

# David B. Kinney

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## Specialization

**Areas of Specialization:** Cognitive Science and AI, Philosophy of Science, Formal Epistemology

**Areas of Competence:** Decision Theory, Digital Humanities

## Employment

### Washington University in St. Louis

Department of Philosophy and Program in Philosophy-Neuroscience-Psychology  
Assistant Professor, July 2024–Present

### Google Research

Visiting Faculty Researcher, October 2023–December 2024

### Yale University

Department of Psychology  
Lecturer, August 2023–May 2024

### Princeton University

Program in Cognitive Science (Lombrozo Lab) and University Center for Human Values  
Postdoctoral Research Associate, September 2021–August 2023

### Santa Fe Institute

Omidyar Postdoctoral Fellow, September 2019–August 2021

## Education

### London School of Economics

Ph.D. Philosophy, September 2015–August 2019  
M.Sc. Philosophy and Public Policy, September 2013–September 2014 (Distinction)

### Dartmouth College

B.A. Philosophy, September 2007–June 2011 (*cum laude*, High Honors)

## Publications

**Kinney, David.** Forthcoming. [How \(Relational\) Beliefs Simplify Reasoning](#). *Mind*.

**Kinney, David.** (2025). [Aggregating Concepts of Fairness and Accuracy in Prediction Algorithms](#). *FAccT '25: Proceedings of the 2025 ACM Conference on Fairness, Accountability and Transparency* (pp. 464-472).

Lertvittayakumjorn, Piyawat, **David Kinney** (co-first author), Vinodkumar Prabhakaran, Donald Martin Jr., and Sunipa Dev. (2025). [Towards Geo-Culturally Grounded LLM Generations](#). *Proceedings of the 63rd Annual Meeting of the Association for Computational Linguistics*.

**Kinney, David** and Tania Lombrozo. (2024). [Building Compressed Causal Models of the World](#). *Cognitive Psychology*. 155, 101682.

Ian Peebles, **David Kinney**, and Emily Foster-Hanson. (2024). [Systematic Decision Frameworks for the Socially Responsible Use of Precision Medicine](#). *npj Genomic Medicine*. 9:46.

**Kinney, David** and Tania Lombrozo. (2024). [Tell Me Your \(Cognitive\) Budget and I'll Tell You What You Value](#). *Cognition*. 247, 105782.

**Kinney, David** and Liam Kofi Bright. (2023). [Risk Aversion and Elite-Group Ignorance](#). *Philosophy and Phenomenological Research*. 106(1): 35-57.

**Kinney, David**. (2023). [Causal History, Statistical Relevance, and Explanatory Power](#). *Philosophy of Science*. 90(5): 1161-1172.

**Kinney, David**. (2023). [Bayesian Networks and Causal Ecumenism](#). *Erkenntnis*. 88: 147-172.

**Kinney, David**. (2022). [Why Average When You Can Stack? Better Methods for Generating Accurate Group Credences](#). *Philosophy of Science*. 89(4): 845-863. **Awarded the 2022 Ernest Nagel Prize for Best Paper in *Philosophy of Science* by an early-career scholar.**

**Kinney, David** and Christopher Kempes. (2022). [Epistemology and Anomaly Detection in Astrobiology](#). *Biology & Philosophy*. 37:22.

**Kinney, David**. (2022). [Diachronic Trends in the Topic Distributions of Formal Epistemology Abstracts](#). *Synthese*. 200(1): 1-24.

**Kinney, David** (2021). [Blocking an Argument for Emergent Chance](#). *Journal of Philosophical Logic*. 50: 1057-1077.

**Kinney, David**. (2021). [Curie's Principle and Causal Graphs](#). *Studies in History and Philosophy of Science*. 87: 22-27.

**Kinney, David** and David Watson (2020). [Causal Feature Learning for Utility-Maximizing Agents](#). *Proceedings of Machine Learning Research* (138). Tenth International Conference on Probabilistic Graphical Models (PGM): 257-268.

**Kinney, David**. (2019). [On the Explanatory Depth and Pragmatic Value of Coarse-Grained, Probabilistic, Causal Explanations](#). *Philosophy of Science*. 86(1): 145-167.

**Kinney, David**. (2019). [Inductive Explanation and Garber-Style Solutions to the Problem of Old Evidence](#). *Synthese*. 196(10): 3995-4009. **Awarded the LSE Popper Prize for best graduate student paper.**

## Invited Contributions and Book Reviews

Wolpert, David and **David Kinney** (2024). [A Stochastic Model of Mathematics and Science](#). *Foundations of Physics*. 54: 21. (Invited By Carlo Rovelli).

**Kinney, David** and Tania Lombrozo (2022). [Going Against the Grain of Proportionality](#). *Brains Blog Symposium on James Woodward's *Causation with a Human Face*.*

Wolpert, David and **David Kinney** (2021). [Noisy Deductive Reasoning: How Humans Construct Math, and How Math Constructs Universes](#). *Undecidability, Uncomputability, and Unpredictability*. Springer. Ed. Anthony Aguirre, Zeeya Merali, and David Sloan. (Collection of winning essays from FQXi's 2020 Essay Contest). pp. 141-168

**Kinney, David.** (2021). [Review of \*What Is a Complex System?\* by James Ladyman and Karoline Wiesner.](#) BJPS Review of Books

**Kinney, David.** (2018). [Imprecise Bayesian Networks as Causal Models.](#) *Information*. 9(9), 211. (Special Issue on Probabilistic Causal Modelling in Intelligent Systems, ed. Kevin Korb, Anne Nicholson, and Erik Nyberg).

## Non-Archival Conference Proceedings

**Kinney, David.** (2025). [LLM-Generated Semantic Networks Predict Semantic Priming Effects on Human Reaction Times in a Word-Recognition Task.](#) *Proceedings of the 47th Annual Conference of the Cognitive Science Society*.

**Kinney, David** and Tania Lombrozo. (2023). [Lossy Compression and the Granularity of Causal Representation.](#) *NeurIPS Workshop: Information-Theoretic Principles in Cognitive Systems*.

**Kinney, David** and Tania Lombrozo. (2023). [Tell Me Your \(Cognitive\) Budget, and I'll Tell You What You Value: Evidential Relationships Between Granularity, Agential Values, and Data in Generic Causal Claims about the Social World.](#) *Proceedings of the 45th Annual Conference of the Cognitive Science Society*. pp. 2609-2615.

**Kinney, David** and Tania Lombrozo. (2022). [Evaluations of Causal Claims Reflect a Trade-Off Between Informativeness and Compression.](#) *Proceedings of the 44th Annual Conference of the Cognitive Science Society*. pp. 621-7.

## Grants Awarded

*Foundations and Applications of Cultural Analytics in the Humanities.* National Endowment for the Humanities HT-272418. Project Director (NEH Equivalent of PI). \$229,639. 2020-2023.

## Teaching

### *As Lead Instructor*

**PHIL 514:** Graduate Survey Seminar in Philosophy of Mind. Spring 2025. (WashU)

**122A Ampersand:** Introduction to the Study of the Mind and Brain II. Spring 2025. (WashU)

**PNP 201:** Inquiry in the Cognitive Sciences. Autumn 2024. (WashU)

**CGSC 217:** The Cognitive Science of Large Language Models. Spring 2024. (Yale)

**PSYC 518a:** Multivariate Statistics. Spring 2024. (Yale)

**PSYC 130/CGSC 110:** Introduction to Cognitive Science. Autumn 2023. (Yale)

**PSYC235:** Research Methods in Psychology, Writing Intensive. Autumn 2023. (Yale)

Senior Thesis Workshop in Values and Public Life. 2021-22, 2022-23 (Princeton)

Foundations and Applications of Humanities Analytics. 2021-23 (Santa Fe Institute; Online course and in-person workshop co-taught with Simon DeDeo)

*As Graduate Teaching Assistant*

**PH103:** Introduction to Philosophy. 2018-19 (LSE)

**PH201:** Philosophy of Science. 2017-18 (LSE)

**PH225:** Business and Organizational Ethics. Autumn 2016 (LSE)

**6AANA046:** Topics in Political Philosophy. Autumn 2016 (King's College London)

**PH101:** Logic. 2015-16 (LSE)

**PH222:** Philosophy and Public Policy. 2015-16 (LSE)

*Advising and Mentoring:*

Research Advisory Committee Member for Alex Wentzell (WashU PNP PhD Student). Fall 2025.

Summer Undergraduate Research Guided Experience Mentor to Hugo Placer-Sanchez. Summer 2025. (Project on Buddhism and AI Ethics).

Faculty Internship Sponsor for Charlie Yurak. Summer 2025. (Project on Muscle Dysmorphia and TikTok).

*Teacher Training:*

UK Postgraduate Certificate in Higher Education

**Awards and Scholarships**

Awarded the Ernest Nagel Prize for Best Paper in *Philosophy of Science* by a young scholar 2023. \$250.

FQXi Essay Contest Second Prize (with David Wolpert) 2020. \$5,000.

LSE Philosophy Class Teacher Award 2016, 2019

LSE Popper Prize (biennial award for distinguished graduate work in an area of philosophy to which Karl Popper made significant contributions) 2018. £250.

National Science Foundation Travel Grant 2018. \$357.

LSE Postgraduate Travel Award 2016 (x2), 2017 (x3), 2018 (x3), Approx. £4,000 Total.

LSE Student's Union Teaching Award: Highly Commended for Feedback and Communication 2016

LSE Ph.D. Studentship 2015–2019. £18,000 p.a.

James B. Reynolds Scholarship for Graduate Study Abroad 2013–2014. \$20,000.

**Other Writing**

[Longtermism and Computational Complexity.](#) *Effective Altruism Forum*.

[The Mathematical Case Against Blaming People for their Misfortune.](#) *Psyche*. (Further coverage in *Motherboard*.)

[In a Complex Crisis, Scientists Cannot Avoid Making Value Judgments.](#) *Santa Fe Institute Transmission*. (Quoted in *The Guardian*.)

[Getting the Details Just Right: Solving the “Goldilocks Problem” of Scientific Explanation.](#) *London School of Economics Philosophy Blog*.

## Invited Talks

LLM-Generated Semantic Networks Predict Semantic Priming Effects on Human Reaction Times in a Word-Recognition Task.

Washington University New Directions in Philosophy of AI Workshop. April 2025.

St. Louis Area Philosophy of Science Association Conference. March 2025.

Normative facts for Scientific Realists. Investigating Reality — A Philosophical, Mathematical, and Scientific Exploration. March 2024. Santa Fe Institute.

Measuring Topical Distinctness in Stochastic Block Topic Models. Cultural Data Analytics Seminar. March 2024. Tallinn University.

Computational Complexity and Consequentialism. Global Priorities Institute. November 2022. University of Oxford.

Building Compressed Causal Models of the World (with Tania Lombrozo)

Formal Epistemology and Experimental Philosophy Workshop. October 2022. Pittsburgh.

Cognitive Research Seminar. October 2022. Princeton.

Corroboration Conditions for Cyclic Bayesian Networks. Superdeterminism and Retrocausality Workshop. May 2022. Bonn.

Models that Discover Their Own Representational Context. Philosophy Colloquium. May 2022. University of Hannover.

Evaluations of Causal Claims Reflect a Trade-Off Between Informativeness and Compression. Santa Fe Institute Seminar. March 2022.

Hinge Epistemology in the Search for Life Beyond Earth. Uncovering the Laws of Life Workshop. October 2021. Grindavik.

Why Average When You Can Stack? Better Methods for Generating Accurate Group Credences. LSE Choice Group. October 2020.

How Kernel Support Vector Machines Represent Actual and Possible Data. Modeling the Possible Workshop. October 2020. University of Vienna.

Risk Aversion and Elite-Group Ignorance. Santa Fe Institute Science Club. July 2020.

Levels Without Supervenience: An Information-Bottleneck Approach. Institute of Philosophy. October 2019. London.

Pragmatic Causal Feature Learning. LSE Choice Group. November 2018. London.

Imprecise Bayesian Networks as Causal Models. Workshop on Counterfactuals and Causal Modeling. August 2018. Australian National University.

A Dilemma for Multi-Level Humeans.

LSE Choice Group. October 2017.

University of Melbourne HPS Seminar. July 2017.

Choosing the Correct Level of Causal Description: A Pragmatic Approach. ANU PhilSoc Seminar. March 2017. Australian National University.

## Conference and Workshop Presentations

Formalism is Not a Trap. MINT-Yale Law School Workshop on Normative Philosophy of Computing. September 2024. New Haven.

How (Relational) Beliefs Simplify Reasoning.

APA Central Division Meeting. January 2024. New York.

Fifth Taiwan Philosophical Logic Colloquium. November 2023. Taiwan.

Lossy Compression and the Granularity of Causal Representation. NeurIPS Workshop on Information-Theoretic Principles in Cognitive Systems. December 2023. New Orleans.

Causal Theories and Structural Data Representations for Improving Out-of-Distribution Classification. Causal Data Science Meeting. November 2023. Online.

Identifying Fair and Good Predictors. Causality for Ethics and Society. July 2023. Munich.

Tell Me Your (Cognitive) Budget, and I'll Tell You What You Value: Evidential Relationships Between Granularity, Agential Values, and Data in Generic Causal Claims about the Social World.

Society for Philosophy and Psychology Annual Meeting. June 2023. Pittsburgh.

Heuristics and Causality Workshop. May 2023. London.

Evaluations of Causal Claims Reflect a Trade-Off Between Informativeness and Compression. Annual Meeting of the Cognitive Science Society. July 2022. Toronto.

Conditional Expectations and Evidential Aboutness. APA Central Division Meeting. February 2021. New Orleans.

Causal Feature Learning for Utility-Maximizing Agents. Tenth International Conference on Probabilistic Graphical Models (PGM). September 2020. Aalborg.

Epistemic Principles of Astrobiology

European Philosophy of Science Association Biennial Conference. September 2021. Turin.

Philosophy of Science Association Poster Forum. January/November 2021.

British Society for Philosophy of Science Annual Conference. July 2020. University of Kent. (Paper Accepted, Conference Canceled Due to COVID-19.)

Philosophy of Biology at the Mountains. June 2020. University of Utah.

Why Average When You Can Stack? Better Methods for Generating Accurate Group Credences

LMU-MCMP Workshop on Bayesian Epistemology: Perspectives and Challenges. August 2020. LMU Munich.

Formal Epistemology Workshop. May 2020. University of California at Irvine.

ILLC Workshop on the Wisdom and Madness of Crowds: Argumentation, Information Exchange and Social Interaction. March 2020. University of Amsterdam.

Kolmogorov Complexity and Occam's Razor Assumptions in Inductive Causal Inference. Conference for Philosophy of Science and Formal Methods in Philosophy. December 2019. University of Gdansk.

Algorithmic Causal Modeling as a More General Model of Inductive Causal Inference. European Philosophy of Science Association Biennial Conference. September 2019. Geneva.

Efficient Information Gathering for Agents with a Causal Model of their Environment. Workshop on Causal Cognition in Humans and Machines. May 2019. Oxford.

Pragmatic Causal Feature Learning. Workshop on Causation vs. Constitution: Loosening the Friction. December 2018. University of Bergen.

Curie's Principle and Causal Graphs.

Philosophy of Science Association Biennial Meeting. November 2018. Seattle.

Society for Exact Philosophy Annual Conference. May 2018. University of Connecticut.

Causal Explanations: Power, Depth, Granularity, and Accuracy. Explanatory Power Workshop. June 2018. University of Geneva.

Two Concepts of Independence for Imprecise Bayesian Networks. Munich-Sydney-Tilburg-Turin Philosophy of Science Conference. June 2018. University of Turin. (Poster)

Bayesian Networks and Multi-Level Causation. APA Central Division Meeting. February 2018. Chicago.

A Dilemma for Multi-Level Humeans. Australasian Association of Philosophy Conference. July 2017. University of Adelaide.

Choosing the Correct Level of Causal Description: A Pragmatic Approach.

Society for the Metaphysics of Science Conference. October 2017. Fordham University.

Munich-Sydney-Tilburg Philosophy of Science Conference. March 2017. University of Sydney.

Dutch Research School of Philosophy (OZSW) Conference. December 2016. Groningen.

## Service

Organizer of Google—SFI Conference on Causation, Cognition, Complexity, and Representation for Responsible AI. March 2024.

Research Assistant for LSE Choice Group (Weekly departmental seminar), 2017-2019.

Reviewer for *Biology & Philosophy*, *British Journal for Philosophy of Science*, *Canadian Journal of Philosophy*, *Cognitive Science Annual Conference*, *Developmental Psychology*, *European Journal for Philosophy of Science*, *Entropy*, *Episteme*, *Ergo*, *Erkenntnis*, *Ethics*, *ACM FAccT*, *International Journal of Approximate Reasoning*, *Journal of General Philosophy of Science*, *Kriterion*, *MindMatter*, *Philosophical Studies*, *Philosophy & Technology*, *Philosophy of Science*, *PLOS One*, *Proceedings of the National Academy of Sciences*, *Philosophy*, *Politics, and Economics*, *Philosophy and Phenomenological Research*, *Philosophical Quarterly*, *Psychological Review*, *Science Advances*, *SoftwareX*, *Synthese*, and *Theoria*.

Referee for LSE-Bayreuth Student Philosophy Conference, 2017-2019