This course will mainly consider parsimony arguments in science, though there will be some attention to parsimony arguments in philosophy. After a brief historical overview of attempts to justify Ockham’s razor before 1900, we will consider 20th century attempts to formulate and justify the principle of parsimony in a probability framework. To do this we’ll need to look at the basics of Bayesianism and at some ideas from frequentist statistics. Then we’ll turn to the subject of how parsimony is and ought to be used in philosophical argumentation. This will encompass a variety of philosophical topics – for example, the argument from evil, the mind/brain identity theory, Platonism about mathematics, realism in meta-ethics, mental causation, and solipsism. Then we’ll discuss how probabilistic ideas about parsimony apply to the conflict between Copernican and Ptolemaic astronomy. Finally, there will be two case studies from contemporary science: the use of parsimony in evolutionary biology to make phylogenetic inferences and its role in the controversy in cognitive psychology over whether chimpanzees form mental representations of the mental states of others.

Requirements: You should attend all meetings of the seminar and participate in discussion. Your grade will be influenced by both. A homework assignment is due at the 3rd seminar meeting and a double-spaced 7 page paper is due at the 9th. Details about both will be explained. There also is a term paper (15 pages) that is due at the last seminar meeting. You should discuss your plans for your term paper with me before week 12.

1. Introduction

Sober, OR, chapter 1.


2. Kant on the Principle of Parsimony (led by James Messina)

Primary: (1) the two parts of the "Appendix to the Transcendental Dialectic" in CPR (so A642/B670-A704/B732, which is pages 590-623 in the Wood/Guyer translation). Concentrate on the first part, where the principle of parsimony is discussed; the second part focuses more on the regulative role that the ideas of the soul, world, and God play in our efforts to systematize nature (this is where Kant seems to be saying that we have to think of nature as if it were designed by God). (2) section 5 of the introduction to the Critique of Judgment (so 5:181-5:186, which is pages 68-73 in the Guyer translation). Here Kant talks about the principle of parsimony again and his account appears to differ from the one in CPR.

Secondary: (1) pages 423-448 in the 2004 edition of Henry Allison's *Kant's Transcendental Idealism*, where Allison talks about the Appendix. (2) The first two sections (so pages 290-301) of Fred Rauscher's "The Appendix to the Dialectic and the Canon of Pure Reason: The Positive Role of Reason", which is in the 2010 *Cambridge Companion to Kant's Critique of Pure Reason* (we would skip the later sections of the paper, which deal with the Canon of Pure Reason, where considerations about morality and the highest good are discussed)

3. Some Probability Tools (Bayesianism and Likelihoodism)

Sober, OR, chapter 2, pp.1-15 (up to the start of “Ockham’s Razor for Bayesians”).

Mike Titelbaum, A Guide to Bayesian Epistemology, chapter 3 (skipping 3.2.2), chapter 4 (skipping 4.2.1, 4.2.2, and 4.3), and chapter 5 (up to the start of 5.2.1).

4. Prior Probabilities, Jeffreys, and Popper


5-6. Reichenbach’s theorem, a Reichenbachian likelihood inequality, and Reichenbach’s principle of the common cause

Titelbaum, section 4.2.1.


7. Model Selection and Bayesian Ockham’s Razor


8. Parsimony in Modern Philosophical Arguments

Sober, *OR*, chapter 5.


9. Parsimony in Comparative Psychology – Morgan’s Canon and the Principle of Conservatism

Sober, OR, chapter 4. Reread section in ch 1 on Morgan.


Recommended:


10. More on Chimpanzee Mind-Reading


Sober. OR, chapter 4, pp. 24-end.


11. Cladistic Parsimony

Sober, OR, chapter 3, pp. 1-19.


12. More on Cladistic Parsimony

Sober, OR, chapter 3, pp. 19-end.

13. Baker on Quantitative Parsimony and Myrvold on Unification


14. Janssen’s COI


15. Wrap Up