

**Course Syllabus**  
**PHIL 0992A Puzzles of Rationality**  
Fall 2023  
TTh 1pm-2:20pm

**Instructor:** Ryan Doody

**Location:** 111 Thayer St-Watson Institute 112

**Office hours:** W 1-2pm

**Course Website:**

<https://canvas.brown.edu/courses/1092869>

**Email:** [ryan\\_doody@brown.edu](mailto:ryan_doody@brown.edu)

**Required Readings:**

Reading will be posted to the course site.

**Course Description:**

What is it to be rational? This course takes up that question by looking at a number of intriguing puzzles. For example: Is it irrational to not believe in God? Is it irrational to settle for less now when you could have more later? Is it irrational to intend to do something that you don't believe you'll do? Can it be rational to do what you hope you won't? When is it rational to be random? Is it ever rational to be irrational? Along the way, we will learn Bayesian probability theory, decision theory, game theory, and social choice theory.



**Grading Policy:**

- *Reading Responses* [15%]

At the beginning of the semester, you will sign-up for **five** class days (using this [sign-up sheet](#)). In advance of that day's class, you will generate one question or comment regarding that day's material. You are to post that question or comment to the appropriate thread on the discussion board (on Canvas). You should also be prepared to discuss your question or comment during class. Your question/comment must be posted before **9:00AM** on the day of class in order to receive full credit. There will also be **three** guest lectures throughout the semester. On those days, **everyone** should post a question/comment to the discussion board in advance of the guest lecture. So, by the end of the semester, you should make, in total, **eight** questions/comments to the discussion board.

- *Problem Sets* [40%]

There will be **four** problem sets, consisting of multiple choice and short-answer

questions, administered on Canvas. See the schedule below for due dates. (They, typically, will be posted after class on Thursday, and due the following Tuesday at the end of the day.)

- *Final Paper* [33%]

You will write a 10-12 page (5k-6k words) paper on one of the topics covered in class. We will discuss the requirements for the paper in more detail toward the end of the semester. The final paper is due **December 12**.

- *Participation* [12%]

Ideally, this is a discussion-heavy course—with lots of spirited conversation during class. Participating in class is one way of satisfying this course's participation requirement. But it is not the only. As mentioned before, we will also make use of Canvas's discussion forums. One way to earn participation credit is to read and respond to others' questions/comments. You are also free to take the initiative to use the discussion forum for other class-related discussions as well.

### Grading Breakdown

Reading Responses ...	15%
Problem Sets ...	40%
Final Paper ...	33%
Participation ...	12%

**Honor Code:** All students are expected to follow the guidelines set out in Brown's [Honor Code](#). In particular, please refrain from cheating and plagiarism. It's fine to do outside research, just be sure to cite it. All of your work should be wholly your own.

**Availability and Communication:** I encourage you to meet with me during office hours to talk about anything related to the course. Don't hesitate to meet even if you don't have a specific question. If you can't meet during my office hours, we can make an appointment for a time that works better for you.

**Accessibility and Accommodations Statement.** Brown University is committed to full inclusion of all students. Please inform me early in the term if you may require accommodations or modification of any of course procedures. You may speak with me after class, during office hours, or by appointment. If you need accommodations around online learning or in classroom accommodations, please be sure to reach out to Student Accessibility Services (SAS) for their assistance (seas@brown.edu, 401-863-9588).

Undergraduates in need of short-term academic advice or support can contact an academic dean in the College by emailing [college@brown.edu](mailto:college@brown.edu).

**Modifications to Syllabus:** I reserve the right to make changes to the syllabus—including due dates and test dates—when unforeseen circumstances occur. These changes will be announced as early as possible.

**Time Expectations:** We expect to meet 24 times, for an hour and twenty minutes, so that's **32 hours** spent in class. You should expect to spend about 4 hours per class reviewing the relevant material and reading the assigned readings. This totals **96 hours**. You should expect to spend an additional hour on those days that you are scheduled to post a question or comment. So, that's another **8 hours** (the 5 class days that you sign-up for + the three guest lectures). There will be four problem sets throughout the semester, each of which you can expect to spend about five hours on. That's an additional **20 hours**. You should expect to spend **24 hours** researching, writing, and revising your final papers. So, you should expect your total time commitment for this class to be about **180 hours**.

# Schedule for *Puzzles of Rationality*

## Fall 2023

### Week 1: The Preface

#### - September 7 - First Day of Class

No required reading

#### - *Optional:*

D. C. Makinson, "The Paradox of the Preface"

### Week 2: Evidence for the Existence of God

#### - September 12 - Hume's 'of Miracles', Bayes' Theorem, and Base Rates

Dawid, P., & Gillies, D. "A Bayesian Analysis of Hume's Argument Concerning Miracles"

#### - *Optional:*

David Hume, "of Miracles," *An Enquiry concerning Human Understanding* (1748)

#### - *Further Reading:*

James Joyce, "[Bayes' Theorem](#)"

#### - September 14 - The Fine-Tuning Argument and Conditionalization

Roger White, "Fine-Tuning and Multiple Universes"

#### - *Optional:*

Roger White, "The Fine Tuning Argument" (manuscript)

### Week 3: Eternity, Infinity, Boundlessness

#### - September 19 - Pascal's Wager and Expected Utility Theory

Alan Hájek, "Waging War on Pascal's Wager"

#### - *Optional:*

Blaise Pascal, excerpts from *Pensées* ("the Wager"), sec. 233 (1660)

#### - September 21 - St. Petersburg, Two Envelopes, Satan's Apple, and Binding

Frank Arntzenius, Adam Elga and John Hawthorne, "Bayesianism, Infinite Decisions, and Binding"

#### - *Optional:*

David Chalmers, "The St. Petersburg two-envelope paradox"

#### - *Further Reading:*

John Broome, "The Two-Envelope Paradox"

Frank Arntzenius and David McCarthy, "The Two Envelope Paradox and Infinite Expectations"

Martin Peterson, "[The St. Petersburg Paradox](#)"

*Problem Set #1 (Due September 26)*

#### **Week 4: Evidential vs Causal Decision Theory**

##### **- September 26 - The Newcomb Problem**

Arif Ahmed, "Introduction," *Newcomb's Problem* (2018)

- *Optional:*

Adam Bales, "Richness and rationality: causal decision theory and the WAR argument"

- *Further Reading:*

David Lewis, "'Why Ain'cha Rich?'"

- *Further Reading (for fun):*

Adam Elga, "Newcomb University: A Play in One Act"

##### **- September 28 - Death in Damascus**

Arif Ahmed, "Dicing with death"

- *Optional:*

Abelard Podgorski, "Tournament Decision Theory"

- *Further Reading:*

Andy Egan, "Some Counterexamples to Causal Decision Theory"

#### **Week 5: "Curse your sudden but inevitable betrayal!"**

##### **- October 3 - The Prisoners' Dilemma**

David Lewis, "Prisoners' Dilemma is a Newcomb Problem"

- *Optional:*

Cristina Bicchieri & Mitchell S. Green, "Symmetry arguments for cooperation in the Prisoner's Dilemma"

##### **- October 5 - Part II: Cooperation and Repeated Prisoners' Dilemmas**

**\*NO CLASS MEETING TODAY\***

Play [The Evolution of Trust](#) Activity

Listen to "[Tit for Tat](#)," *RadioLab* podcast

- *Optional:*

Excerpts from Robert Axelrod's *The Evolution of Cooperation* (1984)

*Problem Set #2 (Due October 10)*

### **Week 6: Max Khan Hayward Week [guest lecture]**

- **October 10 - Max Khan Hayward Day**  
Max Khan Hayward, "Increasing Marginal Utility, or, How to Plan a Bus Route"
- **October 12 - TBA**  
TBA

### **Week 7: Rational Irrationality**

- **October 17 - "Curse your sudden but inevitable betrayal!", Part III: Revenge of the Centipede**  
Philip Pettit & Robert Sugden, "The Backward Induction Paradox"
  - *Optional:*  
Cristina Bicchieri, "Self-refuting Theories of Strategic Interaction: A Paradox of Common Knowledge"
- **October 19 - The Toxin Puzzle (and the Paradox of Deterrence)**  
Gregory S. Kavka, "The toxin puzzle"
  - *Optional:*  
Chrisoula Andreou, "[Dynamic Choice](#)," (Especially see sections 1.5, 2.1-2.4)
  - *Further Reading:*  
Gregory S. Kavka, "Some Paradoxes of Deterrence"

### **Week 8: Intransitivity and Incompleteness**

- **October 24 - The Paradox of the Self-torturer**  
Warren S. Quinn, "The Puzzle of the Self-Torturer"
  - *Optional:*  
Sergio Tenenbaum and Diana Raffman, "Vague Projects and the Puzzle of the Self-Torturer"
- **October 26 - Incommensurability and the Puzzle of Opaque Sweetness**  
Caspar Hare, "Take the sugar"
  - *Optional:*  
Ryan Doody, "Parity, Prospects, and Predominance"  
Ryan Doody, "Opaque Sweetening and Transitivity"

*Problem Set #3 (Due October 31)*

### **Week 9: Caspar Hare Week [guest lecture]**

- **October 31 - Caspar Hare Day**

TBA

- **November 2 - TBA**

TBA

### **Week 10: Melissa Fusco Week [guest lecture]**

- **November 7 - Melissa Fusco Day**

TBA

- **November 9 - TBA**

TBA

### **Week 11: The Allais Paradox and Risk-Aversion**

- **November 14 - Risk-weighted Expected Utility Theory**

Lara Buchak, "Risk and Tradeoffs," (Skip sections 4 and 5)

Lara Buchak, "Precis of *Risk and Rationality*,"

- *Optional:*

Lara Buchak, "Normative Theories of Rational Choice: Rivals to Expected Utility" [Sec. 5: Risk-Aversion](#),

- *Further Reading:*

Phillipe Mongin, "The Allais paradox: what it became, what it really was, what it now suggests to us"

- **November 16 - Criticism of Risk-weighted Expected Utility Theory**

Johanna Thoma and Jonathan Weisberg, "Risk Writ Large"

- *Optional:*

Ryan Doody, "Risk-taking and tie-breaking"

- *Further Reading:*

Johanna Thoma, "Risk Aversion and the Long Run"

### **Week 12: Thanksgiving Week**

- **November 21 - Picking, Choosing, Tie-breaking**

Ryan Doody, "[Dice Ex Machina](#)" (unpublished manuscript)

- *Further Reading:*

Edna Ullmann-Margalit and Sidney Morgenbesser, "Picking and Choosing"

*Problem Set #4 (Due November 28)*

- **November 23 - THANKSGIVING**  
**\*NO CLASS MEETING TODAY\***

**Week 13: Big Decisions, Transformative Choices, and the Self**

- **November 28 - Decision Theory and Transformative Choice**  
Agnes Callard, "Chapter 1: Decision Theory and Transformative Choice"  
*Aspiration: the agency of becoming* (2018)
  - *Optional:*  
L.A. Paul, "Précis of *Transformative Experience*"
  - *Further Reading:*  
Richard Pettigrew, "Book Symposium: Transformative Experience and Decision Theory"  
Edna Ullmann-Margalit, "Big Decisions: Opting, Converting, Drifting"
- **November 30 - The Problem of Self-creation**  
Agnes Callard, "Chapter 5: The Problem of Self-creation" *Aspiration: the agency of becoming* (2018)

**Week 14: Amartya Sen's Liberal Paradox**

- **December 5 - Liberty and Pareto Optimality**  
Amartya Sen, "The Impossibility of a Paretian Liberal"
  - *Optional:*  
Amartya Sen, "Liberty and Social Choice"
  - *Further Reading:*  
Brian Berry, "Lady Chatterley's Lover and Doctor Fischer's Bomb Party: liberalism, Pareto optimality, and the problem of objectionable preferences"
- **December 7 - Final Day of Class**  
No required reading

***Final Paper Due December 12***