

# ERIC MARTIN FELTHAM

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## EMPLOYMENT

### Data Science Institute Postdoctoral Fellow

Columbia University

Sept. 2024 -

New York, NY

### Postdoctoral Associate

Yale Institute for Network Science and Department of Sociology, Yale University

June 2023 - Aug. 2024

New Haven, CT

## EDUCATION

### Ph.D., Sociology, Yale University (with Distinction)

Dissertation: "Cognizing Social Networks"

Committee: Drs. Nicholas Christakis (chair), Emily Erikson, Laura Forastiere, Ifat Levy

Winner of the 2024 Marvin B. Sussman Dissertation Prize from Yale University

May 2023

New Haven, CT

### M.A., Statistics, Yale University

2018

New Haven, CT

### B.A., Philosophy; B.A., Economics, University of Massachusetts Amherst

*magna cum laude, Phi Beta Kappa*

2013

Amherst, MA

## RESEARCH INTERESTS

Social networks, social cognition, computational social science, causal inference, mathematical sociology, social theory, political sociology

## PUBLICATIONS

**Eric Feltham**, Laura Forastiere, and Nicholas Christakis. "Cognitive representations of social networks in isolated villages". *Nature Human Behaviour* 9, 1737–1753 (2025). <https://doi.org/10.1038/s41562-025-02221-6>

- Selected for a "Research Briefing" feature by *Nature Human Behaviour*. <https://doi.org/10.1038/s41562-025-02222-5>
- Featured in Phys.org ("Biases shape how people mentally represent social ties in their community, study suggests", June 2025)

**Eric Feltham**, Laura Forastiere, Marcus Alexander, Nicholas Christakis. "Mass gatherings for political expression had no discernible association with the local course of the COVID-19 pandemic in the USA in 2020 and 2021". *Nature Human Behaviour* 7, 1708–1728 (2023). <https://doi.org/10.1038/s41562-023-01654-1>

- Featured in *FiveThirtyEight*.

Emily Erikson and **Eric Feltham**. (2021). "Structure". In *Research Handbook on Analytical Sociology*. Cheltenham, UK: Edward Elgar Publishing.

Emily Erikson and **Eric Feltham**. (2020). "Historical Network Research". In *Oxford Handbook of Social Networks*. New York: Oxford UP. <https://doi.org/10.1093/oxfordhb/9780190251765.001.0001>

Philipp Homan, Ifat Levy, **Eric Feltham**, Charles Gordon, Jingchu Hu, Jian Li, Robert H. Pietrzak, Steven Southwick, John H. Krystal, Ilan Harpaz-Rotem, Daniela Schiller. (2019). "Neural computations of threat in the aftermath of combat trauma". *Nature Neuroscience* 22, 470–476. <https://doi.org/10.1038/s41593-018-0315-x>

## WORKING PAPERS

**Eric Feltham** and Nicholas Christakis. "Cognitive Expectations of Homophily in Village Social Networks". (submission stage, available upon request)

**Eric Feltham.** “The social and cultural context of social network cognition”. (manuscript in prep.)

**Eric Feltham.** “TSCSMethods.jl: Extended Matching for Generalized Difference-in-Differences with Time-Series Cross-Sectional Data” (manuscript in prep)

**Eric Feltham.** “FormulaCompiler.jl: A Unified Typed Compilation Framework for Statistical Formulas” (manuscript in prep)

**Eric Feltham** “Positive Predictive Bias: A Simple Nonparametric Alternative to  $c$  in Signal Detection”. (research phase)

**Eric Feltham**, Nicholas Christakis, and Laura Forastiere. “Sampling Cognitive Social Structures”. (research phase)

**Eric Feltham** and Nicholas Christakis. “The Networked Climate Game”. (data collection phase)

**Eric Feltham** and Nicholas Christakis. “Risk Attitudes and Network Structure in Honduras”. (research phase)

Dominik Duell, **Eric Feltham**, Nicholas Christakis. “Revolutions *in silico*”. (data collection phase)

## BOOK

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“Cognizing social networks” (working title). Manuscript in preparation.

- Book proposal under review

## OTHER WRITING

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“Social network cognition among isolated villagers reveals distinct patterns of bias” **Nature Human Behaviour Research Briefing** (June 2025). (Invited contribution by Nature Human Behaviour)

**Eric Feltham** and Nicholas Christakis. (2023). “Rapid research with a pandemic bearing down: Studying the impact of mass gatherings on the course of COVID-19”. **Springer Nature Communities**. (Invited contribution to “Behind the Paper” series for the Springer Nature Social Sciences online community.)

**Eric Feltham** and Nicholas Christakis. (2020). “Voting In The 2020 Primaries Didn’t Worsen The COVID-19 Pandemic”. **FiveThirtyEight**.

## INVITED TALKS

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“Cognizing social networks”

- Department of Psychology, Harvard University (Cognition, Brain, Behavior Seminar), September 2025
- Department of Sociology, Yale University (Sussman Award Lecture), May 2025
- Department of Sociology, University of Iowa (Social Networks Workshop), Iowa City, IA, November 2023

“Modeling the Effect of Identity on Polarization”

- Center for Empirical Research on Stratification and Inequality, Yale University, January 2019

“Experiments on Observational Learning”

- Yale Institute for Network Science, August 2018

“Using Tools from Causal Inference to Reconstruct Simulated Social Data”

- DARPA Workshop, Alexandria, VA, 2018

## CONFERENCE PRESENTATIONS

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“Cognizing social networks”

- International Conference on Computational Social Science, Norrköping, Sweden, July 2025
- American Sociological Association (Sections on Social Psychology and Mathematical Sociology), Montréal, August 2024
- Duality@50: Making progress and looking forward, ETH Zürich, Ascona, Switzerland, April 2024
- Implementation and Dissemination Science Workshop, Copán, Honduras, June 2023

“Expecting Homophily”

- Annual Conference of the International Network of Analytical Sociology, Columbia University, June 2025

Megha Chawla, Philipp Homan, Charles Gordon, **Eric Feltham**, Daniela Schiller, Ilan Harpaz-Rotem, Ifat Levy. “**Cortical thickness and volume of the right posterior parietal cortex predict individual learning rate in healthy adults**”

- Society for Neuroscience, San Diego, CA, 2018

## HONORS AND AWARDS

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**Sussman Prize for best dissertation in the past two years** 2024

Yale Department of Sociology, New Haven, CT

**Commonwealth Honors College Scholar with Greatest Distinction** 2013

University of Massachusetts Amherst, Amherst, MA

- Awarded based on thesis quality and GPA

## GRANTS

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**National Institutes of Health, The National Institute on Aging and the Office of Behavioral and Social Sciences Research** 2022

Research Grant (R-01), “Characterizing Individuals’ Cognitive Maps of their Village Social Networks”

- Award: \$3,226,809 (over 4 years)
- PI: Dr. Nicholas Christakis
- Role: Researcher

**Robert Wood Johnson Foundation** 2020

“Assessing the Hazard of Elections During the COVID-19 Pandemic”

- Award: \$350,000
- PI: Dr. Nicholas Christakis
- Role: Researcher

## RESEARCH EXPERIENCE

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**Graduate Researcher** 2016 - 2023

Yale Institute for Network Science and Human Nature Lab, New Haven, CT

- Designed and led large scale data collection and analysis efforts on individuals’ perceptions of social network structure with over 10K persons in 82 villages in rural Honduras
- Developed sampling method for cognitive social structures research design
- Conducted fieldwork in rural Honduras to support data collection and analysis effort for thesis project
- Developed generalized difference-in-differences methodology to estimate the impact of large-scale political gatherings on the spread of COVID-19 in the USA

**Research Fellow** 2019

Dr. Emily Erikson, Yale University, New Haven, CT

- Analyzed historical social network data consisting of English economic manuscript writers from the 18th century
- Applied topic modeling to uncover trends in the economic literature over a roughly 200-year period

**Graduate Researcher** 2018

Drs. James Evans, Michael Franklin, Joshua Tenenbaum, University of Chicago, Chicago, IL

- Part of a team on a grant “Social MIND: Social Machine Intelligence for Novel Discovery”

### **Research Assistant**

**2014 - 2016**

Levy and Harpaz-Rotem Labs, Yale University School of Medicine, New Haven, CT

- Independently performed fear conditioning experiments with human participants in behavioral and MRI settings
- Preprocessed and analyzed fMRI data using BrainVoyager software

### **Research Assistant**

**2014**

Schiller Affective Neuroscience Lab, Mount Sinai Icahn School of Medicine, New York, NY

- Independently performed human subject trials investigating the effects of a pharmacological agent on memory formation and persistence

### **Undergraduate Honors Thesis**

**2013**

University of Massachusetts Amherst Commonwealth Honors College, Amherst, MA

- Title: “Unconscious Attention? Inattentional Consciousness? Examining the Relationship Between Attention and Phenomenal Consciousness”
- Committee: Drs. Joseph Levine and Louise Anthony

## **SOFTWARE**

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TSCSMETHODS.jl (sole author)

- Performs non-parametric generalized differences-in-differences estimation, with covariate matching

FormulaCompiler.jl (sole author)

- Provides a unified, typed compilation framework for statistical model formulas in Julia

Margins.jl (sole author)

- Computes marginal effects for generalized linear models and mixed models

SamplingPerceivedNetworks.jl (sole author)

- Implements a sampling procedure for “cognitive social structures” data collection

## **TEACHING**

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**Teaching Fellow**, Yale College, Yale University (2018–2023):

- SOCY 133a, Computers, Networks and Society (Fall 2018)
- SOCY 167b, Social Networks and Society (Spring 2019)
- SOCY 151a, Foundations of Modern Social Theory (Fall 2019)
- SOCY 126b, Health of the Public (Spring 2020)
- SOCY 134a, Sex and Gender in Society (Fall 2021)
- SOCY 152b, Topics in Contemporary Social Theory (Spring 2022)
- SOCY 126a, Health of the Public (Fall 2022)
- SOCY 141b, Sociology of Crime and Deviance (Spring 2023)

## **MENTORING**

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- Karen Gao (Computer Science & Psychology, Yale College 2027)
- Ashley Oaks (Statistics & Data Science, PhD)
- Breanna Nguyen (Cognitive Science, Yale College 2025)
- Kaity Chandrika (Sociology, Yale College 2025)
- Justice Harasha (Economics & Mathematics, Yale College 2024)
- Kayla Morgan (Cognitive Science, Yale College 2024)

- Benjamin Snyder (Economics, Yale College 2022)

## SERVICE

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### AD HOC REVIEWS

- Proceedings of the National Academy of Sciences of the United States of America
- Risk Analysis
- Policy Analysis
- Group Processes & Intergroup Relations
- Rationality and Society
- Yale Undergraduate Research Journal

## SKILLS

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### LANGUAGES

Julia, R, MATLAB, Python, Spanish (basic), French (basic)

### SELECTED COURSEWORK

Theory of Statistics, Multivariate Statistical Analysis, Linear Models, Stochastic Processes, Computational Tools for Data Science, Research Design & Causal Inference, Social Network Analysis, Topics in Biosocial Science, The Microeconomics of Coordination and Conflict

## LEADERSHIP & SERVICE

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### Campaign Coordinator

2010 - 2011

Students for a Just and Stable Future, Boston, MA

- Represented the organization at public events
- Built partnerships with community leaders and students across Massachusetts
- Contributed to climate policy development for MA state legislation

### Team Leader

June 2010 - Aug. 2011

Better Future Project, Boston, MA

- Led and coordinated a four-member team across media, events, and housing
- Organized public events on the economic and environmental impacts of policy

## REFERENCES

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1. Dr. Nicholas Christakis, Sterling Professor of Social and Natural Science, Yale University
  - [nicholas.christakis@yale.edu](mailto:nicholas.christakis@yale.edu)
2. Dr. Peter Bearman, Cole Professor of Social Science in the Department of Sociology, Columbia University
  - [psb17@columbia.edu](mailto:psb17@columbia.edu)
3. Dr. Emily Erikson, Professor of Sociology and (by courtesy) Management, Yale University
  - [emily.erikson@yale.edu](mailto:emily.erikson@yale.edu)
4. Dr. Laura Forastiere, Associate Professor of Biostatistics, Yale School of Public Health, Yale University
  - [laura.forastiere@yale.edu](mailto:laura.forastiere@yale.edu)
5. Dr. Ifat Levy, Associate Professor of Comparative Medicine, Neuroscience, and Psychology, Yale School of Medicine, Yale University
  - [ifat.levy@yale.edu](mailto:ifat.levy@yale.edu)