

Silvia De Toffoli

Curriculum Vitae

04/02/21

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Philosophy Department,

Princeton University

208 Marx Hall, Princeton, NJ 08540

Areas of Specialization: Philosophy of Mathematics, Epistemology

Areas of Competence: Philosophy of Science, Logic, Nietzsche, Philosophy and Literature

Employment

2019 – Princeton University, Philosophy Department, Postdoctoral Research Associate and Lecturer

Education

2019 **PhD in Philosophy, Stanford University**

Dissertation: *Epistemic Roles of Mathematical Diagrams*

Committee: Thomas Ryckman (advisor), Marcus Giaquinto, Michael Friedman, Krista Lawlor

As visiting student: Columbia University (fall 2016), University of Pennsylvania (fall 2017)

Goethe University Frankfurt (spring 2018)

PhD Minor, Philosophy, Literature, and the Arts, Stanford University

Advisor: R. Lanier Anderson

2013 **PhD in Mathematics, Technical University of Berlin**

Advisor: John M. Sullivan

2009 MS, Mathematics, University of Bologna

As visiting student: University of Paris7 (2007-2008)

2006 BS, Mathematics, University of Bologna

As visiting student: University of Calgary (2004-2005)

Publications

Articles

- “Groundwork for a Fallibilist Account of Mathematics,” *The Philosophical Quarterly*, online first, <https://doi.org/10.1093/pq/pqaa076> (2020).
- “Reconciling Rigor and Intuition,” *Erkenntnis*, online first, <https://doi.org/10.1007/s10670-020-00280-x> (2020).

- “Leopardi: ‘Everything is Evil,’” in: *Evil—A History*, Ed: A. P. Chignell. Oxford University Press, 350-357, (2019).
- “‘Chasing’ The Diagram – The Use of Visualizations in Algebraic Reasoning,” *The Review of Symbolic Logic*, Volume 10, Number 1, 158-186, (2017).
- “Envisioning Transformations – The Practice of Topology” (with V. Giardino), in: *Mathematical Cultures*, Ed: B. Larvor. Birkhäuser, 25-50, (2016).
- “An Inquiry into the Practice of Proving in Low-Dimensional Topology” (with V. Giardino) In: *From Logic to Practice*, Eds: G. Lolli, M. Panza, G. Venturi. *Boston Studies in the Philosophy and History of Science*, Volume 308, 315-336, (2015).
- “Forms and Roles of Diagrams in Knot Theory” (with V. Giardino), *Erkenntnis*, Volume 79, 829-842, (2014).

Editorial Work

- Special issue of *Endeavour* (with P. Findlen and G. Priest) With a co-authored introduction: “Tools of Reason: The Practice of Scientific Diagramming from Antiquity to the Present” *Endeavour*, Volume 42 (2-3), 49–59, (2018).

Work in Progress

- “A Case for the Fundamentality of Doxastic Justification,” in preparation, to appear in: *Propositional and Doxastic Justification: New Essays on Their Nature and Significance*, Eds. Paul Silva Jr. & Luis Oliveira, Routledge, 2021.
- “The Epistemological Subject of Mathematics,” in preparation, to appear in: *The Handbook of the History and Philosophy of Mathematical Practice*, Ed: Bharath Sriraman, Springer, 2021.
- “What is a Mathematical Diagram?,” *R&R*.
- “Who’s Afraid of Mathematical Diagrams?” submitted.
- “Mathematical Justification,” in preparation.
- “Nietzsche on Logic,” in preparation.

Others

- “Einführung in Meta-Vermeer: Experimentelle Studien über originale und manipulierte Bilder” (with Y. Sakamoto), in: *Das Licht im Zeitalter von Rembrandt und Vermeer*, Ein Handbuch der Forschungsgruppe Historische Lichtgefüge, Jovis, 50-53 (2012).
- “Meta-Vermeer: A Topological Reinterpretation of a Masterpiece” (with Y. Sakamoto), *Bridges 2012: Mathematics, Music, Art, Architecture, Culture*, 499-502, (2012).
- “Numeri. Divagazioni, calcoli, giochi” (with D. De Toffoli, D. Zaccariotto) (introduction by Stefano Bartezzaghi), *Stampa Alternativa*, Viterbo. 2017: 2nd Edition (preface by Furio Honsell), Kangourou editions (2008).

Teaching

As Primary Instructor

- [COMING UP] *Graduate Seminar in Philosophy of Mathematics: Mathematical Rigor* (with John Burgess), PHI 536, Fall 2021-22, Princeton University
- *Theory of Knowledge*, PHI 313, Fall 2020-21, Princeton University
- *Philosophy of Mathematics* (with John Burgess), PHI 314, Fall 2019-20, Princeton University
- *Philosophy of Mathematics*, PHIL 162, Winter 2017-18, Stanford University
- *Introduction to Philosophy*, PHIL 102, Fall 2016-17, City College New York
- *Algebraic Topology*, MA 512, Spring Semester 2013-14, Montana State University, Bozeman

As Teaching Assistant

- *Philosophy and Literature*, PHIL 81, (R. L. Anderson and J. Landy) Winter 2016-17, Stanford
- *Epistemology*, PHIL 184, (Instructor: Eli Alshanetsky) Spring 2015-16, Stanford
- *Introduction to Philosophy of Science*, PHIL 60, (H. Longino) Winter 2015-16, Stanford
- *Topology* (Instructor: John Sullivan), Master course, Winter 2010-11, TU Berlin

Awards

- 2017-19 Ric Weiland Graduate Fellow in the Humanities & Sciences, Stanford University
- 2017 France-Stanford Visiting Student Researcher Fellowship (IHPST, Institute for History and Philosophy of Sciences and Technology), spring 2017, sponsor: Marco Panza, CNRS, Paris
- 2013 Certificate of Distinction from *the Berlin Mathematical School* for the Ph.D. thesis “Degrees of essentiality for secants of knots”

Events Organization

- [member of the organizing Committee] *6th International Conference of the Association for the Philosophy of Mathematical Practice*, (June 2021)
- *Rigor and Intuition*, group session of the Philosophy of Mathematics Association, Pacific APA, Portland (31 March –4 April 2021)
- [POSTPONED] With John Burgess: *The ‘End’ of Philosophy of Mathematics?*, Conference at Princeton University (3-5 April 2020)
- [member of the organizing Committee] *5th International Conference of the Association for the Philosophy of Mathematical Practice*, ETH, Zurich (18-21 January 2020)
- *Association for the Philosophy of Mathematical Practice* symposium, 16th Congress of Logic, Methodology and Philosophy of Science and Technology, Prague (5-10 August 2019), <http://clmpst2019.flu.cas.cz>

- *Association for the Philosophy of Mathematical Practice* symposium, XXIV World Congress of Philosophy, Beijing (13-20 August 2018)
- With Rebecca Morris: *Mathematical Reasoning*, Workshop at Stanford University (9-10 February 2018)
- *Varieties of Visualization in Mathematics*, Workshop as part of the Fourth International Meeting of the Association for the Philosophy of Mathematical Practice, Salvador, Brazil (23-27 October 2017)
- With Paula Findlen and Greg Priest: *Tools of Reason: The Practice of Scientific Diagramming from Antiquity to the Present*, Workshop at Stanford University (10-11 February 2017)

Service

- 2019 – **PhilPapers Editor** of the categories “**Mathematical Practice**,” “**Visualization in Mathematics**,” “**Philosophy of Literature**,” “**Fiction**,” “**The Basing Relation**,” “**Propositional and Doxastic Justification**,” and “**Epistemic Fallibilism**.”
- 2018 – Member of the Steering Committee of the *Association for the Philosophy of Mathematical Practice* (APMP)

Refereeing

Synthese, Erkenntnis, Philosophy of Science, The British Journal for the Philosophy of Science, Journal for General Philosophy of Science, Journal of Humanistic Mathematics, Manuscripta, Theoria, Dialectica, Axiomathes, Éditions de la Sorbonne

Scientific Committee for Conferences

- 2021 *Diagrams 2021*, 12th International Conference on the Theory and Application of Diagrams, Philosophy Track, (28-30 September)
- 2020 *Diagrams 2020*, 11th International Conference on the Theory and Application of Diagrams, Philosophy Track, Tallinn (24-28 August)
- 2018 *Diagrams 2018*, 10th International Conference on the Theory and Application of Diagrams, Philosophy Track, Edinburgh (18-22 June)

Presentations

2021

EEN (European Epistemology Network) conference, Glasgow (21-23 June)

“Mathematical Justification”

Stirling University, Visiting Speaker Seminar, (11 February)

“A Case for the Fundamentality of Doxastic Justification”

Logic & Phil of Math in the evening, organized by D. Kant and D. Sarikaya (14 January)

“Mathematical Justification”

Comments on “Nietzsche... and Possibility of Metaphysics,” Eastern APA (4-7 January)

2020

- University of Trento, *PopMat* lab, joint talk department of philosophy and mathematics (9 December)
"Philosophy of Mathematical Practice"
- Canadian Society for the History and Philosophy of Mathematics Talk, (20 November)
"The Epistemological Subject of Mathematics"
- [CANCELLED] *Dimensions of Epistemic Justification*, University of Cologne (26-27 March)
Commentator at Large
- [POSTPONED] *Understanding Mathematical Explanation*, Rutgers University (6 April)
TBD
- [POSTPONED] *The 'End' of Philosophy of Mathematics?*, Princeton University (3 April)
"Mathematical Justification Ain't What it Seems"
- 5th International Conference of the APMP, ETH, Zurich (18-21 January)
"A Fallibilist Account of Mathematical Justification"

2019

- Carnegie Mellon University, philosophy department, colloquium talk (8 November)
"Diagrammatic Notations in Mathematical Proofs"
- Rutgers University, Talk at the *Proof Comprehension Research Group* (1 November)
"Mathematical Diagrams"
- 16th Congress of Logic, Methodology and Philosophy of Science and Technology, Prague (5-10 August)
"The Epistemic Basing Relation in Mathematics"
- Masterclass in the Philosophy of Mathematical Practice, Vrije Universiteit Brussel (19-21 June)
"Mathematical Justification in Practice"
- Explanatory and Heuristic Power of Mathematics* (invited), Roma La Sapienza (13-14 June)
"Grasping How a Proof Supports its Conclusion"
- Intersem Talk*, organized by Mic Detlefsen, Paris 7, Sphere, (6 June)
"Rigorous Diagrammatic Proofs"
- Big Proofs* Workshop, International Centre for Mathematical Sciences (invited), Edinburgh (26-31 May)
"Diagrammatic Notations in Mathematical Proofs"
- Macalester College, department colloquium (April 25)
"Mathematical Justification in Practice"
- Pacific APA*, Society for Realist-Antirealist Discussion, Vancouver (April 17-20)
"Proof, Simil-Proofs, and Mathematical Justification"

2018

- Mathematics in Action* (invited paper), Henri Poincaré Archives, Nancy (13-14 December)
"Mathematical Justification in Practice"
- APMP session, XXIV World Congress of Philosophy, Beijing (13-20 August)
"What is a Mathematical Diagram"
- XXIV World Congress of Philosophy, Beijing (13-20 August)
"Fruitful Over-determination for Mathematical Notations"
- Proofs and Representations* Workshop (invited), Munich Center for Mathematical Philosophy (6-8 July)
"Heterogenous Notations for Mathematical Proofs"
- Diagrams 2018*, 10th International Conference on the Theory and Application of Diagrams (18-22 June)
"Fruitful Over-Determination in Knot Diagrams"

Stanford University, Psychology Department, Jay McClelland Laboratory (6 March)
“Diagrams in Mathematics”
University of British Columbia, Okanagan campus, department colloquium (23 February)
“Diagrams in Mathematical Practice”
Eastern APA, Society for Realist-Antirealist Discussion, Savannah (3-7 January)
“Proofs and Diagrams in Mathematics”

2017

4th International Conference of the APMP, Salvador, Brazil (23-27 October)
“Varieties of Mathematical Diagrams”
Visual Reasoning and Intuition in Mathematics. (invited), Free University of Berlin, (29 June-1 July)
“Knots and Embeddings: New Tools for Incongruent Counterparts”
Logic in Question 7 conference (invited paper), Paris Sorbonne (13-14 June)
“Thinking with Diagrams: The Case of Mathematics”
PhilMath seminar series (invited paper), IHPST, Paris (12 June)
“Varieties of Mathematical Diagrams”
PROOFS workshop (invited paper), IHPST, Paris (1-2 June)
“The Notion of Proof in the Practice of Mathematics”
Mathématiques en action seminar series, Archives Henri Poincaré, Nancy (24 April)
“What is a Mathematical Diagram?”
Tools of Reason workshop, Stanford University (10-11 February)
“Thinking with Diagrams: The Case of Mathematics”

2016

Midwest PhilMath Workshop 17, Notre Dame University (12-13 November)
“Thinking with Diagrams: The Case of Mathematics”
City College New York, department colloquium (22 September)
“Aspects of Diagrammatic Reasoning in Mathematics”
Vrije Universiteit Brussel, colloquium (08 July)
“Aspects of Diagrammatic Reasoning in Category Theory” (with I. Goyvaerts)
University of Udine, mathematics and computer science colloquium (29 June)
“Pensare con i Diagrammi: il caso dei Nodi”
Five Years MCMP: Quo Vadis, Mathematical Philosophy? conference (invited), MCMP (2-4 June)
“Varieties of Visualizations in Mathematics”
43rd philosophy of science conference in Dubrovnik (invited paper), Croatia (11-15 April)
“Diagrams in Algebra”

2009–2015

3rd International Conference of the APMP (keynote speaker), Paris (2-4 November 2015)
“Chasing’ The Diagram – The Use of Visualizations in Algebraic Reasoning”
Proofs and Pictures conference, University of South Carolina, Columbia (20 March 2015)
“Diagram Chase’ Techniques – The Use of Space in Algebraic Reasoning”
What is? Seminar, Berlin Mathematical School (8 February 2013)
“What is a Rational Tangle?”
Filosofia della matematica, Scuola Normale Superiore, Pisa, Italy (24-36 September 2012)
“La dinamica dei diagrammi in teoria dei nodi” (with V. Giardino)
Società Italiana di Filosofia Analitica (SIFA) conference, Alghero, Italy (13-15 September 2012)

“Roles and Forms of Diagrams in Knot Theory” (with V. Giardino)
Mathematical Cultures conference, London (10-13 September 2012)
“Low-dimensional topology as visual mathematics” (with V. Giardino)
Free University of Berlin, Sybille Krämer’s colloquium (19 June 2012)
“Die epistemische Rollen von Diagrammen in der Topologie”
Société de philosophie analytique (SOPHA) conference, École Normale Supérieure, Paris (5 May 2012)
“Diagrammes et Illustrations en Topologie: Le Cas des Nœuds”
Work in Progress Seminar, Munich Center of Mathematical Philosophy, Munich (19 January 2012)
“The Knot Moves: A Case Study on Diagram Dynamics”
University of Sevilla, philosophy colloquium (15 November 2011)
“Use and Epistemic Roles of Diagrams in Knot Theory”
What is? Seminar, Berlin Mathematical School (4 December 2009)
“What is a Seifert Surface?”

Languages

Italian (native), English (excellent), French and German (fluent reading and speaking)

References

Thomas Ryckman, Professor of Philosophy, Stanford University

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Paolo Mancosu, Willis S. and Marion Slusser Professor of Philosophy, University of California, Berkeley

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Thomas Kelly, Professor of Philosophy, Princeton University

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