

Curriculum vitae for John Michael Pemberton

Academic affiliations

Centre for Philosophy of the Natural and Social Sciences, London School of Economics Website: www.lse.ac.uk/CPNSS

The CPNSS promotes research into philosophical, methodological and foundational questions arising in the natural and the social sciences, and their application to practical problems. As an Associate at the Centre (since 1994), John contributes to this research.

Centre for Humanities Engaging Science and Society Website: <https://www.dur.ac.uk/chess/>
Department of Philosophy, Durham University

As an Associate at CHES (since Summer 2014), John supports the programme's work of promoting knowledge for use through an engagement of science and society by the humanities.

Society for Philosophy of Time Website: <https://s-p-o-t.weebly.com/>

John is a member of the society and a contributor to their workshops.

Career

2008-2018: Full time research in philosophy.

1981-2008: Various commercial roles in actuarial science, finance, risk management, investment management and senior management

Education

Fellowship of the Institute of Actuaries 1985.

Ronald Hassé annual prize for Mathematics, Bristol University 1980.

First Class Honours Degree in Mathematics (BSc. Hons.), Bristol University 1977-80.

Warwick School 1970-77.

Selected publications

1. Pemberton, J. M. (2018). *Individuating processes*. In Individuation, Process and Scientific Practices. Edited by Otávio Bueno, Ruey-Lin Chen and Melinda Fagan. *Oxford University Press*.

Abstract: Individuals, such as organisms, are often held to be processes. But what are processes? How should we individuate them? The paper distils a rich characterisation of

processes from a consideration of their treatment in science, where processes are taken to involve parts acting together. The tension between these rich scientific views of processes and the parsimonious accounts of individuals common in metaphysics is explicated.

2. Pemberton, J.M. & Cartwright, N. (2014). *Ceteris paribus laws need machines to generate them*. Erkenntnis special issue: Semantics and Pragmatics of Ceteris Paribus Conditions. Volume 79, Issue 10 (2014), Page 1745-1758.

Abstract: Many of our most useful and prized laws within science are not basic but rather they arise from the operation of nomological machines. To make use of such laws we should first identify the relevant machine from which they arise: this is an essential first step to explicating the ceteris paribus conditions which obtain.

3. Cartwright, N. & Pemberton, J.M. (2012). *Aristotelian powers: without them, what would modern science do?* In Powers and capacities in philosophy: the new Aristotelianism. Edited by J. Greco and R. Groff. Routledge.

Abstract: Powers make sense of familiar methods for inferring and testing causal claims in contemporary science, and in particular the use of mechanism-evidence alongside regularity-evidence. Powers give rise to contributions which combine in a nomological machine arrangement to give rise to (Aristotelian) processes of change – and in turn to causal relations.

4. Pemberton, J.M. (2005), 'Why Ideals in Economics have Limited Use' in Cartwright, N. and Jones, M. (eds.), *Idealisation XII: Correcting the Model. Idealization and Abstraction in the Sciences* (Poznan Studies in Philosophy of Sciences and Humanities Vol. 86, pp35-46.) Amsterdam/New York NY: Rodopi, 2005

Abstract: Idealised models used in economics typically assume the stability of numerous causal factors in a way that allows these factors to be omitted from the resulting ideal. Unfortunately, economic reality makes such stability assumptions unreliable – such ideals may often be approximately right, but are sometimes very wrong – nothing in the ideal model helps to identify when it may go wrong.

5. Pemberton, J.M. (1999), 'The Methodology of Actuarial Science', *British Actuarial Journal*, Volume 5, Part I, No. 21, April 1999

Abstract: Actuarial models are typically narrowly focused on specific situations, using local evidence to assess causally relevant factors and their implications. Such methods contrast with mathematical economics, say, where more general assumptions license more elegant and seemingly more powerful models – but often at the cost of robustness in relevant and important respects.

Current research

Areas of research: Philosophy of science, metaphysics.
Special topics: Process, powers, change, causation, arrangement, structure, laws.

- Current research is focused on developing a process ontology dubbed *actor-process* ontology. An *actor-process* (unless it is elementary) is the acting together of its parts (also actor-processes) at each stage to bring about the next stage. Examples of actor-processes are entities we take to be things, e.g. beating hearts, pendulums, hydrogen atoms and electrons (which may be elementary). *Acting* is explicated as the manifesting through time of powers with *Aristotelian-timing*, i.e. the power and its bearer obtain through the time-extended period of manifesting.
- This process research has developed from a continuing work in conjunction with Nancy Cartwright in philosophy of science focused on *nomological machines*, i.e. arrangements of components and powers which give rise to characteristic change. Key areas of investigation in this research are powers, causation and laws.
- Another key strand of work focuses on metaphysical consideration of the interrelation between change and structure informed by Aristotle's account of form, process of change, and agent-patient powers – this work benefits from participation in projects investigating powers and structures led by Anna Marmodoro.

Selected recent conference and seminar presentations

Changing. Research presentation to “Change and change-makers” at the University of Cologne, 21-22 September 2018.

3 paradigms of change. Research presentation to “The power to change: dispositions and persistence” at University of Salzburg. 13 September 2017.

Aristotle's ontology of change. Research presentation to “Durham causation workshop”. 16-17 June 2016.

Properties in a changing world. Research presentation to “Properties in the metaphysics of science” workshop at UCL, London. 19 May 2016.

What is the manifestation of a power? Research presentation to “Powers, dispositions and the new essentialism” conference at the American University of Beirut, Lebanon. 29-30 April 2016.

Causation is processual not relational: implications for downward causation. Research presentation to “Downwards causation in the biological and social sciences” conference at Durham University. 30th September - 2nd October 2015.

Powerful process causation. Research presentation to “The Uniformity in Nature: natural laws, natural powers, or divine action?” conference at Edinburgh University. 30 May 2015.

Things are powerful processes. Research presentation for the Egenis seminar series at Exeter University. 27 May 2015.

Possibilities from powers. Research presentation at the “Real Possibilities, Indeterminism and Free Will” conference at the University of Konstanz, Germany. 18-21 March 2015.

Processual powers and emergence. Research presentation at the “Emergent powers” workshop at the University of Macerata, Italy. 19 February 2015.

How do Aristotelian powers combine? Research presentation at the National Yang-Ming University, Taipei, Taiwan. 12 December 2014.

Things are material processes. Research presentation at the “Scientific individuation” conference at the National Chung Cheng University, Chai-Yi City, Taiwan. 8-9 December 2014.

Where do ceteris paribus conditions come from? Research presentation at the “Explaining laws” conference at the University of Luxembourg, Luxembourg. 17-18 October 2014.

Manifestations of Powers: Timing and Continuity. (See webpage for link to Oxford University podcast). Research presentation at the Power Structuralism seminar series at Corpus Christi College, Oxford on 21 November 2012.

Aristotelian powers: without them, what would modern science do? Research presentation (with Nancy Cartwright) to “Aristotelian powers now” seminar, London School of Economics. 8 May 2012.

Causal explanation is mechanist (see webpage). Research presentation at the “Causality and explanation in the sciences” conference, Ghent University, Belgium. 19-21 September 2011.

Change-process causation - its mesh with empirical methods and the inexactness of laws. Research presentation at the “Putting powers to work” conference, Saint Louis University, USA. 28-30 April 2011.

Integrating mechanist and nomological machine ontologies to make sense of what-how-that evidence (see webpage). Research presentation at the “Causality in the biomedical and social sciences” conference, Erasmus University, Rotterdam, NL. 6-8 October 2010.

Selected recent conferences attended

Powers, teleology and intentionality. Durham University. 6-7 September 2018.

A process ontology for contemporary biology. Royal Institution, London. 21-23 March 2018.

The view from above: structure, emergence and causation. Oxford University. 11-12 January 2018.

Powers and change. Oxford University. 24 March 2017.

The foundation of reality: Fundamentality, Space and Time. Corpus Christi College, Oxford
13-15 March 2017.

Modality and causation. UCL. 19th December 2015.

Powers and human agency. Durham University. 16-17 March 2015.

The metaphysics of quantum mechanics. Corpus Christi College, Oxford. 2-3 October 2014.

The philosophy of E. J. Lowe: a memorial conference. Durham university. 27-29 July 2014.

Emergence summer school. Durham University. 21-25 July 2014.

Nancy Cartwright conference. Durham University. 23-24 June 2014.

The ontological commitments of dispositionalism. University of Innsbruck, Austria. 31 July –
2 August 2013.

Causality and experimentation in the sciences. University of Paris, France. 1-3 July 2013.

The metaphysics of relations. University of London. 3-5 October 2012.

Evidence and causality in the sciences. University of Kent. 5-7 September 2012.

Powerful Qualities. Corpus Christi College, Oxford. 26–27 April 2012.

Mechanisms and causality in the sciences. University of Kent. 9-11 September 2009.

Contact details

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