

Joshua Norton

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Last update 11/2019

EDUCATION

University of Illinois at Chicago
Ph.D. Philosophy, 2015
Dissertation: *Quantum Ontology*
Supervised by Nick Huggett

University of Illinois at Chicago
M.S. Physics, 2014

University of California, San Diego
B.A. Mathematics, June 2006

EMPLOYMENT

University California, Irvine. Logic and Philosophy of Science Department,
Postdoctoral Fellow (Spring 2019-current)

American University of Beirut. Philosophy Department,
Assistant Professor (Fall 2015-Fall 2018)

University California, Irvine. Logic and Philosophy of Science Department,
Visiting Assistant Research Professor (Spring, 2018)

AOS AOC

Philosophy of Science, Philosophy of Physics
Logic, Epistemology, Metaphysics

PUBLICATIONS

- (4) "The Hole Argument Against Everything," *Foundations of Physics* (2019)
- (3) "Incubating a Future Metaphysics: Quantum Gravity," in *Synthese* (2017)
- (2) "Weak Discernibility and Relations Between Quanta," in *Philosophy of Science* (2015)
- (1) "Weak Discernibility for Quanta, The Right Way," in *British Journal for the Philosophy of Science* (2013), with Nick Huggett

PROJECTS NEARING COMPLETION

- (5) "Empirically Incoherent Quantum Gravity" (under review)
In this paper, I argue that quantum theories of gravity which do not include spacetime in their fundamental ontology, are empirically incoherent. That being said, these theories can gain empirical coherence were they to make novel predictions which were then verified. Under these circumstances, these theories would defined a new paradigm with its own internal criteria for empirical coherence.

(4) **"Suppressing Spacetime Emergence" (under review)**

In this paper, I argued that the account of spacetime emergences in loop quantum gravity, defended by a few different authors on a few different occasions, fails. This account of emergence conditionalizes the existence of emergent spacetime on properties of the measurement context rather than on the physical system under investigation. I argue that this account of emergence is logically incoherent and requires one to be committed to a problematic view of ontology, namely "ontic-perspectivism".

(3) **"Loop Quantum Ontology: spacetime and spin-networks" (under review)**

In this paper, I provide a series of novel interpretations of loop quantum gravity each which diverges from the received interpretation of the theory in important ways. I demonstrate that many of the evocative claims arising from the loop quantum gravity community, such as, "spacetime emerges from non-spatiotemporal spin-networks", are true only for one of the interpretations I provide and, surprisingly, is false for the received interpretation. This paper is important as it demonstrates that spacetime can live on as a fundamental structure in loop quantum gravity.

(2) **"Chaos in Consequentialism"**

In this paper, I apply chaos theory to consequentialist ethics and argue that were consequentialism true, there would be moral facts that we could not know outside of omniscience. The heart of this paper is the recognition that social structures are intertwined (chaotically) in such a way that any error – whatsoever – introduced into our utilitarian calculus will result in arbitrarily wrong results. The only way to avoid being arbitrarily wrong is to have perfect knowledge of the parameters and initial conditions of our chaotic system – which, as it turns out, is practically impossible.

(1) **The Logic Project**

A colleague and I are writing a logic text book that will be published and printing in the Middle East and North Africa. While the world does not need another introductory textbook on logic, the Middle East and North Africa do. The primary reason for this need is that it is expensive to ship books to these regions and the increased cost gets pushed onto the students. We plan to print the the logic text in both english as well as in local dialects, to have them printed them locally and to sell them at cost.

PRESENTATIONS

(13) "Suppressing Spacetime Emergence," *Society for the Metaphysics of Science* conference, Toronto (November, 2019)

(12) "Out-of Space Physics," Bogazici University, Istanbul (November 2018)

(11) "Unification Through Elimination", at POND's *Unity and Disunity of Science*, Lisbon (September, 2018)

(10) "No Time for the Hamiltonian Constraint", Pacific APA, San Diego (March, 2018)

(9) "Out-of Space Physics", University of Illinois at Chicago, Chicago (January, 2018)

(8) "The Hole Argument Against Everything", *Society for the Metaphysics of Science* conference, Switzerland (September, 2016)

(7) "No Time for the Hamiltonian Constraint," at the *International Association for the Philosophy of Time* conference, Winston-Salem (July, 2016)

(6) "Spin-networks as Real as Spacetime," at the *Fourth International Conference on the Nature and Ontology of Spacetime*, Bulgaria (May, 2016)

- (5) "Lessons in Metaphysics from Quantum Theories of Gravity," at the *New Trends in the Metaphysics of Science* conference, Sorbonne, France (December, 2015)
- (4) "The Hole Argument Against Everything," American University of Beirut, Lebanon (May, 2015)
- (3) "The Hole Argument Against Everything," *Inter-University Centre*, Croatia (April, 2015)
- (2) "No Time for Problems," at *Beyond Spacetime II*, San Diego (March, 2015)
- (1) "Weak Discernibility and Relations Between Quanta," at the *Philosophy of Science Association*, San Diego (2014)

**INVITED
PRESENTATIONS**

- (5) "The Hole Argument Against Everything", *Southern California Philosophy of Physics*, Irvine (May, 2018)
- (4) "Observing Out-of Space", at POND's *Aspects of Objectivity in Science* conference, Athens (September, 2017)
- (3) "Loop Quantum Ontology," at the *Interdisciplinary Workshop on the Mathematics and Philosophy of Physics*, NYU Abu Dhabi (May, 2017)
- (2) "Incubating a Future Metaphysics: Quantum Gravity" at *Space and Time After Quantum Gravity*, University of Geneva, Switzerland (September, 2016)
- (1) "Time in Quantum Gravity," presentation and panel discussion at the *International Association for the Philosophy of Time Conference*, Winston-Salem (July, 2016)

**PUBLIC
ENGAGEMENT**

- (14) "Why Quantum Mechanics Makes No Sense," public talk hosted by AUB, Philosophy (November 2018)
- (13) "Leibniz meets Quantum Mechanics," invited undergraduate lecture, NYU Abu-Dhabi (November, 2018)
- (12) "The Never-Ending Dance of Philosophy and Physics," with Nick Huggett (Video), https://youtu.be/JxZZ6Wv_uaI (September, 2018)
- (11) "The Copernican Revolution", lecture for the *University for Seniors* at AUB (October, 2017)
- (10) "Copernican Revolution", Common Lecture, Civilization Studies Program, AUB (September, 2017)
- (9) "Instruments of Revolution" Common Lecture, Civilization Studies Program, AUB (September, 2017)
- (8) Interview on the nature of time in loop quantum gravity for the podcast *Big Questions* (June, 2017)
- (7) "Instruments of Revolution" Common Lecture, Civilization Studies Program, AUB (February, 2017)
- (6) "Einstein's Hole Argument Against Everything," Faculty of Arts and Sciences research talk hosted by AUB (November, 2016)
- (5) "The Nature of Knowledge and Reason," public talk hosted by IDEAS/Lebanon Book

Club, Beirut (March, 2016)

- (4) "No Time for the Hamiltonian Constraint," brownbag lecture hosted by the Civilization Studies Program, AUB (March, 2016)
- (3) "Science is a god of Facts and Myths," public talk hosted by AUB, Philosophy (February 2016)
- (2) Interview on the nature of time in modern theories of physics for *LAU Magazine & Alumni Bulletin* (Winter, 2015)
- (1) "Time Travel," at the undergraduate philosophy club, UIC (2013)

HONORS

- (6) UIC, Philosophy Teaching Award (2015)
- (5) UIC, Dean's Scholar award (dissertation fellowship 2014-2015)
- (4) UIC, Chancellor's award (interdisciplinary project award 2015)
- (3) UIC, Chancellor's award (interdisciplinary project award 2014)
- (2) UIC, Ruth Barcan Marcus award (outstanding graduate performance 2013)
- (1) UIC, Provost award (travel award, 2009)

SERVICE/ ACTIVITIES

Advising: Fidaa Chehayeb, master's thesis in feminist epistemology of science: "Seeking Hermeneutical Justice in Social *Values*" (2016)

Service: UCI, organized the SoCal philosophy of physics group and meetings (current)
UCI, co-administered the Philosophy of Dark Energy workshop, UCI (March, 2019)
UCI, co-organized the Foundations of Cosmology and Quantum Gravity conference, NYU Abu Dhabi (January, 2020)

AUB, Member of the University Senate (one semester)
AUB, Undergraduate Student Academic Affairs Committee (three semesters)
AUB, Colloquia Coordinator (three semesters)
AUB, Freshman advisor (two semesters)
AUB, Philosophy Major advisor (two semester)

POND, Executive Committee (<https://pondposmed.wordpress.com/>).
POND/ *Theoria*, Guest editor of a special issue based on conference papers.

Referee: Foundations Of Physics
Philosophy Of Science
Ergo
The British Journal of Philosophy of Science
Synthese
Studies in History and Philosophy of Modern Physics

TEACHING EXPERIENCE

AUB, Formal Philosophy (Graduate)
AUB, Metaphysics of Spacetime (Graduate)
AUB, Introduction to Philosophy
AUB, Intermediate Philosophy of Science
AUB, Environmental Ethics

AUB, Advanced Logic (Modal and Metalogic)
AUB, Introduction to Logic
AUB, Philosophy of Physics (Spacetime)
AUB, Philosophy of Physics (Quantum Mechanics)

UIC, Introduction to Logic
UIC, Introduction to Philosophy (Epistemology)
UIC, Introduction to Philosophy
UIC, Introduction to Philosophy of Science, (*co-instructed*)
UIC, Intermediate Philosophy of Science
UIC, Intermediate Logic
UIC, Ethics and the Law

**BOOK
REVIEWS**

(1) Rickles, Dean (ed.) *The Ashgate Companion to Contemporary Philosophy of Physics*,
Heythrop Journal 52 (2):304-305 (2011)

**PROFESSIONAL
MEMBERSHIPS**

Philosophy of Science Association (2008-current)
American Philosophical Association (2013-current)
European Philosophy of Science Association (2017-current)
Pond: Philosophy of Science Around the Mediterranean (2017-current)