PHILOSOPHY 596V
Philosophy and Cognitive Science Seminar
Fall 2014
SocSci 224
Wed 3:30-6:00

Instructor: Shaun Nichols
Office: Social Sciences 318c
Phone: 626-0616
Office Hours: Monday 2-4, and by appointment

Readings: All readings will be available on D2L. [https://d2l.arizona.edu/]

Course Description:
Over the last decade, Bayesian approaches to cognitive sciences have flourished. Bayesian approaches to learning in particular have been productive and influential. In this seminar we will explore some of this recent work in learning theory and consider its implications for a range of philosophical issues, including issues concerning rationality, nativism, moral psychology, and the acquisition of philosophically important concepts and distinctions.

Course requirements and grading:
- 80%: Term paper (5-6000 words), due December 14th
- 20%: Discussion entries for each class period. Starting Sept 24th, for each class, you are required to post a response to some aspect of the readings. These responses will be the basis for our discussions in the seminar meeting, so they should aspire to raise points for discussion. Aim for roughly 400 words. The responses should be posted by 5pm on Tuesday preceding class. Everyone should read the responses prior to class.

University boilerplate:
You need a good excuse, in advance, to miss an exam or to hand in a paper late. All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion. Absences pre-approved by the UA Dean of Students (or Dean's designee) will be honored.

I expect acceptable classroom behavior at all times. Disruptive or threatening behavior may result in disciplinary procedures leading to severe penalties. See the UA Policy on Threatening Behavior by Students, and documents referenced therein.

Students with Disabilities
Students with physical, psychological, or learning disabilities who anticipate needing accommodations in this course are encouraged to register with the S.A.L.T. Center or the Disability Resource Center. Students with special needs who are registered with the S.A.L.T. Center or the Disability Resource Center are reminded that they must submit appropriate documentation as soon as possible if they are requesting special accommodations.

This is a very tentative schedule, and it leaves a few sessions at the end undetermined, to allow us some flexibility on timing and potential additional topics.
Tentative schedule

August 27\textsuperscript{th}: Introduction

Part 1: Background and general issues

Sept 3 & 10: Learning theory toolkit

[In addition to a general (and gentle) introduction to Bayesian inference, we will cover the size principle, sensitivity to sampling, the role of priors in infant inference, screening off, overhypotheses, and the role of simplicity in inference]

Sept 3:
Recommended:
Feldman, Jacob. "Bayesian models of perception: a tutorial introduction."

Sept 10:

Sept 17: Evidence on probabilistic reasoning in infants

Guest lecture from LouAnn Gerken
Reading:

Sept 24: Bayesian learning and rationality

Readings:
Bonawitz, E., Gopnik, A., Denison, S., & Griffiths, T. L. (2012). Rational randomness: the role of sampling in an algorithmic account of preschooler’s causal learning. Rational constructivism, Advances in Child Development and Behavior, 42. [Some of this is pretty briefly explained, so might need to dip into recommended readings to get relevant details]

Recommended:

Background:
If you are not at all familiar with the rationality debates surrounding Kahneman & Tversky’s work, it would be good for you to skim the following paper, esp. sections 2, 3 and 8.

October 1: Nativism and Constructivism
Guest lecture: Jonathan Weinberg
Readings TBD: (candidates: Samuels; Mallon & Weinberg; Gopnik & Wellman 2012 “Reconstructing Constructivism”)

Part 2: Applications of learning theory to philosophy and folk philosophy

Oct 8: Act/Omission
Readings:
Nichols, Kumar, Lopez, “Rational learners and non-utilitarian rules”

Oct 15: Knowledge
Readings:
Nichols & Angel Pinillos, “Skepticism and the acquisition of “knowledge”

Oct 22: Reference and Fodor’s problem
Readings:

Oct 29: Reinforcement learning and moral distinctions
Readings:

Nov 5: Learning, rationality, and morality
Readings:
2. Railton “Toward a Unified Account of Rationality in Belief, Desire, and Action”

Nov 12: Essentialism
Readings:
[Perhaps something on unidimensional rule learning from, e.g., Murphy’s Big Book of Concepts.]
Nov 19, 26, Dec 3, Dec 10 TBD