PHILOS 5: Science and Human Understanding

Fall 2018

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Classes:

- 2 lectures each week: Tu/Th, 2-3:30pm, Evans 60
- 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:

- Plagiarism is not tolerated and will be taken extremely seriously. "Turnitin" software will be used to check all assignments for possible plagiarism.
- That said, I strongly encourage you to discuss the material in this class with other students. It is fine to get feedback from other students on drafts of papers or argument maps. However, your finished work should then be your own work. This means that having talked about your draft with friends, you should sit down and revise your work yourself.
- 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 core themes from 20th century philosophy of science. (Disclosure: I don't agree with theists or relativists, but I do think their challenges are more serious than is often recognized!) Finally, we will use tools from the philosophy of science to examine a number of contemporary issues concerning 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:

- Readings marked ** are optional; all others are required.
- All readings will be available in PDF format through the bCourses site.
- You are expected to complete all readings assigned to each class by the time that class begins.
- If you find the readings difficult, that's fine—indeed this is expected! But please try to get through the reading before class begins. Try to formulate what you don't understand as a succinct question. We will discuss the readings in class and there will be an opportunity to ask questions.

Topic 1: Is there a scientific explanation of our existence?

Thurs 23 Aug
Class 1

Introduction to argument mapping

- Dasgupta, "A Brief Guide to Argument Mapping"

Tues 28 Aug
Class 2

Biological design I: Design vs natural selection

- Sober, "Creationism", pp. 27-42
- **Paley, selection from *Natural Theology*

Thurs 30 Aug
Class 3

Biological design II: Creationism and pseudoscience

- Sober, "Creationism", pp. 42-57
- **Dawkins, *The God Delusion* chapter 4: "Why There Almost Certainly is No God", pp. 129-134.

Tues 4 Sept
Class 4

Physical design I: Fine tuning and the multiverse

- Collins, "God, Design, and Fine-Tuning"
- Sober, "The Design Argument", pp. 126-127

Thurs 6 Sept
Class 5

Physical design 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.

Tues 11 Sept
Class 6

Why is there anything at all? I: Theological explanation

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

Thurs 13 Sept
Class 7

Why is there anything at all? II: Non-theological explanation

- Albert, "On the Origin of Everything"
- Parfit, "Why Anything? Why This?"
- **Andersen, interview with Lawrence Krauss

Topic 2: The epistemology of science

Tues 18 Sept — **Hume's problem of induction I**
Class 8
- Salmon, "An Encounter with David Hume", pp. 245-257
- Feldman, "Skepticism", pp. 130-134

Thurs 20 Sept — **No class**

Tues 25 Sept — **Hume's problem of induction II**
Class 9
- Salmon, "An Encounter with David Hume", pp. 257-263
- Feldman, "Skepticism", pp. 135-139
- **Harman, "Inference to the Best Explanation", pp. 88-91

Thurs 27 Sept — **Epistemic relativism**
Class 10
- Boghossian, *Fear of Knowledge* Chapter 5: "Epistemic Relativism Defended"
- Feldman, "Skepticism", pp. 139-141
- **Strawson, "The 'Justification' of Induction, pp. 256-263

Tues 2 Oct — **Epistemic catastrophe**
Class 11
- Plantinga, *Warrant and Proper Function*, Chapter 12: "Is Naturalism Irrational?"
- **Carroll, "Why Boltzmann Brains Are Bad", pp. 4-11

Thurs 4 Oct — **The new riddle of induction**
Class 12
- Goodman, "The New Riddle of Induction", pp. 72-83

Topic 3: The metaphysics of science

Tues 9 Oct
Class 13

Natural kinds

- Dupre, "Natural Kinds"
- **Rorty, "Relativism: Finding and Making"

Thurs 11 Oct
Class 14

Scientific realism vs anti-realism I

- van Fraassen, *The Scientific Image*, chapter 2: "Arguments Concerning Scientific Realism", pp. 6-19
- **Godfrey-Smith, *Theory and Reality*, chapter 2: "Logic Plus Empiricism"

Tues 16 Oct
Class 15

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

Thurs 18 Oct — **The value-free ideal**
Class 16
- Kuhn, "Objectivity, Value-Judgment, and Theory Choice", pp. 356-364
- Lacy, *Is Science Value Free?* Chapter 1: "Introduction", pp. 1-12

Tues 23 Oct — **Against the value-free ideal I**
Class 17
- Douglass, "Values in Science", pp. 1-11
- **Mitchell, "The Prescribed and Proscribed Values in Science Policy", pp. 249-251

Thur 25 Oct — **Against the value-free ideal II**
Class 18
- Longino, "Gender, Politics, and Theoretical Virtues"
- **Okruhlik, "Gender and the Biological Sciences", pp. 21-31

Tues 30 Oct — **Science and democracy**
Class 19
- Kitcher, *Science in a Democratic Society* Chapter 5: "Well-Ordered Science", pp. 105-125

Thurs 1 Nov — **No Class**

Topic 5: The Philosophy of Artificial Intelligence

Tues 6 Nov — **The singularity**
Class 20
- Chalmers, "The Singularity", pp. 1-15 and 22-33
- **Bostrom and Yudkowsky, "The Ethics of Artificial Intelligence", pp. 1-6 and 14-18

Thurs 8 Nov — **The simulation argument I**
Class 21
- Bisson, "They're Made Out of Meat"
- Chalmers, "The Singularity", pp. 33-40
- **Block, "The Mind as the Software of the Brain", section 1

Tues 13 Nov — **The simulation argument II**
Class 22
- Bostrom, "Are You Living in a Computer Simulation?"
- **Pryor, "What's Wrong With Living in the Matrix?"
- **Nozick, "The Experience Machine"

Thurs 15 Nov — **Mind Uploading I**
Class 23
- Schneider, "Future Minds: Transhumanism, Cognitive Enhancement, and the Nature of Persons"
- Dennett, "Where Am I?"

Tues 20 Nov — **Mind Uploading II**
Class 24
- Chalmers, "The Singularity", pp. 40-54

Thurs 22 Nov — **Thanksgiving: No Class**

Tues 27 Nov — **Ethics of Artificial Intelligence I: Do AIs have moral status?**
Class 25
- Schwitzgebel and Garza, "A Defense of the Rights of Artificial Intelligences"
- Bostrom and Yudkowsky, "The Ethics of Artificial Intelligence", pp. 6-9

Thurs 29 Nov — **Ethics of Artificial Intelligence II: Distribution and bias**
Class 26
- Brynjolfsson and McAfee, *The Second Machine Age* Chapter 14: "Long-Term Recommendations"
- O'Neil, *Weapons of Math Destruction* Chapter 3: "Going to College"