

Curriculum Vitae – Daniele Molinini

Nationality

Date of Birth 1980

Place of Birth

Contact Information

Education, Degrees and Qualifications

- 2017-to date FCT Researcher and Junior Assistant Professor of Epistemology and Philosophy of Science, Center for Philosophy of Sciences (CFCUL), Faculty of Sciences, University of Lisbon.
- 2018 National Scientific Qualification (ASN) as Associate Professor for the academic field Logic History and Philosophy of Science (11/C2). Obtained on 29/03/2018 from the Italian university national recruitment system and valid until 29/03/2024.
- 2016 Postdoctoral Researcher, Dept. of Philosophy, University of Roma Tre, Rome.
- 2014-2015 Research assistant ('cultore della materia'), Dept. of Philosophy, University of Roma Tre, Rome.
- 2013 "Qualification aux fonctions de maître de conférences" at the Conseil National des Universités -CNU-, France. Qualified for sections 17 (Philosophie) and 72 (Epistémologie, Histoire des Sciences et des Techniques). This qualification permits me to apply for maître de conférences positions in universities and Grandes Ecoles in France (a maître de conférences position is equivalent to the rank of Assistant or Associate Professor in North America, and Senior Lecturer in the United Kingdom).
- 2012-2013 Fernand Braudel-IFER postdoctoral fellow at LOGOS Group, University of Barcelona. Research area: Philosophy of Science, Philosophy of Mathematics. (research project *Testing the Viability of a Common Theoretical Framework Within Different Kinds of Mathematical Explanations in Science*).

- 2007-2011 Ph.D degree in Epistemology, History and Philosophy of Science from the University of Paris 7 Denis Diderot. Date degree conferred: 18 July, 2011. Title: *Toward a Pluralist Approach to Mathematical Explanation of Physical Phenomena*. Supervisor: Marco Panza (CNRS, University of Paris 1); co-supervisor: Jos´e Antonio D´ıez (LOGOS Group, Universitat de Barcelona). Distinction awarded: ‘Tr`es Honorable avec les F´elicitations du Jury’ (Highly Honorable with Praises of the Jury).
- Member of the research group SPHERE-REHSEIS (UMR 7219, Universit´e Paris 7 Denis Diderot).
- 2009-2010 Visiting researcher in the Logic, Language and Cognition Research Group (LOGOS), University of Barcelona.
- 2008 Visiting researcher in the Department of Mathematics, UNAM, Mexico City, (March-April 2008).
- 2006-2007 Master 2 (equivalent to Master of Arts) in Logic Philosophy History and Sociology of Sciences (LOPHISS) from the University of Paris 7 Denis Diderot. Thesis title: *La G´eographie d’Idrisi-Roger. Une Synth`ese entre Orient et Occident*. Supervisor: R´egis Morelon (CNRS, CHSPAM). Grade: A level with distinction.
- Research Fellow, UNIVPM - Universit`a Politecnica delle Marche (research project *Analysis of the transcriptional maps and the variations of the functional moduli in the course of the human myeloid differentiation*).
- 1999-2005 Laurea in Fisica vecchio ordinamento (equivalent to Bachelor degree in Physics) from the University of Bologna. Thesis title: *Analysis and development of computational methods for the prediction of the Coiled Coils domains in protein sequences*. Supervisor: Piero Fariselli (University of Bologna, Biocomputing Group). Grade: 106/110.

Grants and Scholarships

- 2017-to date 5-years FCT Exploratory Research Project (within my research project *Disclosing the Role of Visual Reasoning and Mathematical Diagrams in Scientific Explanation*; Reference IF/01354/2015). Budget: 40.000 e. Funding agency: FCT (Fundacao para a Ciˆencia e a Tecnologia), Portugal.
- 2016 Postdoctoral fellowship from the University of Roma Tre, Department of Philosophy (research project *The Nature of Scientific Knowledge and Scientific Progress*).
- 2012-2013 Postdoctoral fellowship Fernand Braudel-IFER Outgoing from the Fondation Maison des Sciences de l’Homme (FMSH, Paris) and the European Union (Action Marie Curie -COFUND- 7th PCRD).
- 2010 Visiting fellowship from the Ecole Doctorale ED400, University of Paris 7 Denis Diderot (“Aides `a la mobilit´e”).
- 2008 Visiting fellowship from the ‘ECOS-Nord project for scientific interchanges between France and Mexico in the domain of history of mathematics’. Funding agency: Comit´e ECOS-NORD, Universit´e Paris 13.

- 2007-2010 Doctoral fellowship from the University Paris 7 Denis Diderot (“Allocation de recherche”).
- 2006-2007 Research fellowship “assegno di ricerca” from the UNIVPM - Università Politecnica delle Marche (research project *Analysis of the transcriptional maps and the variations of the functional moduli in the course of the human myeloid differentiation*).
- 2002-2003 Erasmus scholarship from the University of Bologna.

Participation in Research Projects

- in progress *Disclosing the Role of Visual Reasoning and Mathematical Diagrams in Scientific Explanation*, 2017-to date. Principal Investigator: Daniele Molinini. Budget: 40.000 e. Project reference: IF/01354/2015. Funding agency: FCT (Fundação para a Ciência e a Tecnologia), Portugal.
- in progress *Emergence in the Natural Sciences: Towards a New Paradigm*. 2018-to date. Principal Investigator: David Yates (Centre of Philosophy, University of Lisbon; david.yates@campus.ul.pt). Budget: 239.365,17 e. Project reference: PTDC/FER-HFC/30665/2017. Funding agency: FCT (Fundação para a Ciência e a Tecnologia), Portugal.
- in progress Strategic Project of the *Centre for Philosophy of Science of the University of Lisbon*, 2019-to-date. Budget: 142.172,77 e. Project reference: UID/FIL/00678/2019. Funding agency: FCT (Fundação para a Ciência e a Tecnologia), Portugal.
- 2016 *Structures and Dynamics of Logic and Cognition* (FIRB 2012 project), 2016, Department of Philosophy, Communication and Media Studies (University of Roma Tre). Principal Investigator: Vincenzo Crupi (Università di Torino, vincenzo.crupi@unito.it). Project reference: D11J1200047001. Funding agency: MIUR (Ministry of Education, Universities and Research), Italy.
- 2012-2013 *Testing the Viability of a Common Theoretical Framework Within Different Kinds of Mathematical Explanations in Science*, 2012-2013, LOGOS Group (University of Barcelona). Principal Investigator: Daniele Molinini. Funding agency: Fondation Maison des Sciences de l'Homme (FMSH, Paris) and the European Union (Action Marie Curie -COFUND- 7th PCRD).
- 2012-2013 *Representación y Explicación en la Ciencia: Análisis Monistas y Pluralistas*, LOGOS Group (University of Barcelona). Principal Investigator: José Antonio Díez (LOGOS Group University of Barcelona, jose.diez@ub.edu). Project reference: FFI2012-37354. Funding agency: Ministerio de Ciencia e Innovación, Spain.
- 2009-2010 *Representación y Explicación en la Ciencia: Análisis Inherentistas y Funcionales*. LOGOS Group (University of Barcelona). Principal Investigator: José Antonio Díez (LOGOS Group University of Barcelona, jose.diez@ub.edu). Project reference: FFI2008-01580. Funding agency: Ministerio de Ciencia e Innovación, Spain.

- 2008 *ECOS-Nord project for scientific interchanges between France and Mexico in the domain of history of mathematics*, UNAM, Mexico City, Mexico, March-April 2008. Principal Investigators: Carlos Álvarez Jiméneez (UNAM, alvarji@servidor.unam.mx), Marco Panza (CNRS, marco.panza@univ-paris1.fr). Project reference: M04H01. Funding agency: Comité ECOS-NORD Université Paris 13, France.
- 2006-2007 *Analysis of the transcriptional maps and the variations of the functional moduli in the course of the human myeloid differentiation*, Università Politecnica delle Marche, from 16 June 2006 to 15 June 2007. Principal Investigator: Giovanni Principato (UNIVPM, principato@univpm.it). Funding agency: MIUR (Ministry of Education, Universities and Research), Italy.

Teaching

- 2018 - 2019 Responsible for the graduate course *Epistemology and Philosophy of Science in the xxth Century*, Master in History and Philosophy of Sciences (Mestrado em Historia e Filosofia das Ciências), Faculty of Sciences, Dept. of History and Philosophy of Sciences, University of Lisbon.
- 2017 - 2018 Responsible for the graduate course *Epistemology and Philosophy of Science in the xxth Century*, Master in History and Philosophy of Sciences (Mestrado em Historia e Filosofia das Ciências), Faculty of Sciences, Dept. of History and Philosophy of Sciences, University of Lisbon.

Awards

Finalist of the 2013 edition of the *Prix Jeunes Chercheurs* offered by the Société de Philosophie des Sciences (SPS).

Participation in doctoral juries

Sílvio Filipe Varela de Sousa (*O Transcendente Geométrico e a Percepto-Cognição*, PhD in philosophy, Universidade Nova de Lisboa, 16/03/2017)

Peer Review Activities

Reviewer for *Mind* (peer-reviewed academic journal published by Oxford University Press on behalf of the Mind Association)

Reviewer for *Philosophy of Science* (peer-reviewed, academic journal of philosophy, published by University of Chicago Press).

Reviewer for *The British Journal for the Philosophy of Science* (peer-reviewed, academic journal of philosophy, owned by the British Society for the Philosophy of Science and published by Oxford University Press).

Reviewer for *Erkenntnis* (peer-reviewed journal of philosophy published by Springer Netherlands).

Reviewer for *European Journal for Philosophy of Science* (peer-reviewed, official journal for the European Philosophy of Science Association, published by

Springer)

Reviewer for *International Studies in the Philosophy of Science* (peer-reviewed journal of philosophy published by Taylor & Francis)

Reviewer for *Philosophia Scientiae* (peer-reviewed scientific journal published by Kim'è Editions, Paris).

Reviewer for *Theoria. An International Journal for Theory, History and Foundations of Science* (peer-reviewed scientific journal published by the University of the Basque Country).

Publications

- Books
- Molinini, D. (2014). *Che Cos'è una Spiegazione Matematica*. Roma: Carocci Editore (ISBN 978-88-430-7351-1).
- Molinini, D. (2011). *Towards a Pluralist Approach to Mathematical Explanation of Physical Phenomena*. Lille: ANRT (ISBN 9782729583828).
- Edited volumes
- Guest editor (with Fabrice Pataut and Andrea Sereni) of the *Synthese* Special Issue *Indispensability and Explanation* (*Synthese*, Springer, 2016).
- Peer-reviewed articles
- Molinini, D. & Panza, M. (forthcoming 2019), Le probl'eme de l'application des mathématiques, in Wagner, P., Panza, P., Poggiolesi, F. and Arana A. (eds.), *Précis de Philosophie des Mathématiques et de la Logique*, Editions de la Sorbonne, Paris.
- Molinini, D. (2019). The Weak Objectivity of Mathematics and its Reasonable Effectiveness in Science, *Axiomathes* (Springer). DOI: 10.1007/s10516-019-09449-8.
- Molinini, D. (2018), Parsimony, Ontological Commitment and the Import of Mathematics, in Piazza, M. and Pulcini, G.(eds.), *Truth, Existence and Explanation*, Boston Studies in the Philosophy and History of Science, Vol. 334, Springer, pp. 189-207.
- Molinini, D. (2018), The because of Because Without Cause, *Philosophia Mathematica*, 26(2), pp. 275-286.
- Molinini, D., Pataut, F. & Sereni A. (2016). Indispensability and Explanation: an Overview and Introduction. *Synthese*, 193(2), pp. 317-332.
- Molinini, D. & Friend M. (2016). Using Mathematics to Explain a Scientific Theory. *Philosophia Mathematica*, 24(2), pp. 185-213.
- Molinini, D. (2016). Evidence, Explanation and Enhanced Indispensability. *Synthese*, 193(2), pp. 403-422.
- Molinini, D. (2016). The Epistemological Import of Euclidean Diagrams (in a non-Euclidean world). *Kairos*, 16(1), pp. 124-141.
- Molinini, D. & Panza, M. (2014). Sull'applicabilità della Matematica. In A. Varzi & C. Fontanari (Eds.), *La matematica nella società e nella cultura - Rivista della Unione Matematica Italiana, Serie I, Vol. VII*, pp. 367-395.
- Molinini, D. (2014). Deductive Nomological Model and Mathematics: Making Dissatisfaction more Satisfactory. *THEORIA. An International Journal for*

Theory, History and Foundations of Science, 29(2), pp. 223-242.

Molinini, D. (2013). La Spiegazione Matematica. *APhEx Portale Italiano di Filosofia Analitica*, n.7.

Molinini, D. (2012). Learning from Euler. From Mathematical Practice to Mathematical Explanation. *Philosophia Scientiae*, 16(1), pp. 105-127.

Molinini, D. & Sus, A. (2010). Causality and Explanation in Physics, Biology and Economics. *The Reasoner*, 4(4), pp. 60-61.

Molinini, D. (2009). The First Sicilian School of Translators. *Nova Tellus*, 27(1), pp. 191-205.

Fariselli, P., Molinini, D., Casadio, R. & Krogh, A. (2007). Prediction of structurally determined coiled-coil domains with hidden Markov models. In S. Hochreiter & R. Wagner (Eds.), *Bioinformatics Research and Development*, LNBI (pp. 292-302). Berlin: Springer Verlag.

Peer-reviewed
conference
proceedings

Molinini, D. (2014). What's the Matter with the Deductive Nomological Model? In T. Archibald (Ed.), *Proceedings of 38th Annual Meeting of the Canadian Society for History and Philosophy of Mathematics*, vol. 25 (pp. 125-136). Burnaby (CA).

Molinini, D. (2010). Understanding, Visualizability and Mathematical Explanation. In F. Arzarello, V. Durand-Guerrier & S. Soury-Lavergne (Eds.), *Proceedings of the Sixth Congress of the European Society for Research in Mathematics Education* (pp. 181-190). Lyon: INRP.

Molinini, D. (2010). Using Numbers to Drive in Nails. *Boletín de la Sociedad de Lógica, Metodología y Filosofía de la Ciencia*, Special Edition, December 2010.

Conference Contributions

Invited talks

“Ecco perché (secondo alcuni) i numeri esistono!”, conference Matematica e filosofia per un nuovo percorso formativo, Department of Mathematics, University of Salerno, Salerno, Italy, June 6, 2019.

“Il perché di un perché matematico”, conference Matematica e filosofia per un nuovo percorso formativo, Department of Mathematics, University of Salerno, Salerno, Italy, June 7, 2018.

“History and philosophy in action: The case of the Lagrange Multipliers”, Jornadas do Departamento de Historia e Filosofia das Ciências, Dept. of History and Philosophy of Sciences, University of Lisbon, Lisbon, Portugal, June 1, 2018.

“Ontological Parsimony can be Pricey”, workshop Mathematical and Metaphysical Explanations: New Perspectives, Institute of History and Philosophy of Sciences and Techniques (IHPST), Paris, February 2, 2017.

“Is explanatory indispensability really indispensable?”, Logic and Philosophy of Mathematical Practices, meeting SRP, MEC seminar, Brussels, February 19, 2016.

“Exploring the boundary between mathematics and physics: the case of the logical special relativity project”, Society for Philosophy of Science in Practice (SPSP) Fifth Biennial Conference, University of Aarhus, Aarhus, Denmark, June

25, 2015.

“Numeri, Elefanti e Scienza: la ricerca filosofica di una ragionevole irragionevolezza”, Philosophy of Science Seminar, University of Florence, Department of Philosophy, Florence, May 15, 2015.

“Towards a weakly monistic, not-radically pluralistic, account of mathematical explanation in science”, WIP Seminar, University of Roma Tre, Department of Philosophy, Rome, December 10, 2014.

“A reason for a mathematical reason? The problem of mathematical explanation in science and in mathematics.”, Philosophy of Mind and Language Seminar, University of Milan, Department of Philosophy, Milan, December 5, 2014.

“Explaining Explanation(s)”, Cogito Research Centre in Philosophy Seminar, University of Bologna, Department of Philosophy, Bologna, July 8, 2013.

“Evidence, Explanation, Enhanced Indispensability”, Workshop *Indispensability and Explanation*, IHPST, Paris, November 19, 2012.

“Venados, insectos y matemática. Más allá de la irrazonable efectividad de la matemática en biología : entre representación y explicación”, Pontificia Universidad Católica del Perú, Lima, June 21, 2012.

“Is there something reasonable in this unreasonable effectiveness?”, *Proyecto de Excelencia ‘Estudios sobre historia y filosofía de las ciencias físicas y matemáticas’*, University of Sevilla, Sevilla, July 2, 2009.

“How do we explain mathematical explanation of scientific facts?”, *Philosophy of Mathematics Seminar*, UNAM, Mexico City, April 10, 2008.

“A perspective of continuity. Transmission and production of scientific knowledge at the court of Roger II of Sicily”, *Les Sciences Mathématiques à l'Age Moderne*, Congress of the Italian Society of History of Mathematics, Institut Henri Poincaré, Paris, October 25, 2007.

Talks with paper
accepted

“Mathematical concepts as conceptual mediators”, 9th Novembertagung on the History of Mathematics (History of Mathematical Concepts and Conceptual History of Mathematics), Instituto de Matematicas de la Universidad de Sevilla (IMUS), University of Sevilla, Sevilla, November 28-30, 2018.

“Mathematics *in* (and *for*) application: the case of Lagrange multipliers”, Workshop Mathematics and Mechanics in the Newtonian Age: Historical and Philosophical Questions, University of Sevilla, Sevilla, September 18-20, 2017.

“Mathematical Generosity and Ontological Parsimony”, SILFS 2017 Triennial International Conference, Bologna University, Bologna, June 21, 2017.

“The Case of the Logical Special Relativity Project and the Ontological Status of Mathematical Objects”, EBL 2014, LNCC, Petropolis, Rio de Janeiro, Brazil, April 7-11, 2014.

“How Visualization can (help) Answer(ing) Why”, Workshop on Beauty and Explanation in Mathematics (WBEM), Umea University, Umea, Sweden, March 10-12, 2014.

“A New Approach to Mathematical Explanation(s) in Science”, 4th Conference of The European Philosophy of Science Association (EPSA), Helsinki, Finland, August 30, 2013.

“Towards a New, Pluralist and Pragmatic, Approach to Mathematical Explanation(s)”, SILFS Conference, Urbino, May 30, 2013.

“A Symmetry in the Asymmetry: How explanatory asymmetries might shed light on explanations (in science and in society)”, *Science, Philosophie, Soci ete*, IVe Congr es de la Soci ete de Philosophie des Sciences (SPS), Universit e du Qu ebec, Montr eal, Canada, June 2, 2012.

“What’s the Matter with the Deductive Nomological Model?”, annual conference of the Canadian Society for the History and Philosophy of Science (CSHPS), University of Waterloo, Waterloo, Canada, May 29, 2012.

“Using Numbers to Drive in Nails”, *First SLMFCE Graduate Conference*, University of Granada, Granada, Spain, September 29 - October 1, 2010.

“A Practice Driven approach to MEPP in terms of Conceptual Tools and Conceptual Resources”, *Understanding and the Aims of Science*, Lorentz Center, Leiden, The Netherlands, May 31 - June 4, 2010.

“Understanding, Visualizability and Mathematical Explanation”, *CERME 6 - Sixth Conference of European Research in Mathematics Education*, Lyon, France, January 28 - February 1, 2009.

“Learning about Mathematical Explanation in Physics from the History of Mathematics”, *Novembertagung 2008*, Sominstationen, Holbaek, Denmark, November 5-9, 2008.

“The First Sicilian School of Translators”, Segundo Congreso Internacional de Estudios Cl asicos en M exico, Centro de Estudios Cl asicos, UNAM (Universidad Nacional Aut onoma de M exico), Mexico City, Mexico, September 8-12, 2008.

“Prediction of structurally-determined coiled-coil domains with hidden Markov models”, *BIRD - 1st International Conference on Bioinformatics: Research and Development*, Berlin, Germany, March 12-14, 2007.

Other Activities

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| Organizational activities | (2018-to date) Co-organizer of the seminars within the project <i>FCT Emergence in the Natural Sciences: Towards a New Paradigm</i> at the CFCUL. |
| | (2017-to date) Co-organizer of the Reasoning Seminar (Epistemology & Methodology; Philosophy of the Formal Sciences) at the CFCUL. |
| | (2013-2016) Co-organizer of the reading group WIP (Philosophy of Science), Dept. of Philosophy, University of Roma Tre, Rome. |
| | (2012-2013) Co-organizer of the reading group <i>Scientific Realism and Causality (SRC)</i> , LOGOS Group, Department of Philosophy, University of Barcelona. |
| | (2011-2012) Co-organizer of the workshop <i>MathematicaAnd Geometrical Explanations in Physics</i> , UAB (Autonomous University of Barcelona), Barcelona, March 9-10, 2012. |
| | (2011-2012) Co-organizer of the reading group <i>Scientific Realism (SR)</i> , LOGOS Group, Department of Philosophy, University of Barcelona. |
| Membership in professional societies | Association for the Philosophy of Mathematical Practice (APMP) Canadian Society for History and Philosophy of Mathematics (CSHPM) |

Canadian Society for the History and Philosophy of Science (CSHPS)

Soci et e de Philosophie des Sciences (SPS)

Sociedad de L ogica, Metodolog a y Filosof a de la Ciencia en Espa a (SLMFCE)

Societ a Italiana di Logica e Filosofia delle Scienze (SILFS)

Teaching
Experience in
secondary school

(2016) Upper secondary school teacher, Liceo Scientifico Manieri Copernico (Via Faleria, 21, 00183 Roma). Taught Mathematics and Physics (code A049).

(2014) Lower secondary school teacher, Istituto Comprensivo IC 16 Guido Reni (Vicolo Bolognetti, 10, 40125 Bologna). Taught Mathematical, Chemical, Physical and Natural Sciences (code A059).

(2013) Upper secondary school teacher, Liceo Scientifico Augusto Righi (Viale Carlo Pepoli 3/2, 40123 Bologna). Taught Mathematics and Physics (code A049).

(2013) Lower secondary school teacher, Scuola Media G. Marconi (Via Goffredo Mameli 7, 740033 Casalecchio di Reno, Bologna). Taught Mathematical, Chemical, Physical and Natural Sciences (code A059).

Science
Communication

Freelance journalist for the magazine *Le Scienze Web News* (ISSN 1827-8922).

Languages

- Mother tongue: Italian
- English: fluent (speaking, reading, writing)
- French: fluent (speaking, reading, writing)
- Spanish: fluent (speaking, reading, writing)
- Portuguese: basic reading and speaking knowledge
- Catalan: basic reading and speaking knowledge

Computer Skills

Advanced experience with the following operating systems: Linux, Mac OSX and Microsoft Windows.

Proficient with the following programming, scripting and markup languages: Python, Perl, L^AT_EX, C++, Fortran.

Proficient with the following productivity suites: Logic Studio, Microsoft Office, OpenOffice, Adobe Creative Suite.

Personal interests

Author of the following novels (in italian):

- *Installazioni, vecchie valvole Sovtek e culto del fuoco*, Edizioni Tracce, Pescara, 2003.
- *Quattordici giorni a domani*, Luisa Gasbarri editor, Demian Edizioni, Teramo, 2006.
- *GOA*, Edizioni Noubs, Chieti, 2008.

References

Prof. Paolo Mancosu, Department of Philosophy, University of California Berkeley. E-mail: mancosu@socrates.berkeley.edu

Prof. Christopher Pincock, Department of Philosophy, Ohio State University. E-mail: chrispincock@gmail.com

Prof. Carl Hoefer, Department of Philosophy, Rotman Institute of Philosophy. E-mail: carl.hoefer@uwo.ca

Prof. Marco Panza, CNRS IHPST University Paris 1. E-mail: panzam10@gmail.com

Prof. Mauro Dorato (Department of Philosophy Communication and Media Studies, University of Roma Tre). E-mail: mauro.dorato@gmail.com

Prof. Jos´e D´iez, Department of Philosophy, University of Barcelona. E-mail: diez.ja@gmail.com

Prof. Mich`ele Friend, Department of Philosophy, Washington State University. Email: micheleifriend@gmail.com

Daniele Molinini
Lisbon, July 2019