

Curriculum Vitae

David Elohim

Personal Information

- Name:
David Elohim
My name was Hasen Joseph Khudairi, from January, 1986, to March, 2023, and Timothy Alison Bowen, from March, 2023, to April, 2024.
Please cite my published book and papers under 'Elohim, David'.
- Date of Birth:
January 16, 1986
- Languages:
English (Native)
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12 Maple Rd
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USA

Employment

- CIA Recruit. United States Central Intelligence Agency (the CIA).
Langley, McClean, Virginia, USA. 2022.

Education

- Ph.D. Student, Philosophy. Arché Philosophical Research Centre for
Logic, Language, Metaphysics, and Epistemology, University of St
Andrews. (2014-2017) [withdrew, owing to physical illness]

Research Groups

History and Philosophy of Logic and Mathematics (2015-2017; Convener for the group in the Fall 2016 semester)

Arché Logic Group (2014-2017)

Models, Modality, and Meaning (2014-2015)

Metaphysics (2014-2017)

- Visiting Ph.D. Student, Philosophy. Australian National University. (2017) [declined, owing to physical illness]
- M.A., Philosophy. Columbia University. (2010-2012)
- B.A. (Hons.), Philosophy. Johns Hopkins University. (2005-2008)

Teaching

- Tutor (Teaching Assistant). ‘Reasoning’, i.e. introduction to logic, University of St Andrews. (2016)
Responsibilities included teaching two discussion sections, grading exams, and meeting with students during office hours.
- Reader in Philosophy (Teaching Assistant). ‘Plato’, Columbia University. (2011)
Responsibilities included grading papers and meeting with students during office hours.

Research Interests

Research Topics:

Foundations of Mathematics; Mathematical and Philosophical Logic; Formal Epistemology; Epistemic Modality and Hyperintensionality; Philosophy of Modal Logic; Hyperintensional Semantics; Metaphysics and Cognitive Science of Mind; Feminist Philosophy

Area of Specialization:

- Mathematical and Philosophical Logic [set theory and philosophy of set theory; philosophical applications of (i) modal logic, especially modal algebra, coalgebra, and the modal μ -calculus (ii) dynamic epistemic logic, (iii) hyperintensional semantics, and (iv) two-dimensional semantics]
- Philosophy of Mathematics (modality and hyperintensionality in mathematics; the access problem; the epistemology of mathematics; mathematical ontology)

- Epistemology (epistemic modal and hyperintensional semantics; epistemic logic; epistemic mathematics; modal epistemology; epistemology of mathematics; conceivability; the apriori)
- Metaphysics (mathematical objects; modal ontology; consciousness; grounding)
- Philosophy of Mind (intentional content; consciousness; the language of thought)

Area of Competence

- Philosophical Linguistics;
- Cognitive Science;
- Ethics;
- Feminist Philosophy

Publications

- Hyperintensional Ω -Logic. 2019. In M.V. d’Alfonso and D. Berkich (eds.), *The Cognitive, Ethical, and Scientific Dimensions of Artificial Intelligence – Themes from IACAP 2016*. Springer.
- Grounding, Conceivability, and the Mind-Body Problem. 2018. *Synthese*, 195 (2):919-926, doi:10.1007/s11229-016-1254-2. Correction: *Synthese*, 200 (2).

Dissertation Abstract

This dissertation concerns the foundations of epistemic modality and hyperintensionality and their applications to the philosophy of mathematics. I examine the nature of epistemic modality, when the modal operator is interpreted as concerning both apriority and conceivability, as well as states of knowledge and belief. The dissertation demonstrates how epistemic modality and hyperintensionality relate to the computational theory of mind; metaphysical modality and hyperintensionality; the types of mathematical modality and hyperintensionality; to the epistemic status of large cardinal axioms, undecidable propositions, and abstraction principles in the philosophy of mathematics; to the modal and hyperintensional profiles of the logic of rational intuition; and to the types of intention, when the latter is interpreted as a hyperintensional mental state. Chapter 2 argues for a novel type of expressivism based on the duality between the categories of coalgebras and algebras, and argues that the duality permits of the reconciliation between modal and hyperintensional cognitivism and modal and hyperintensional expressivism. I also develop a novel,

topic-sensitive truthmaker semantics for dynamic epistemic logic, and develop a novel, dynamic two-dimensional semantics grounded in two-dimensional hyperintensional Turing machines. Chapter **3** provides an abstraction principle for two-dimensional (hyper-)intensions. Chapter **4** advances a topic-sensitive two-dimensional truthmaker semantics, and provides three novel interpretations of the framework along with the epistemic and metasemantic. Chapter **5** applies the fixed points of the modal μ -calculus in order to account for the iteration of epistemic states in a single agent, by contrast to availing of modal axiom 4 (i.e. the KK principle). The fixed point operators in the modal μ -calculus are rendered hyperintensional, which yields the first hyperintensional construal of the modal μ -calculus in the literature and the first application of the calculus to the iteration of epistemic states in a single agent instead of the common knowledge of a group of agents. Chapter **6** advances a solution to the Julius Caesar problem based on Fine's 'criterial' identity conditions which incorporate conditions on essentiality and grounding. Chapter **7** provides a ground-theoretic regimentation of the proposals in the metaphysics of consciousness and examines its bearing on the two-dimensional conceivability argument against physicalism. The topic-sensitive epistemic two-dimensional truthmaker semantics developed in chapters **2** and **4** is availed of in order for epistemic states to be a guide to metaphysical states in the hyperintensional setting.

Chapters **8-12** provide cases demonstrating how the two-dimensional hyperintensions of hyperintensional, i.e. topic-sensitive epistemic two-dimensional truthmaker, semantics, solve the access problem in the epistemology of mathematics. Chapter **8** examines the interaction between my hyperintensional semantics and the axioms of epistemic set theory, large cardinal axioms, the Epistemic Church-Turing Thesis, the modal axioms governing the modal profile of Ω -logic, Orey sentences such as the Generalized Continuum Hypothesis, and absolute decidability. These results yield inter alia the first hyperintensional Epistemic Church-Turing Thesis and hyperintensional epistemic set theories in the literature. Chapter **9** examines the modal and hyperintensional commitments of abstractionism, in particular necessitism, and epistemic hyperintensionality, epistemic utility theory, and the epistemology of abstraction. I countenance a hyperintensional semantics for novel epistemic abstractionist modalities. I suggest, too, that higher observational type theory can be applied to first-order abstraction principles in order to make first-order abstraction principles recursively enumerable, i.e. Turing machine computable, and that the truth of the first-order abstraction principle for two-dimensional hyperintensions is grounded in its being possibly recursively enumerable and the machine being physically implementable. Chapter **10** examines the philosophical significance of hyperintensional Ω -logic in set theory and discusses the hyperintensionality of metamathematics. Chapter **11** provides a modal logic for rational intuition and provides a hyperintensional semantics. Chapter **12** avails of modal coalgebras to interpret the defining properties of indefinite extensibility, and avails of hyperintensional epistemic two-dimensional semantics in order to account for the interaction between interpretational and objective modalities and the truthmakers thereof. This yields the first hyperintensional category theory in the

literature. I invent a new mathematical trick in which first-order structures are treated as categories, and Vopenka's principle can be satisfied because of the elementary embeddings between the categories and generate Vopenka cardinals in the category of Set in category theory. Chapter **13** examines modal responses to the alethic paradoxes. I provide a counter-example to epistemic closure for logical deduction. Chapter **14** examines, finally, the modal and hyperintensional semantics for the different types of intention and the relation of the latter to evidential decision theory.

Work in Progress

- *Hyperintensionality in Epistemic Democracy and Welfare Economics*

Awards and Honors

- St Leonard's College Ph.D. Research Scholarship. University of St Andrews, 2014-2017.
- Departmental Honors in Philosophy. Johns Hopkins University, 2008.
- University Honors. Johns Hopkins University, 2008.

Graduate and Undergraduate Philosophy Seminars in which I earned an 'A'

Graduate

A, Theory of Knowledge, Johns Hopkins University
A, Quodlibetal Studies: Philosophy of Perception, Columbia University
A, Topics in Moral Philosophy, Columbia
A, Quodlibetal Studies: Hegel, Columbia
A, Topics in Ancient Philosophy: Relativism and Skepticism, Columbia
A, Topics in Esthetics and Criticism, Johns Hopkins
A+, Secularism and Beyond, Johns Hopkins
A+, The Secular Lives of Grace, Johns Hopkins
A-, Philosophy of Mind: Self-Knowledge, Columbia

Undergraduate

A, Intro to Symbolic Logic, Brandeis University
A, Philosophy of Language II, Johns Hopkins
A, Wittgenstein, Johns Hopkins
A, Radical Enlightenment: Spinoza, Johns Hopkins
A, Philosophy Honors Project II, Johns Hopkins
A-, Philosophy Honors Project I, Johns Hopkins
A-, Directed Study, Johns Hopkins
A-, Plato and his Predecessors, Johns Hopkins

Research Presentations

- ‘Modal Cognitivism and Modal Expressivism’. *History and Philosophy of Logic and Mathematics*, Arché, October 2016.
- ‘Imagination and Knowledge of Necessary Existence’. *The Logics of Image*, International Symmetry Society Congress (Santorini, Greece), July 2016. (Peer-Reviewed)
- ‘Grounding, Conceivability, and the Mind-Body Problem’. *Grounding and Consciousness*, University of Birmingham, June 2016. (Peer-Reviewed)
- ‘Modal Ω -Logic’. International Association for Computing and Philosophy – Annual Meeting, University of Ferrara, June 2016. (Peer-Reviewed)
- ‘Goodness and Moral Obligation’. *Kant, Metaethics, and Value*, Trinity College Dublin, May 2016. (Peer-Reviewed)
- ‘Grounding, Conceivability, and the Mind-Body Problem’. *The Science of Consciousness*, University of Arizona, April 2016. (Peer-Reviewed)
- ‘Logical and Epistemic Modality’. Postgraduate Friday Seminar, Departments of Logic and Metaphysics and of Moral Philosophy, University of St Andrews, April 2016.
- ‘Algebraic Metaphysical Semantics’. Uehiro Graduate Philosophy Conference, University of Hawai’i at Mānoa, March 2016. (Peer-Reviewed)
- ‘Grounding and Fundamentality’. *Metaphysics: Identity, Existence, and Structure*, Arché, November 2015.
- ‘Rules and Evolution’ and ‘Inference in Logic’. *History and Philosophy of Logic and Mathematics*, Arché, October 2015.
- ‘Bisimulations’. Arché Logic Group, April 2015.
- ‘Consciousness, Haecceitism, and Grounding’. *Metaphysics: Identity, Existence, and Structure*, Arché, November 2014.
- ‘Haecceitism, Chance, and Counterfactuals’. *Metaphysics: Identity, Existence, and Structure*, Arché, November 2014.
- ‘On Scharp’s Resolution to the Alethic Paradoxes’. *Models, Modality, and Meaning*, Arché, October 2014.

Service

- Co-Organizer, Funding Coordinator, and Referee. 9th Annual Arché Graduate Conference (2016). Keynotes: Fiona Macpherson (Glasgow) and Jenny Saul (Waterloo).
- Referee. 8th Annual Arché Graduate Conference (2014).
- Referee. The Columbia/NYU Graduate Conference in Philosophy (2012).

References

- Professor Branden Fitelson, Northeastern University
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- Professor Emeritus Peter Milne, University of Stirling, UK
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Telephone: +44 (0)1786 467562
- Professor Jody Azzouni, Tufts University
Email: jody.azzouni@tufts.edu
Telephone: +1 (617) 627-2345
- Professor Katja Vogt, Columbia University
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