

Nicolas Davidenko
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CURRENT EMPLOYMENT

University of California, Santa Cruz

2012-present Assistant Professor of Psychology

EDUCATION

Stanford University

2006 Ph.D., Psychology.

Dissertation: *The use of parameterized stimulus spaces for the study of face representation.*
Developed a novel parametric space of face silhouettes and conducted behavioral experiments to model the variability, perception, and memory of human faces.
Readers: Dr. Michael Ramscar, Dr. Kalanit Grill-Spector, Dr. Gordon Bower.

2004 M.S., Statistics

Advisor: Dr. Joseph Romano.

Harvard University

1998 A. B., *cum laude*, Mathematics.

Advisor: Dr. Cliff Taubes.

RESEARCH EXPERIENCE

Stanford University

2011 – 2012 Research Associate, Department of Psychology.

Design and conduct behavioral and fMRI experiments to characterize the mechanisms of shape and category representation in the human ventral visual stream.
Advisor: Dr. Kalanit Grill-Spector.

2006 – 2011 NRSA Postdoctoral Fellow, Department of Psychology.

Conducted fMRI investigations of face perception using a novel parametric face space and modeled the relationship between behavioral and neural responses to face stimuli.
Advisor: Dr. Kalanit Grill-Spector.

University of California, Berkeley

2000 Graduate Researcher, Department of Vision Sciences.

Developed experimental designs and computational models to study the influence of optic flow and extra-retinal cues in slant and self-path perception.
Advisor: Dr. Martin Banks.

SUNY Health Science Center, Syracuse

1998-1999 Project Support Specialist, Department of Electrophysiology.

Advisors: Dr. Jacques Beaumont and Dr. José Jalife.
Helped develop and implement a 3D surface model of the mouse heart.

TEACHING AND MENTORING

Course Instructor

UC Santa Cruz

- Spring 2013 Psyc 139K: Face recognition, Department of Psychology, UC Santa Cruz. Senior seminar, 27 students.
- Spring 2013 Psyc 121: Perception, Department of Psychology, UC Santa Cruz. Upper division, 135 students.
- Winter 2013 Psyc 121: Perception, Department of Psychology, UC Santa Cruz. Upper division, 69 students.

Stanford University

- Summer 2005 Introduction to Cognitive Psychology, Department of Psychology, Stanford University. Co-instructors: Jon Winawer and Adam November.
- Summer 2004 Introduction to Cognitive Psychology, Department of Psychology, Stanford University. Co-instructor: Daniel Yarlett.
- Summer 2003 The Science of Consciousness, Department of Psychology, Stanford University. Co-instructor: Tristan Thomte.

Teaching Assistant

Stanford University

- Winter 2005 Perception, Department of Psychology. Instructor: Dr. Kalanit Grill-Spector.
- Winter 2004 Birds to Words: Cognition, Communication, and Language, Department of Psychology. Instructors: Dr. Michael Ramscar and Dr. Anne Fernald.
- Fall 2003 Introduction to Cognitive Development, Department of Psychology. Instructor: Dr. Ellen Markman.
- Winter 2003 Introduction to Statistical Methods, Department of Psychology. Instructor: Dr. Ewart Thomas.
- Fall 2002 Introduction to Cognitive Psychology, Department of Psychology. Instructor: Dr. Barbara Tversky.
- Spring 2002 Introduction to Psychology, Department of Psychology. Instructor: Dr. Brian Knutson.
- Winter 2002 Introduction to Psychology, Department of Psychology. Instructor: Dr. James Gross.

Harvard University

- Spring 1998 Integral Calculus, Mathematics Department.
- Fall 1997 Integral Calculus, Mathematics Department.
- Fall 1996 Differential Calculus, Mathematics Department.

Invited Talks

- Fall 2011 "Beyond the retina: evidence for a face inversion effect in the environmental reference frame," Mind, Society, and Technology Colloquium, University of California, Merced.
- Spring 2009 "Spatial models of representation," High Level Vision, Department of Psychology, Stanford University

- Fall 2007 “Parametric models of representation,” Foundations of Cognition, Department of Psychology, Stanford University.
- Fall 2006 “Using parameterized face silhouettes to study face representation,” Mind, Society, and Technology Colloquium, UC Merced.
- Fall 2006 “Parametric models of face representation,” Foundations of Cognition, Department of Psychology, Stanford University
- Summer 2000 “Modelos autónomos de representación visual,” Universidad de Colima, Mexico.

Mentoring and Advising

- 2005-2006 Graduate student coordinator of the Masters Program, Department of Psychology, Stanford University. Advised Co-Terminal Psychology Masters students in the execution and writing of their Masters theses.
- Fall 1999 Mathematics lab instructor, Mathematics Department, Santa Monica College. Tutored students in Algebra, Geometry, and Calculus courses.
- Summer 1999 Student advisor, Mathematical and Theoretical Biology Institute, Cornell University. Mentored college students in applied mathematics research with the goal of advancing underrepresented minorities in math and science. Program Director: Dr. Carlos Castillo-Chavez.

FELLOWSHIPS AND AWARDS

- 2008 NRSA Postdoctoral Fellowship (NIH, NEI), 3 years.
- 2007 Franklin Grant for Postdoctoral Research, American Philosophical Society.
- 2001 National Science Foundation (NSF) Graduate Fellowship, 3 years
- 1995-1998 Harvard College and John Harvard Scholarship.
- 1994 Rensselaer Polytechnic Institute Medal for Math and Science.

ASSOCIATIONS AND COMMITTEES

University Services

- 2008-2010 Council Member, Stanford University Postdoctoral Association, Stanford University.
- 2002-2004 Graduate Student Representative, Stanford Psychology Graduate Admissions Committee,
- 2000-2003 Member, El Centro, Association for Hispanic and Latino students, Stanford University.

Scientific Memberships

- 2007-present Society for Neuroscience, Member
- 2003-present Vision Sciences Society, Member
- 2000-present Cognitive Science Society, Member

LANGUAGES

- Spanish Native speaker from Argentina, fluent in written and spoken Spanish. Provide translation of spoken and written instructions for Spanish-speaking participants.

PUBLICATIONS

Peer-Reviewed Articles

- Paxman, R.G., Carrara, D.A., Walker, P.D., Davidenko, N. (2014). Silhouette estimation. *Journal of the Optical Society of America A*, 31(7), 1636-1644. <http://dx.doi.org/10.1364/JOSAA.31.001636>.
- Paxman, R. G., Walker, P. D., & Davidenko, N. (2013). Silhouette restoration. *Computational Optical Sensing and Imaging*, CM2C-4.
- Davidenko, N., & Flusberg, S. (2102). Environmental inversion effects in face perception. *Cognition*, 123(3), 442-447. doi:10.1016/j.cognition.2012.02.009.
- Davidenko, N., Remus D., & Grill-Spector, K. (2012). Face-likeness and image variability drive responses in human face-selective ventral regions. *Human Brain Mapping* 33(10), 2334-2349. doi: 10.1002/hbm.21367.
- Davidenko, N. & Grill-Spector, K. (2010). Controlling stimulus variability reveals stronger face-selective responses near the average face. *Visual Cognition* 18, 1, 122-126.
- Gaucher, D., Hafer, C. L., Kay, A. C., & Davidenko, N. (2010). Compensatory rationalizations and the resolution of everyday undeserved outcomes. *Personality and Social Psychology Bulletin*, 36(1), 109-118.
- Callan, M. J., Kay, A. C., Davidenko, N., & Ellard, J. H. (2009). The effects of justice motivation on memory for self- and other-relevant events. *Journal of Experimental Social Psychology*, 45(4), 614-623.
- Oppenheimer, D. M., Meyvis, T., & Davidenko, N. (2009). Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology*, 45(4), 867-872.
- Davidenko, N., Witthoft, N., Winawer, J. (2008). Gender aftereffects in face silhouettes reveal face-specific mechanisms. *Visual Cognition* 16, 1, 99-103.
- Davidenko, N. (2007). Silhouetted face profiles: a new methodology for face perception research. *Journal of Vision* 7(4):6, 1-17, <http://journalofvision.org/7/4/6/>, doi:10.1167/7.4.6.
- Davidenko, N., & Ramscar, M. (2006). The distinctiveness effect reverses when using well-controlled distractors. *Visual Cognition* 14, 1, 89-92.
- Beaumont, J., Davidenko, N., Davidenko, J., Jalife, J. (1998). Spiral waves in two-dimensional models of ventricular muscle: formation of a stationary core. *Biophysical Journal*, 75: 1-14.

Peer-Reviewed Conference Proceedings

- Davidenko, N., Weiner, K., Grill-Spector, K. (2013). Broadly tuned face and hand representations in human ventral temporal cortex. Talk presented at 19th Annual Meeting of the Organization for Human Brain Mapping, Seattle, WA.
- Davidenko, N., & Flusberg, S. (2011). Beyond the retina: Evidence for a face inversion effect in the environmental frame of reference. Talk presented at the 33rd Annual Conference of the Cognitive Science Society.
- Davidenko, N., Remus, D., Grill-Spector, K. (2010). Characterizing face representations in the ventral stream: effects of physical variability and distance from the average face. Talk presented at the 40th Annual Meeting of the Society for Neuroscience.
- Davidenko, N., Witthoft, N., Winawer, J. (2009). Transfer of gender aftereffects in face silhouettes reveals face-specific mechanisms. Talk presented at the 31st Annual Conference of the Cognitive Science Society.
- Witthoft, N., Davidenko, N., & Grill-Spector, K. (2009). Exemplar frequency affects unsupervised learning of shapes. In N.A. Taatgen & H. van Rijn (Eds.), *Proceedings of the 31th Annual Conference of the Cognitive Science Society* (pp. 3058-63). Austin, TX: Cognitive Science Society.
- Davidenko, N., Remus, D., Grill-Spector, K. (2008). Responses in face-selective cortex increase with increased face variability but decrease with increased distance from the mean face. Talk presented at the 38th Annual Meeting of the Society for Neuroscience.
- Davidenko, N., Remus, D., Ramscar, M., Grill-Spector, K. (2008). Stronger face-selective responses to typical versus distinctive faces when stimulus variability is controlled. Talk presented at the 8th annual

meeting of the Vision Sciences Society in Naples, FL, May 2008.

Davidenko, N., & Ramscar, M. (2005). Distinctiveness effects in face memory vanish with well-controlled distractors. In *Proceedings of the 27th Annual Conference of the Cognitive Science Society*. Mahwah, NJ: Lawrence Erlbaum Associates.

Conference Presentations

Davidenko, N., Waterman, A., Cheong, Y., Smith, J. (2014). Reading rotated clocks: the role of egocentric and environmental orientation. *Journal of Vision 14* (10), 442-442. Poster presented at Vision Science Society meeting in Saint Pete Beach, FL, May 2014.

Smith, J., Cheong, Y., Rogers, J., Davidenko, N. (2014). Illusory perception of alternating vertical apparent motion in sequential random texture displays. *Journal of Vision 14* (10), 276-276. Poster presented at Vision Science Society meeting in Saint Pete Beach, FL, May 2014.

Davidenko, N., Flusberg, S. (2013). Environmental orientation influences novel shape learning. Poster presented at Vision Science Society meeting in Naples, FL, May 2013.

Davidenko, N., Weiner, K., Grill-Spector, K. (2013). Broadly tuned face and hand representations in human ventral temporal cortex. Poster presented at Organization for Human Brain Mapping, Seattle WA, June 2013.

Davidenko, N., Weiner, K., Grill-Spector, K. (2012). Broadly tuned face and hand representations in human high-level visual cortex. Poster presented at NIPS (National Institute for Physiological Sciences) international symposium on face perception and recognition, Okazaki, Japan, October 2012.

Davidenko, N. & Mills, G. (2012). Describing faces: conventionalizing ontologies through dialogic interaction. Poster presented at 34th Annual Conference of the Cognitive Science Society, Sapporo, Japan, August 2012.

Davidenko, N., Weiner, K., Grill-Spector, K. (2012). Parametric face-to-hand transformations reveal shape-tuned representations in human high-level visual cortex. Poster presented at Vision Sciences Society meeting in Naples FL, May 2012.

Davidenko, N., Remus, D., Grill-Spector, K. (2011). Face-likeness and variability drive responses in human face-selective regions. Poster presented at the 11th annual meeting of the Vision Sciences Society in Naples, FL, May 2011.

Flusberg, S., Davidenko, N. (2011). Beyond the retina: Evidence for a face inversion effect in the environmental reference frame. Poster presented at the 11th annual meeting of the Vision Sciences Society in Naples, FL, May 2011.

November, A., Davidenko, N., Ramscar, M. (2011). Breaking the world into symbols. Poster presented at the 33rd annual meeting of the Cognitive Science Society in Boston, MA, July, 2011.

Davidenko, N., Flusberg, S. (2010). Turn that frown upside down and to the left: Memory for faces is affected by their gravitational orientation. Poster presented at the annual meeting of the Cognitive Science Society in Portland, OR, July 2010.

November, A., Davidenko, N., Ramscar, M. (2010). Using objects as symbols: Associative learning improves when confusable items serve as cues rather than as associates. Poster presented at the Vision Sciences Society meeting in Naples, FL, May 2010.

Davidenko, N., Grill-Spector, K. (2009). Face-selective cortex prefers typical over distinctive faces. Poster presented at the 21st Annual Convention of the Association for Psychological Science, San Francisco, CA, May 2009.

Olsen, R. K., Wilson, K., Davidenko, N., Drucker, N., & Wagner, A. D. (2009). The influence of study-test perceptual similarity on recognition memory: a high-resolution fMRI study. Poster presented at the Society for Neuroscience Meeting, Chicago, November 2009.

Davidenko, N., Remus, D., Glover, G.H., Grill-Spector, K. (2007). Sensitivity to image format and distinctiveness in face-selective cortex. Poster presented at the Society for Neuroscience meeting in San Diego, CA, November 2007.

Remus, D., Davidenko, N., Hu., Y., Glover, G.H., Grill-Spector, K. (2007). Reliability of object- and face-selective activations measured with high-resolution fMRI. Poster presented at the Society for

- Neuroscience meeting in San Diego, CA, November 2007.
- Davidenko, N., Witthoft, N., & Winawer, J. (2007). Gender aftereffects in face silhouettes depend on face-specific processes. Poster presented at the Vision Sciences Society meeting in Sarasota, FL, May 2007.
- Davidenko, N., & Ramscar, M. (2006). A reverse distinctiveness effect in face memory. Talk presented at the Bay Area Memory Meeting in Berkeley, CA, August 2006.
- Davidenko, N., Winawer, J., Witthoft, N., & Ramscar, M. (2006). Implicit gender aftereffects in the perception of face silhouettes. Poster presented at the annual meeting of the Cognitive Science Society, Vancouver, July 2006.
- Kay, A. C., & Davidenko, N. (2005) Karmic and compensatory rationalizations. Symposium presented at the annual meeting for the Society of Experimental Social Psychology, San Diego, CA.
- Davidenko, N. (2006). Silhouetted face profiles: A new methodology for studying face representation. Talk presented at the Berkeley-Stanford Cognitive & Neuroscience Talks, Berkeley, CA, April 2006.
- Davidenko, N. (2004). The distinctiveness effect reexamined: poorer recognition of distinctive face silhouettes. Poster presented at the annual meeting of the Psychonomic Society, Minneapolis, MN, November 2004.
- Davidenko, N., (2004). Modeling face-shape representation using silhouetted face profiles. Poster presented at the 4th annual meeting of the Vision Science Society in Sarasota, FL. *Journal of Vision*, 4(8), 436a, <http://journalofvision.org/4/8/436/>, doi:10.1167/4.8.436.
- Davidenko, N., & Yarlett, D.G. (2004). Age and gender labels affect facial attractiveness. Poster presented at the annual meeting of the Society for Personality and Social Psychology, Austin, TX, January 2004.
- Davidenko, N., & Ramscar, M. (2003). Age and gender: similarly cued from silhouetted face profiles. Poster presented at the annual meeting of the Cognitive Science Society, Boston, MA, July 2003.
- Davidenko, N., & Tenenbaum, J.B. (2001). Concept generalization from multiple exemplars in separable and integral stimulus spaces. Poster presented at the Cognitive Science Society meeting in Edinburgh, Scotland, August 2001.
- Sibigtroth, M., Banks, M.S., & Davidenko, N. (2000). The effect of perspective transformation on self-path perception. Poster presented at the ARVO conference in Fort Lauderdale, Florida, May 2000.
- Aguirre, E., Davidenko, N., Smith, T., & Stancil, J. (1999). A differential equation model of neoadjuvant chemotherapy treatment for stage III breast cancer patients. Poster presented at the SACNAS conference in Portland, Oregon, October 1999.
- Barrera, J., Cintron, A., Davidenko, N., Denogean, L., & Franco, S. (1999). A discrete-time susceptible-infectious-susceptible population model. Poster presented at the annual SACNAS conference in Portland, Oregon, October 1999.
- Acosta, B., Barrera, J., Clarke, E., Davidenko, N., & Ting, D. (1997). Tumor growth dynamics: a deterministic and stochastic analysis of the interaction between normal and abnormal cells. *Studies in Theoretical Biology: A Collection of Undergraduate Research*. BU-1425-M, 1997.
- Goodwin, A., Beaumont, J., Davidenko, N., & Jalife, J. (1997). Ionic mechanisms underlying the formation of an unexcited core of a vortex of excitation waves in the cardiac muscle. Poster presented at the Upstate New York Cardiac Electrophysiology Society meeting.
- Davidenko, N., Beaumont, J., Davidenko, J.M., and Jalife, J. (1997). Spatio-temporal evolution of spiral wave activity. *Biophys. J.* 72:2 A370, June 1997.