

Mario Günther

RESEARCH PROFILE

I developed a theory of causation, a theory of legal proof, and a theory of learning conditional information.

APPOINTMENTS

22- Assistant Professor

Munich Center for Mathematical Philosophy
LMU MUNICH

Visiting Assistant Professor 2024-7

CARNEGIE MELLON UNIVERSITY

Junior Researcher in Residence 2023-4

Center for Advanced Studies, LMU MUNICH

Academic Visitor 2022

UNIVERSITY OF EDINBURGH

19-21 Research Fellow

Humanising Machine Intelligence
AUSTRALIAN NATIONAL UNIVERSITY

Academic Visitor 2021

LONDON SCHOOL OF ECONOMICS & POLITICAL
SCIENCE

18-19 Research Fellow

German Research Foundation
UNIVERSITY OF REGENSBURG

EDUCATION

2019 PhD in Philosophy

“Learning, Conditionals, Causation”
Munich Center for Mathematical Philosophy &
Graduate School of Systemic Neurosciences
LMU MUNICH

2015 Master in Logic and Philosophy of Science

“Non-Monotonic Logics, Artificial Neural
Networks, and Complexity Considerations in the
Horn Case”
Munich Center for Mathematical Philosophy
LMU MUNICH

2012 Bachelor in Philosophy and Cognitive Science

“The Methodology of Scientific Research
Programmes as Modification of Popper’s
Falsificationism”
ALBERT LUDWIG UNIVERSITY FREIBURG
Erasmus Year 2011-12
UNIVERSITÉ PARIS-SORBONNE (PARIS IV)

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@ mario-guenther.com
🔗 Google Scholar
🗣 English, German, French, Ancient Greek

* indicates co-first-author

BOOK

2025 *From Reasons to Causes: A Theory of Causation* (with
Holger Andreas*)
Cambridge University Press (forthcoming)

JOURNAL ARTICLES

2025 Reply to Commentaries on “Factual
Difference-Making” (with Holger Andreas*)
Australasian Philosophical Review (forthcoming)

“Factual Difference-Making” (with Holger
Andreas*)
Australasian Philosophical Review (forthcoming)

Lead Article

2024 “Probability of Guilt”
Canadian Journal of Philosophy 54(3): 189-206.

“Legal Proof Should Be Justified Belief of Guilt”
Legal Theory 30(3): 129-41.

“A Lewisian Regularity Theory” (with Holger
Andreas*)
Philosophical Studies 181: 2145-2176.

“A Regularity Theory of Causation” (with Holger
Andreas*)
Pacific Philosophical Quarterly 105(1): 2-32.

“Epistemic Sensitivity and Evidence”
Inquiry 67(6): 1348-1366.

“Foundational Challenges in Assuring Alignment
and Safety of Large Language Models” (with
Usman Anwar et al.)
Transactions on Machine Learning Research

2023 “Counterfactuals for Causal Responsibility in
Legal Contexts” (with Holger Andreas* and
Matthias Armgardt*)
Artificial Intelligence and Law 31(1): 115-132.

“Bayesians Still Don’t Learn from Conditionals”
(with Borut Trpin)
Acta Analytica 38(3): 439-451.

- 2022 “Causal and Evidential Conditionals”
Minds and Machines 32(4): 613-626.
- “Ramsey’s Conditionals” (with Caterina Sisti)
Synthese 200(165): 1-31.
- “A Connexive Conditional”
Logos and Episteme 13(1): 55-63.
- “Algorithmic and Human Decision Making: For a Double Standard of Transparency” (with Atoosa Kasirzadeh*)
AI & Society 37(1): 375-381.
- “Actual Causation” (with Holger Andreas*)
Dialectica 76(1): 1-44.
- 2021 “Difference-Making Causation” (with Holger Andreas*)
Journal of Philosophy 118(12): 680-701.
- “A Ramsey Test Analysis of Causation for Causal Models” (with Holger Andreas*)
British Journal for the Philosophy of Science 72(2): 587-615.
- 2020 “Causation in Terms of Production” (with Holger Andreas*)
Philosophical Studies 177(6): 1565-1591.
- 2019 “On the Ramsey Test Analysis of ‘Because’” (with Holger Andreas*)
Erkenntnis 84(6): 1229-1262.
- 2018 “Learning Conditional Information by Jeffrey Imaging on Stalnaker Conditionals”
Journal of Philosophical Logic 47 (5): 851-876.
Wolfgang Stegmüller Award 2022
- 2017 “Learning Conditional and Causal Information by Jeffrey Imaging on Stalnaker Conditionals”
Organon F, 24(4): 456-486.

ENCYCLOPEDIA ENTRIES

- 2021 “Regularity and Inferential Theories of Causation” (with Holger Andreas*)
The Stanford Encyclopedia of Philosophy

CONFERENCE PROCEEDINGS

- 2019 “Defining Selection Functions” (with Holger Andreas*)
The Logica Yearbook 2018, 1-13.
- 2017 “Disjunctive Antecedents for Causal Models”
Proceedings of the 21st Amsterdam Colloquium, 25-34.

OTHER PUBLICATIONS

- 2023 “Kann Europas KI Gesetz eine lebenswerte Zukunft bewahren?” (with William D’Alessandro*)
prae faktisch (German)
- 2020 “Large-scale facial recognition is incompatible with a free society” (with Seth Lazar and Claire Benn)
The Conversation
- “Was wird die Künstliche Intelligenz für Versicherungsunternehmen bedeuten?” (German)
prae faktisch
- 2018 “What’s Hot in Mathematical Philosophy?”
The Reasoner, 12 (11): 90-91.
- 2014 “Logical Symbolicism vs. Dynamicist Connectionism: Is there a Difference in Computational Power?”
Incipiens, 2(1): 5-28.

AWARDS & GRANTS

- 2025 AI Safety Tactical Opportunities Fund \$40,000
VANGUARD CHARITABLE ENDOWMENT PROGRAM
- 24-25 “Rational Belief and Guilt” €49,630
LMUexcellent Grant
EXCELLENCE INITIATIVE OF GERMANY
- 23/24 Researcher in Residence ≈€30,000
Center for Advanced Studies
LMU MUNICH
- 2023 Grant for Teaching “Democracy & AI” €16,620
Venice International University
LMU MUNICH
- 2022 Wolfgang Stegmüller Award €4,000
“Learning Conditional Information by Jeffrey Imaging on Stalnaker Conditionals”
SOCIETY FOR ANALYTIC PHILOSOPHY
- “A Unifying Theory of Conditionals”
Walter Benjamin Grant (declined)
DEUTSCHE FORSCHUNGSGEMEINSCHAFT (DFG)
- 19-22 Postdoctoral Research Fellow
Grand Challenge Humanising Machine Intelligence
AUSTRALIAN NATIONAL UNIVERSITY
- 18-19 Postdoctoral Research Fellow
DEUTSCHE FORSCHUNGSGEMEINSCHAFT (DFG)
- 15-19 Doctoral Fellowship Grant
GRADUATE SCHOOL OF SYSTEMIC NEUROSCIENCE

- 2014 Top 10% of the master students of the Munich Center for Mathematical Philosophy (refund of study fees)
- 11-12 Grant for independent studies
UNIVERSITÉ PARIS-SORBONNE (PARIS IV)
- 09/10 Top 5% in the Cognitive Science II exam
ALBERT LUDWIG UNIVERSITY FREIBURG
- 2008 Top 10% in the Formal Logic I exam
ALBERT LUDWIG UNIVERSITY FREIBURG

TEACHING EXPERIENCE

Instructor at CARNEGIE MELLON UNIVERSITY

- 2025 “AI, Society, and Humanity”
- 2025 “The History of Analytic Philosophy and Its Influence”
- 2024 “AI, Society, and Humanity”

Instructor at LMU MUNICH

- 2024 “Legal Epistemology”
- 23/24 “Democracy & AI” (*Venice International University*)
- 2023 “Knowledge, Belief, and Degrees of Belief”
- 22/23 “Introduction to Decision Theory” (German)
- “Introduction to Scientific Working” (German)
- 2022 “Introduction to Decision Theory” (German)
- “Causation”

Instructor at AUSTRALIAN NATIONAL UNIVERSITY

- 2021 “Philosophy, AI, and Society”
with Pamela Robinson and Sarita Rosenstock
- 2020 “Conditionals” (Seminar for PhD students)
with Alan Hájek

Instructor at UNIVERSITY OF BAYREUTH

- 2020 “Fair Machine Learning”
- 2019 “Decisions, Fairness, and Machine Learning”
- 2018 “Decisions and Machines”
- 2017 “Philosophy of AI”

Teaching Assistant

- 2020 “Logic & Critical Thinking”
Colin Klein, ANU
- 2019 “The Moral and Political Philosophy of AI”
Seth Lazar, ANU
- 2018 “Ethics of AI”
Fiorella Battaglia & Atoosa Kasirzadeh, LMU
- “Versions of Realism”
Julian Nida-Rümelin, LMU
- 17/18 “Logic I” (German)
Hannes Leitgeb, LMU
- 2017 “Epistemology and Ethics”
Julian Nida-Rümelin, LMU
- “Intro to Philosophy of Science” (German)
Alexander Reutlinger, LMU
- 2016 “Intro to Philosophy of Science” (German)
Alexander Reutlinger, LMU
- “The Foundation of the Philosophy of Morals with Kant” (German)
Fiorella Battaglia, LMU
- 15/16 “Human Liberty vs. Freedom of Will” (German)
Fiorella Battaglia, LMU
- 2015 “Responsibility in the Sciences and Technology”
Fiorella Battaglia, LMU (German)
- “Philosophy of Mind”
Stephan Sellmaier, LMU
- 14/15 “Life-form and Science” (German)
Fiorella Battaglia, LMU
- “Metaethics: Constructivism and Realism”
Fiorella Battaglia, LMU (German)
- 2014 “Metaethical Foundation of Moral Reasoning”
Fiorella Battaglia, LMU (German)
- 13/14 “Robotisation of Warfare. Risk, Ethics and Politics” (German)
Fiorella Battaglia, LMU
- 10/11 “Cognitive Science II” (German)
Gerhard Strube
ALBERT LUDWIG UNIVERSITY FREIBURG
- “Logic I” (German)
Markus Junker
ALBERT LUDWIG UNIVERSITY FREIBURG

ORGANISATION OF EVENTS

- 2024 Workshop “Theories of Legal Proof”
CATHOLIC ACADEMY OF BAVARIA, MUNICH
Main organizer of an international workshop
supported by the Junior Research Fund of
LMUexcellent.
- 2023 Seminar “Democracy & AI”
VENICE INTERNATIONAL UNIVERSITY, SAN
SERVOLO, ITALY
Organizer
- 2022 Workshop “Responsibility & AI”
UNIVERSITY OF VIENNA
Co-organizer
- 2021 Seminar “Humanising Machine Intelligence” (led
by Seth Lazar)
AUSTRALIAN NATIONAL UNIVERSITY
Convener
- 2020 Reading Group on “Conditionals” (with Frank
Jackson, Alan Hájek, and Brian Hedden)
AUSTRALIAN NATIONAL UNIVERSITY
Organizer
- 2019 Workshop “Decision Theory & the Future of
Artificial Intelligence”
AUSTRALIAN NATIONAL UNIVERSITY
Co-organizer
- Workshop “Knowledge of Knowledge”
UNIVERSITY OF REGENSBURG
Co-organizer
- 2018 Seminar “The Ethics of Artificial Intelligence”
VENICE INTERNATIONAL UNIVERSITY, SAN
SERVOLO, ITALY
Co-organizer
- 2018 Seminar “Versions of Realism”
VENICE INTERNATIONAL UNIVERSITY, SAN
SERVOLO, ITALY
Co-organizer
- 2017 International Workshop “Democracy as a Form
of Life”
PARMENIDES FOUNDATION, GERMANY
Co-organizer
- ECAP9 Symposium on “Current Trends in
Neurophilosophy”
LMU MUNICH, GERMANY
Organizer at the 9th European Congress of
Analytic Philosophy

- Conference “Causation, Explanation,
Conditionals”
EV. AKADEMIE, TUTZING (LAKE STARNBERG) AND
LMU MUNICH, GERMANY
Main organizer of an international conference
supported by the Graduate School of Systemic
Neuroscience, the Bernstein Center for
Computational Neuroscience, and the Munich
Center for Mathematical Philosophy
- Seminar “Epistemology and Ethics”
VENICE INTERNATIONAL UNIVERSITY, SAN
SERVOLO, ITALY
Co-organizer
- 2015 Conference “Predictive Brain”
VENICE INTERNATIONAL UNIVERSITY, SAN
SERVOLO, ITALY
Co-Organizer

SELECTED RECENT TALKS

- 2025 “Factual Difference-Making” (refereed)
*12th International Congress of the Society for Analytic
Philosophy (GAP.12)*
HEINRICH-HEINE UNIVERSITY DÜSSELDORF
- “Comments on “Accuracy and Informativity of
Belief” (invited)
Formal Epistemology Workshop 2025
UNIVERSITY OF ICELAND
- “Causation and Deviancy” (refereed)
Pacific APA 2025
SAN FRANCISCO
- 2024 “How to Estimate $P(\text{Doom} \mid \text{AGI})?$ ” (invited)
AI, Safety, Ethics, and Society
CENTER FOR AI SAFETY
- 2023 “Legal Proof is Rational Belief of Guilt” (refereed)
Central APA 2023
DENVER
- 2022 “Probability of Guilt” (refereed)
*11th International Congress of the Society for Analytic
Philosophy (GAP.11)*
HUMBOLDT UNIVERSITY OF BERLIN
- “Legal Proof is Rational Belief of Guilt” (refereed)
*96th Joint Session of the Aristotelian Society and the
Mind Association*
UNIVERSITY OF ST ANDREWS
- “Actual Causation” (invited)
The LSE Choice Group

SERVICE

- 2024 Referee for a Consolidator Grant Proposal of the
European Research Council
- Referee for Swiss National Science Foundation
- “14th Tbilisi Symposium on Logic, Language and
Computation (TbiLLC 2023)”
Referee for post-proceedings
- “Essay Award of the Society for Analytic
Philosophy and *Grazer Philosophische Studien*”
Jury member
- 2023 “ACM Conference on Fairness, Accountability,
and Transparency”
Chicago, USA
Program committee member
- 2022 “ACM Conference on Fairness, Accountability,
and Transparency”
Seoul, South Korea
Program committee member
- 2020 “Data, AI and Society Seminar Series”
AUSTRALIAN NATIONAL UNIVERSITY
Permanent Panelist for the public online seminar
series
- “Ethics of data science conference 2020”
UNIVERSITY OF SYDNEY
Program committee member
- 2019 “Conditional Logics and Conditional Reasoning:
New Joint Perspectives”
SCHLOSS DAGSTUHL, LEIBNIZ CENTER FOR
INFORMATICS
Collector for the [Dagstuhl report](#)
- 2017 “Causation, Explanation, Conditionals”
GRADUATE SCHOOL OF SYSTEMIC NEUROSCIENCE,
BERNSTEIN CENTER FOR COMPUTATIONAL
NEUROSCIENCE, MUNICH CENTER FOR
MATHEMATICAL PHILOSOPHY, LMU MUNICH
Program chair

JOURNAL REVIEWING

The Journal of Philosophy, *Noûs*, *Mind* (2x), *Australasian
Journal of Philosophy* (2x), *Philosophical Quarterly* (2x),
Canadian Journal of Philosophy (3x), *Journal of Philosophi-
cal Logic* (7x), *Review of Symbolic Logic*, *Philosophical Stud-
ies* (7x), *Analysis* (5x), *British Journal for the Philosophy of
Science* (5x), *Mind & Language* (3x), *Erkenntnis* (3x), *Philoso-
phy of Science* (2x), *Minds and Machines* (3x), *Synthese* (20x)
Theoria (2x), *Artificial Intelligence* (2x), *AI and Ethics* (2x),
Ergo (2x), *Kriterion*, *Quaestio Facti*, *Philosophia*, *Episteme*,
European Journal for Philosophy of Science, *The Australasian
Journal of Logic*.

RESEARCH STAYS

- 2022 “Academic Visitor”
UNIVERSITY OF EDINBURGH
- 2021 “Academic Visitor”
LONDON SCHOOL OF ECONOMICS & POLITICAL
SCIENCE
- 2018 “International Rationality Summer Institute
2018”
LMU MUNICH, IRSEE
- 2017 Research Stay
UNIVERSITY OF BRITISH COLUMBIA, KELOWNA
- 2016 “International Rationality Summer Institute
2016”
JUSTUS LIEBIG UNIVERSITY, AURICH
- 2015 “European Summer School of Logic, Language
and Computation”
UNIVERSITY POMPEU FABRA, BARCELONA
- 11-12 “Studies in Philosophy and Cognitive Science”
UNIVERSITY PARIS-SORBONNE (PARIS IV), PARIS

SUPERVISION

- 2025- “How Do Data Models Represent the World
Through Causal Mechanisms?”
PhD Student Hu Die
CARNEGIE MELLON UNIVERSITY
- 2025 “Full Belief, Degree-of-Belief, Comparative
Belief, and their Normative Interplay”
MA Thesis of Yannis Polychronopoulos
LMU MUNICH
- 2024 Postdoctoral Researcher Conrad Friedrich
Rational Belief and Guilt funded by LMUexcellent
LMU MUNICH

2023 “The Limits of Technocracy”
MA Thesis of Victor Karl Magnússon
LMU MUNICH

“The Distance Minimization Approach to the
Learning of Conditionals”
MA Thesis of Zahra Moghimkhan
LMU MUNICH

“Climate Justice and Game Theory: An
Investigation of the Significance of Cooperation
and CO₂ Reductions in International Climate
Negotiations”
BA Thesis of Clara Goetz
LMU MUNICH

2020 “Sleeping Beauty and Belief Updating”
Independent Study with Honours Student Huon
Porteous
AUSTRALIAN NATIONAL UNIVERSITY

2019 “An Ethical Governor for Reinforcement
Learning Agents”
MA Thesis of Torben Swoboda
UNIVERSITY OF BAYREUTH

School of Philosophy
AUSTRALIAN NATIONAL UNIVERSITY
✉ Alan.Hajek@anu.edu.au

PROF. DR. CHRISTIAN LIST
Chair of Philosophy and Decision Theory
*Co-Director of the Munich Center for Mathematical
Philosophy*
LMU MUNICH
✉ C.List@lmu.de

PROF. DR. IGOR DOUVEN
Research Professor
Sciences, Normes, Décision
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
UNIVERSITÉ PARIS IV – LA SORBONNE
✉ Igor.Douven@sorbonne-universite.fr

PROF. DR. KATIE STEELE
Professor of Philosophy
School of Philosophy
AUSTRALIAN NATIONAL UNIVERSITY
✉ Katie.Steele@anu.edu.au

PROF. DR. GREGORY WHEELER
Professor of Theoretical Philosophy & Computer
Science
Director of the Centre for Human and Machine Intelligence
FRANKFURT SCHOOL OF FINANCE AND MANAGEMENT
✉ G.Wheeler@fs.de

PROF. DR. OLIVIER ROY
Chair of Philosophy I
Department Chair of Philosophy
UNIVERSITY OF BAYREUTH
✉ Olivier.Roy@uni-bayreuth.de

PROF. DR. DR. HC. JULIAN NIDA-RÜMELIN, FORMER
MINISTER OF STATE
Former Chair of Philosophy and Political Theory
LMU MUNICH
✉ Julian.Nida-Ruemelin@lrz.uni-muenchen.de

REFERENCES

PROF. DDr. HANNES LEITGEB
Chair of Logic and Philosophy of Language
*Co-Director of the Munich Center for Mathematical
Philosophy*
LMU MUNICH
✉ Hannes.Leitgeb@lmu.de

PROF. DR. STEPHAN HARTMANN
Chair of Philosophy of Science
*Co-Director of the Munich Center for Mathematical
Philosophy*
LMU MUNICH
✉ S.Hartmann@lmu.de

PROF. DR. ALAN HÁJEK
Research Professor