

JORDAN WILLIAM SUCHOW

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<http://suchow.io>

EDUCATION & EMPLOYMENT

2019—	Stevens Institute of Technology <i>Assistant Professor</i>	2011	Harvard University <i>A.M. in Psychology</i>
2014–18	University of California, Berkeley <i>Postdoctoral fellow</i> <i>Advisor:</i> Prof. Thomas Griffiths	2009	Brandeis University <i>B.S. in Computer Science</i>
2014	Harvard University <i>Ph.D. in Psychology</i> <i>Advisor:</i> Prof. George Alvarez	—2008	New York University Psychology & Neural Science <i>Research Assistant</i> <i>Advisor:</i> Prof. Denis Pelli

PUBLISHED WORKS

Reprints are available at <http://suchow.io>.

1. Suchow, J. W. & Alvarez, G. A. (2011). Motion silences awareness of visual change. *Current Biology*, 21, 140–143.
2. Suchow, J. W. (2011). NPG’s policy on authorship. *Nature*, 477, 244. [N.B.: fiction, for now.]
3. Suchow, J. W. & Pelli, D. G. (2012). Learning to detect and combine the features of an object. *Proceedings of the National Academy of Sciences*, 110(2), 785–790.
4. Fougner, D., Suchow, J. W., & Alvarez, G. A. (2012). Variability in the quality of visual working memory. *Nature Communications*, 3(1229), 1–8.
5. Suchow, J. W.*, Brady, T. F.*, Fougner, D., & Alvarez, G. A. (2013). Modeling visual working memory with the MemToolbox. *Journal of Vision*, 13(10):9, 1–8.
6. Suchow, J. W., Fougner, D., Brady, T. F. & Alvarez, G. A. (2014). Terms of the debate on the format and structure of visual memory. *Attention, Perception, & Psychophysics*, 76(7), 2071–2079.
7. Fan, J. E. & Suchow, J. W. (2014). The crowd is self-aware. Commentary on “Mapping collective behavior in the big-data era.” *Behavioral and Brain Sciences*, 37(01), 81–82.
8. Suchow, J. W. (2014). Measuring, monitoring, and maintaining memories in a partially observable mind. PhD Thesis, Harvard University.

- Committee members:* Daniel Schacter, Martin Nowak, Patrick Cavanagh, George Alvarez
9. Suchow, J. W. (2015). Building a social network one choice at a time. *PLoS ONE*, 10(7), e0133463.
 10. Suchow, J. W., Pacer, M. D., & Griffiths, T. L. (2016). Design from zeroth principles. *Proceedings of the 38th Annual Conference of the Cognitive Science Society*.
 11. Suchow, J. W. & Griffiths, T. L. (2016). Deciding to remember: memory maintenance as a Markov Decision Process. *Proceedings of the 38th Annual Conference of the Cognitive Science Society*.
 12. Suchow, J. W., Fougny, D. & Alvarez, G. A. (2016). Looking inwards and back: realtime monitoring of visual working memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*.
 13. Pacer, M. D. & Suchow, J. W. (2016). Linting science prose and the science of prose linting. *Proceedings of the 15th Python in Science Conference*.
 14. Suchow, J. W. & Griffiths, T. L. (2016). Rethinking experiment design as algorithm design. *CrowdML — NIPS 2016 Workshop on Crowdsourcing and Machine Learning*.
 15. Gates, M., Suchow, J. W., & Griffiths, T. L. (2017). Empirical tests of large-scale collaborative recall. *Proceedings of the 39th Annual Conference of the Cognitive Science Society*.
 16. Langlois, T., Jacoby, N., Suchow, J. W., & Griffiths, T. L. (2017). Uncovering visual priors in spatial memory using serial reproduction. *Proceedings of the 39th Annual Conference of the Cognitive Science Society*.
 17. Suchow, J. W. & Alvarez, G. A. (2017). Silencing the awareness of change. *The Oxford Compendium of Visual Illusions*. Oxford: Oxford University Press.
 18. Suchow, J. W., Bourgin, D. D., & Griffiths, T. L. (2017). Evolution in mind: evolutionary dynamics, cognitive processes, and Bayesian inference. *Trends in Cognitive Sciences*, 21(7), 522–530.
 19. Peterson, J., Aghi, K., Suchow, J. W., Ku, A., & Griffiths, T. L. (2018). Capturing human category representations by sampling in deep feature spaces. *Proceedings of the 40th Annual Conference of the Cognitive Science Society*.
 20. Paxton, A., Morgan, T. J. H., Suchow, J. W., Griffiths, T. L. (2018). Interpersonal coordination of perception and memory in real-time online social interaction. *Proceedings of the 40th Annual Conference of the Cognitive Science Society*.
 21. Suchow, J.W.*, Peterson, J.* & Griffiths, T.L. (2018). Learning a face space for experiments on human identity. *Proceedings of the 40th Annual Conference of the Cognitive Science Society*.
 22. Jupyter et al. (2019). nbgrader: A Tool for Creating and Grading Assignments in the Jupyter Notebook. *Journal of Open Source Education*, 2(11), 32.

FUNDING & GRANTS

- 2016–2020 DARPA cooperative agreement awarded under the *Defense Sciences Office*, for project “Culture-on-a-chip computing: crowdsourced simulations of culture, group formation, collective identity,” as part of the Next Generation Social Science (NGS2) program (\$4,800,00 / co-PI).
- 2014–2016 NSF Postdoctoral Research Fellowship awarded under the *Directorate for Social, Behavioral & Economic Sciences*, for project “The dynamics of updating and transmitting individual and collective memories” (\$172,000 / co-PI).

SOFTWARE, HARDWARE, & INVENTIONS

1. Dallinger, <http://docs.dallinger.io/>. Laboratory automation for the behavioral and social sciences; human culture on a chip.
2. MemToolbox, <http://memtoolbox.org>. A MATLAB toolbox for Bayesian modeling of visual working memory.
3. Wallace, <http://github.com/suchow/Wallace>. A platform for “simulating” cultural evolution in structured populations using crowdsourced experiments with people.
4. proselint, <http://github.com/amperser/proselint>. A linter for prose.
5. Dissertate, <https://github.com/suchow/Dissertate>. Beautiful L^AT_EX templates for a dissertation.
6. nbgrader, <https://nbgrader.readthedocs.io>. A tool that facilitates creating and grading assignments in the Jupyter notebook.
7. Autonudger. An iPhone-based commitment device that monitors movement and exercise, nudging the user towards better behavior.
8. LQOK, an Arduino-based wristband that facilitates visual experience sampling.
9. “Antisilencing,” <https://vimeo.com/34934039>.
Invention reported to Harvard’s *Office of Technology Development* in 2012.
10. “Methods and compositions for determining differences in taste perception.”
Invention reported to UC Berkeley’s *Office of Intellectual Property and Industry Research Alliances* in 2015.

VISUAL DEMONSTRATIONS

1. “Silencing.” <http://visionlab.harvard.edu/silencing/>.
(with George Alvarez)
Presented at the Vision Sciences Society’s *Demo Night* in 2010.
🏆 1st prize, Neural Correlate Society’s 2011 *Best visual illusion of the year* contest
2. “Disembodied eyes and mouth illusion.” visionlab.harvard.edu/upsidedown/.
(with Ken Nakayama and Maryam Vaziri-Pashkam)
Presented at the Vision Sciences Society’s *Demo Night* in 2011.

3. "Touching and interpreting hallucinated patterns in dynamic visual noise."
(with Justin Jungé and George Alvarez)
Presented at the Vision Sciences Society's *Demo Night* in 2012.
4. "Reflections on a true mirror."
(with Jason Haberman)
Presented at the Vision Sciences Society's *Demo Night* in 2013.

TALKS, PRESENTATIONS, & POSTERS

Peterson, J., Aghi, K., Suchow, J.W., Ku, A., & Griffiths, T.L. (2018). Capturing human category representations by sampling in deep feature spaces. *Sixth International Conference on Learning Representations (ICLR)*, workshop track, in Vancouver, Canada.

Suchow, J.W. (2018). Presented at the New Members Symposium of the *13th International Conference of the Learning Sciences (ICLS)* in London, England.

Morgan, T.J.H., Suchow, J.W., & Griffiths, T.L. (2018). Experimental gene–culture coevolution of human social learning in a changing environment. *The Cultural Evolution Conference* in Tempe, AZ.

Suchow, J.W., Lall, Vishal H., Callaway, F., Pacer, M., & Griffiths, T.L. (2018). Towards closed-loop crowdsourcing and human computation. *The International Conference on Probabilistic Programming (PROBPROG)* in Cambridge, MA.

Suchow, J. W., Peterson, J. C., & Griffiths, T. L. (2018). A learned generative model of faces for experiments on human identity. Presented as a talk at the *Vision Sciences Society* conference in St. Pete, FL.

Peterson, J. C., Aghi, K., Suchow, J. W., Ku, A., Griffiths, T. L. (2018). Sampling from object and scene representations using deep feature spaces. Presented as a poster at the *Vision Sciences Society* conference in St. Pete, FL.

Paxton, A., Morgan, T. J. H., Suchow, J. W. & Griffiths, T. L. (2018). Low-level coordination in minimally interactive (online) contexts. Presented as a talk at the *Guy Van Orden UConn Workshop on Cognition and Dynamics, XIII*, in Storrs, CT.

Paxton, A., Suchow, J. W., Morgan, T. J. H., & Griffiths, T. L. (2018). The virtuous cycle of theory-building: improving theoretical understanding in the (online) lab and in the wild. Presented as a talk at the *SPSP Annual Convention* in Atlanta, GA.

Suchow, J.W. & Griffiths, T. L. (2018). Culture on a chip computing. Presented at the *DARPA NGS2 PI meeting* in Arlington, VA.

Suchow, J. W. (2018). Invited talk at Stevens Institute of Technology (Computer Science) in Hoboken, NJ.

Suchow, J. W. (2017). Algorithmic experimentation with Dallinger. Presented as a tutorial at the 2017 *Estes Fund Data on the Mind Workshop* in Berkeley, CA.

Peterson, J., Abbott, J. Battleday, R., Suchow, J. W. & Griffiths, T. L. (2017). Using large natural image datasets to study cognition. Presented as a poster at the *58th Annual Meeting of the Psychonomic Society* in Vancouver, Canada.

Paxton, A., Suchow, J. W., Morgan, T. J. H., & Griffiths, T. L. (2017). Exploring social behavior with Dallinger, an open-source experiment automation tool. Presented as a poster at the *58th Annual Meeting of the Psychonomic Society* in Vancouver, Canada.

Suchow, J. W. (2017). Invited talk at Stevens Institute of Technology (Information Systems) in Hoboken, NJ.

McDowell, M., Suchow, J. W., & Haberman, J. (2017). A preference for flipped depictions of self. Presented as a poster at the *Vision Sciences Society* conference in St. Pete, FL.

Suchow, J. W. (2016). Experiment design, algorithm design, and automation in the behavioral and social sciences. Presented as a talk at the CS Colloquium at Wellesley College in Wellesley, MA.

Suchow, J. W. (2016). Invited talk at Stanford University in Stanford, CA.

Suchow, J. W. (2016). Invited talk at Cornell Tech in New York City, NY.

Suchow, J. W., Fougny, D., & Alvarez, G.A. (2016). Looking inwards and back: realtime monitoring of visual working memory. Presented as a talk at the *24th Annual Workshop on Object Perception, Attention, and Memory* conference in Boston, MA.

Suchow, J. W., Morgan, T. J. H., Hamrick, J., Pacer, M., Meylan, S. C. & Griffiths, T. L. (2016). Wallace: automating cultural evolution experiments through crowdsourcing. Presented as a tutorial at the *Proceedings of the 38th Annual Conference of the Cognitive Science Society* in Philadelphia, PA.

Suchow, J. W. & Griffiths, T. L. (2016). Deciding to remember: memory maintenance as a Markov Decision Process. Presented as a talk at the *Proceedings of the 38th Annual Conference of the Cognitive Science Society* in Philadelphia, PA.

Suchow, J. W. & Griffiths, T. L. (2016). Culture-on-a-chip computing. Presented as a talk and poster at the kickoff meeting for DARPA's Next Generation Social Science program in Arlington, VA.

Suchow, J. W., Pacer, M. D. & Griffiths, T. L. (2016). Design from zeroth principles. Presented as a poster at the *Proceedings of the 38th Annual Conference of the Cognitive Science Society* in Philadelphia, PA.

Pacer, M. D. & Suchow, J. W. (2016). Proselint: the linting of science prose and the science of linting prose. Presented as a talk at *Scientific Computing with Python 2016* in Austin, TX.

Suchow, J. W. (2016). Member of panel for session "Extracting knowledge from data: What can we learn from the mind and brain?" at the Data Science Summit for the Moore-Sloan Data Science Environment program.

Suchow, J. W. (2016). Invited talk at Wellesley College in Wellesley, MA.

Suchow, J. W. (2016). Invited talk at Mount Holyoke College in South Hadley, MA.

Suchow, J. W. (2016). Presentation at Proposer's Day for DARPA's Next Generation Social Science program in Arlington, VA.

Suchow, J. W., Morgan, T. J. H., Hamrick, J., Pacer, M., Meylan, S. C. & Griffiths, T. L. (2015). Wallace: A platform for simulating cultural evolution in structured populations online. Presented as a talk at the *Crowdsourcing and Online Behavioral Experiments* workshop at the *ACM Conference on Economics and Computation* in Portland, OR.

Suchow, J. W. (2015). Invited talk at Cornell University in Ithaca, NY.

Suchow, J. W. (2015). Invited talk at Tufts University in Medford, MA.

Suchow, J. W. (2015). Illusory amputation of the eye; adaptive methods for measuring aftereffect decay; the perception of age. Presented as a talk at the *Perception and Action* seminar at UC Berkeley.

Suchow, J. W. & Alvarez, G. A. (2014). The more you try to remember, the faster you forget: Load dependent forgetting and overreaching. Presented as a talk at the *Vision Sciences Society* conference in St. Petersburg, FL.

Suchow, J. W., Allen, B., Nowak, M. A. & Alvarez, G. A. (2013). Evolutionary dynamics of visual memory. Presented as a poster at the *Vision Sciences Society* conference in Naples, FL.

Suchow, J. W. (2013). Maintaining memories in a partially observable mind. Presented as a talk at the *Visual Attention Seminar* at Brigham & Women's Hospital in Cambridge, MA.

Herman, L., Suchow, J. W., & Alvarez, G. A. (2013). Frequency-based synesthetic associations between letters and colors. Presented as a poster at the *Vision Sciences Society* conference in Naples, FL.

Fougnie, D., Suchow, J. W., & Alvarez, G. A. (2013). Gradual decay and death by natural causes in visual working memory. Presented as a poster at the *Vision Sciences Society* conference in Naples, FL.

Alvarez, G. A., Brady, T. F., Fougnie, D. & Suchow, J. W. (2013). Beyond slots vs. resources. Presented as a talk in the symposium *The structure of visual working memory* at the *Vision Sciences Society* conference in Naples, FL.

Herman, L., Suchow, J. W., & Alvarez, G. A. (2013). Frequency-based synesthetic associations between letters and colors. Presented as a poster at the *Seventeenth International Conference on Cognitive and Neural Systems* in Boston, MA.

Brady, T. F., Suchow, J., Fougny, D. & Alvarez, G. A. (2012). MemToolbox: A MATLAB toolbox for analyzing visual working memory experiments. Presented as a poster the *Portland Working Memory Conference*, Portland, OR.

Fougny, D., Suchow, J. W., & Alvarez, G. A. (2012). Gradual decay and death by natural causes in visual working memory. Presented as a poster at the *Portland Working Memory Conference*, Portland, OR.

Suchow, J. W., Fougny, D., & Alvarez, G. A. (2012). Visual working metamemory. Presented as a poster at the *Vision Sciences Society* conference in Naples, FL.

Fougny, D., Suchow, J. W., & Alvarez, G. A. (2012). The volatility of working memory. Presented as a talk at the *Vision Sciences Society* conference in Naples, FL.

Suchow, J. W. (2012). Metamemory and evolutionary dynamics in cognitive processes. Presented as a talk at the *Cognition, Brain, and Behavior Seminar* at Harvard.

Fougny, D., Suchow, J. W., & Alvarez, G. A. (2011). Variable precision among working memory representations. Presented as a talk at the *Object Perception, Attention, & Memory* conference in Seattle, WA.

Suchow, J. W. & Alvarez, G. A. (2011). Background motion silences awareness of foreground change. Presented as a poster at *SIGGRAPH* in Vancouver, Canada.
 🏆 *Semifinalist*, ACM Student research competition

Suchow, J. W. & Alvarez, G. A. (2011). Silencing awareness of change by background motion. Presented as a poster at the 15th annual meeting of the *Association for the Scientific Study of Consciousness* in Kyoto, Japan.

Haberman, J., Suchow, J. W., & Alvarez, G. A. (2011). The visual system adapts to mean orientation. Presented as a poster at the *Vision Sciences Society* conference in Naples, FL.

Suchow, J. W., & Alvarez, G. A. (2011). Which kinds of motion silence awareness of visual change? Presented as a poster at the *Vision Sciences Society* conference in Naples, FL.

Suchow, J. W., & Alvarez, G. A. (2010). Silent updating: cross-dimensional change suppression. *Journal of Vision*, 10(7), 299. Presented as a talk at the *Vision Sciences Society* conference in Naples, FL.

Suchow, J. W., & Pelli, D. G. (2008). Letter learning: feature detection and combination. *Journal of Vision*, 9(6), 1133. Presented as a poster at the *Vision Sciences Society* conference in Naples, FL.

Suchow, J. W. (2006). Feature integration during letter learning. Presented as a talk at *The Leadership Alliance* national symposium in Chantilly, VA.

Suchow, J. W. (2006). Feature integration during letter learning. Presented as a talk at the *NYU Summer Undergraduate Research Symposium* in New York, NY.

Suchow, J. W., & Pelli, D. G. (2005). Learning to identify letters: Generalization in high-level perceptual learning. *Journal of Vision*, 5(8), 712. Presented as a poster at the *Vision Sciences Society* conference in Sarasota, FL.

TEACHING (WELLESLEY COLLEGE)

2015 *Instructor, Cognition*

TEACHING (UC BERKELEY)

2015 *Lecturer, 2 sections of Computational models of cognition*

TEACHING (HARVARD)

2013 *Instructor, Contemporary issues in psychology: intensive cross-level analysis*

♣ Derek Bok Center teaching award

♣ George W. Goethals teaching award

2012 *Teaching fellow, 2 sections of “Psychological Science”, taught by Dan Gilbert*

2012 *Instructor, “Contemporary issues in psychology: intensive cross-level analysis”*

♣ George W. Goethals teaching award

2012 *Teaching fellow, “MATLAB programming for behavioral testing”, taught by George Alvarez*

2011 *Teaching fellow, 2 sections of “Psychological science”, taught by Dan Gilbert*

GUEST LECTURES

2016 Lecture on the silencing illusion for Wellesley’s “Sensation & Perception” course, taught by Jeremy Wilmer.

TEACHING TOOLS

QALMRI+, an extended worksheet and method for learning to read a journal article.

Visual Quantitative Literacy Test, versions 0.1–0.4. (with Justin Jungé)

Zipf It., an interactive tool for learning about Zipf’s law.

AWARDS

2015–2016 *Fellow, Center for Technology, Society, & Policy at UC Berkeley*

2011 *Mind, Brain & Behavior Graduate Student Award, Harvard University*

2009–2012 *Sosland Fellow, Harvard University*

2005–2009 *Presidential Scholar, Brandeis University*

2005 *Semifinalist, Intel Science Talent Search (formerly, Westinghouse STS), for project “Learning to identify letters: Generalization in high-level perceptual learning”, advised by Denis Pelli at NYU.*

TRAINING

2014 Participant in a 2-week graduate summer school on brains, minds and machines at the

- Marine Biological Laboratory* in Woods Hole, organized by the *Center for Brains, Minds, and Machines*.
- 2012 Research assistant in Vadodara, India, running a randomized controlled trial of mental abacus training in a local primary school. The project considered the effects of this training on mathematical ability and basic cognitive capacities, such as working memory.
- 2011 Participant in a 2-week graduate summer school in probabilistic models of cognition at UCLA's *Institute for Pure & Applied Mathematics*, organized by Josh Tenenbaum, Noah Goodman, and Alan Yuille.
- 2006 NSF Research Experience for Undergraduates, at New York University
- 2006 The Leadership Alliance Early Identification Summer Research Program
- 2003–2005 Columbia University Science Honors Program

OUTREACH, MEDIA COVERAGE, AND GALLERY EXHIBITIONS

Suchow, J. W. (2018). Haven't we met before? On doppelgängers and perception. *Aeon*.
<http://bit.ly/twinstrangers>

In 2017, the Carl Bosch Museum in Heidelberg included a demonstration of the silencing illusion in a special exhibit on illusions. Suchow, J. W. and Griffiths, T. L. (2016). Rethinking experiment design as algorithm design. *Follow the Crowd*.
<https://humancomputation.com/blog/?p=9374>

In 2016, Proselit reached the #1 spot on the front page of *Hacker News* and was covered by *Boing Boing*.

In 2015, Suchow (2011) was translated to audio in episode 397 of *StarShipSofa*.

Suchow & Pelli (2012) was covered in an interview by *Medical Xpress*.

Suchow & Alvarez (2011) was covered by *Scientific American*, *New Scientist*, *The Washington Post*, *Slashdot*, *Gizmodo*, *Wired.co.uk* and *.it*, *MSNBC*, *CVC Radio*, *CBS*, *Sciences et avenir*, and others. As of early 2016, the official demo page had been seen by 150,000 visitors and the YouTube demos had been played over 2,100,000 times. *The Exploratorium*, a museum of science, art, and human perception in San Francisco, holds a physical installation of silencing in its permanent collection.

Interview with *Nerve.com* published as 'Sex advice from neuroscientists' in June 2009.

Suchow, J. W. (2005). Seeing things: Visual perception research at NYU. *Imagine Magazine*, March 2005.

PROFESSIONAL SERVICE & OUTREACH

- 2015— *Editorial Board*, *Matters*
- 2012 *Judge*, Neural Correlate Society's 2012 'Best visual illusion of the year contest'
- 2011–2013 *Editorial board*, *The New School Psychology Bulletin*

2011–2013 *Scientific advisor to Pubget, Inc.*

2011–2012 *e-print committee of the Association for the Scientific Study of Consciousness*

Ad hoc reviewer for (alphabetical):

Attention, Perception, & Psychophysics,
Cognition,
Cognitive Psychology,
Cognitive Science,
CogSci 2016, 2017, 2018,
Emotion,
EPIC 2018,
Eurohaptics 2018,
Frontiers in Human Neuroscience,
International Journal of Human Factors and Ergonomics,
Journal of Cognitive Psychology,
Journal of Comparative Psychology,
Journal of Experimental Psychology: Human Perception and Performance,
Journal of Experimental Psychology: Learning, Memory, and Cognition,
Journal of the Optical Society of America A,
Journal of Vision,
Matters,
New School Psychology Bulletin,
NIME 2018,
PLOS ONE (+ guest editor),
Perception,
Psychological Research,
Psychological Science,
Psychonomic Bulletin & Review,
SciPy 2016, and
Visual Cognition.

Member of the:

Vision Sciences Society,
American Psychological Association,
Cognitive Science Society, and the
Association for Computing Machinery.

REFERENCES

Denis Pelli
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33 Kirkland Street
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Justin Jungé
Senior Lecturer, Princeton University
Peretsman-Scully Hall
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Thomas Griffiths
Professor, University of California, Berkeley
Tolman Hall,
Berkeley, CA 94720
tom_griffiths@berkeley.edu

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