

Final for Philosophy 385, Science and Rationality

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Answer four of the eight questions. You should choose questions from at least three of the four topics. Each answer should be approximately a page to a page and a half, double-spaced. It is more important to have an organized answer that addresses all the relevant points than to worry about the exact length.

Answers are due by e-mail to me by 11:59 pm, Sunday, May 8, unless you get explicit permission from me beforehand to submit it late.

1 Definitions of science

1.1 Popper vs. the Positivists

What is the Positivist view of meaning, and how does it shape their view of science? What is Popper's criterion for science? How does it differ from that of the Positivists, and why does he reject their view?

1.2 Popper vs. Kuhn

Popper says that an ideal scientist should both create and test theories. What rules should an ideally rational scientist follow when doing these things, according to Popper? Which of these rules do scientists break when doing "normal science", according to Kuhn? Does this make science irrational, according to Kuhn, or does he say it still manages to be rational in a different way? If so, how?

2 Induction and Confirmation

2.1 Paradoxes of Confirmation

What is the Paradox of the Ravens? What is the "grue" paradox? Give a formal characterization of induction, and show how both of these paradoxes cause problems for it.

2.2 Bayesianism

State the central claims of Bayesianism. What is the Bayesian approach to confirmation? Either explain a major problem for Bayesianism, or show how Bayesians can reconstruct one of the traditional notions of induction or confirmation.

3 The Social Organization of Science

3.1 Incommensurability and Relativism

What is incommensurability? (Be sure to draw a distinction between a moderate and radical version of the thesis, and state how incommensurability applies to at least two different aspects of science.) How does radical incommensurability lead to relativism? Why do many philosophers find relativism so problematic?

3.2 The Reward Structure of Science

Describe one of the views of the reward structure of science that we have studied. Describe how scientists are encouraged to behave by this reward structure. Show how this behavior would lead to an approximately rational picture of scientific theory building and testing.

4 Empiricism, Realism, and Naturalism

4.1 Empiricism vs. Realism

State the central ideas of realism and radical empiricism, and explain why they are incompatible. Describe a more moderate version of empiricism that is compatible with realism.

4.2 Naturalism

What is philosophical naturalism? How do naturalists respond to skepticism about induction?