Lucas Gautheron

Computational Models of Human & Social Behavior

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Education

2022-2025 **Ph.D. candidate, Computational Sociology**, *Interdisciplinary Centre for Science and Technology Studies, Wuppertal*, Germany
"Exploring cultural evolutionary perspectives on collective action problems in science using computational models of scientists' behavior". Supervisors: Thomas Heinze & Radin Dardashti. $3^{1/2}$ years contract.

2021-2022 **M.A., History and Philosophy of Science**, *Université Paris-Cité*, [Class rank: 1st]
Thesis : "Too beautiful to be false, or too beautiful to be true? Searching supersymmetry at the *Large Hadron Collider*". Supervisors: Olivier Darrigol & Elisa Omodei.

2014-2018 **Master 1, Theoretical and Experimental Physics**, *Ecole Normale Supérieure de Cachan (Paris-Saclay)*
Full scholarship & civil-servant status.

2012-2014 **PCSI/PC***, *Lycée Berthollet*, Annecy
Mathematics, physics and chemistry. Preparation for the competitive entrance exams of the Écoles Normales Supérieures (research oriented top higher education institutions).

Research

Mar 2023 (on-going) **Research Assistant (linguistics, part time)**, *Laboratoire de Sciences Cognitives et Psycholinguistique (LSCP - DEC - École Normale Supérieure)*, Paris
Investigating correlations between speech heard and produced by young infants.

Feb 2023 Aug 2023 **Visiting PhD student**, *Medialab, Sciences Po Paris*

Sep 2020 Nov 2021 **Engineer (linguistics)**, *Laboratoire de Sciences Cognitives et Psycholinguistique (LSCP - DEC - École Normale Supérieure)*, Paris
Study of language acquisition across cultures through naturalistic long-form audio recordings.

Oct 2016 Jan 2017 **Research Internship (astrophysics)**, *Laboratoire Univers et Théories (LUTH - INSU - CNRS)*, Paris Meudon
Influence of the nuclei distribution on weak interactions' rates in core-collapse supernovae.

May 2016 Jul 2016 **Research Internship (particle physics)**, *Laboratoire de Physique Nucléaire et des Hautes Énergies (LPNHE - IN2P3 - CNRS)*, Paris
Diphoton analysis and phenomenology for the ATLAS experiment.

Oct 2015 Jan 2016 **Research Internship (astrophysics)**, *Laboratoire d'Annecy-Le-Vieux de Physique Théorique (LAPth - IN2P3 - CNRS)*, Annecy-Le-Vieux
History of modern cosmology & science communication (website)

May 2015 Jul 2015 **Research Internship (particle physics)**, *Laboratoire d'Annecy-Le-Vieux des Particules (LAPP - IN2P3 - CNRS)*, Annecy-Le-Vieux
Particle physics for the ATLAS experiment.

Preprints

[1] **L. Gautheron**. *Balancing Specialization and Adaptation in a Transforming Scientific Landscape*. Dec. 2023.

Peer-Reviewed Publications

[2] A. Cristia, **L. Gautheron**, and H. Colleran. "Vocal input and output among infants in a multilingual context: Evidence from long-form recordings in Vanuatu". In: *Developmental Science* (Feb. 2023).

[3] **L. Gautheron** and E. Omodei. "How research programs come apart: The example of supersymmetry and the disunity of physics". In: *Quantitative Science Studies* 4.3 (2023), pp. 671–699. ISSN: 2641-3337.

[4] **L. Gautheron**, N. Rochat, and A. Cristia. "Managing, storing, and sharing long-form recordings and their annotations". In: *Language Resources and Evaluation* (Feb. 2022).

[5] M. Lavechin, M. de Seyssel, **L. Gautheron**, E. Dupoux, and A. Cristia. "Reverse Engineering Language Acquisition with Child-Centered Long-Form Recordings". In: *Annual Review of Linguistics* 8.1 (Jan. 2022), pp. 389–407.

Invited Talks

[6] **L. Gautheron**. "Correlational analyses of the effects of caregivers' speech behaviour on children's speech production". Department of Linguistics, UCLA. June 2024.

[7] **L. Gautheron**. "Algorithmic bias in correlational analyses of the effects of caregivers' speech behaviour on children's speech production". Daylong Audio Recordings of Children's Linguistic Environments (DARCLE). May 2024.

[8] **L. Gautheron**. "Balancing Specialization and Adaptation in a Transforming Scientific Landscape: Modelling scientists' behavior with Natural Language Processing". NLP Seminar, LATTICE, Montrouge. Nov. 2023.

[9] **L. Gautheron**. "Too beautiful to be false, or too beautiful to be true: supersymmetry and the future of high-energy physics". 2JM seminar, Sciences Po, Paris. May 2023.

[10] **L. Gautheron** and A. Cristia. "A python package for long-form recordings and their annotations". Bergelson Lab, Duke University, North Carolina [online]. June 2021.

Contributed Talks

[11] **L. Gautheron**. "Inferring conventions' function and origin from behavioral data: the example of the metric signature in high-energy physics". Santa Fe Institute Graduate Workshop in Computational Social Science Modeling and Complexity. July 2024.

[12] **L. Gautheron**. "A dialogue between philosophy of science and computational studies of science illuminates the crisis of fundamental physics". Workshop Philosophy of Science meets Quantitative Science Studies, Turin, Italy. May 2024.

[13] **L. Gautheron**. "From Colliders to Cosmos: Dynamics of Cooperation and Collaboration in High-Energy Physics". Summer school "Collaboration and Interdisciplinarity in Science and Technology", Wuppertal, Germany. Sept. 2023.

[14] **L. Gautheron**. "Probing Socio-Epistemic Dynamics in High-Energy Physics Using the Inspire HEP Database". Big Data & HPS. May 2023.

[15] **L. Gautheron**. "La désunité de la physique des hautes-énergies". XIVe Congrès de la Société française d'histoire des sciences et des techniques: symposium "La physique de l'après Seconde guerre mondiale, entre ruptures et continuités", Bordeaux, France. Apr. 2023.

[16] **L. Gautheron**. "The many faces of supersymmetry: Supersymmetry across subcultures of High-Energy Physics, 1971–2019". 2022 History of Science Society Annual Meeting: group session on Historical Epistemology of Particle Physics and Quantum Gravity, Chicago, IL, United States. Nov. 2022.

[17] **L. Gautheron**. "Who trusts supersymmetry? Probing quantitative methods for investigating research orientations in High-Energy Physics". 4th International Spring School of the Epistemology of the Large Hadron Collider: The History, Philosophy and Sociology of Large Scale Experiments, Wuppertal, Germany. Mar. 2022.

[18] **L. Gautheron**, M. Lavechin, R. Riad, C. Scaff, and A. Cristia. "Longform recordings : Opportunities and challenges". In: *LIFT 2020 - 2èmes journées scientifiques du Groupement de Recherche "Linguistique informatique, formelle et de terrain"*. Ed. by T. Poibeau, Y. Parmentier, and E. Schang. Montrouge / Virtual, France: CNRS, Dec. 2020, pp. 64–71.

Poster presentations

[19] **L. Gautheron**. "Balancing Specialization and Adaptation in a Transforming Scientific Landscape". 10th International Conference on Computational Social Science (IC2S2), Philadelphia, US. July 2024.

Tutorials

○ Tutorial for language acquisition scientists ("LongFoRMer: A software for managing and exploiting longform recordings and their annotations"), UCLA, Department of Linguistics. June 17th 2024.

Workshops and summer schools

2024 **Santa Fe Institute Graduate Workshop in Computational Social Science Modeling and Complexity**, Santa Fe, New Mexico

2023 **Summer school "Collaboration and Interdisciplinarity in Science and Technology"**, Interdisciplinary Summer School Series in Higher Education Research and Science Studies, Wuppertal, Germany

2022 **Spring school "The History, Philosophy and Sociology of Large Scale Experiments"**, *4th International Spring School of the Epistemology of the Large Hadron Collider*, Wuppertal, Germany

Grants

2023 **G-Research**, *Grants for PhD students and postdocs in quantitative fields; £1 000*

Journalism

Dec 2019 **President & Publication Director**, *Société de Production Le Média*, Montreuil
Nov 2020 Head of a production company with 12+ full-time workers.

Sep 2018 **Journalist**, *Le Média*, Montreuil
Sep 2020 Data journalism and book reviews, text & video (articles cited in research papers and books, and in an appeal to the French constitutional court).

Selected press articles

[20] **L. Gautheron** and C. Gence. "[DATA] Les morts invisibles du coronavirus : la vérité derrière les chiffres officiels (The Hidden Toll of Coronavirus: Revealing the Truth Beyond Official Numbers)". In: *Le Média* (Apr. 4, 2020).

[21] **L. Gautheron** and C. Gence. "[DATA] Lutte contre le COVID-19 : oui, la lenteur de l'État français a tué (Fatal Sluggishness: How France's COVID-19 Response Cost Lives)". In: *Le Média* (Apr. 23, 2020).

[22] **L. Gautheron**. "Référendum ADP : les médias au service du pouvoir (Silencing Democracy: Media Blackout on the ADP Privatization Referendum)". In: *Le Média* (Aug. 1, 2019).

[23] T. Kouamouo and **L. Gautheron**. "Élections européennes : un vote de classe avant tout (European Elections: It's Always About Class!)" In: *Le Média* (June 4, 2019).

[24] **L. Gautheron**. "Des chiffres pour appréhender l'anti-Mélenchonisme de la presse". In: *Marianne* (Dec. 1, 2017).

Programming

Jul 2013 **Back-end developer**, *Électricité réseau Distribution de France (ErDF)*, Annecy
Automated retrieval of large amounts of data from other company-wide applications.

2011 **Volunteer**, *AssaultCube*
2014 Development of a C++ 3D video game as part of an international team of volunteers.

Skills & interests

Programming Python (expert), and C, C++, Fortran & Arduino (proficient); Stan, PyTorch; Pandas, SQL, HDF; PHP, HTML, JS

Languages French (native), English (fluent/C2); Spanish (beginner)

Interests Energy transition; climate change and the polycrisis; microcontroller programming