

Dr. Frank R. Faries

AREAS OF SPECIALIZATION: Philosophy of Science, Cognitive Science, Data Science

AREAS OF COMPETENCE: (Applied) Ethics, Philosophy of Technology

EDUCATION

University of Cincinnati

Ph.D., Philosophy (2022)

Dissertation title: *Big Data and the Integrated Sciences of the Mind*

Supervisor: Anthony Chemero; Committee members: Zvi Biener, Angela Potochnik, Gualtiero Piccinini

M.A., Psychology (2022)

M.A., Philosophy (2022)

University of Missouri – Saint Louis

M.A., Philosophy (2013)

Thesis title: *Akrasia and the Elusive Self*

Supervisor: Gualtiero Piccinini; Committee members: Berit Brogaard, Eric Wiland

B.A., Philosophy (2011)

PUBLICATIONS & REVIEWS

- Faries, F. (under review). Varieties of multi-dimensional integration in cognitive neuroscience.
- Faries, F., & Raja, V. (under review). Black boxes and theory deserts: Deep networks and epistemic opacity in the cognitive sciences.
- Langland-Hassan, P., Faries, F., Gatyas, M., Dietz, A., and Richardson M. (2021). Assessing abstract thought with a new nonverbal paradigm: Evidence from aphasia. *Cognition* 211. doi: 10.1016/j.cognition.2021.104622
- Faries, F., & Chemero, A. (2018). Dynamic information processing. In M. Sprevak and M. Colombo (Eds.) *The Routledge Handbook of the Computational Mind* (pp. 150-164). Routledge.
- Langland-Hassan, P., Gauker, C., Richardson, M., Dietz, A., and Faries, F. (2017). Metacognitive deficits in categorization tasks in a population with impaired inner speech. *Acta Psychologica* 181:62-74.
- Langland-Hassan P., Faries, F., Richardson, M., and Dietz, A. (2015). Inner speech deficits in people with aphasia. *Frontiers in Psychology* 6:528. doi: 10.3389/fpsyg.2015.00528
- Faries, F. (2015). Review of Wickens, A., *A History of the Brain: From Stone Age surgery to modern neuroscience*, Psychology Press 2015. *Metapsychology Online Reviews* 19(41).

PRESENTATIONS

- “A Role for Language in Abstract Thought: Evidence from Aphasia”. Co-presented with Gatyas, M., Langland-Hassan, P., et al., at Southern Society for Philosophy and Psychology 2020, Contributed Session (Psychology): Memory & Linguistics. (December 2020).
- “What is (so Special about Big) Data?”. Conference on Computational Methods and the Future of Science, University of Kansas. (June 2019).
- “Mechanistic Integration and Multi-Dimensional Network Neuroscience”. Poster at Philosophy of Science Association 2018, Seattle. (November 2018).
- “Inner Speech Scaffolds Self-Consciousness”. 2018 Saint Louis University Graduate Conference, “The Nature & Character of Self-Consciousness”. (March 2018).
- “The Role of Philosophy in Systems Neuroscience”. Poster at NetSci 2017, Indianapolis. (June 2017).
- “Comments on Hardcastle: Predicting the Self: Lessons from Schizophrenia”. Embodied Awareness Philosophy Colloquium, University of Cincinnati. (February 2017).
- “Inner Speech and Cognition”. 2016 CAP Guy Van Orden Student Conference, University of Cincinnati. (December 2016).

- “Mental Representations as Idealizations in Cognitive Modeling”. Models & Simulations 7, University of Barcelona. (May 2016).
- “Mental Representations as Idealizations in Cognitive Modeling”. Invited lecture at Philosophy Department Graduate Seminar, Universidad de Murcia. (May 2016).
- “Assessing Inner Speech in People with Aphasia”. Philosophy and Psychology Speaker Series, “Brain, Mind and Society”, University of Cincinnati. (April 2016).
- “Comments on Gatzia: I Think it’s Going to Hurt: The Effects of Cognition on Pain Perception”. Ohio Philosophical Association, Otterbein University. (April 2016).
- “Against Attention”. Mississippi Philosophical Association, University of Mississippi. (March 2016).
- “Keeping Idealizations in Check”. USS-SWC Univie: Summer School, “The Computational Turn: Simulation in Science”. University of Vienna, Austria. (July 2015).
- “A Tale of Two Minds”. Co-presented with Thill, S., & Blouw, P. at Nengo Summer School, University of Waterloo. (June 2015).
- “Comments on Weiss: Impure Intentionalism about Affective Experience”. Ohio Philosophical Association, Kenyon College. (April 2014).
- “Does Inner Speech Facilitate Metacognition or Conceptual Thought? Some Preliminary Results from People with Aphasia”. Co-presented with Langland-Hassan, et al., at 50th Annual UC Philosophy Colloquium, University of Cincinnati. (March 2014).
- “Toward a Unified View of Computation in Neural Systems: A Reply to Shagrir and Piccinini”. The Society for the Study of Artificial Intelligence and the Simulation of Behavior Convention 2013, under Symposium “Computing and Philosophy: The Scandal of Computation”. University of Exeter, Devon, UK. (April 2013).
- “Comments on Protasi: The Varieties of Envy”. UMSL Graduate Philosophy Conference, “Piece of Mind”, University of MO – St. Louis. (April 2011).

WORKSHOPS & TRAINING

- Best Practices for Teaching Online. St. Louis Community College (May 2022).
- Applying the Quality Matters Rubric. St. Louis Community College. (October 2021).
- APA Advanced Training Institute: Big Data: Exploratory Data Mining in Behavioral Research. Arizona State University. (June 2017).
- USS-SWC Univie: Summer School, “The Computational Turn: Simulation in Science”. University of Vienna, Austria. (July 2015).
- Nengo Summer School on large-scale brain modelling. Center for Theoretical Neuroscience, University of Waterloo, Canada. (June 2015).

GRANTS & AWARDS

- National Science Foundation Travel Grant. (November 2018).
- Research Assistantship Scholarship, under *Inner Speech and Cognitive Phenomenology: An Interdisciplinary Investigation of What it is Like to Think without Words*. New Directions in the Study of the Mind & John Templeton Foundation. (January 2016-December 2017).
- NetSci Travel Assistance Award. (June 2017).
- APA Travel Assistance Award. (June 2017).
- GSGA Interdisciplinary Research Fellowship. (Spring 2017).
- Graduate Student Paper Award, Mississippi Philosophical Association. (March 2016).
- Department Travel Grant for presenting at “The Computational Turn: Simulation in Science”. (July 2015).
- Graduate Student Governance Association Group Grant. (April 2015).
- AISB Graduate Student Bursary Award. (April 2013).
- Ronald Munson Philosophy Essay Prize: Graduate Winner. (Spring 2013).

ACADEMIC APPOINTMENTS

Term Assistant Professor (Virginia Commonwealth University):

Faries CV

- PHL 201: Introduction to Ethics. (2 online/in-person sections Fall 2022 – Spring 2023).
- PHL 201(HNR): Critical Thinking about Moral Problems. (Fall 2022 – Spring 2023).
- PHL 331: Philosophy of Science. (Fall 2022 - Spring 2023).

Instructor II (St. Louis Community College):

- PHL 101: Introduction to Philosophy. (3 sections Fall 2021, 2 sections Spring 2022).
- PHL 102: Introduction to Logic. (Spring 2022).
- PHL 103: World Religions (Spring 2022).
- PHL 104: Ethics. (Fall 2021 – Spring 2022).
- PHL 112: Business Ethics. (Fall 2021).

Instructor (Southern Illinois University – Edwardsville):

- RA 101: Reasoning and Argumentation. (3 sections each Fall 2019 – Fall 2020).

Instructor (University of Cincinnati):

- PHIL 1003: Intro to Ethics Online. (Spring 2018).
- PHIL 2028: Business Ethics Online. (Summer 2017).
- PHIL 3044: Issues in the Information Age. (Summer 2016).
- PHIL 2040: Philosophy and Technology. (Fall 2015).
- PHIL 2022: Philosophy of Sport Online. (Summer 2015).

Instructor (University of Missouri – St. Louis):

- PHIL 2254: Business Ethics Online. (Spring 2012, Spring 2013).

Graduate Teaching Assistant (University of Cincinnati):

- PHIL 1007: Philosophy through Movies. (Fall 2018).
- PHIL/PSYC 1006: Intro to Cognitive Studies. (Spring 2015).
- PHIL 3046: Foundations of Technology. (Fall 2014).

Graduate Research Assistant (University of Cincinnati):

- Under Tony Chemero (Spring 2019).
- Under Peter Langland-Hassan. (Fall 2013 – Spring 2014, January 2016 – December 2017).

Graduate Research Assistant (University of Missouri – St. Louis):

- Under Berit Brogaard, Brogaard Laboratory for Multisensory Research. (Fall 2012 – Spring 2013).
- Under Gualtiero Piccinini. (Summer 2012).

PROFESSIONAL SERVICE

- Referee for special issue of Synthese: Neuroscience and its Philosophy. (2015-present).
- President of UC Philosophy Graduate Student Association. (2015-2016).
- Graduate Student Governance Association Research Fellowship Review Committee. (Fall 2015).
- Contact Coordinator for GSA Guest Speaker Series. (April 2015).
- Referee at Ohio Philosophical Association Annual Conference. (2014-2016).
- Co-organizer at 50th Annual UC Philosophy Colloquium, “The Nature and Cognitive Role of Inner Speech”. (March 2014).
- Referee at UMSL Graduate Philosophy Conference, “Piece of Mind”. (April 2013).
- Chair for Session at 7th Annual Gateway Graduate Philosophy Conference. St. Louis, MO. (March, 2012).

ORGANIZATIONAL AFFILIATIONS

- American Philosophical Association
- American Psychological Association
- Cognitive Science Society

- Philosophy of Science Association (PSA)
- Mississippi Philosophical Association
- Ohio Philosophical Association (OPA)
- Society for the Study of Artificial Intelligence and the Simulation of Behavior (AISB)

PHILOSOPHY DISSERTATION ABSTRACT
“Big Data and the Integrated Sciences of the Mind”

We live in a data-driven world. Increased availability of data and advances in computing capacity have resulted in an age of Big Data. The brain and mind are being touted as the next target for Big Data. My project here is to evaluate the prospects of a data-driven cognitive science. The central hypothesis of this work is that Big Data heralds fundamental changes to the notion of integration in the philosophy of cognitive science. Although “integration” is seen as a central goal of Big Data research, there is, generally speaking, a tendency to conflate two different senses of integration: the technical issues of making data interoperable, or what we might call *data integration*, and the theoretical issues in evaluating disparate empirical evidence about the same phenomena, or what we will call *information integration*. What makes Big Data special is that the “classic” sense of data integration—in which the successful integration of data *entails* integration of information—is no longer feasible. This conflation is, I would argue, part of the motivation behind some of rhetoric surrounding Big Data, particularly in business domains.

As Big Data and related technologies see application in the various scientific domains associated with human cognition, there is a danger that such conflation may have deleterious effects on scientific progress. In cognitive science, as in data science, “integration” is also seen as a central goal, and there is good reason to believe that Big Data technologies may make positive contributions to this goal. One corollary of my central hypothesis is an affirmative response to this. Big Data will indeed contribute to “integration” in cognitive science, though it may not look the way philosophers might have expected.

In support of this central hypothesis, I offer three observations on integration in Big Data and its intersection with cognitive science. Specifically:

Data integration is presented as a key challenge in large-scale, data-intensive efforts to study the mind-brain. One way in which data integration is achieved is by means of an ontology. “Ontological realism” represents a family of theories about the proper means of data integration via ontologies. Namely, that our best taxonomy of phenomena will come about via piecemeal agglomeration of a master ontology based on a single framework. I argue here that, at best, what ontological realism demonstrates is a thesis about a set of ontological commitments. With respect to cognitive science, this commitment is neither warranted nor wanted as a normative constraint on data integration. Instead, I recommend a perspectivist approach to data integration via ontologies in cognitive science. This approach not only inherits the features which drive the successful implementations of ontologies, without the unnecessary metaphysical or empirical baggage, but better comports with the stated goals of the ontological realist’s agenda.

Among philosophers of science, integrating products of different sciences poses a philosophical puzzle. Among philosophers of neuroscience, one dominant model is mechanistic integration. I argue that systems-level approaches (a common approach in Big Data) provide an alternative to mechanistic integration. This alternative generates explanations which meet the desiderata of explanation, and thus qualify as genuine alternatives to mechanistic explanation. However, these explanations can be seen to complement, rather than compete with, mechanistic explanations.

Data-driven cognitive science poses philosophical puzzles about integrating heterogeneous data. Perspectivism in philosophy of science offers one reply to these puzzles, but this reply is inadequate. I demonstrate how adopting tools from Gibsonian ecological psychology allows perspectivism to resolve these philosophical puzzles. Therefore, I argue that what I call Ecological Perspectivism is best suited to data-driven cognitive science.

The final, and perhaps more speculative, portion of my hypothesis concerns the way this conceptual reorientation will affect not only cognitive science and data science, but also science in general, and the public’s understanding and engagement with it. Making explicit the distinction between data integration and information integration gives a more nuanced understanding of the relationship between data and information. A more subtle comprehension of how Big Data aids in scientific inquiry also reorients our understanding of human-technology interactions, particular in knowledge generation and management. Lastly, ecological perspectivism contains significant revisions of commonly held notions about humans and their relationship to knowledge. It may be that taking these insights on board means a de-centering of humanity and its role in knowledge.