LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

STRATEGIC MINDS: THE GAME THEORY OF COOPERATION, COORDINATION AND COLLABORATION

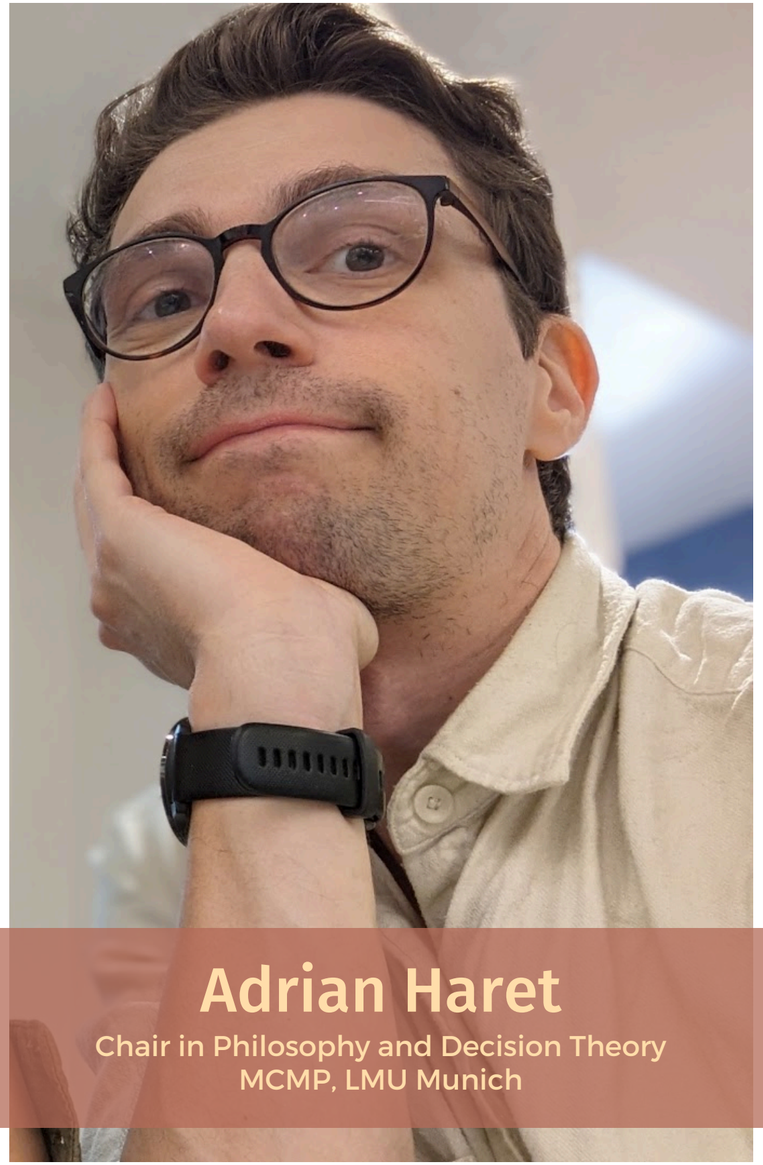
LOGISTICS

Adrian Haret
a.haret@lmu.de

April 15, 2024

First, let's get to know each other.

ABOUT ME



Adrian Haret

Chair in Philosophy and Decision Theory
MCMP, LMU Munich

ABOUT ME

Background in Philosophy, at the University of Bucharest.

Switched to Computer Science, with a PhD in the logic of belief change at TU Wien.

Followed by Postdoc in Computational Social Choice at the University of Amsterdam.

Write to me!

✉ a.haret@lmu.de
🔗 https://adrianharet.github.io

Your turn!

FORMAT

FORMAT

In-person, on campus, 2hrs each.
45 mins + 15 mins break (to ask questions, take naps) + 45 mins.
Slides will be posted online after the lectures.*
Adrian starts with spend the first weeks laying out the framework.
This will be followed by discussions on key papers, led by students.

*`https://adrianharet.github.io`

SCHEDULE

One lecture per week

Monday, 16:00 - 18:00, Room 021 (here!)

FIRST LECTURE

April 15, 2024 (now!)

NO LECTURE

May 20, 2024 (Whit Monday)

LAST LECTURE

July 15, 2024

EVALUATION

GRADE

50% class participation

- presentation in one of the sessions, or
- two small essays on papers related to the course
- due end of May and September 23

50% Term Paper

- due September 23, 2024
  - research on some topic that caught your interest
  - can be a review of existing literature, tackling a research question, coding up something (a simulation) and reporting the results
  - potential research topics will be flagged during the lectures with the following symbol: 🔍
  - also a list on the course website (forthcoming!)
  - in second half of the course, we will have a preliminary discussion on the chosen topic

ETIQUETTE

PERSONAL WORK
Don't plagiarize, etc.

RESPECT TOWARDS PEERS
Please.

QUESTIONS DURING LECTURES
Yes!

Feel free to interrupt and ask.

AIMS

SINK YOUR TEETH INTO THIS FASCINATING TOPIC

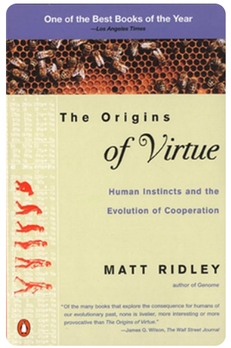
Very interdisciplinary topic, with broad reach.

Won't be able to touch on *all* the work, but (hopefully!) just enough.

USE THE GAME THEORY, LUKE

In particular, the final essay should reflect that aim!

POPULAR SCIENCE

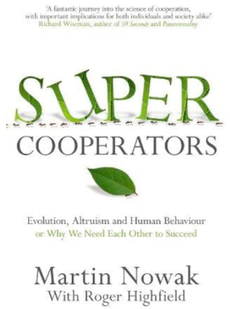


MATT RIDLEY

The Origins of Virtue: Human Instincts and The Evolution of Cooperation

Viking

1999



MARTIN NOWAK

SuperCooperators: Altruism, Evolution, and Why We Need Each Other to Succeed

Simon and Schuster

2011

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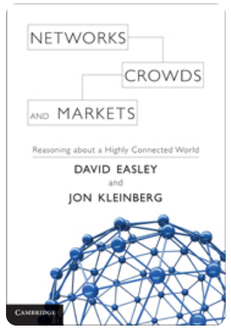
Slides, papers, videos: stay tuned!

USEFUL BOOKS



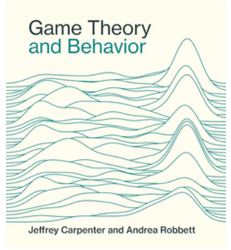
DAVID EASLEY & JON KLEINBERG

Networks, Crowds, and Markets

Cambridge University Press

2012

https://www.cs.cornell.edu/home/kleinber/networks-book/networks-book.pdf



JEFFREY CARPENTER & ANDREA ROBBETT

Game Theory and Behavior

MIT Press

2022

TOPICS

- Basics of Game Theory
- The Problem of Cooperation
  - Kin Selection
  - Reciprocity
  - Indirect Reciprocity
  - Punishment, Rewards
- Coordination
- Norms

Before we dive into the material
let’s warm up with a little game!

Guessing Game

As many players as there are people in the room.

Everyone chooses a number between 0 and 100.

The winning guess is the choice closest to a half of the average of all guesses.

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how to think through this...

If everyone guesses 100 (the maximum), the average is 100.

In this case, the target is (1/2)·100 = 50.

No point in guessing anything over 50.

But if everyone thinks like this the maximum guess is 50 and the target cannot be greater than 25.

But if everyone thinks like *this*...

In the end, we should all be guessing 0.