# **GUSTAV KARRESKOG REHBINDER**

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#### **Current Position**

2025- RESEARCHER

Institute for Futures Studies, Stockholm

#### **Previous Positions**

#### 2021–2025 POSTDOCTORAL RESEARCHER

Dept. of Economics, Uppsala University

#### Education

## 2015–2021 Doctor of Philosophy in Economics

Stockholm School of Economics

Primary supervisor (from 2021-01-01): Assoc. Prof. Mark Voorneveld

Primary supervisor (until 2020-12-31): Prof. JA¶rgen Weibull

Secondary supervisor: Assoc. Prof. Erik Mohlin

## References

Prof. Jï¿ærgen Weibull

Dept. of Economics, SSE

jorgen.weibull@hhs.se

Assoc. Prof. Erik Mohlin

Dept. of Economics, Lund University

erik.mohlin@nek.lu.se

Prof. Drew Fudenberg

Dept. of Economics, MIT

drewf@mit.edu

Assoc. Prof. Mark Voorneveld

Dept. of Economics, SSE mark.voorneveld@hhs.se

# 2014-2015 M.Sc. IN ECONOMICS

Stockholm School of Economics

Unfinished due to admittance to the PhD program

## 2012-2014 M.Sc. IN MATHEMATICS

Stockholm University

# 2010-2012 **B.Sc.** IN **MATHEMATICS**

Stockholm University

# **Research Visits**

#### 2018–2019 Dept. of Economics, Massachusetts Institute of Technology

Faculty Sponsor: Prof. Drew Fudenberg

## **Teaching and Research Fields**

FIELDS Microeconomic Theory, Behavioral Economics, Experimental Economics

TOPICS Machine Learning, Bounded Rationality, Learning in Games

#### **Working Papers**

"Rational Heuristics for One-Shot Games" with Frederick Callaway and Thomas L. Griffiths [Job Market Paper]

"Predicting Cooperation with Learning Models" with Drew Fudenberg

"Stochastic Stability of a Recency Weighted Sampling Dynamic" with Alexander Aurell

## Ongoing projects

"Cue Based Decision Making and Context Effects" with Benjamin Mandl

"Estimation of Learning Models Using Approximate Bayesian Computation"

#### **Journal Publication in Mathematics**

"Schrizedinger operators on graphs: symmetrization and Eulerian cycles" Proceedings of the American Mathematical Society, 144, (2016) with Isak Trygg Kupersmidt and Pavel Kurasov

#### **Research Grants and Awards**

Tom Hedelius Scholarship for research visit to MIT.

2014 Scholarship for excellent Master Thesis from Mittag-Leffer's fund.

## **Teaching**

## **Stockholm School of Economics**

- 2020 TA: Global Challenges Undergraduate course
- 2017 TA: Economics of Organization Undergraduate course
- 2016,2017 Math summer camp Preparatory math class for incoming Ph.D. students
- 2016,2017 TA: Mathematics I Introductory mathematics for Ph.D. students
- 2016 TA: Advanced Microeconomics Advanced level course on microeconomic theory

## 2012–2015 Amanuensis, Dept. of Mathematics, Stockholm University

Primarily teaching assistant in undergraduate mathematics. I also developed (designed and coded) a web-platform for a large distance course in preparatory mathematics.

#### **Presentations Outside of Home Department**

- 2021 Arne Ryde Workshop, Lund; Games, 6th World Congress of the Game Theory Society, Budapest; Applied Micro Seminar, Goethe University Frankfurt
- 2020 Nordic Exchange, NHH, Bergen; SUDSWEC, Uppsala University; ENTER/SWIPS, University College London
- 2019 Phd Math Fest, Stockholm; SING 15, Turku; Theory Lunch, MIT, Boston
- 2018 Theory Lunch, MIT, Boston

## Other Skills

#### Languages

Swedish (native), English (fluent), Spanish (very good)

#### **Programming**

Julia, Python, R, Web Development (HTML, CSS, javascript, SQL, basic linux server administration etc.), and workable knowledge in many more such as STATA, Matlab, and Mathematica.

## Job Market Paper

## "Rational Heuristics for One-Shot Games"

with Frederick Callaway and Thomas L. Griffiths (Dept. of Psychology, Princeton University)

Insights from behavioral economics suggest that perfect rationality is an insufficient model of human decision-making. However, the empirically observed deviations from perfect rationality or biases vary substantially among environments. There is, therefore, a need for theories that inform us when and how we should expect deviations from rational behavior. We suggest that such a theory can be found by assuming optimal use of limited cognitive resources. In this paper, we present a theory of human behavior in one-shot interactions based on the rational use of heuristics. We test our theory by defining a broad family of heuristics for one-shot games and associated cognitive cost functions. In a large, preregistered experiment, we find that behavior is well predicted by our theory, which yields better predictions than existing models. We find that the participants' actions depend on their environment and previous experiences, in the way the rational use of heuristics suggest.

# **Working Papers**

# "Predicting Cooperation with Learning Models"

with Drew Fudenberg (Dept. of Economics, MIT)

We use simulations of a simple learning model to predict how cooperation varies with treatment in the experimental play of the indefinitely repeated prisoner's dilemma. We suppose that learning and the game parameters only influence play in the initial round of each supergame, and that after these rounds play depends only on the outcome of the previous round. Using data from 17 papers, we find that our model predicts out-of-sample cooperation at least as well as more complicated models with more parameters and harder-to-interpret machine learning algorithms. Our results let us predict how cooperation rates change with longer experimental sessions, and help explain past findings on the role of strategic uncertainty.

# "Stochastic Stability of a Recency Weighted Sampling Dynamic"

with Alexander Aurell (Dept. of Operations Research and Financial Engineering, Princeton University)

We introduce and study a model of long-run convention formation for rare interactions. Players in this model form beliefs by observing a recency-weighted sample of past interactions, to which they noisily best respond. We propose a continuous state Markov model, well-suited for our setting, and develop a methodology that is relevant for a larger class of similar learning models. We show that the model admits a unique asymptotic distribution which concentrates its mass on some minimal CURB block configuration. In contrast to existing literature of long-run convention formation, we focus on behavior inside minimal CURB blocks and provide conditions for convergence to (approximate) mixed equilibria conventions inside minimal CURB blocks.