where Am I?"

Mon Nov 20 **Mind Uploading II**

- Chalmers, "The Singularity", pp. 40-54

Weds Nov 22 **THANKSGIVING, NO CLASS**

Fri Nov 24 **THANKSGIVING, NO CLASS**

Mon Nov 27 **Ethics of Artificial Intelligence I: Surviving the singularity**

- Chalmers, "The Singularity", pp. 22-33
- **Bostrom and Yudkowsky, "The Ethics of Artificial Intelligence", pp. 1-6 and 14-18
- **Price and Tallinn, "Artificial Intelligence—Can We Keep it in the Box?

Weds Nov 29 **Ethics of Artificial Intelligence II: Do AIs have moral status?**

- Schwitzgebel and Garza, "A Defense of the Rights of Artificial Intelligences"
- Bostrom and Yudkowsky, "The Ethics of Artificial Intelligence", pp. 6-9

Fri Dec 1 **Ethics of Artificial Intelligence III: The economics of automation**

- Brynjolfsson and McAfee, *The Second Machine Age* Chapter 14: "Long-Term Recommendations"
- Harari, "Universal Basic Income is Neither Universal Nor Basic"