

S. G. Sterrett

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of History and Philosophy of Science
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(many preprints available at: <http://philsci-archive.pitt.edu> and
<https://wichita.academia.edu/SusanSterrett>)

EDUCATION

Ph.D. Philosophy, University of Pittsburgh, Department of Philosophy	1999
M. A. Philosophy, University of Pittsburgh, Department of Philosophy	1988
M. A. Mathematics, University of Pittsburgh, Department of Mathematics	1987
B. S. Cornell University, College of Engineering (with distinction) Major: Engineering Science, College Program in Theoretical & Applied Mechanics	1977

WORK EXPERIENCE

Academic Positions:

August 2013 - present	Curtis D. Gridley Distinguished Professor of History and Philosophy of Science, Department of Philosophy, Wichita State University
January 2010 - July 2013	Special Faculty - Research Associate, Department of Philosophy Carnegie Mellon University, Pittsburgh, PA
Spring 2010	Visiting Fellow, Center for the Philosophy of Science University of Pittsburgh, Pittsburgh, PA
August 2000 - December 2009	Assistant Professor, Department of Philosophy Duke University, Durham, NC

Non-academic positions post-baccalaureate but prior to academic career:

1978 - 1984	Associate Engineer, Westinghouse Electric Corporation
1991 - 1998	Engineering consultant, Westinghouse Electric Corporation. (Intermittent temporary contracts during graduate school)

RESEARCH INTERESTS

My research interests are in history and philosophy of science. Much of my work concerns models and analogical reasoning in some way, whether in physics, geophysics, biology (Darwin), ecology, cognitive science, or artificial intelligence. One of my contributions has been to argue for the significance of the concepts of physical similarity and physically similar systems, already recognized as important in science and engineering, to philosophy of science. I have two forthcoming works of major significance on this topic ("Physically Similar Systems: a history of the concept" and "Experimentation on Analogue Models"), and two more forthcoming works on related foundational issues in dimensional analysis and metrology. I use both historical and analytical approaches -- often together.

Besides the major works on analogical reasoning, models and modeling: I've published a group of papers on Alan Turing and natural and artificial intelligence that continue to generate interest; I expect to continue to contribute to that field as well. I also have a few research projects building on my earlier work in other areas such as history and philosophy of mathematics, logic, and psychology.

PAPERS & BOOKS

Forthcoming Papers (* indicates refereed journal article or refereed contribution to anthology)

* "Relations between units and relations between quantities", *Journal for the General Philosophy of Science*, Special Issue on the 'New SI' (forthcoming)

* Sterrett, Susan G., Experimentation on Analogue Models. In L. Magnani and T. Bertolotti (eds.), *Springer Handbook of Model-Based Science*, Springer, Switzerland, 2017 (forthcoming) Preprint: <http://philsci-archive.pitt.edu/11492/>

* Sterrett, Susan G., Physically Similar Systems -- A History of the Concept. In L. Magnani and T. Bertolotti (eds.), *Springer Handbook of Model-Based Science*, Springer, Switzerland, 2017 (forthcoming) Preprint: <http://philsci-archive.pitt.edu/11352/>

* Sterrett, S. G. "Turing and the integration of human and machine intelligence." Juliet Floyd and Alisa Bokulich (Eds.) *Philosophical Explorations of the Legacy of Alan Turing: Turing 100*, *Boston Studies in the Philosophy and History of Science* Springer (Forthcoming) Preprint: <http://philsci-archive.pitt.edu/10316/>

Publications & Other Archived Papers (* indicates refereed journal article or contribution)

* Sterrett, Susan G. "The morals of model-making", *Studies in History and Philosophy of Science*, Part A, Volume 46, June 2014, Pages 31-45. (Special issue: Values and Norms in Modeling the Progress of Science) Published open access.

* (Book) *Three Views of Logic: Mathematics, Philosophy, and Computer Science* (co-authored w/ Donald Loveland (Duke Computer Science) and Richard Hodel (Duke Mathematics). My contribution is Part III of the book: Philosophical Logic. Princeton University Press, January 2014. The book received a positive review in *MAA (Mathematical Association of America) Reviews* and was recommended by *Choice: Current Reviews for Academic Libraries*.

- * Sterrett, Susan G. (2013) "Scientific Models in Philosophy of Science" in *HOPOS: The Journal of the International Society for the History of Philosophy of Science*, Volume 3, Issue 2, Page 334-337, Fall 2013. Review of Daniela Bailer-Jones, *Scientific Models in the Philosophy of Science*.
- * Sterrett, Susan G. (2012) "Bringing Up Turing's Child-Machine" in *How the World Computes, Springer Lecture Notes in Computer Science*, 2012, Volume 7318/2012, 703 - 713. (preprint: <http://philsci-archive.pitt.edu/9085/>)
- * Sterrett, S. G. (2010) "Similarity and Dimensional Analysis" (Invited Handbook Article) *Handbook of the Philosophy of Science, Volume 9: Philosophy of Technology and the Engineering Sciences*, edited by Anthonie Meijers (Series editors: Dov Gabbay, Paul Thagard, and John Woods). pp. 799 – 824. (preprint: <http://philsci-archive.pitt.edu/4474/>)
- Sterrett, S. G. (2009) "Abstracting Matter" <http://philsci-archive.pitt.edu/4836/> (in conference papers for Models and Simulation 3 (Charlottesville, Virginia, March 5 - 7, 2009))
- Sterrett, Susan G (2009) "Historical Context and Philosophy of Science: Reply to Peter Simons' "Coincidence and Kite-Flying", <http://philsci-archive.pitt.edu/4488/>
- * Sterrett, S. G. (2006) "Models of Machines and Models of Phenomena." *International Studies in the Philosophy of Science* Vol. 20, No. 1, pp. 69-80. preprint: <http://philsci-archive.pitt.edu/2245/>
- (Book) Sterrett, Susan G. (2005) *Wittgenstein Flies a Kite: A Story of Models of Wings and Models of the World* Published November 2005, Pi Press (Penguin). Flyer on book: https://www.academia.edu/1003211/Wittgenstein_flies_a_kite_a_story_of_models_of_wings_and_models_of_the_world
- * Sterrett, S. G. (2005) "Pictures of Sound: Wittgenstein on Gramophone Records and the Logic of Depiction." *Studies in History and Philosophy of Science*, Vol. 36, pp. 351-362. (preprint: <http://philsci-archive.pitt.edu/2019/>)
- Sterrett, Susan G. (2005) "Kinds of Models": based on a talk presented at an STS Interdisciplinary roundtable: "The Multiple Meanings of Models", March 20, 2003, John Hope Franklin Center, Duke University <http://philsci-archive.pitt.edu/2363/>
- Sterrett, S. G. (2004) "How Many Thoughts Can Fit in the Form of a Proposition?" <http://philsci-archive.pitt.edu/1816/>
- * Sterrett, S. G. (2002) "Darwin's analogy between artificial and natural selection: how does it go?" *Studies in History and Philosophy of the Biological and Biomedical Sciences*, Vol. 33, pp. 151-168.
- * Sterrett, S. G. (2002) "Physical Models and Fundamental Laws: Using One Piece of the World to Tell About Another" *Mind and Society* 5, 2002, Vol. 3, pp. 51-66. (preprint: <http://philsci-archive.pitt.edu/720/>)
- * Sterrett, S. G. (2002) "Too Many Instincts: Contrasting Philosophical Views on Intelligence in Humans and Non-Humans", *JETA I (Journal of Experimental and Theoretical Artificial Intelligence)*, Vol. 14, No. 1, pp. 39 - 60. Reprinted in *Thinking About Android Epistemology*, Edited by Ken Ford, Clark Glymour and Patrick Hayes, MIT Press (March 2006).

* Sterrett, S. G. (2002) "Nested Algorithms and 'The Original Imitation Game Test': A Reply to James Moor" *Minds and Machines*, Vol. 12, pp. 131-136.

* Sterrett, S. G. (2002) "Physical Pictures: Engineering Models circa 1914 and in Wittgenstein's *Tractatus*." *History and Philosophy of Science: New Trends and Perspectives*, ed. by Michael Heidelberger and Friedrich Stadler (Vienna Institute Yearbook 2001/9), Kluwer Academic, 2002. (preprint of longer lecture based on paper, includes timeline: <http://philsci-archive.pitt.edu/661/>)

* Sterrett, Susan G. (2000) "Turing's Two Tests for Intelligence" *Minds and Machines*, Vol. 10, pp. 541-559. Reprinted in *The Turing Test: The Elusive Standard of Artificial Intelligence*. Edited by James H. Moor. Kluwer Academic, 2003. (preprint: <http://philsci-archive.pitt.edu/8480/>)

Sterrett, Susan G. (1999) "How Beliefs Make a Difference" Ph.D. Dissertation, University of Pittsburgh. Available on Philosophy of Science Archive at <http://philsci-archive.pitt.edu/9372/> (Also available in hard copy and electronic pdf via ProQuest Dissertation Publishing <http://www.proquest.com/en-US/products/dissertations/>)

* Sterrett, S. G. (1998) "Sounds Like Light: Einstein's Special Theory of Relativity and Mach's Work on Acoustics and Aerodynamics." *Studies in History and Philosophy of Modern Physics*, Vol. 29, pp. 1 - 35.

Sterrett, Susan G. (1994 Talk) "Frege and Hilbert on the Foundations of Geometry" Available on Philosophy of Science Archive at <http://philsci-archive.pitt.edu/723/>

* Sterrett, S. Martin and Daniel C. Smith (1990) A Comment on "Evaluating and Improving Argument-Centered Works in Marketing." *Journal of Marketing*, Vol. 54, No. 2, pp. 83-88

Putnam, Ralph T., Lesgold, Sharon B., Resnick, Lauren B., and Sterrett, Susan G. (1987) "Understanding Sign Change Transformations." in: Bergeron, Jacques C., Nicolas Herscovics, and Carolyn Kieran, (Eds.) *Proceedings of the International Conference on the Psychology of Mathematics Education (PME) (11th, Montreal, Canada, July 19 - 25, 1987)*. Volume I, pp. 338 - 344.

PRESENTATIONS, TALKS, INTERVIEWS

Presentations

"The Use of Analogy in the Works of Darwin, Einstein, and Turing" 8th Quadrennial International Fellows Conference, July 11th - 13th, 2016, Lund, Sweden.

"Disciplining Little Models" HOPOS (History of Philosophy of Science) 2016. June 23rd - 25th, 2016. University of Minnesota, Minneapolis, MN. <http://hopos2016.umn.edu/welcome>

"Experimentation on Analogue Models" SPSP (Society for the Philosophy of Science in Practice) 2016. June 17th - 19th, 2016 Rowan University, Glassboro, NJ

"Schema, Perception and Memory in Social Interaction"
IV Colombian Conference on Logic, Epistemology and Philosophy of Science
Bogota, Colombia, February 17 - 19, 2016.

"Pictures, Models, and Measures" (Invited symposium contribution)
Symposium on "Wittgenstein's 'Picture Theory' ", American Philosophical Association Annual Meeting, Pacific Division, Vancouver, BC Canada, April 1-4, 2015. .

"Logic that fits your Ifs", Department of Mathematics, Wichita State University, Wichita, Kansas, October 10, 2014.

"The use of analogy in the works of Charles Darwin, Albert Einstein, and Alan Turing,"
Inaugural Lecture, Curtis D. Gridley Distinguished Professor of History and Philosophy of Science, Wichita State University, Wichita, KS. September 26, 2014.

"The Morals of Model-Making", Department of Philosophy, Kansas State University, Manhattan, Kansas, October 18, 2013.

"Models of Intervention", SPSP2013, Fourth Biennial Meeting of the Society for the Philosophy of Science in Practice, Institute for the History and Philosophy of Science and Technology (IHPST), Victoria College, University of Toronto, June 26 -29, 2013.

"Thinkers and their scientific surroundings." College of Arts and Sciences Colloquium Series, Old Dominion University, Humanities Institute and Philosophy Department, Norfolk, Virginia. April 19th, 2013. Also at Department of Philosophy, Wichita State University, Wichita, Kansas. March 11th, 2013.

"Models of Intervention." Models and Decisions Conference, Munich Center for Mathematical Philosophy, Ludwig Maximilians-Universitat Munchen, Munich, Germany. April 10- 13, 2013.

(Invited; cancelled due to inclement weather) "Moral Perception and Moral Modeling: Evaluating Geoengineering Schemes for Fixing Climate Change", Group Meeting of the American Association for the Philosophic Study of Society (at Eastern APA Meeting, December 28, 2012 in Atlanta, GA).

"Experimentation on Analogues", PSX3 (Philosophy of Scientific Experimentation III), Department of Physics, University of Boulder Campus, Boulder, Colorado. October 5 - 6, 2012. Slides available at:
https://www.academia.edu/8409726/_Experimentation_on_Analogues_2012_Talk_at_PSX3_Boulder_CO_

(Invited Keynote) "Morals and Model-making"
Values and Norms in Modeling (VaNiM 2012) Conference
Eindhoven University of Technology, in cooperation w/ Delft University of Technology, Eindhoven, The Netherlands. June 25 - 27, 2012

(Invited) "Bringing Up Turing's 'Child-Machine'",
for session "The Turing Test and Thinking Machines"
Turing Centenary Conference: CiE 2012 -- How the World Computes
University of Cambridge, Cambridge, England. June 18th - 23rd, 2012

(Invited) "Geometric Configuration in Nature and in Design: Is there a connection?"
with Adrian Bejan, (Pratt College of Engineering, Duke University)
4th Congress on Logic, Methodology and Philosophy of Science
Nancy, France. July 19 - 26, 2011

"How is theory employed in modeling? There are many ways"
Conference: Epistemology of Modeling and Simulation
University Club, University of Pittsburgh, Pittsburgh PA. April 1 - 3, 2011

(Invited) "The Art of Interdisciplinary Science: Found Art, Outsider Art, or Something Else?"
Symposium: "Interdisciplinary Exchanges as the Object of Philosophical Inquiry"
Helsinki, Finland. March 3 - 4, 2011

(Invited) Presented Work in Session: Structuralism, Objects, and Properties
"Structuralism in the Philosophy of Science" Workshop
Department of Philosophy, University of Notre Dame, Notre Dame, Indiana
November 18 - 20, 2010

(Invited) "What's a scale model?"
Third Regional Wittgenstein Workshop, Floyd, Virginia September 24 - 26, 2010

(Invited) "Similarity and Induction"
Center for Philosophy of Science Lunchtime Talk Series
University of Pittsburgh, Pittsburgh, Pennsylvania January 26, 2010

(Invited) Dies Natalis 2010 Keynote Lecture
University of Delft, Delft, Netherlands
January 8th, 2010 (video online; my lecture begins at around 39:30 & lasts about 25 mins.)

"Abstracting Matter"
Models and Simulation 3 Conference
University of Virginia, Charlottesville, VA March 6-8th, 2009

(Invited) "Could There Be A General Theory of Similarity?"
36th Annual Philosophy of Science Conference
(2009 conference themes: Philosophy of Physics, Metaphysics in Science, Simulation)
Inter-University Centre (IUC) Dubrovnik, Croatia April 13-18th, 2009

(Invited) "Nuclear Energy and Environmental Ethics: What Is the Question?"
North Carolina State University
Raleigh, NC Thursday, February 19, 2009

(Invited) "What is the concept of a rule in the Tractatus?"
2nd Regional Working Conference on Wittgenstein,
Virginia Military Institute, Lexington, Virginia September 12-14, 2008

(Invited) "Wittgenstein and Aeronautics" (title chosen by conference organizer),
Regional Working Conference on Wittgenstein,
Virginia Tech Philosophy Department Spring Conference 2007.
Virginia Polytechnic and State University, Blacksburg, Virginia April 13, 2007

"Symbols, Models and Facts: Biographical Clues to Wittgenstein's Talk About Picturing"
John Hope Franklin Center for Interdisciplinary and International Studies, Duke University.
Wednesdays at the Center Series, January 24, 2007
Available on itunes via Duke University's "Wednesdays at the Center" series.

(Invited) "What Makes Good Models Good?"

Presented at "Models and Prediction in Science, Science Studies & Public Policy: A Research Workshop" University of California, San Diego. May 26 - 28, 2006.

"Analogous Principles: Some Historical Case Studies" - Presented at conference "Philosophical Perspectives on Scientific Understanding", The Free University, Amsterdam, Netherlands, August 27, 2005.

"Models of Machines and Models of Phenomena" Invited contribution, Workshop on "Applying Science" at PSA 2004, Philosophy of Science Biennial Meeting, Austin, Texas, November 18, 2004.

"The Proper Uses of Proportion: Understanding Galileo's Advance over the Pythagoreans" 12th UK Conference on Foundations of Physics, University of Leeds, September 2-5, 2003.

"The Science of the Similar: How to Get Things Out of Proportion" 12th Conference on Logic, Methodology, and Philosophy of Science. Oviedo, Spain, August 7-14, 2003.

"Kinds of Models" Contribution to a panel discussion: STS Interdisciplinary Roundtable: "The Multiple Meanings of Models", John Hope Franklin Center, Duke University, Durham NC, March 20, 2003. (text of talk is available at <http://philsci-archive.pitt.edu/2363/> .)

"Intelligent Behavior, Habitual Response, or Programmed Movement? Turing, James, and Descartes on Intelligence in Animals and Machines" NC State Philosophy Club, Raleigh, NC, April 24th, 2002.

"Too Many Instincts: Contrasting Views on Intelligence in Humans and Non-Humans" NCPS/SCPS Meeting, at The College of Charleston, Charleston SC, February 9th, 2002.

"Physical Models and Fundamental Laws: Using One Piece of the World to Tell About Another" presented at MBR'01 (Conference on Model Based Reasoning 2001), May 15-17, 2001, Pavia, Italy. (Longer versions also presented at Carnegie-Mellon University, Duke University, Pitzer College, and Simon Fraser University in 2000.)

"Darwin's analogy between artificial and natural selection: how does it go?" Lunchtime talk series, Center for Philosophy of Science, University of Pittsburgh, March 2001.

"Physical Pictures: Engineering Models circa 1914 and in Wittgenstein's *Tractatus* (long UNC version)" UNC-Chapel Hill Philosophy Department Colloquium, November 2000.

"Physical Pictures: Engineering Models circa 1914 and in Wittgenstein's *Tractatus*." Talk presented at HOPOS2000 (History of Philosophy of Science 2000), University of Vienna, Vienna, Austria, July 6-9, 2000.

"Turing's Two Tests for Intelligence" Computing and Philosophy Conference (CAP '99), Carnegie Mellon University, Pittsburgh, PA, August 5-7, 1999. Also presented at Occidental College in 2000.

"Sounds Like Light: Einstein's Special Theory of Relativity and Mach's Work on Acoustics and Aerodynamics." Lunchtime talk series, Center for Philosophy of Science, University of Pittsburgh, March 1997.

"Frege and Hilbert on the Foundations of Geometry (1994 Talk)." Talk presented at the University of Pittsburgh Graduate Student Colloquium. available on Philosophy of Science Archive at <http://philsci-archive.pitt.edu/723/>

Other participation in workshops and conferences

Commentator (invited), Kansas Philosophical Society, Kansas State University, Manhattan, Kansas, February 2015.

Participant (refereed submission) Pittsburgh Area Philosophy Conference 4, Washington & Jefferson University, Analytic Working Group II, September 2012

Invited Participant, "Wittgenstein and the Philosophy of Mind" University of California, Santa Cruz, California June 2007

Invited Participant, "Models, Methods, and Evidence: Topics in the Philosophy of Science" 38th Oberlin Colloquium in Philosophy, April 4-6, 2008

Interview

"Kites, Models and Logic: Susan Sterrett Investigates Models in Wittgenstein's World" Interview on SimplyCharly.com *Interview (text) available at: Text of interview also available at: https://www.academia.edu/4992195/Interview_c_2008_2009_about_Wittgenstein_Flies_A_Kite_A_Story_of_Models_of_Wings_and_Models_of_the_World_*

FELLOWSHIPS & GRANTS

Received as university faculty member:

Faculty Fellow, NEH Summer Institute - "Mapping Nature Across the Americas" Newberry Library, Chicago, Illinois Summer 2014 (5 weeks)
Institute Conveners: Jim Akerman (Newberry Library) and Kathleen Brosnan (U of Oklahoma)

Visiting Fellow, Center for Philosophy of Science, Spring 2010 term
University of Pittsburgh, Pittsburgh, Pennsylvania

Arts and Sciences Committee on Faculty Research (ASCFR) 2008-2009 Competition Research Award (from Duke University)

Selected as one of 12 American University Professors for Nuclear Tour of France "ANS French Section Tour of French Nuclear Facilities" July 6-12, 2008

Faculty Fellowship, John Hope Franklin Seminar, 2007-2008 Academic year

Woodrow Wilson National Fellowship Foundation
Career Enhancement Fellowship June 2003 - June 2004

Arts and Sciences Council on Faculty Research (Duke University) -- Travel Grants (to present papers at conferences: Pavia, Italy (2001); Leeds, UK (2003); Oviedo, Spain (2004); Amsterdam, Netherlands (2005), Dubrovnik, Croatia (2009), Charlottesville, VA and as invited participation in conferences in Santa Cruz, California (2007) and Oberlin, Ohio (2008))

Received as graduate student:

Teaching Fellowship, Department of Philosophy, University of Pittsburgh	1998 - 1999
Mellon Doctoral Fellowship	1990 - 1991
Teaching Fellowships, Department of Philosophy, University of Pittsburgh	1987 - 1988; 1988 - 1989; 1989 - 1990
Research Fellowship, Learning Research and Development Center	1986 - 1987
Teaching Fellowships, Department of Mathematics	1984 - 1985; 1985 - 1986

Received as Undergraduate student:

Yale Summer Research Program for Undergraduates in Science and Engineering	Summer 1977
Eastman Kodak Undergraduate Scholarship for Students in Engineering	1976 - 1977

REFEREEING & REVIEWING

Journals: *European Journal for the Philosophy of Science*
Journal of the History of Ideas
Journal for the General Philosophy of Science
Minds and Machines
Nous
Philosophers' Imprint
Philosophical Quarterly
Philosophy of Science
Science & Education
Synthese

Publishers: Cambridge University Press (Book Manuscript),
Oxford University Press (Book Manuscript)
Continuum Press (Book Manuscript).
Hackett Publishing (Book Proposal).
Routledge (Book Proposals)
Simply Charly (Book Manuscript)

MEMBERSHIP - PROFESSIONAL SOCIETIES

American Association for the Advancement of Science (Elected Fellow of AAAS in 2016)
Association for Computing Machinery
American Geophysical Union
American Nuclear Society
American Philosophical Association
History of Science Society
International Society for the History of Philosophy of Science
Philosophy of Science Association
Society for the History of Technology
Society for the Philosophy of Science in Practice
Sigma Xi (Full Member)