

Tom Cunningham

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LinkedIn, Twitter, Website, Google Scholar

Background. I worked as one of the most senior data scientists at both Meta and Twitter, consulting on a range of issues: company strategy, anti-trust, advertiser behaviour and auction design, network effects (experimentation, modelling, tipping points), many aspects of experimentation, and content moderation. I am now a resident fellow at the Integrity Institute working on content moderation (1, 2), AI (3), and academic work on cognition and decision-making (4).



Areas of interest/expertise

1. **Content moderation.** I have worked across the spectrum on content moderation: policy, classifiers, ranking, experimentation, and formulating tradeoffs. I was quoted extensively in the report of the Congressional investigation into the Jan 6 2020 riot. In 2023 I have published notes about how platforms make tradeoffs, and patterns in suspension of prominent users.
2. **Experimentation.** I worked extensively on experiment design and interpretation at both Meta and Twitter. After inventing and applying new methods for more accurately estimating experiment effects at Meta I wrote a paper with Dominic Coey. I also wrote a paper with Josh Kim discussing a wide variety of issues related to experiments with multiple outcomes, including interpreting surrogacy effects and composite metrics.
3. **Network effects.** I began the use of matrix models at Meta to characterize situations involving network effects. I have dealt with many different sources of evidence for estimating network effects (launch effects; cluster experiments; pretests compared with backtests; downstream effects; country tests; content experiments; jigsaw experiments), and I have written internal survey articles on how to evaluate each. I also have worked on how to deal with nonlinear network effects (AKA tipping points).
4. **Business models and strategy.** I worked on a number of strategic issues: cannibalization between platforms, anti-trust issues, modeling spillovers between different sides of a platform, evaluating incentives for creators, and evaluating subscription and premium charges. I recently wrote a Twitter thread with some generalizations about social media business models.
5. **Advertiser behavior.** I have worked extensively on understanding and modeling advertiser behaviour and using those models to evaluate counterfactuals, e.g. the equilibrium effect of changes in targeting signals, changes in auction design, changes in ad-load, and changes on a competitor's platforms.
6. **Cognition and decision-making.** My primary academic interest has been

how the structure of human cognition is reflected in economic decision-making. I have a paper under review at the AER on how to detect the influence of unconscious or un-acknowledged influences on decisions. More background is in a blog post.

Employment

2023- Integrity Institute, Resident Fellow
 2021-2022 Twitter, Senior Staff Data Scientist
 2015-2020 Meta/Facebook, Research Scientist
 2014-2015 Caltech, Visiting Associate, Economics Department
 2013-2015 Institute for International Economic Studies, Stockholm, Assistant Professor
 2012-2013 Tel Aviv University, Postdoctoral Researcher
 2011-2012 Harvard University, College Fellow (Postdoctoral Fellow)
 2007-2007 Zoopla, Consultant (House price prediction)
 2006-2007 Europe Economics, Analyst
 2003-2005 LOVEFILM, Programmer, Manager & Analyst
 1999-2003 Equillia (now Outreach), Programmer & Manager (CRM software)

Education

2009-2011 Harvard University, Visiting Fellow, Economics Department
 2006-2012 London School of Economics (LSE), MRes/PhD in Economics
 2005-2006 London School of Economics (LSE), MSc in Economics & Philosophy
 2004-2005 Birkbeck University, Postgraduate Certificate in Economics & Mathematical Economics
 1995-1998 Otago University, Dunedin, New Zealand BA (Honours) Philosophy

Talks

2023 MIT social media conference, Pinterest, NABE
 2022 California Econometrics Conference, Bay Area Behavioral Economics Workshop, Netflix, Conference on Digital Experimentation (CODE), Meta Data Science.
 2019 Conference on Digital Experimentation (CODE), World Wide Web (WWW).
 2016 Harvard Economics Seminar, Princeton Economics Seminar

Other activities

- 2022-: Founder and co-organizer of the Bay Area Tech-Economics Seminar Series.

Publications

- 2019: **Improving Treatment Effect Estimators Through Experiment Splitting**, *WWW*, with Dominic Coey.
- 2013: **The Incumbency Effects of Signalling** *Economica*, with Ines Moreno de Barreda, Francesco Caselli, and Massimo Morelli.
- 2009: **Leader Behaviour and the Natural Resource Curse** *Oxford Economic Papers*, with Francesco Caselli.

Working Papers

- 2023: **Implicit Preferences**, *Revise and Resubmit, American Economic Review*, with Jon de Quidt.
- 2020: **Interpreting Experiments with Multiple Outcomes** (presented at CODE) with Josh Kim.
- 2015: **Biases and Implicit Knowledge**
- 2013: **Comparisons and Choice**