Bryan W. Roberts

Curriculum Vitae: May 14, 2022

Associate Professor, Philosophy, Logic & Scientific Method
Director, Centre for Philosophy of Natural & Social Sciences
London School of Economics & Political Science

personal.lse.ac.uk/robert49
B.W.Roberts@lse.ac.uk

Areas of Expertise

AOS philosophy of physics, philosophy of science
AOC history of physics, foundations of finance, metaphysics and epistemology, logic, philosophy of maths, foundations of probability theory

Academic Appointments

2020 to present. Director, LSE Centre for Philosophy of Natural & Social Sciences
2017 to present. Associate Professor, LSE Philosophy, Logic & Scientific Method
2019 to 2020. Visiting Fellow Commoner, Trinity College, Cambridge
2013 to 2017. Assistant Professor, LSE Philosophy, Logic & Scientific Method
2012 to 2013. Provost's Postdoctoral Scholar, University of Southern California

Education

Ph.D. History & Philosophy of Science, University of Pittsburgh, 2006 - 2012
B.S. Mathematics, University of Washington, 2001 - 2005
B.A. Philosophy, University of Washington, with College Honors, 2001 - 2005

Books

2022 *Reversing the arrow of time*, Cambridge: Cambridge University Press.
2018 *Philosophico-Scientific Adventures*, Free eBook introduction to philosophy of science: `http://personal.lse.ac.uk/ROBERT49/ebooks/PhilSciAdventures/`

Articles

Peer-Reviewed Articles

21. 2022 (with Henrique Gomes and Jeremy Butterfield) "The Gauge Argument: A Noether Reason", forthcoming in *The Physics and Philosophy of Noether's Theorems*, Read and Teh (Eds.), Cambridge: Cambridge University Press, `http://philsci-archive.pitt.edu/19099/`

20. 2022 "Time reversal." In *The Routledge Companion to the Philosophy of Physics*, Eleanor Knox and Alastair Wilson (Eds.), New York and London: Routledge Taylor & Francis Group, `http://philsci-archive.pitt.edu/15033/`

19. 2021 (with Jeremy Butterfield), "Time-energy uncertainty does not create particles." *Journal of Physics* 1638:012005.

18. 2020 "Regarding 'Leibniz Equivalence'." *Foundations of Physics* 50:250–269, `https://dx.doi.org/10.1007/s10701-020-00325-9`

17. 2020 (with Jim Weatherall) "New Perspectives on the Hole Argument", *Foundations of*

Physics 50(4):217-227, https://dx.doi.org/10.1007/s10701-020-00334-8

16. 2018 "Observables, disassembled." *Studies in History and Philosophy of Modern Physics* 63:150-162. https://doi.org/10.1016/j.shpsb.2018.02.002

15. 2017 "Unreal observables." *Philosophy of Science* 84(5):1265-1274. https://doi.org/10.1086/694298

14. 2017 "Three myths about time reversal in quantum theory." *Philosophy of Science* 84(2):1-20. https://doi.org/10.1086/690721

13. 2016 "Curie's Hazard: From electromagnetism to symmetry violation." *Erkenntnis* 81(5):1011-1029. http://dx.doi.org/10.1007/s10670-015-9779-1

12. 2015 "Three merry roads to T-violation." *Studies in History and Philosophy of Modern Physics* 52(A):8-15. http://dx.doi.org/10.1016/j.shpsb.2014.08.003

11. 2015 "Comment on Ashtekar: Generalization of Wigner's Principle." *Studies in History and Philosophy of Modern Physics* 52(A):21-23. http://dx.doi.org/10.1016/j.shpsb.2014.08.008

10. 2014 "A general perspective on time observables." *Studies in History and Philosophy of Modern Physics* 47:50-54. http://dx.doi.org/10.1016/j.shpsb.2014.05.001

9. 2013 "When we do (and do not) have a classical arrow of time." *Philosophy of Science* 80(5):1112-1124. http://dx.doi.org/10.1086/674001

8. 2013 "The simple failure of Curie's Principle." *Philosophy of Science* 80(4):579-592. http://dx.doi.org/10.1086/673212

7. 2012 "Kramers degeneracy without eigenvectors." *Physical Review A* 86(3):034103. http://dx.doi.org/10.1103/PhysRevA.86.034103

6. 2012 (with John D. Norton) "The Scaling of Speeds and Distances in Galileo's *Two New Sciences*: A reply to Palmerino and Laird." *Centaurus* 54(2):182-191. http://dx.doi.org/10.1111/j.1600-0498.2012.00263.x

5. 2012 (with John D. Norton) "Galileo's refutation of the speed-distance law of fall rehabilitated." *Centaurus* 54(2):148-164. http://dx.doi.org/10.1111/j.1600-0498.2012.00260.x

4. 2011 "How Galileo Dropped the Ball and Fermat Picked It Up." *Synthese* 180(3):337-356. http://dx.doi.org/10.1007/s11229-009-9705-7

3. 2011 "Group Structural Realism." *The British Journal for the Philosophy of Science* 62(1):47-69. http://dx.doi.org/10.1093/bjps/axq009

Solicited Academic Articles

2. 2016 "Supertasks." With John Byron Manchak. In *Stanford Encyclopedia of Philosophy*, E. Zalta (Ed.), http://plato.stanford.edu/entries/spacetime-supertasks/.

General-Audience Articles

1. 2015 "Humans, Not Robots, Are the Real Reason Artificial Intelligence Is Scary", *The Atlantic*, 14 August 2015, URL: http://www.theatlantic.com/technology/archive/2015/08/humans-not-robots-are-the-real-reason-artificial-intelligence-is-scary/400994/

Dissertation

Time, Symmetry and Structure, supervised by John D. Norton and John Earman, with committee members Robert Batterman, Laura Ruetsche, and Giovanni Valente. Online: `http://d-scholarship.pitt.edu/12533/`

Fundraising

Personal Awards and Grants

2017 Philip Leverhulme Prize Winner, £100,000 GBP, Award Period from 2018-2020
2017 US National Science Foundation (NSF) Grant #1734155, 'Representing the Observable', $193,140 USD, co-administered with Nicolas J. Teh, 2017-2019
2017 Teaching Promotion Award 2017, *London School of Economics*
2016 Student Union Excellence in Teaching Award, *London School of Economics*
2011 US National Science Foundation (NSF) Dissertation Research Improvement Award #1058902, $6,864
2010 Rob Clifton Memorial Book Prize in Philosophy of Physics, *U. of Western Ontario*.

Total grant funding personally raised: **£163,069**.

Fundraising as Centre Director

2022 'Not in My Name', Jonathan Parry (PI), European Research Council (ERC), £809,657
2022 'Episodic Memory: Uniquely Human?', Ali Boyle, (PI), UK Research and Innovation (UKRI), £770,183
2022 'Physical laws and the application of mathematics', Cristián Soto (PI), Newton Fellowship, British Academy, £99,750.

Total grant funding raised as Centre Director: **£1,679,590**.

Teaching Experience

Teaching at the LSE

Teaching scores by the Teaching Quality Assurance and Review Office (TQARO) based on student surveys, on a scale from 5 (very good) to 1 (very poor). Scores prior to 2020 have been adjusted to reflect the change of scale to the current model.

Lent 2022 Physics and the City (PH 232/431)
Mich 2021 The Big Questions: An Intro to Philosophy (PH 103, 2 lectures)
Einstein for Everyone (PH 230/430)
Lent 2021 Physics and the City (PH 232/431)
TQARO Average Overall Performance: Seminars 4.8, Lectures 4.6
Mich 2020 The Big Questions: An Intro to Philosophy (PH 103, 2 lectures)
Einstein for Everyone (PH 230/430)
TQARO Average Overall Performance: Seminars 4.9, Lectures 4.6
Lent 2018 The Big Questions: An Intro to Philosophy (PH 103), 5 lectures
Physics and the City (PH 232/431)
TQARO Average Overall Performance: Seminars 4.9, Lectures 4.9
Mich 2017 The Big Questions: An Intro to Philosophy (PH 103), 5 lectures
Einstein for Everyone (PH 230/430)
TQARO Average Overall Performance: Seminars 4.9, Lectures 5.0
Lent 2017 Physics and the City (PH 232/431)

	TQARO Average Overall Performance: Seminars 4.5, Lectures 4.8
Mich 2016	Einstein for Everyone (PH 230/430)
	TQARO Average Overall Performance: Seminars 4.5, Undergrad classes 4.8
Lent 2016	Physics and the City (PH 232/431) - Course Creator
	TQARO Average Overall Performance: Seminars 4.5, Undergrad classes 4.8
Mich 2015	Einstein for Everyone (PH 230/430) - Course Creator
	TQARO Average Overall Performance: Lecture 5.0 (BSc), 5.0 (MSc), Seminars 5.0, Undergrad classes 5.0
Lent 2015	Philosophy of Science (PH 201/400)
	TQARO Average Overall Performance: Lecture 4.9 (BSc), 4.9 (MSc). Seminars: 4.8, 5.0.
Mich 2014	Philosophy of Science (PH 201/400)
Lent 2014	Genes, Brains and Society (PH 227/427) - Course Creator
	TQARO Average Overall Performance: Lecture: 4.4 (BSc), 5.0 (Msc). Seminar: 5.0.
	Reason, Knowledge and Values (PH 103)
	TQARO Average Overall Performance: Lecture 4.7 (Bsc).

Other Teaching

Lent 2019	Philosophical aspects of classical and quantum mechanics, Part iii Mathematics, University of Cambridge
Spr 2013	Methodologies of the Sciences (PHIL 486), University of Southern California
Fall 2012	Einstein's Spacetime Revolution (ARLT 100), University of Southern California
Spr 2010	Morality & Medicine, University of Pittsburgh
Fall 2009	Principles of Scientific Reasoning, University of Pittsburgh
Fall 2009	Certification in Higher Education Teaching (Teaching Practicum), University of Pittsburgh

Service

Service at LSE: School

Jul 2020-present	LGBTQ+ Steering Group Member
Sep 2020-present	Director, Centre for Philosophy of Natural & Social Sciences (CPNSS)
Jan 2014-Jan 2016	Academic Consultation Group, Web Improvement Programme
Dec 2013-Feb 2017	IT Portfolio Board

Service at LSE: Philosophy

Sep 2020-present	Coordinator, Undergraduate BSc Philosophy, Logic & Scientific Method
Jul 2017-Jul 2018	Director of Postgraduate Studies (PhD Programme Director)
Jun 2016-Jul 2018	Convener of the Popper Seminar Lecture Series
Jun 2014-Jul 2018	PhD Placement Director
Jan 2014-Jul 2018	Convener of the Sigma Club Lecture Series
Jun 2014-Sep 2021	Department Web and Outreach Coordinator
Sep 2014-Sep 2018	Karl Popper Memorial Seminar Committee
Sep 2014-Aug 2015	MSc Programme Coordinator, Philosophy of Science
Jun 2014-Dec 2014	Designer and developer of new philosophy homepage
Nov 2013-Oct 2017	MSc Admissions Selector
Nov 2013-Jun 2014	Fellow of the Forum for European Philosophy

Service to the Profession

Jul 2020-present	Co-Editor in Chief of *BSPS Open*, the Open Access book series of the British Society for the Philosophy of Science
Jul 2020-present	Governing Trustee of the Philosophy of Physics Society, successfully negotiating with the LSE Press **to bring the flagship journal in philosophy of physics** to the LSE. Designed and created the Society website: `https://philosophyofphysics.org`
Jul 2020-present	Co-Director of *PhilSci-Archive*, official online preprint repository of the Philosophy of Science Association, `http://philsci-archive.pitt.edu`.
Jan 2017-Jul 2020	Chair of the PSA/BSPS Committee on Open Access Monograph Publishing, Philosophy of Science Association (co-chair with David Teira)
Mar 2015-Mar 2018	Governing Board Member, British Society for the Philosophy of Science
Mar 2013-Mar 2017	Developer and Manager of USC Logic Web, a public web application for learning logic, `http://dornsife.usc.edu/USCLogicWeb`.
Aug 2012-Jul 2020	Executive Committee, PhilSci-Archive.
Aug 2009-Aug 2012	Archive Manager, PhilSci-Archive.

Journal Referee Service

British Journal for the Philosophy of Science, Dialectica, Ergo, Erkenntnis, European Philosophy of Science Association, Foundations of Physics, Humana.mente Journal of Philosophical Studies, Journal of General Philosophy of Science, Pacific Philosophical Quarterly, Philosophy of Science, Philosophical Transactions of the Royal Society A, Studies in History and Philosophy of Modern Physics, Synthese, Theoria.

Programme Committee Service

British Society for the Philosophy of Science, Annual Conference (2016, 2017, 2018, 2021)
European Philosophy of Science Association 2015 Biennial Conference
British Society for the Philosophy of Science 2015 Annual Conference

Conferences Organised

2022	The Quantum, the Thermal and the Gravitational Reconciled: Physics and Philosophy in the Varied Landscape of the Intersections, 24-26 June 2022, Co-Organised with Erik Curiel, Sebastian De Haro, and Katie Robertson, Munich Centre for Mathematical Philosophy (MCMP), LMU.
2021	The Challenges of Open Access Publishing in Philosophy, 13 January 2021, Co-Organised with David Teira, LSE
2019	Second Irvine-London-Munich-PoliMi-Salzburg Conference in Philosophy and Foundations of Physics, 2-3 Sep 2019, Co-organised with Erik Curiel, Patricia Palacios, Giovanni Valente, Jim Weatherall, and Charlotte Werndl, University of Salzburg.
2019	Cambridge Workshop on Philosophy of Physics, 19 Aug 2019, Cambridge, Co-Organised with Jeremy Butterfield.
2018	Norton for Everyone? The Material Theory of Induction and Beyond (CPS Pittsburgh), 27-28 Oct 2018, Co-Organised with John Earman and Elay Shech.
2018	The Philosophy and Physics of Noether's Theorems: A Centenary Conference on the 1918 Work of Emmy Noether (Notre Dame London), 5-6 Oct 2018, Co-Organised with Nicholas J. Teh.
2018	Workshop on Probability and the Many Worlds Interpretation of Quantum Mechanics (LSE), 2 Jul 2018.

2017 Quantum Investigations: A conference in honour of Miklós Rédei (LSE), 27 Oct 2017, Co-Organised with Balázs Gyenis.

2016 The 3rd Cambridge Masterclass in Philosophy of Physics: Structure and equivalence in physical theories (Trinity College, Cambridge), 12 Nov 2016, Co-Organised with Jeremy Butterfield.

2016 Foundations 2016: The 18th UK and European Conference on Foundations of Physics (LSE), 16-18 July 2016, Co-Organised with Roman Frigg and Miklós Rédei.

2016 The Hole Shebang: New Perspectives on the Hole Argument (LSE), 15 July 2016, Co-Organised with James Nguyen.

2016 The Cambridge Masterclass in Philosophy of Physics: Measurement and the Emergence of the Classical-Quantum Interface (Trinity College, Cambridge), 14 May 2016, Co-Organised with Jeremy Butterfield.

2016 Geometry and Physics Workshop, Lakatos Award (LSE), 4 May 2016.

2016 50 Years of Worrall: Science, Structure and Rock 'n' Roll (LSE), 18 March 2016, Co-Organised with Richard Bradley, Roman Frigg, Miklós Rédei, Alex Voorhoeve.

2015 The Cambridge Masterclass in Philosophy of Physics I: Thermal Physics (Trinity College, Cambridge), 14 Nov 2015, Co-Organizers Jeremy Butterfield, Adam Caulton.

2015 From Physics to Metaphysics and Back Again (Trinity College, Cambridge), 6-7 Feb 2015.

2014 Lakatos Award Conference on Philosophy of Physics (LSE), 21 Oct 2014

2014 Quantum Time (Center for Philosophy of Science, Pittsburgh), 28-29 March 2014, Co-Organized with Thomas Pashby and Giovanni Valente.

2013 Relativity Meets Quantum Theory (CPNSS, London School of Economics), 28-29 Nov 2013, Co-Organized with Adam Caulton and Eleanor Knox.
Irreversibility in Axiomatic Thermodynamics (Trinity College, Cambridge), 30 Nov 2013, Co-Organized with Adam Caulton and Eleanor Knox.

2012 7th Quadrennial Fellows Conference of the Center for Philosophy of Science (University of Pittsburgh / Muğla, Turkey), November 2012, Co-Organizers Mehmet Elgin, Peter Machamer, Ali Osman Gündoğan, John D. Norton.

Talks

Invited Academic Talks

51. "Spacetime symmetries and the origin of antimatter", Philosophy of Physics Lecture Series, University of Bristol, 6 Oct 2021

50. "The symmetry argument for higher-level causation: A defence of Christian List", Freedom and Reason: A workshop in honour of Christian List, LSE, 25 June 2021

49. "Representing Time and Time's Arrow", Quantizing Time, 18 June 2021, Perimeter Institute, Canada, `https://pirsa.org/21060118`

48. "The good news about killing people", Choice Group Lecture, LSE, 18 Mar 2020

47. "Directed theories of time and the conventionality of simultaneity", History and Philosophy of Science Department Seminar series, University of Cambridge, 28 Nov 2019

46. "The good news about killing people", CamPoS (Cambridge Philosophy of Science) Seminar, University of Cambridge, 27 Nov 2019

45. "Causation when time unfolds in the wrong direction", Serious Metaphysics Group, Department of Philosophy, University of Cambridge, 23 Oct 2019

44. "Causation when time unfolds in the wrong direction", Cambridge Workshop on Philosophy of Physics, Department of History and Philosophy of Science, Cambridge, 19 Aug 2019

43. "Causation when time unfolds in the wrong direction", Dubrovnik Philosophy of Science Conference, Inter-University Centre, Dubrovnik, 16 Apr 2019

42. "Time reversal" and "On the future of the weakly-interacting arrow of time", two lectures prepared for the Geneva Symmetry Group Seminar, University of Geneva, 12-13 Mar 2019

41. "Measuring time", University of Utrecht lecture series, 1 Mar 2019

40. "Time observables" Time in Physics Conference, University of Salzburg, 4-5 Sep 2018

39. "On the observable" Dubrovnik Conference on the Philosophy of Science, 16-20 Apr 2018

38. "Philosophical and physical aspects of the measurement problem" Foundations of Quantum Theory Book Workshop: Cats, Fleas and Symmetries, LSE, 4 Dec 2017

37. "Observables, disassembled" Qu'est-ce que l'observable? What Is Observable Conference, 18-22 June 2018, CEA/Saclay Paris (V. Bontems, T. Duguet, A. Grinbaum, F. Raimondi, organisers)

36. "The mechanics of markets," Choice Group Lecture, LSE, 22 Nov 2017

35. "On the meaning of time reversal," Symmetries and Asymmetries in Physics Conference, Leibniz Universität Hannover, 6-8 Jul 2017

34. "Against unitarity," With an Without Measure: Symmetry and Symmetry Breaking Workshop, Munich Center for Mathematical Philosophy, Ludwig-Maximilians-Universität München, 20 Jun 2017.

33. "Why there is more than one kind of thing," Contemporary Debates in Philosophy of Science lecture at the University of Edinburgh, 23 Mar 2017.

32. "On the future of the weakly interacting arrow of time," Workshop on Symmetry and symmetry breaking in fundamental physics, Paris Centre for Quantum Computing (PCQC), Pierre and Marie Curie University, Paris, 2 Dec 2016

31. "Unreal Observables," Munich Center for Mathematical Philosophy, Ludwig-Maximilians-Universität München, 14 Jun 2017; and *Physics and Metaphysics* conference, University of Bristol, 27-28 Jun 2016; and Trinity College, University of Cambridge, 29 May 2016; and University of Notre Dame, 19 April 2016.

30. "Why there is more than one kind of thing," LSE 50 Years of Worrall Conference, 18 Mar 2016

29. "The history and philosophy of Curie's principle," University of Oxford, Philosophy, 4 Feb 2016

28. "The history and philosophy of Curie's principle," University of Cambridge, History and Philosophy of Science Department, 19 Nov 2015.

27. "On the future of the weakly interacting arrow of time," University of Oxford, Philosophy, 22 Oct 2015.

26. "Why there is more than one kind of thing," Material Metaphysics Conference, University of Osnabrueck, 18 Sep 2015.

25. "Weak interactions and the curious little arrow of time," Workshop on Time and Physics, ETH Zurich, 7-11 Sep 2015

24. "Measuring the fundamental arrows of time," Time: Arrows, Experience, Emergence, conference of the New Agendas for the Study of Time project at the University of Sydney, 12-13 Jun 2015.

23. "Geometrizing quantum theory," 3rd Budapest-Krakow Workshop on Probability, Causality and Determinism, Hungarian Academy of Sciences, BTK Filozófiai Intézet, 21-22 May 2015.

22. "Mathematical representation and the hole argument," Applying Homotopy Type Theory to physics workshop, University of Bristol, 7-8 Apr 2015

21. "On the meaning of time reversal," Popper Seminar, Philosophy, LSE, 10 Mar 2015

20. "Quantum field theory on Kähler manifolds," Centre for Mathematical Sciences, University of Cambridge, 5 Jan 2015

19. "Curie's hazard," Lecture programme of the British Society for the Philosophy of Science, 24 Nov 2014

18. "The curious case of reversal in time," University of Leeds, 29 Oct 2014

17. "A general perspective on time observables," University of Bristol, 11 Jun 2014

16. "A general perspective on time observables," London Foundations Connection, LSE, 14 May 2014

15. "Curie's Principle," University of Rome III, 16 Apr 2014

14. "Two Merry Roads to T-violation," LSE Sigma Club, 3 Feb 2014

13. "Two Merry Roads to T-violation," Centre for Mathematical Sciences, Cambridge, 18 Mar 2014

12. "Classical time obsevables," Centre for Mathematical Sciences, Cambridge, 4 Jan 2014

11. "Three Merry Roads to T-violation," Workshop on Cosmology and Time, Penn State University, 16-17 Apr 2013

10. "The Curious Case of Reversal in Time," LSE Philosophy, 5 Feb 2013

9. "The simple failure of Curie's principle," Philosophy, University of Minnesota, 14 Feb 2013

8. "The simple failure of Curie's principle," Southern California Philosophy of Physics Reading Group, University of California, Irvine, 8 Dec 2012

7. "When do the laws of physics distinguish past from future?" University of Southern California, 31 Aug 2012

6. "Does quantum time have a preferred direction?" University of Sydney, 6 Dec 2011; and University of California, Irvine 13 Jan 2012; and University of Chicago 19 Jan 2012; and California State University, LA, 23 Jan 2012

5. "T-invariance and T-violation." University of Bristol Quantum Field Theory Workshop, 24 May 2011

4. "Three myths about time reversal." University of Oxford Philosophy of Physics Research Seminar, 19 May 2011

3. "Notes on the CPT Theorem." UCSD Philosophy of Science Reading Group, University of California, San Diego, 3 Mar 2011
2. "How to time reverse a quantum system." Southern California Philosophy of Physics Reading Group, University of California, Irvine, 19 Feb 2011
1. "Group Theory and the Structure of Quantum Theory." University of Notre Dame Workshop: *Structuralism in Philosophy of Science*, 18-20 Nov 2010

Professional Conferences

11. "Matter-Antimatter Exchange as a Spacetime Symmetry", Quantum Objects Conference, 11 November 2021, University of Geneva
10. "Interpreting Feynman on Antimatter", *Foundations 2021*: The 20th European Conference on Foundations of Physics, 28-30 October 2021, Paris
9. "Are antiparticles just particles moving backwards in time?" *Pressing Charges* Symposium at the Biennial Meeting of the Philosophy of Science Association, Seattle, 1-4 November 2018.
8. "Unreal Observables," Biennial Meeting of the Philosophy of Science Association, Atlanta, November 2016.
7. "Kähler representation theory," Foundations 2016: The 18th UK and European conference on Foundations of Physics, 16-18 Jul 2016
6. "Geometrizing Quantum Theory," British Society for the Philosophy of Science Annual Meeting, Manchester, 2-3 Jul 2015
5. "Curie's hazard: From electromagnetism to symmetry violation," Symposium on Curie's Principle with Elena Castellani, Jenann Ismael, and John D. Norton, Biennial Meeting of the Philosophy of Science Association, Chicago, 7 Nov 2014
4. "When we do (and do not) have a classical arrow of time," Biennial Meeting of the Philosophy of Science Association, San Diego, 16 Nov 2012
3. "How to time reverse a quantum system," Biennial Meeting of the Philosophy of Science Association, Montreal, 4-7 Nov 2010
2. "Galileo's refutation of the speed-distance law of fall rehabilitated," &HPS3 Conference, Bloomington, IN, 23-26 Sep 2010
1. "Time reversal and the symmetry of nothing," British Society for the Philosophy of Science Annual Meeting, Dublin, 9 Jan 2010

Invited Public Lectures

10. "The arrow of time", Cheltenham Science Festival, 7-12 June 2022, Cheltenham, UK.
9. "Do aliens exist?" Public lecture at *Philosophy Standup*, London, 6 Mar 2017.
8. "Time, disassembled" Public lecture at the Royal Court Theatre for the performance of *Torn*, 20 September 2016.
7. "Unveiling Reality" and "Traveling Through Time", Public lectures at *How the Light Gets In* at the Festival at Hay on Wye, 5 Jun 2016.
6. "The Ethics of Drones: A Dialogue", with Susanne Burri and Jonathan Birch, *Philosophy Now* Festival, Conway Hall Ethical Society, London, 21 Nov 2015.

5. "The arrow of time", Barnes Philosophy Club, London, 15 Jan 2015
4. "The limits of science", Forum for European Philosophy, LSE, 7 Oct 2014
3. "On the Unreasonable Effectiveness of Mathematics in Science", Forum for European Philosophy, 1 May 2014. `https://soundcloud.com/lsepodcasts/on-the-unreasonable`
2. "Metaphysics vs. Physics", University of Southern California, 30 Nov 2012
1. "The science of warp drives", Casa de Bernardo, Los Angeles, 20 Sep 2012

Media Appearances

3. *Thinkative* Podcast, "Alien life", Guest, 9 Mar 2017. `https://www.buzzsprout.com/55175/498677-together-in-electric-dreams-ep-16-mp3`
2. *Thinkative* Podcast, "Time and Philosophy of Physics", Guest, 26 May 2016. `https://www.buzzsprout.com/55175/385442-bryan-s-prosecco-ep-8`
1. Radio 4 *The Moral Maze*, "Is science morally neutral?" Expert Witness, 12 Mar 2016. `http://www.bbc.co.uk/programmes/b072mz5r`

Languages

fluent	Croatian, English (native), French, Spanish
reading	Italian, Latin
elementary	German, Russian