

Reading Assignment 12: Criticisms of Expected Utility and Savage's Theory

Assigned Reading

- Section 3 of R. A. Briggs. "Normative Theories of Rational Choice: Expected Utility". In: *The Stanford Encyclopedia of Philosophy*. Ed. by E. N. Zalta and U. Nodelman. Winter 2023. Metaphysics Research Lab, Stanford University, 2023
- Section 3.1 of K. Steele and H. O. Stefánsson. "Decision Theory". In: *The Stanford Encyclopedia of Philosophy*. Ed. by E. N. Zalta. Winter 2020. Metaphysics Research Lab, Stanford University, 2020.
- Section 1.1.1 of L. Buchak. *Risk and rationality*. OUP Oxford, 2013

Technical Requirements

Answer questions one, three, six, and nine below. Together, your answers should not be longer than a single typed page. See the document "Reading Assignment and Quiz Guidelines" for further instructions.

1. Using Quinns' example as a model, develop your own counterexample to the claim that rational (strict) preferences must be transitive.
2. Which "half" of various representation theorems can be proven if one's preferences satisfy all of the relevant axioms except completeness?
3. Study the Allais Paradox carefully and come to class ready to discuss it. What is the "re-description solution" to the Allais paradox? Note: We will also study's Broome's criticism of the re-description solution in class; it is important.
4. Give your own example of a decision problem in which an expected utility maximizer might choose a weakly dominated option. What extra requirement does Skyrms propose adding to expected utility theory?
5. Summarize the State Neutrality axiom (as stated in Steele and Stefannson's article) in your own words. Then devise your own example (i.e., an example different from Steele and Stefannson's) that indicates why State Neutrality is implausible unless outcomes are "maximally specific in every way that matters for their evaluation."
6. What is Savage's "Rectangular Field Assumption"? Give your own example to illustrate why one might object to the plausibility of the Rectangular Field Assumption.
7. What did Gaifman and Liu show? Hint: It helps to read the endnotes.
8. What name have we used in previously classes for the assumption that Steele and Steffanson call "probabilistic independence"? Why is the sure-thing principle (STP) implausible unless probabilistic independence holds? And why is the requirement of probabilistic independence problematic according to Steele and Steffanson?
9. Consider Buchak's example involving Jeff. To the best of your ability, explain why Jeff's preference for Deal 2 to Deal 1 violates expected utility theory.