

Michael L. Kalish

Curriculum Vitae, updated 2 October 2017

Department of Psychology
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Academic Appointments

Professor, Department of Psychology, Syracuse University, 2013 – present.
Associate Professor, Institute of Cognitive Science, University of Louisiana, Lafayette. 2005 – present.
Assistant Professor, Institute of Cognitive Science, University of Louisiana, Lafayette. 2002 – 2005.
Senior Lecturer, Department of Psychology, University of Western Australia. 2002.
Lecturer, Department of Psychology, University of Western Australia. 1995 – 2002. Tenured, 2000.
Postdoctoral Research Fellow in Mathematical Psychology, Department of Psychology, Indiana University, Bloomington. 1993 – 1995.

Degrees

Ph.D. Cognitive Science, University of California at San Diego, 1993.
M.S. Cognitive Science, University of California at San Diego, 1991.
B.Sc. Cognitive and Linguistic Science, with Honors, Brown University, 1987.

Research

Book

Dunn, J. & Kalish, M. (in press) State Trace Analysis. New York: Springer.

Refereed Publications

Kalish, M., Newell, B. & Dunn, J. (2017). More is generally better: Higher working memory capacity does not impair perceptual category learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *43*, 503-514.
Kalish, M., Dunn, J., Burdakov, O. & Sysoev, O. (2016). A statistical test of the equality of latent orders. *Journal of Mathematical Psychology*, *70*, 1-11.
Donkin, C., Newell, B., Kalish, M., Dunn, J. & Nosofsky, R. M. (2015). Identifying strategy use in category learning tasks: a case for more diagnostic data and models. *Journal of Experimental Psychology: Learning, Memory and Cognition*, *41*, 933-948.
Dunn, J., Kalish, M. & Newell, B. (2014). State-trace analysis can be an appropriate tool for assessing the number of cognitive systems: A reply to Ashby. *Psychonomic Bulletin & Review*, *21*, 947-954
Canini, K., Griffiths, T., Vanpaemel, W. & Kalish, M. (2014). Revealing human inductive biases for category learning by simulating cultural transmission. *Psychonomic Bulletin & Review*, *21*, 785-793
Kalish, M. (2013). Learning and extrapolating a periodic function. *Memory & Cognition*, *41*, 886-96.
Griffiths, T. L., Lewandowsky, S., & Kalish, M. L. (2013). The effects of cultural transmission are modulated by the amount of information transmitted. *Cognitive Science*, *37*, 953-67.
Kalish, M. & Dunn, J. (2012). What can cognitive neuroscience tell us about recognition memory? *Australian Journal of Psychology*, *64*, 29-36.

- Dunn, J., Newell, B. & Kalish, M. (2012). The effect of feedback delay and feedback type on perceptual category learning. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 38, 840-859.
- Lewandowsky, S., Yang, L., Newell, B. & Kalish, M. (2012). Working memory does not dissociate between different perceptual categorization tasks. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 38, 881-904.
- Kwantes, P., Neal, A. & Kalish, M. (2012). Item order matters in a function learning task. *Canadian Journal of Experimental Psychology*, 66, 90-97.
- Trigg, J. & Kalish, M. (2011). Explaining how the mind works: on the relation between cognitive science and philosophy. *Topics in Cognitive Science*, 3, 399-424.
- Newell, B., Dunn, J., & Kalish, M. (2011). Systems of category learning: fact or fantasy. In B. Ross (Ed.) *The Psychology of Learning and Motivation*, Vol 54 (pp. 167-215), Burlington: Academic Press.
- Newell, B., Dunn, J., & Kalish, M. (2010). The dimensionality of perceptual category learning: A state-trace analysis. *Memory and Cognition*, 38, 563-581.
- Trigg, J. & Kalish, M. (2010). Thought, language and mental representation. In S. Ohlsson & R. Catrambone (Eds.) *Proceedings of the 32nd Annual Meeting of the Cognitive Science Society* (p188-193).
- Robinette, L., Feist, M., & Kalish, M. (2010). Framed: Factors influencing reference frame choice in tabletop space. In S. Ohlsson & R. Catrambone (Eds.) *Proceedings of the 32nd Annual Meeting of the Cognitive Science Society* (p1064-1069).
- Lewandowsky, S., Griffiths, T. & Kalish, M. (2009). The wisdom of individuals: Exploring people's knowledge about everyday events using iterated learning. *Cognitive Science*, 33, 969-998.
- Griffiths, T., Lucas, C., Williams, J. & Kalish, M. (2009). Modeling human function learning with Gaussian processes. *Advances in Neural Information Processing Systems*, 21.
- Griffiths, T.L., Christian, B.R., & Kalish, M.L. (2008). Using category structures to test iterated learning as a method for revealing inductive biases. *Cognitive Science*, 32, 68-107.
- Griffiths, T., Kalish, M. & Lewandowsky, S. (2008). Theoretical and empirical evidence for the impact of inductive biases on cultural evolution. *Philosophical Transactions of the Royal Society, Series B*. 363, 3503-3514.
- Griffiths, T.L., Christian, B.R., & Kalish, M.L. (2008). Using category structures to test iterated learning as a method for revealing inductive biases. *Cognitive Science*, 32, 68-107.
- Kalish, M., Griffiths, T. & Lewandowsky, S. (2007). Iterated learning: Intergenerational knowledge transmission reveals inductive biases. *Psychonomic Bulletin and Review*, 14, 288-294.
- Griffiths, T. & Kalish, M. (2007). Language evolution by iterated learning with Bayesian agents. *Cognitive Science*, 31, 441-480.
- Griffiths, T., Christian, B. & Kalish, M. (2006). Revealing priors on category structures through iterated learning. *Proceedings of the 28th Annual Conference of the Cognitive Science Society*.
- Kalish, M., Lewandowsky, S. & Davies, M. (2005). Error-driven knowledge restructuring in category learning. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 31, 846-861.
- Griffiths, T., & Kalish, M. (2005). A Bayesian view of language evolution by iterated learning. In B. G. Bara, L. Barsalou, & M. Bucciarelli (Eds.), *Proceedings of the twenty-seventh annual conference of the cognitive science society* (p. 827-832). Mahwah, NJ: Erlbaum.
- Kalish, M., Lewandowsky, S., & Kruschke, J. (2004). Population of Linear Experts: Knowledge Partitioning and Function Learning. *Psychological Review*, 111, 1072-1099.
- Griffiths, T. L. & Kalish, M. (2002). A multidimensional scaling approach to mental multiplication. *Memory and Cognition*, 30, 97-106.
- Lewandowsky, S. L, Kalish, M. & Ngang, S. K. (2002). Simplified learning in complex situations: Knowledge partitioning in function learning. *Journal of Experimental Psychology: General*, 131, 163-193.
- Kalish, M. (2001). An inverse base rate effect with continuously valued stimuli. *Memory and Cognition*, 29, 587-597.

- Kalish, M. & Kruschke, J. (2000). The role of attention shifts in categorization of continuous dimensioned stimuli. *Psychological Research*, *64*, 105-116.
- Lewandowsky, S. L, Kalish, M. & Griffiths, T. L. (2000). Categorization using context: Expedient errors and resistance to knowledge restructuring. *Journal of Experimental Psychology: Learning, Memory and Cognition*, *26*, 1666-1684.
- Kalish, M., Lewandowsky, S. & Dennis, S. (1999). Remote delivery of cognitive science laboratories: A solution for small disciplines in large countries. *Behavior Research Methods, Instruments and Computers*, *31*, 270-274.
- Wynne, C.D. & Kalish, M. (1999). Effects of occasional short interfood intervals on temporal control in pigeons. *Behavioral Processes*, *45*, 207-218.
- Goertzel, B. & Kalish, M. (1998). Similarity as compression. *The Noetic Journal*, *1*, 174-182.
- Henmi, T., & Kalish, M. (1998). Dynamics of iterated perception. *Complexity International*, *6*. Available on line at <http://life.csu.edu.au/complex/ci/vol6/henmi/>.
- Goertzel, B. & Kalish, M. (1998). Mindspace curvature: The non-Euclidian geometry of perception and illusion. *The Noetic Journal*, *1*, 207-230.
- Kalish, M. & Kruschke, J. (1997). Decision boundaries in one dimensional categorization. *Journal of Experimental Psychology: Learning, Memory and Cognition*. *23*, 1362-1377.
- Kalish, M. (1994). Idiosyncratic errors in visually directed reaching. *Journal of Motor Behavior*, *26*, 296-300.
- Kalish, M. (1994). Adaptive learning of Gaussian categories leads to decision bounds and response surfaces incompatible with optimal decision making. *Proceedings of 16th Annual Conference of the Cognitive Science Society*, 479-484.
- Kalish, M. (1993). Affordance learning as a problem of information integration. In S. Valenti & J. Pittenger (Eds.) *Studies in Perception and Action II*, (pp. 130-134). Hillsdale, NJ: LEA.
- Kalish, M. (1991). Human performance in visually directed reaching results in systematic, idiosyncratic error. *Proceedings of 13th Annual Conference of the Cognitive Science Society*, 770-774.
- Warren, W., Blackwell, A., Kurtz, K., Hatsopoulos, N. & Kalish, M. (1991). On the sufficiency of the velocity field for perception of heading. *Biological Cybernetics*, *65*, 770-774.
- Warren, W., Morris, M. & Kalish, M. (1988). Perception of translational heading from optical flow. *Journal of Experimental Psychology: Human Perception and Performance*, *14*, 646-660.

Grants and Fellowships

- National Science Foundation, 2013-2016. Principle Investigators: M. Kalish & M. Lee. Direct Costs: \$521,947. Title: Classifying Categorization Using State Trace Analysis and Hierarchical Bayesian Modeling.
- Australian Research Council (ARC) Discovery Grant, 2013-2015. Principle Investigators: J Dunn, M Kalish, O. Burdakov, L. Anderson. \$293,000. Title: State-trace analysis: theory and application.
- Louisiana Board of Regents Traditional Enhancement Grant, 2009-2010. Principle Investigator: M. Kalish. Project Team: S. Feist & C. Rice. \$85,672. Title: Computational resources for cognitive science.
- ARC Discovery Grant, 2007-2010. Principle Investigators: B. Newell, J. Dunn, M. Kalish. \$100,000. Title: Dual process models of categorization
- National Science Foundation, 2006-2009. Principle Investigators: M. Kalish & T. Griffiths. Direct Costs: \$375,000. Title: Iterated learning with Bayesian agents.
- Louisiana Board of Regents Research Competitiveness Grant, 2004-2006. Principle Investigator: M. Kalish. Direct costs: \$98,910. Title: Knowledge restructuring during concept learning.
- ARC Discovery Grant, 2002-2005. Chief Investigators: S. Lewandowsky & M. Kalish. \$150,000. Title: Models of knowledge restructuring.
- UWA Research Grant, 2001. Chief Investigators: S. Lewandowsky & M. Kalish. \$12,489. Title: Facilitation of knowledge restructuring: training better experts, faster.

- ARC International Research Exchange Grant, 2000. Chief Investigators: M. Kalish, S. Lewandowsky. Partner Investigator: J. Kruschke. Associate Investigator: R. Kliegl. \$14,400. Title: Knowledge partitioning: models of the limits of expertise.
- Australian Partnership for Advanced Computing, Merit Allocation Scheme, 2000. Chief Investigators: M. Kalish & G. Zemunik. Title: A neural model of insect olfaction.
- ARC Large Grant, 1999–2001. Chief Investigators: M. Kalish, S. Lewandowsky. Partner Investigator: J. Kruschke. Associate Investigator: R. Kliegl. \$124,000. Title: Knowledge partitioning: models of the limits of expertise.
- ARC Small Grant, 1999. Chief Investigator: M. Kalish. \$19,000. Title: Initial testing of an inclusive model of concept acquisition.
- ARC Small Grant, 1997. Chief Investigator: M. Kalish. \$10,915. Title: Reaching without visual feedback.
- Commonwealth Department of Health and Family Services, Office of Disabilities Grant, June 1996–Dec 1997. \$62,164. Project Team: K. Hird, N. Hennessey, M. Kalish. Title: Speech access to computer technology for people with physical disabilities.
- Department of Psychology, UWA Research Initiative Grant, 1996. \$6,000. Investigator: M. Kalish. Title: Infrastructure for Motor Control Research.
- NIH Training Program Postdoctoral Fellowship, Indiana University, 1993–1995
- National Defense Science and Engineering Fellowship, UC San Diego, 1989–1992
- Brown University Undergraduate Research Fellowship, 1987

Other Publications

- Smith, K., Kalish, M., Griffiths, T. & Lewandowsky, S. (2008). Introduction. Cultural transmission and the evolution of human behaviour. *Philosophical Transactions of the Royal Society B*, 363, 3469–3476.
- Lewandowsky, S., Little D. R., & Kalish, M. (2007). Knowledge and expertise. In F. T. Durso, R. Nickerson, S. Dumais, S. Lewandowsky & T. Perfect (Eds.). *Handbook of applied cognition* (2nd Ed.) (83-110). Chichester: Wiley.
- Kalish, M. & Barousse, C. (2006). Review of Michael R.W. Dawson, Connectionism: A Hands-On Approach. *Trends in Cognitive Science*, 10, 6-8.
- Doyle, M. & Kalish, M. (2004). Stigmergy: Indirect communication in multiple mobile autonomous agents. In M. Pechoucek & A. Tate (Eds.) *Knowledge Systems for Coalition Operation* (151-158). Prague: Czech Technical University.
- Kalish, M., Lewandowsky, S. and Dennis, S. (1999). The remote delivery of cognitive science. In K. Martin, N. Stanley & N. Davison (Eds.), *Teaching in the Disciplines / Learning in Context: Proceedings of the 8th Annual Teaching Learning Forum* (178-183). Perth: UWA.
- Rhodes, G. & Kalish, M. (1999). Cognitive penetration: Would we know it if we saw it? *Brain and Behavioral Sciences*, 22, 390-391.
- Roberts, B., Kalish, M., Hird, K., & Kirsner, K. (1999). Decontextualized data in, decontextualized theory out. *Brain and Behavioral Sciences*, 22, 54-55.
- Hird, K., Hennessey, N. W., & Kalish, M. (1997). Speech access to computer technology for people with physical disabilities. *National Disability Research Agenda Report No.1*.
- Kalish, M. & Nygaard, L. (1994). Modeling the effect of learning voices on the perception of speech. *Research on Spoken Language Processing, Progress Report No. 19*, Speech Research Laboratory, Indiana University.
- Kalish, M. (1992). Limitations on what reaching can tell us about sensorimotor transformations. *Brain and Behavioral Sciences*, 15, 344.
- Kalish, M. & Harris, C. (1991). An empirical study of the ability of back propagation to approximate posterior probabilities. Proceedings of the Fifth International Joint Conference on Neural Networks, (2454-2457).

Teaching

Publication:

Kalish, M., Lewandowsky, S. & Dennis, S. (1999). (Item appears in main Publication list.)

Grants:

Syracuse University Science Equipment Excellence Fund Grant 2015-16. M. Kalish. Title: Understanding Cognitive Science through Mobile Robots. \$16359.40

Louisiana Board of Regents Traditional Enhancement Grant, 2009-2010. Principle Investigator: M. Kalish. Project Team: S. Feist & C. Rice. \$85,672. Title: Computational resources for cognitive science. (Item appears in main Grants list)

University of Louisiana, Lafayette. Instructional MiniGrant, 2005. M. Kalish. \$800. Title: Mobile robots for cognitive science.

University of WA Faculty of Science Teaching Initiative Grant, 2000. M. Kalish. \$2,500. Title: A quiet space: using Lego robots to teach cognitive science.

University of WA Teaching and Learning Committee Grant, 1998. Project Team: M. Kalish and S. Lewandowsky. \$9,578. Title: Flexible delivery of cognitive science tutorials.

University of WA Initiatives Fund, 1996. Project Team: S. Lewandowsky, M. Kalish & others. \$249,000. Title: Interdisciplinary complex cognitive processes laboratory.

Professional Service

National/International Administrative Service:

Guest Editor, Philosophical Transactions of the Royal Society (B), 2008. With three others, directed reviews and revisions of papers from a series of invited colloquia sponsored by the British Research Council.

Co-chair, Australasian Cognitive Science Organizing Committee. 2001 – 2002. Planning for a conference with registration of 100. Established organizing committee; chair of accommodations committee; liaison with local government organizations regarding community support and involvement in conference.

Symposium Co-Chair, International Conference on Memory, 2001. With one other, organized speakers from the US, Australia, Europe and Middle East to present research on function learning at this conference in Valencia, Spain.

Guest Editor, Australian Journal of Psychology, Vol 50, No. 3 (1997/8). With two others, directed reviews and revisions of papers from national and international authors for a special issue devoted to mathematical psychology.

Co-Chair, Eighth Australasian Mathematical Psychology Conference, University of WA, Perth, November 28–30, 1997. Registered attendance of 50. Directed collection of submitted abstracts and arranged papers into program. Composed call for papers, registration brochure, and program. Solicited departmental and university funds to host international invited speakers.

Member, Organizing Committee for Australian Experimental Psychology Conference, University of WA, Perth, March 22–24, 1996. Arranged papers into multiple-track program, directed selection of prizewinners for excellent student papers.

Service, Syracuse University

University Service:

Member, Research Computing Advisory Council. 2014-present

Member, Arts & Sciences Academic Strategic Planning Working Group (Research and Discovery) 2017
Member, Arts & Sciences Curriculum Committee. 2014-16
Chair, PhD Oral Defense (Philosophy x 2, iSchool)
Examiner, PhD Oral Defense (Falk)

Department Service:

Examiner, PhD Oral Defense (two candidates)
Chair, Psychology workload policy working group 2016-7
Member, Psychology Executive Committee 2014-present
Chair, Psychology T&P subcommittee (1 candidate) 2015
Chair, Psychology Undergraduate Curriculum Revision Committee 2014-5
Member, Psychology Annual Performance Review Committee (multiple)
Member, Psychology Social Area Faculty Search Committee 2014
Psychology Research Mentor (two mentees) 2013-present
CBB Area Graduate Student Evaluation Coordinator 2013-present

Other Professional Activities:

Member, NSF Review Panel (2015)
Member, NSF Graduate Fellowship Review Panel (2016)

Journal manuscripts reviewed for

- Journal of Experimental Psychology (various)
- Journal of Mathematical Psychology
- Psychological Review
- PNAS
- Cognitive Science
- Cognition
- etc.

Affiliations:

- Psychonomic Society
- Cognitive Science Society
- Society for Mathematical Psychology