Gerard J. Rothfus

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Education

University of California, Irvine
Ph.D., Philosophy, Spring 2020 (Expected)
M.A., Mathematical Behavioral Science, June 2019
Thesis: "The Logic of Planning"
Committee: Brian Skyrms and Simon Huttegger (co-chairs), Cailin O'Connor, and Jeffrey Barrett

Pepperdine University
B.S., Mathematics, B.A., Philosophy, *cum laude*, April 2014

Publications

"Dynamic Consistency in the Logic of Decision". *Philosophical Studies* (2020), https://doi.org/10.1007/s11098-020-01415-0.

Working Papers

"Bradley Conditionals and Dynamic Choice". (with Simon Huttegger; currently revise and resubmit)

"Newcombian Tragedy". (working paper)

"Planning and the Norms of Rational Choice". (working paper)

Book Reviews

Review of Richard Pettigrew's *Accuracy and the Laws of Credence* (with Chad Marxen) in *Philosophy of Science* 85(2):316-320.

Presentations

"Planning and the Norms of Rational Choice"

- Philosophy Day, California State University, Long Beach, December 2019

"Newcombian Tragedy"

- Probability in Philosophy Conference, Australian Catholic University, November 2019

"Conditionals and Dynamic Choice"

- Luce 2019 Conference, University of California, Irvine, May 2019

"Evidence, Causality, and Sequential Choice"

- Foundations of Normative Decision Theory Workshop, Oxford University, June 2018
- Topics in Scientific Philosophy Conference in honor of Brian Skyrms, U.C. Irvine, February 2018 (Invited by Simon Huttegger)
- 46th Annual Meeting of the Society for Exact Philosophy, May 2018

Comments on Benjamin Arbour and Myron Penner's "Arguments from Evil and Evidence for Pro-theism"

- Pacific APA, San Francisco, March 2016 (Invited by Tomas Bogardus)

"Game Theory and the Problem of Social Evils"

- Pepperdine University, March 2015 (Invited by Tomas Bogardus)

Teaching Experience

Instructor, University of California, Irvine

- Introduction to Inductive Logic, Spring 2020 (contracted)
- Introduction to Symbolic Logic, Summer 2019

Instructor, California State University, Long Beach

- Rationality and Decisions, Fall 2019

Teaching Assistant, University of California, Irvine

- Probability and Statistics, Winter 2020
- Voting and Political Manipulation, Winter 2019
- Naturalized Epistemology, Fall 2018
- Probability and Statistics, Spring 2018
- Probability and Statistics, Winter 2018
- Probability and Statistics, Spring 2017
- Philosophy of Biology, Winter 2017
- Behavioral Economics, Fall 2016
- Probability and Statistics, Spring 2016
- Business Decisions, Fall 2015
- The Good Life: Happiness and Well-Being, Spring 2015
- Philosophy of Biology, Winter 2015

Honors

UCI Social Science Merit Fellowship, 2014-2020
UCI Associate Dean Fellowship, 2019

Professional Service

Organizer, U.C. Irvine Formal Epistemology Reading Group, 2016-2019
Journal Referee, *Philosophy of Science*
Member, Program Committee for Formal Epistemology Workshop (FEW) 2020

References

Brian Skyrms
Distinguished Professor of Logic and Philosophy of Science
University of California, Irvine
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Simon Huttegger
Professor of Logic and Philosophy of Science
University of California, Irvine
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Jeffrey Barrett
Chancellor's Professor
Logic and Philosophy of Science
University of California, Irvine
j.barrett@uci.edu

Graduate Courses

Probability, Decision, and Game Theory:

Rational Choice Theory (Fall 2014)
De Finetti's Philosophy of Probability (Fall 2014)
Game Theory (Winter 2015)
Topics in Decision Theory (Spring 2015)
Evolutionary Game Theory (Spring 2015, Independent Study)
Probability and Randomness (Winter 2016)
Conceptual Foundations of Probability (Fall 2016)
Probabilistic Learning (Winter 2017)
Chance (Spring 2017)
Foundations of Happiness (Spring 2019)

Logic and Mathematics:

Set Theory (Fall 2014)
Metalogic (Winter 2015)
Incompleteness (Spring 2015)
Modal Logic (Fall 2015)
Philosophy of Mathematics (Fall 2017)
Real Analysis (Fall 2017)

Other Coursework:

Primary and Secondary Qualities I (Fall 2014))
Primary and Secondary Qualities II (Winter 2015)
Rawls and Utilitarianism (Winter 2016)
Philosophy of Quantum Mechanics (Spring 2018)

Dissertation Abstract

The Logic of Planning

Over the past 40 years, decision theorists have produced an impressive body of literature employing dynamic choice arguments to defend the standard principles of Bayesian decision theory. However, examination of the import of these arguments has largely been restricted to the context of Savage-style decision theories that posit a sharp distinction between acts, states, and outcomes, while the more general framework developed in Richard Jeffrey's *Logic of Decision* has remained mostly neglected. My dissertation aims to remedy this situation by extracting and defending what I take to be the core insights of dynamic choice arguments and exploring their significance in the context of Jeffrey-style decision theories.

Despite their widely granted intuitive appeal, the merit of dynamic choice arguments remains a matter of controversy. Hence, my opening chapter sketches a philosophical defense of the dynamic consistency principle that I take to lie at the heart of standard dynamic choice arguments. This principle posits that a rational agents' own attitudes never preclude her from implementing *ex ante* optimal plans in contexts of sequential choice. Given this characterization of dynamic consistency, I also argue that certain risk-sensitive preferences are problematic in a way that incomplete preferences are not, thus contributing to a long standing debate on the interrelation of independence, completeness, and dynamic consistency.

With an informal defense of dynamic consistency laid out, the second chapter turns to the matter of formally modelling sequential choice within Jeffrey's decision theoretic framework. The first problem that confronts us here is that dynamic consistency concerns the evaluation of *plans*, while the Logic of Decision is a theory concerned with ranking *propositions* according to their desirability. Relying upon the standard practice of modelling sequential choice problems via Bayesian decision trees, I show how we can model plans in a Jeffrey-style framework by employing conditionals that I neutrally dub '*planning conditionals*'. I then argue that how we interpret planning conditionals has implications for the dynamic consistency of desirability maximizers. On certain interpretations of the planning conditional, but not others, desirability maximization gives rise to dynamic inconsistency.

When Newcomb problems arise, desirability maximization conflicts with causal decision theory. In such cases, the latter's prescriptions are superior to the former's. Unfortunately, Arif Ahmed has recently argued that causal decision theory is dynamically inconsistent. This generates a puzzle: the correct account of static choice generates diachronic tragedy. My third chapter proposes a resolution of this puzzle via a principle of *Autonomy*, which requires that rational agents take the (subjective) evidential import of their acts to coincide with their (perceived) causal import. Building on Ahmed's work, I produce a recipe for turning causalist violations of Autonomy into dynamic inconsistencies and prove a theorem showing that Autonomy is sufficient for the dynamic consistency of causalists. This result justifies an identification of causalist behavior with desirability maximization in the case of fully rational agents, yielding perhaps the most surprising result of taking dynamic consistency seriously in the context of Jeffrey-style decision theories.