

24.805: Imprecision and Irrationality

Fall 2023

Thursdays 2–5; 32-D831

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Description:

Our preferences are often imprecise or uncertain: you neither enjoy Caspar's talks more than Kevin's, nor vice versa; but nor are you clearly indifferent—if you discover that Kevin is giving \$1 to each audience member, you're still torn about which talk to attend. Likewise, our beliefs are often imprecise or uncertain: you're not more confident that Caspar owns green socks than that Kevin enjoys cabbage, nor vice versa; but nor are you clearly equally confident—if you discover that Kevin enjoys broccoli, you're still unsure which is more likely.

How *do* and *should* people make decisions in light of such imprecision (or uncertainty) in their preferences and beliefs? We'll tackle this question from a variety of theoretical and applied angles, asking questions such as: What's the best way to understand and model such cases? How is it rational to make decisions and form beliefs over time in such cases? And how does normative thinking about such cases inform our understanding of related empirical "biases"—such as (perhaps) [ambiguity aversion](#), the [endowment effect](#), the [attraction](#), [repulsion](#), and [compromise](#) effects, [rationalization](#), and others.

Readings: all readings will be made available on the course website:

https://www.kevindorst.com/fa23_imprecision_irrationality.html

Requirements: Attendance at all classes. A presentation on your term paper project on December 7. A draft of your turn paper by **December 20**. A revised final version by **February 6**.

Disability Accommodations: If there's any issue to touch base about, let us know! Disability and Access Services: <https://studentlife.mit.edu/das>.

Self-Care and Well-Being:

Grad school is hard. So please, get into the habit of building self-care into your schedule—whether it's in the form of exercise, time talking to friends/family, or even just to relax. Do it! You'll find that you are much more productive if you do.

MIT also has resources (<https://medical.mit.edu/services/mental-health-counseling>). Or call 617-253-2916—a line that's open 24 hours a day. For grad-student-specific resources: the Office of Graduate Education (OGE), GradSupport provides consultation, coaching, and advocacy to graduate students on matters related to academic and life challenges. Contact GradSupport at gradsupport@mit.edu or at (617) 253-4860.

Schedule

Sept 7 (both): Multidimensionality and imprecision

- No reading

Sept 14 (Caspar): What is multidimensionality?

- Chang 2002, [The possibility of parity](#)
- Muñoz and Hedden, [Dimensions of value](#)
- *Optional: Chang 2005, [Parity, Interval value, and choice](#)*

Sept 21 (Kevin; Caspar traveling): Introduction to Probability and Decision Theory

- Titelbaum 2022, Chapters 2, 3 and 7

Sept 28 (Caspar): Incommensurability and spectrum paradoxes

- Hajek and Rabinowicz, [degrees of incommensurability and the repugnant conclusion](#)
- Hedden, [On Pareto principles and parity](#)

October 5 (Caspar): Uncertainty and dominance principles

- Hare2010, Take the Sugar
- Schoenfield2014, [Decision-making in the face of parity](#)

October 12 (Caspar, Harvey visits): Is there really incomparability?

- Lederman 2023, marbles and matchsticks
- TBD

October 19 (Kevin): Mushy credences

- White 2010
- Schoenfield 2012, [Chilling out on epistemic rationality](#)

October 26 (Caspar; Kevin traveling): Implications for ethics

- TBD
- (Possibly: Hedden on collective action)

November 2 (Kevin): Higher-order uncertainty

- To-be-written draft chapter
- *Optional: Carr 2020, [Imprecise evidence without imprecise credences](#)*

November 9 (Kevin; Rahul Bhui visiting): Compromise and Repulsion effects

- Bhui2022, A rational account of the repulsion effect
- Shenoy2013, Rational preference shifts in multi-attribute choice: what is fair?

November 16 (Both): Sticking to your guns in a multidimensional world

- Caspar, limits of kindness selections
- Anna Mahtani, [Imprecise probabilities and unstable betting behavior?](#)
- *Optional: Kevin, the [endowment effect blog post](#)*

November 23: No class (Thanksgiving)

November 30 (Kevin): Ambiguity Aversion

- Ellsberg 1963
- Bradley, Chapter 13

December 7 (You!): Student presentations

December 20: PAPER DRAFTS DUE