Philosophy 8: Introduction to Philosophy of Science
The Epistemology of the Special Sciences

Summer 2017, A Session

Gabe Dupre

June 26, 2017

Time: Monday, Wednesday and Friday 11.30am - 12.50pm
Place: Public Affairs 2242
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Office Hours: 1-2pm Monday and Wednesday

Course Overview

The contemporary sciences have generated an immense amount of knowledge. Discoveries about the natural and social world and highly confirmed, deeply explanatory, theories enable technologies that were inconceivable mere decades ago. To deny these successes, or to attribute them to mere chance, would be a skepticism of an extreme sort. However, science is not infallible. Sometimes, scientific consensus turns out to be wrong. The opposite extreme to skepticism is dogmatism, and dogmatism about science can be just as irrational and harmful as skepticism about science. Science is a social phenomenon, produced by human beings, with all their limitations. Interesting science goes beyond the observable data and so always involves a risk of being wrong. This fact is compounded by various distorting factors, such as corporate influence, institutional prejudices and the ambitions of practicing scientists.

In this course, we will examine how best to strike a balance between the two extremes of skepticism and dogmatism. We will examine how exactly the knowledge-generator of science works and the conditions under which it fails. To do so, we will split our time between reading philosophy of science and science itself. We will investigate the various claims that philosophers have made by testing them against actual science, with extended discussions of case studies from the biological and psychological sciences, finishing with a sustained investigation of the controversial area of evolutionary psychology, the attempt to understand the human mind through Darwinian theory.

I hope that students taking this course will come away with an appreciation of the subtleties and complexities of scientific theorizing. This should serve to temper both dogmatism and skepticism. Now more than ever, given the political realities of 2017 America, an appreciation of the epistemology of science is hugely important. I hope that this course can go some way to instilling this.

Course Materials

There will be no official textbook for the course. All of the required readings will be available digitally through the course webpage. Please check the course website regularly for updates.

Although there is no course textbook, multiple readings will come from James Ladyman's 2001 introductory text *Understanding Philosophy of Science* (Routledge), so it might be worth picking this up.

Course Difficulty

While there are no prerequisites for this course, it will be intellectually demanding—requiring you to master novel theoretical concepts and critically engage with complex arguments from both science and philosophy in your own writing. In short: the class is not an easy A. As with many other courses, to do well in Phil 8 you will need to:

- Attend lectures regularly and take (mental or physical) notes;
- Attend all sections and engage in discussion;
- Complete all the course readings, slowly and carefully, typically multiple times;
- Work hard on all assignments, including proof-reading and re-drafting written work multiple times, and submit on time.
- **Optional, but highly recommended:** Meet with me to discuss questions regarding the course material or any of your assignments.

This class is not about memorizing facts or correctly reproducing slogans; this class is about developing your own opinions and critical perspective on the topics discussed and enriching your ability to articulate and defend those opinions in a written form. Students who are prepared to work hard, challenge themselves, and attend lecture and section regularly will do well.
For pro-tips on reading and writing philosophy:
`https://sites.google.com/a/wellesley.edu/pinkguidetophilosophy/`

Course Requirements

1. **Weekly Attendance and Participation:** 9% of final grade. 1% for each section attended, plus up to 3% for participation.
2. **Online Course Evaluation (on MyUCLA)** 1% of final grade.
3. **Reading Responses:** 2 sets, 10% of your final grade each. 20% of final grade.
4. **Section Presentation:** 10% of final grade.
5. **Analysis of Pop Science** 25% of final grade.
6. **Final Paper Essay Plan:** 5% of final grade.
7. **Final Paper:** 30% of final grade.

8. **Be familiar with and abide by UCLA's policy on Academic Integrity:** This policy can be found at http://www.deanofstudents.ucla.edu/Academic-Integrity

   As with all classes at UCLA, it is required of all students that any ideas that they have utilized in their written work are properly cited. Failure to cite the source of any aspect of their work which originated in another context, including other submitted papers by the same student, is plagiarism. Any pieces of work which violate this rule will be sent directly to the Dean of students. The style of the citation is not important to me (APA vs. MLA, in-text vs. bibliography vs. footnotes etc.). What is crucial is that it be easy for me to determine where an idea comes from.

9. **Late assignments:** Late reading responses will be docked by 10% (1% of your final grade) for every 24 hours after the due date they are handed in. Your grades for both your analysis of Pop Science and your final paper will be docked by 1/3 of a letter grade for every 24 hour period after their due dates. There will be no credit for late essay plans. Extensions may be granted under appropriate circumstances. If you are hoping to get an extension on any piece of work, please inform me as early as possible.

Academic Accommodation

Students needing an academic accommodation should notify the UCLA Center for Accessible Education(CAE). This center can be contacted using (310) 825-1501 or by visiting A255 Murphy Hall. When possible, students should contact the CAE within the first two weeks of the quarter, as reasonable notice is needed to coordinate accommodations. For more information visit http://www.cae.ucla.edu/

Unless requested by the CAE, ***The use of computers, phones and tablets is not allowed in lecture.*** This component of the course's requirements is not intended to be mean or punitive, but rather to aid your understanding — and the understanding of those around you — of the contents of the lectures.

Classroom Etiquette

Classroom participation is strongly encouraged. The best way to learn philosophy is to *do* philosophy, and this involves discussion and argumentation, in the flesh as well as in written work. Such discussion may be spirited and this is OK. However, what is not OK is behavior that discourages other students from engaging. Such behavior includes, but is not limited to: dismissing another student's opinion, talking over another student, etc. Finding the line

between passionate debate and personal attack is a vital skill for anyone in or outside of academia.

Reading Responses

These will be assigned via the course website on Monday afternoon in weeks 2, 3 and 5 and must be returned by midnight the Friday of that week. Each set will consist of 3 or so short questions, requiring an answer of approximately a couple paragraphs each. They will all concern the assigned readings.

You only need to submit two reading responses of your choice.
This is so that you don't have to do a reading response and a section presentation in the same week.
Reading Responses will be given either a Check+(10%), Check (8%) or a Check-(6%).

Section Presentation

Each section (excluding week 1), I would like for two students in that section to volunteer to lead the discussion. They will each select one reading from that week and prepare a 10-15 minute presentation on this material. The other students will then discuss the material presented. I will be there primarily to moderate. For doing so, you will receive 10% of your final grade. In sections of week 1, I will try to ensure that everyone is assigned a week and a reading.

Analysis of Pop Science

The key thing to take away from this course is the amount that must go into a scientific inference or theory in order for it to legitimately be granted the epistemic merit that we attribute to scientific claims. Unfortunately, much science, especially popularizations of science, does not meet these lofty standards. I would like you to find a popular discussion of some scientific phenomenon or theory and analyze it using the tools and concepts we have discussed in this class. A good place to look for material to analyze in this way is in the science pages of a respectable newspaper (e.g. The Guardian or The New York Times) or the science section in Amazon or a bookstore. The assignment should be about 2-3 pages long, double spaced. Approximately one third to one half of this should be exegesis of the material you are discussing, and the remainder should be your analysis and evaluation of the arguments/inferences made in this material. We will spend one lecture going through an example of this.
This exercise, along with the reading responses, should introduce students

to the skills needed in philosophical writing. Feedback on these assignments should enable students new to philosophy to succeed in their final paper. Please include either the article discussed, or a link to the article, in your submission.

Final Paper

The final paper requires you to critically engage with the philosophical material covered in the course. The topic will not be assigned (although I am willing to help you find one). Once you have settled on a topic, you must check with me that this topic is suitable. As this paper is the largest chunk of your grade of any single piece of work, it is highly recommended that you start thinking about this paper fairly early in the course, and begin discussions with me no later than the beginning of week 5. An essay plan must be produced by Midnight on Friday of Week 5.
This paper is an indication of your ability to do philosophy. This involves understanding the material you are drawing on, presenting this material clearly and concisely, and demonstrating an ability to engage creatively and productively with this material. It is not required of you to master an entire area of the literature, and secondary readings should be utilized sparingly, if at all. This paper should be 3-4 pages long.

Reading Schedule

Week 1
Monday 6/26: Introduction.
—No Reading.
Wednesday 6/28: Extended Case Study 1: Evolution vs. Creationism I.
—Mclean vs. Arkansas Testimony by Michael Ruse. (1981)
Friday 6/30: Extended Case Study 1: Evolution vs. Creationism II.
—Laudan, L. *Commentary: Science at the Bar- Causes for Concern.* (1982)

Week 2
M 7/03: The Scientific Method I: Bacon and Induction.
—Ladyman, J. *Understanding Philosophy of Science.* Chapter 1. (2001)
W 7/05: Case Study: Mendelian Genetics.
—Griffiths, A.J., et al. *An Introduction to Genetic Analysis.* pp2-4. (2015)
F 7/07: The Scientific Method II: Falsificationism.
—Ladyman, J. *Understanding Philosophy of Science.* Chapter 3. (2001)

Week 3
M 7/10: Case Study: Chomskian Psycholinguistics.
—Fodor, J.A. and Bever, T.G.. *The Psychological Reality of Linguistic Segments*

(1965).
W 7/12: The Scientific Method III: Inference to the Best Explanation.
–Harman, G. *The Inference to the Best Explanation.* (1965)
F 7/14: The Scientific Method IV: Spandrels.
—Gould, S.J. and Lewontin, R. *The Spandrels of San Marco.* (1979)

Week 4
M 7/17: In Class Analysis of Popular Science.
–Rahman, Q. *'Gay Genes' Science is on the Right Track.* (2015)
W 7/19: The Scientific Method V: Randomized Controlled Trials.
—Cartwright N. *Are RCT's the Gold Standard?* (2007)
F 7/21: Kuhn
—Godfrey-Smith, P. *Theory and Reality.* Chapters 5 and 6. (2003)
Pop Science Analysis Due

Week 5
M 7/24: Science and Society.
—Douglas, H. *Values in Science.* (2016)
W 7/26: Extended Case Study 2: Evolutionary Psychology I.
—Wilson, E.O. *Sociobiology: The New Synthesis.* pp271-290 (1975)
F 7/28: Extended Case Study 2: Evolutionary Psychology II.
—Kitcher, P. *Vaulting Ambition* Chapter 6 (1985)
Final Paper Essay Plan Due

Week 6
M 7/31: Extended Case Study 2: Evolutionary Psychology III.
Buss, D. *Strategies of Human Mating* (2006)
Recommended:–Cosmides, L. and Tooby, J.. *Evolutionary Psychology: A Primer* (1997)
W 8/02: Extended Case Study 2: Evolutionary Psychology IV.
–Dupré, J. *Human Nature and the Limits of Science* (Chapter 3) (2001)
F 8/04: Loose Ends.

M 8/07 **Final Paper Due**