

PHIL* 2180

Philosophy of Science

Practice questions for the final exam

Note that the exam is on Tuesday December 8 at 8:30 am

Richards Building, Room 2529

(Make sure to get enough sleep).

1. The traditional problem of induction begins with the following assumption: the statement “all swans are white” is logically equivalent to “all non white things are non-swans.” How does the rest of the argument proceed?
2. The Strong Program in the sociology of science embraces the symmetry principle. Godfrey-Smith describes this principle as follows: “we should not give the *Real World* a special role in the explanation of scientific belief that it does not have in the explanation of other beliefs that pass local community norms” (p126). From this assumption, advocates of the Strong Program sometimes conclude that the Real World has no role in explaining why scientific theories change- i.e. that theory change in science can be explained entirely in terms of social dynamics among scientists. Reconstruct this argument in your own words in premise and conclusion form. (4 points)
3. Raise an objection to one of the premises in the argument that you have reconstructed (2 points).
4. Post Modern theories of science embrace two principles: (1) *Social Reductionism*: every example of theory change in science can be explained entirely in terms of the social dynamics (or politics) among scientists. (2) *Epistemic Relativism*: the truth or justification of a belief depends on one’s situation or point of view.
 - a) What are the two methods that philosophers use to assess such sweeping theories (2 points)
 - b) Identify an objection that one might raise against Social reductionism (2 points).
 - c) Identify and objection that one might raise against Epistemic Relativism (2 points).
5. Kathleen Okrhulik provides an objection to Standpoint Theory (p. 199-200)). First, briefly state her objection in your own words. Second, explain whether (according to your assessment) this is a decisive objection. In other words, do you think that Okrhulik provides an adequate reason for rejecting Standpoint Theory? Why or why not? (4 points).
6. In the final section of her article, Linda Fedigan suggests three explanations for why primatologists usually do not self-identify as feminists. She suggests that all three reasons are inadequate, and that primatologists should embrace the feminist label. But this is a controversial proposal. In your answer, focus on any one of the three explanations that Fenigan provides. Explain why someone might view it (contra Fenigan) as a *good* reason not to label primatology as a feminist science (4 points).

7. Why does Naturalistic philosophy of science potentially encounter a circularity problem that foundationalist theories would not encounter (if they were successful)? (3 points).
8. Naturalism views philosophy as continuous with science. But this raises the question of how the two disciplines differ. Based on the textbook or on our discussions in class, identify two ways that naturalistic philosophy differs from science (4 points).
9. According to Naturalistic philosophy of science, how does a reward system based on notoriety (or prestige) make science as a whole more reliable? (3 points)
10. The emphasis in science on notoriety makes it tempting for some scientists to fabricate their results. What social mechanism has evolved within science to safeguard against this danger? (2 points)
11. How do the social institutions of (1) peer review and (2) face-to-face contact among scientists (e.g. attending conferences or visiting one another's labs) promote the reliability of science as a whole? (4 points)
12. Identify one general reason why the public comes to distrust science in examples such as the anti-vaccination or climate change controversies? Propose one solution to avoiding such crises of distrust. (4 points).
13. In the second half of this course we considered two answers to the question, "why is science successful?" Post Modernists argue that the success of science is an illusion. Naturalism argues that science owes its success to certain social institutions that promote an accurate understanding of nature. In 2-3 sentences each, explain what you take to be the biggest obstacle for each of these positions. (5 points).