

HUL 841: Philosophy of Science
IInd Semester, 2014-15
Major exam

Sumeet Agarwal and Arudra Burra

May 2, 2015

Instructions: total 30 marks

1. This is an open-book, open-notes, take-home exam. Please email the answers to sumeet@iitd.ac.in by 9th May, 23:59. Focus on clarity of exposition and understanding, and concentrate on the readings which have been assigned for this course.
2. *Your written work must be your own.* There is no need to go outside the assigned texts, but if you do read something else which is an important source of an idea, cite it.¹ Feel free to discuss the questions with others, but make sure to acknowledge them.
3. Answer any **two** of the following three questions. Each is worth 15 marks, and should be answered in about 1500 words.

Causation

- 1 (a) Explain, in your own words, how Hume's discussion of causation leads him to the problem of induction. [5]
- (b) Hume's discussion of causation seems to be motivated by the empiricist idea that the ultimate basis of all scientific knowledge must be observation. To what extent are the different models of causation we've talked about compatible with this idea? [5]
- (c) In *An Enquiry Concerning Human Understanding*², Hume wrote:

¹You may find it helpful to consult <http://isites.harvard.edu/icb/icb.do?keyword=k70847&pageid=icb.page357682> or <http://abacus.bates.edu/cbb/quiz/intro/integrity.html>

²<http://www.gutenberg.org/ebooks/9662>; Section VII, Part II

we may define a cause to be *an object, followed by another, and where all the objects similar to the first are followed by objects similar to the second*. Or in other words *where, if the first object had not been, the second never had existed*.

David Lewis and others have pointed out that the two definitions appear to be quite distinct, and whilst the first is the well-known regularity account, the second is a counterfactual account. Why do you think Hume equated these two definitions? [5]

Explanation

2. Discuss the role of causality in scientific explanation in the light of readings and class discussion. Do all legitimate scientific explanations make reference to causal relations? Or is causality essentially irrelevant to scientific explanation? Does the answer depend upon the nature of the science in question – for instance, does it make a difference whether we are studying “complex sciences” such as biology or economics as opposed to fundamental physics? [15]

Reduction

- 3 (a) Explain in your own words what you think is the most important point of difference between Fodor and Sober with respect to the multiple realizability argument against reductionism. [5]
- (b) Where do you stand on the debate between them on this point? [5]
- (c) Sober writes: “Although Fodor (1975) does not mention grue and bleen, it is fairly clear that his thinking about natural kinds – and his horror of disjunctions – both trace back to that issue.” (553). Just what is the “issue” Sober is referring to, and how does it relate to the debate between him and Fodor? [5]