

Philosophy 5330: Philosophy of Science
Fall 2019 – Assignment 2

You have two options for how to complete assignments for the course.

Option 1 is to produce a final paper. This is to be a serious research paper of perhaps 3,000-4,000 words. It would be expected that you would come and talk to me about what you might want to write on and that you would produce a draft (or at least an abstract and outline) ahead of time that we could talk about. It would be due December 10th.

Option 2 is to complete two shorter essay assignments. The first assignment would be due on Sunday, November 10th (extensions are fine). Then you would have a similar, second assignment on the topic of science and values due December 10th.

Assuming you are doing option 2, your next assignment is to write a short paper dealing with some topic relevant to the readings from weeks 6-10 of the course (Kuhn and responses to Kuhn). A good paper would be perhaps between 1,800-2,500 words.

Here are some sample questions that might help stimulate your thinking (questions 1-5 due to Michael Strevens).

1. According to Kuhn, what role is played by a paradigm (in the broad sense) during normal science? In answering this question, discuss two important functions of the paradigm. To what extent is it important that scientists are incapable of thinking outside the paradigm?
2. During periods of normal science, Kuhn says, there can be only one paradigm. What are his motivations for saying this? Is he right?
3. In revolutionary times, can there be good reasons for a scientist to make the leap from the old paradigm to the new paradigm? Explain Kuhn's answer to this question, and discuss.
4. In what ways is it possible to say that a move from one paradigm to another constitutes scientific progress, according to Kuhn? Is his view plausible?
5. To what extent are the results of observations in science determined by outputs of parts of the brain that work the same way in all normal humans, regardless of beliefs, culture, and so on? How does this help with the problem of the theory-ladenness of observation? (Be sure to say what the problem is.)
6. How is Lakatos's theory of research programmes related to Kuhn's theory of scientific methodology. Which view is superior and why?
7. What is scientific rationality and how can scientists rationally decide between competing theories? Is there an objectively correct way to do this?