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## *Curriculum Vitae*

### *AOS:*

Digital Philosophy of Science, Philosophy of Cognitive Science (incl. Neuroscience), Philosophy of Biology

### *AOC:*

General Philosophy of Science, History of Cognitive Science, Philosophy of Mind, Computational Modelling of Cognitive Processes, Methodology of Psychology

### *Education:*

PhD Student, Philosophy and Psychology, Interdisciplinary Doctoral School, University of Warsaw, since 2020 (expected graduation: 2025).

Cognitive Science, M.Sc., University of Warsaw, 2018-2020, graduated in 2023.

Philosophy, B.A., University of Warsaw, 2014–2018, graduated with honours.

Cognitive Science, B.A., University of Warsaw, 2014–2017, graduated with honours.

### *Academic appointments:*

Assistant (Asystent), Institute of Philosophy and Sociology, Polish Academy of Sciences, Poland, 2023-2026.

Writing-Up Fellow, Konrad Lorenz Institute for Evolution and Cognition Research, Austria, 2024-2025.

Researcher, University of Warsaw, Poland, 2019-2024.

### *Important publications:*

**Rorot W.**, Miłkowski M. (2024). Empirical Evidence in Conceptual Engineering, or the Defense of 'Predictive Understanding. In: Stalmaszczyk P. (Ed.) *Conceptual Engineering. Methodological and Metaphilosophical Issues*, Brill mentis: Paderborn. DOI: 10.30965/9783969753026\_013.

**Rorot W.**, Rączaszek-Leonardi J. (2023). Understanding "compositionality" in Research on Language Emergence. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 45. <https://escholarship.org/uc/item/6tg5d31m>

Falandays J.B., Kaaronen R.O., Moser C., **Rorot W.**, Tan J., Varma V., Williams T. & Youngblood M. (2023). All intelligence is collective intelligence. *Journal of Multiscale Neuroscience* 2(1), 169-191. DOI:10.56280/1564736810

**Rorot W.**, Skowrońska K., Nagórnska E., Zieliński K., Zubek J., & Rączaszek-Leonardi J. (2023). Structuring unleashed expression: developmental foundations of human communication. *Behavioral and Brain Sciences*, 46, E13. DOI:10.1017/S0140525X22000838

Harrison D., **Rorot W.**, Laukaityte U. (2022). Mind the Matter: Active Matter, Soft Robotics, and the Making of Bio-Inspired Artificial Intelligence. *Frontiers in Neurorobotics* 16. DOI: 10.3389/fnbot.2022.880724

**Rorot W.** (2022). Counting with Cilia: The Role of Morphological Computation in Basal Cognition Research. *Entropy*, 24(11), 1581. DOI: 10.3390/e24111581

**Rorot W.**, Korbak T., Litwin P., Miłkowski M. (2022). Enough blanket metaphysics, time for data-driven heuristics. *Behavioral and Brain Sciences*, 45, E206. doi:10.1017/S0140525X22000280

**Rorot W.** (2021). Bayesian theories of consciousness: a review in search for a minimal unifying model. *Neuroscience of Consciousness* 2021 (2). DOI: 10.1093/nc/niab038.

Sękowski K., **Rorot W.** (2021). Intuition-Driven Navigation of the Hard Problem of Consciousness. *Review of Philosophy and Psychology*. DOI: 10.1007/s13164-021-00533-w

**Rorot W.** (2020). Explaining “spatial purport of perception”. A predictive processing approach. *Synthese*. DOI: 10.1007/s11229-020-02678-0

### *Selected refereed presentations:*

Presentation, “Looking for keys to the brain: Keying-up in neuroscience” at a symposium “Assessing the representational roles of model organisms: A view from DEKI” organized by Guido I. Prieto (Bielefeld University). 5<sup>th</sup> International Conference of the German Society for Philosophy of Science, Erlangen, Germany, March 2025.

Poster, “Concepts & texts in the practice of life science”. Conference “Philosophy of Science: Past, Present & Future”, Minnesota, USA, October 2024.

Presentation, “Rethinking Material Agency: Bioelectricity as a Model of Causation for the Life Sciences”, with Urte Laukaitytė (UC Berkeley), at a co-organized symposium. British Society for the Philosophy of Science Annual Conference, York, UK, July 2024.

Presentation, “Distributional Semantics in Digital Philosophy of Science methodological sketch and a case study”, with Marcin Miłkowski. Biennial Meeting of the International Society for the History, Philosophy, and Social Studies of Biology, Toronto, Canada, July 2023.

Poster, “Understanding „compositionality” in research on language emergence”, with Joanna Rączaszek-Leonardi, Annual Meeting of the Cognitive Science Society, Sydney, Australia, July 2023.

Presentation, “Counting on the Cilia: Cybernetics, Morphological Computation, and Computational Enactivism”. 4<sup>th</sup> International Conference of the German Society for Philosophy of Science, Berlin, Germany, August 2022.

Presentation, "Bisecting the Bayesian Brain: Rational Constructivism and the FEP as Complementary Modelling Frameworks", with Mel Andrews (University of Cincinnati). Bayesian Learning & Reasoning Workshop, Bochum, Germany, July 2022.

Presentation, "Lessons from Basal Cognition" at a co-organized symposium. British Society for the Philosophy of Science Annual Conference 2022, Exeter, UK, July 2022.

Presentation at a co-organized symposium, "The Rise of Basal Cognition and its Relevance for the Cognitive Sciences". 17th Annual Meeting of the Italian Association for Cognitive Science, Noto, December 2021.

Poster, "Modeling 'Spatial Purport of Perceptual Experience': Egocentric Space Perception in a Semi-Realistic 3D Virtual Environment". 43rd Annual Meeting of the Cognitive Science Society, Vienna and online, July 2021.

Presentation, "Free Energy Principle: Ergodicity & Historicity". 4<sup>th</sup> Avant Conference "Trends in Interdisciplinary Studies", Porto, October 2019.

Presentation, "Fitness and complexity". Conference "Fitness Meets Niche Construction and Symbiosis", Kraków, June 2019.

Presentation, "Egocentric spatial awareness from the perspective of predictive processing", 11th Cracow Cognitive Science Conference, Kraków, May 2019.

Poster, „Predictive and hierarchical skill theory: a model of egocentric space perception”. Conference „Predictive Processing, Consciousness, and Self”, Bochum, January 2019.

Poster, "Weak and strong darkened room problem (and a solution to both)". Workshop "Expecting Ourselves: Prediction, Action, and the Embodied Mind", Edinburgh, November 2017.

### *Research projects:*

PRINCIPAL INVESTIGATOR, "Investigation of the use of the concept "communication" in biology and cognitive sciences", Institute of Philosophy and Sociology, Polish Academy of Science, Poland, supervised by prof. Marcin Miłkowski. February 2023 – January 2026.

PHD STUDENT at project "Developmentally informed agent-based modeling of symbolic constrains in interaction", University of Warsaw, Poland. PI: prof. Joanna Rączaszek-Leonardi. October 2020 – January 2023.

PRINCIPAL INVESTIGATOR, "Mechanisms of space representation. A predictive processing approach", University of Warsaw, Poland, supervised by Paweł Gladziejewski, PhD (Nicolas Copernicus University). October 2019-March 2024.

### *Research stays, fellowships and summer schools:*

WRITING-UP FELLOW, Konrad Lorenz Institute for Evolution and Cognition Research, Klosterneuburg, Austria, October 2024-March 2025.

VISITING SCIENTIST, Institute of Cognitive Sciences and Technologies, CNR, Italy, supervised by Dr. Luca Tummolini and Dr. Francesco Mannella. March 2024 & November 2022.

VISITING SCIENTIST, The Pence Lab, Institut supérieur de philosophie, Université catholique de Louvain, Belgium, supervised by prof. Charles Pence. May 2023.

VISITING SCIENTIST, The Levin Lab, Department of Biology, Tufts University, United States of America, supervised by prof. Michael Levin. June 2022-December 2022.

VISITING RESEARCH STUDENT, Cognitive Robotics Lab, Department of Computer Science, University of Manchester, United Kingdom, supervised by prof. Angelo Cangelosi. March 2022.

FELLOW at Diverse Intelligences Summer Institute, University of St Andrews, United Kingdom. July 2019 and June-July 2021.

STUDENT RESEARCHER at project „Literary Exploration Machine”, Wrocław University of Technology and Institute of Literary Research of the Polish Academy of Sciences, Poland. PIs: Maciej Maryl, PhD and prof. Maciej Piasecki. February–December 2017.

INTERN at Laboratory for Cognitive Research in Art History, Department of Art History, University of Vienna, Austria. PI: Klaus Speidel, PhD; head of the lab: prof. Raphael Rosenberg. September 2016.

### *Teaching experience:*

“Experimental Psychology”, tutorial, summer term 2022, 2023 & 2024, 1<sup>st</sup> year undergraduate course for Cognitive Science program, University of Warsaw.

Lectures and tutorials as part of the course “Cognitive Processes Modeling I & II”, academic years 2022, 2023, 2024, 1<sup>st</sup> year Masters’ course for Cognitive Science program, University of Warsaw.

Supervision of research projects of Bachelor’s and Master’s students, 2023 & 2024 as part of the Cognitive Science program, University of Warsaw.

### *Grants, awards, distinctions:*

Recipient of PRELUDIUM grant for project “Investigation of the use of the concept “communication” in biology and cognitive sciences”, funded by National Science Center, total funding 176 936 PLN. Awarded in 2022.

Recipient of “Diamond Grant” for project “Mechanisms of space representation. A predictive processing approach”, funded by Polish Ministry of Science and Higher Education, total funding 180 000 PLN. Awarded in 2019.

Scholarship for outstanding young researchers awarded by the Polish Ministry of Science and Higher Education in June 2024 for the period of October 2024-September 2027.

Scholarship START awarded by the Foundation for Polish Science in May 2024.

Scholarship of the Polish Minister of Science and Higher Education for the best students in academic years 2018/2019 and 2019/2020.

Scholarship of the Rector of University of Warsaw for the best students in academic years 2016/2017 and 2019/2020.

*Public engagement:*

Co-organizer and coordinator (from 2023), summer school “School of Ideas in Neuroscience” at Nencki Institute for Experimental Biology and Faculty of Psychology, University of Warsaw, July 2022, June-July 2023, July 2024 & September 2025.

Elected member (PhD Student Representative) of the Didactic Council for the Cognitive Science Bachelor and Master programmes, University of Warsaw, term: 2023-2024.

Co-organizer, 5th International Conference on Interactivity, Language & Cognition: “Integrating Quantitative and Qualitative Methods in the Cognitive and Language Sciences” at the University of Warsaw, September 2021 (held online).

Co-organizer and co-editor of post-conference Special Issue of *Avant*, conference “Skąd ciało wiedziało? Ucieleśnienie w naukach kognitywnych i społecznych” [How did the body know? Embodiment in cognitive and social sciences] at the University of Warsaw, May 2018.

*Professional memberships:*

Centre for Philosophical Research / Ośrodek Badań Filozoficznych – member (since 2021), Member of the Board (2021-2024), Member of the Supervision Committee (2024-2027).

Student Association for Philosophy of Mind at the Institute of Philosophy, University of Warsaw - member (2017-2023) and President (2019-2020).

Member of: Cognitive Science Society, British Society for Philosophy of Science, International Society for the History, Philosophy, and Social Studies of Biology, Italian Association for Cognitive Science.

*Skills and languages:*

Programming skills: knowledge of Python (libraries: numpy, scipy, pytorch, pandas, matplotlib, nltk, spaCy, gensim), Bash and Latex; basic knowledge of R, Matlab, HTML with CSS, database management incl. vector databases.

Data analysis skills: machine learning methods (natural language processing, neural networks, predictive models, natural language processing, data science); familiarity with probability calculus, linear algebra, mathematical analysis; knowledge of statistics.

Languages: Polish (native), English (proficient), French (advanced, DELF B2 certificate), German (communicative, level A2).