Belief, Desire, and Rational Choice
Course Guide (2017)

Course organiser:
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Course description

This course provides an introduction to formal models of belief, desire, and rational choice. It has roughly three parts. The first introduces the core ideas of Bayesian epistemology, where belief is treated as an attitude that comes in degrees. In the second part, we turn to formal models of desire, drawing on utility theory in economics and value theory in philosophy. We will also look at some interactions between rational belief and desire. The third part takes a closer look at decision theory, which formalises the intuition that rational agents do what they believe will bring them closer to satisfying their desires.

Classes consist of a one-hour lecture plus a one-hour tutorial.
Worksheets will be made available in advance of each lecture, and are the only required reading.

No prior knowledge of the material is expected. Familiarity with basic propositional logic will be helpful.

General background reading:

- Michael Strevens: *Notes on Bayesian Confirmation Theory* (2017)
- Kenny Easwaran: “Bayesianism I” (2011)
Assessment

The worksheets for each week will contain problems. You should try to answer them and hand in your solutions at the start of the following lecture. 50% of your mark is based on these exercises.

Some worksheets will also contain questions that call for more open-ended philosophical discussion. You should choose one of these for your final essay, which will determine the remaining 50% of your mark.

Provisionary syllabus

Week 1: Overview

How beliefs and desires are related to choice; why beliefs and desires are graded; the difference between conceptual analysis and model-building.

Background reading:

- Mark Colyvan: “Idealisations in normative models” (2013)

Week 2: Belief as probability

Basic rules of probability; Bayes’ theorem; some applications.

Background reading:

- Chapters 2-4 of Michael Strevens: Notes on Bayesian Confirmation Theory (2017)
- Chapters 3-8 of Brian Weatherson: Lecture Notes on Decision Theory (2015)

Week 3: Probabilism

Why degrees of beliefs should conform to the principles of probability theory.

Background reading:

- Richard Pettigrew: “Epistemic Utility and Norms for Credence” (2013)
Week 4: Further constraints on rational belief

How permissive is epistemic rationality? Deference principles; indifference; evidential probability.

Background reading:
- Christopher Meacham: “Impermissive Bayesianism” (2014)

Week 5: Utility

Utility as desirability; other conceptions of utility.

Background reading:

Week 6: Preference

Deriving utility measures from a preference ordering; ordinal and cardinal utility; utility and belief.

Background reading:
- Samir Okasha: “On the Interpretation of Decision Theory” (2016)
- Peter Fishburn: “Utility and Subjective Probability” (1994)
- Daniel Hausman: “Mistakes about Preferences in the Social Sciences” (2011)

Week 7: Separability

Are there rationality constraints on basic desires? Additivity; discounting.

Background reading:
- Peter Fishburn: “Utility and Subjective Probability” (1994)
Week 8: Risk

Does decision theory neglect rationally defensible attitudes towards risk?

Background reading:

- Lara Buchak: “Redescription” (2014)

Week 9: Conditional decision theories

Newcomb’s problem; Evidential Decision Theory and Causal Decision Theory.

Background reading:


Week 10: Game theory

Background reading:

- Don Ross: “Game Theory” (2014)

Week 11: Bounded rationality

Background reading:

- Alejandro Pérez Carballo: “Structuring Logical Space” (2016)