

CURRICULUM VITAE
BRADLEY C. LOVE
(July, 2025)

Contact Information

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Citizenship US and UK

EDUCATION

Ph.D. in Cognitive Psychology
Northwestern University, Evanston, IL

B.S. Cognitive and Linguistic Sciences
Brown University, Providence, RI

POSITIONS

2025-	Senior Research Scientist, Los Alamos National Laboratory
2020-2021 Institute	Programme Leader in Human-Machine Teams at the Alan Turing
2016 - 2024	Inaugural Turing Fellow at the Alan Turing Institute
2011 - 2025	Professor of Cognitive and Decision Sciences at University College London (UCL)
2010 - 2011	Full Professor in Psychology The University of Texas at Austin
2005 – 2010	Associate Professor in Psychology The University of Texas at Austin
1999 – 2005	Assistant Professor in Psychology The University of Texas at Austin

GRANTS, FELLOWSHIPS, AND HONORS

8/2024	Foresight Institute AI Safety Grant, “NeuroTrust: Leveraging LLMs to Identify Reliable Science for Safe NeuroTech Development”
2/2024	Donation to UCL from tech leader (wishing to remain anonymous) to fund the BrainGPT project.
9/2023	Microsoft’s Accelerating Foundation Models Research program, “BrainGPT: An open-source tool to accelerate neuroscience research using Llama2 and LoRA”.
8/2022	ESRC Grant, “Next Generation Psychological Embeddings”.

8/2020	Best paper award, <i>Computational Brain & Behavior</i> for Hornsby et al. (2020).
9/2019	ELLIS.eu Fellow in the Natural Intelligence Programme
5/2019	Royal Society Wolfson Fellowship, "Integrating Embedding Spaces".
10/2018	Turing Institute flagship project with Intel.
7/2018	ESRC fellowship funding for a PhD studentship in AI.
6/2016	National Institute of Health P01 (linked R01s), "Linking Brain, Behavior, and Development: Integrative Models of Category Learning."
3/2016	Inaugural Fellow at the Alan Turing Institute for data science.
6/2015	Wellcome Trust Senior Investigator Award, "Neural and Computational Mechanisms of Categorisation."
12/2014	Fellow, APS.
6/2014	The Leverhulme Trust, "Circumventing Limits in Memory Retrieval."
5/2014	Membership (elected) to the Memory Disorders Research Society.
9/2012	IMPACT fellowship award (dunnhumby corporation and UCL).
8/2012	Wellcome Trust New Start Equipment Award.
1/2012	Fellow, Psychonomic Society.
5/2011	NIH proposal R21 MH091523-01A1 "Model-Based fMRI of Dynamic Category Learning: The Memory and Attention Interface."
5/2010	AFOSR Gant #FA9550-10-1-0268, "A Dynamic Approach to Information Sampling and Learning."
9/2009	NSF Grant #0927315 (Co-PI, PI 2011-), "Predicting Disrupted Network Behavior."
7/2009	ARL Grant #W911NF-09-2-0038, "A Computational Learning Approach to Adaptive Information Displays for Enhancing Soldier Performance."
5/2007	AFOSR Grant #FA9550-07-1-0178, "Category Learning by Clustering with Extension to Dynamic Environments."
1/2007	ARL Grant #W911NF-07-2-0023 Love (Co-PI), "Sustaining and Enhancing High Optempo Performance of Soldiers in the Transformed Military."
6/2004	AFOSR Grant #FA9550-04-1-0226, "Maximizing the Benefits of Training by Example and Direct Instruction."
4/2004	NSF CAREER Grant #0349101, "Flexible learning inside and outside the classroom."

12/2002	Awarded (along with Ahn, Goldstone, Markman, and Wolff) by the APA to host a conference honouring Doug Medin.
6/2002	Admitted and attended the APA's summer institute in fMRI at Harvard-MGH.
2/2002	J. S. McDonnell Foundation grant titled "Interdisciplinary Collaborative Consortium on the Cognitive Neuroscience of Category Learning." I am one of numerous co-investigators (Mark Gluck is the PI).
5/2001	AFOSR Grant #F49620-01-1-0295, "Adaptive Learning Across Task Environments."
4/1996	Graduate Fellowship, NDSEG.
4/1996	National Science Foundation Graduate Fellowship.

SERVICE TO FIELD

journals	<i>Acta Psychologica</i> ; <i>Attention, Perception, & Psychophysics</i> ; <i>Artificial Intelligence</i> ; <i>Australian Journal of Psychology</i> ; <i>Behavioral and Brain Sciences</i> ; <i>Behavior Research Methods</i> ; <i>Cell Reports</i> ; <i>Cerebral Cortex</i> ; <i>Cognition</i> ; <i>Cognitive Psychology</i> (Associate Editor 2014-2017); <i>Cognitive Science</i> (Editorial Board 2006-2009); <i>Current Directions in Psychological Science</i> ; <i>eLife</i> ; <i>Experimental Psychology</i> ; <i>Decision</i> ; <i>Frontiers in Cognitive Science</i> (Editorial Board 2012-2014); <i>Frontiers in Developmental Psychology</i> (Editorial Board 2010-2014); <i>Human Brain Mapping</i> ; <i>International Journal of Science and Mathematics Education (Special Issue Editor, 2012-2014)</i> ; <i>JARMAC</i> ; <i>Journal of Experimental Child Psychology</i> ; <i>Journal of Cognitive Psychology</i> ; <i>Journal of Experimental Psychology: General</i> ; <i>Journal of Experimental Psychology: Human Perception and Performance</i> ; <i>Journal of Experimental Psychology: Language, Cognition and Neuroscience</i> ; <i>Learning, Memory, and Cognition</i> (Editorial Board 2006-2009); <i>Journal of Experimental Social Psychology</i> ; <i>Journal of Mathematical Psychology</i> (Special Issue Editor 2014-2015); <i>Journal of Memory and Language</i> ; <i>Journal of Neuroscience</i> ; <i>Journal of Vision</i> ; <i>Journal of Vision: Language and Cognitive Processes</i> ; <i>Language, Cognition and Neuroscience</i> ; <i>Memory & Cognition</i> (Editorial Board 2006-2009 ; Associate Editor 2009-2012); <i>Nature</i> ; <i>Nature Communications</i> ; <i>Nature Human Behaviour</i> ; <i>Nature Machine Intelligence</i> ; <i>Neural Computation</i> ; <i>Neural Networks</i> ; <i>Neurobiology of Learning and Memory</i> ; <i>NeuroImage</i> ; <i>Neurons, Behavior, Data analysis, and Theory</i> ; <i>Open Mind</i> ; <i>Perception & Psychophysics</i> ; <i>Perspectives on Psychological Science</i> ; <i>Philosophical Transactions of the Royal Society A</i> ; <i>PLoS Computational Biology</i> ; <i>PLoS ONE</i> ; <i>Proceedings of the National Academy of Sciences</i> ; <i>PNAS Nexus</i> ; <i>Psychological Bulletin</i> ; <i>Psychological Review</i> ; <i>Psychological Science</i> ; <i>Psychonomic Bulletin and Review</i> (Editorial Board 2006-2010); <i>Science</i> ; <i>Science Advances</i> ; <i>Scientific Reports</i> ; <i>Trends in Cognitive Sciences</i> ; <i>Quarterly Journal of Experimental Psychology</i> ; <i>Visual Cognition</i> ; <i>Wiley Interdisciplinary Reviews</i> .
conferences	AAAI 2006 (senior program committee member); Biologically Inspired Cognitive Architecture (BICA); FLAIRS; ICCM; ICLR; ICONIP; NIPS;

Awards Chair of 2007 Cognitive Science Society annual conference; **Co-Chair of 2008 Cognitive Science Society annual conference**, Cognitive Science Society Program Committee member (various years); Expert Panel for IEEE VIS 2020 Workshop on Visualization Psychology; Organiser for ICML 2022 Workshop on Human-Machine Collaboration and Teaming.

grants

AFOSR's Perception & Cognition Program; ANR (France); BBSRC; Canada Foundation for Innovation; Deutsche Forschungsgemeinschaft (DFG) "Clusters of Excellence" panel member; EPSRC, ERC, ESRC; ESRC Rapporteur; EU Human Brain Project panel member (2014); FONDECYT Sicologia (Chile); FNR (Luxembourg); FNRS (Belgium); FWO (Belgium); Leverhulme Trust; MRC; NASA's Intelligent Systems (Human-Centered Computing); National Endowment for the Humanities; Israeli Science Foundation panel member (2011), National Endowment for the Humanities; NIMH Cognition, Language, and Perception (Fellowship) panel member (2006-2007); National Science Foundation (Cognitive Neuroscience); National Science Foundation Perception, Action, and Cognition panel member (2005-2007); National Science Foundation program evaluator (2012) for UCSD Science of Learning Center; NSERC (Canada); National Science Foundation (Decision, Risk and Management Sciences); Research Council of Leuven (Belgium); Royal Society; UKRI Future Leaders Fellowships; University of Texas at Austin Research Internship (RI) fellowship, the Wellcome Trust.

other

Advisory board of IEEE VIS2020 Workshop of Visualization Psychology; Assisting Brain Imaging Data Structure (BIDS) group extend standard to computational modelling; Comment of House of Lords request for feedback on how government should regulate Artificial Intelligence; Consultant for BBC Horizon (2014-2015, Episode 19) "Are Video Games Really That Bad?"; Outside evaluator on tenure and promotion cases, and Ph.D. dissertations. Consultant for Charles A. Dana Center academic youth development program. Royal Society mentoring programme. Air Force AMBR project expert panel member (2002-2004), program committee member for FLAIRS 2002 Special Track "Categorization and Concept Representation: Models and Implications"; Program evaluation for Oxford's new Social Data Science programme; Program evaluation for Kingston's new Decision Sciences MSc programme; Consultant on Scientific Content of BBC Horizon episode (2015); Programme evaluation for Oxford Internet Institute's newly proposed MSc (2017), Programme evaluation for Warwick new Psychology and Data Science MSc (2016); Consultant for Ofgem, dunnhumby, the Take Five (<https://takefive-stopfraud.org.uk/>) public service; REF consultant for WBS; Advisory Board NSF project Learning Preferences and Domain Differences in Design Fixation (2020-2024).

UNIVERSITY SERVICE

Mentor for UCL PALS programme (2023-)

Mentor for Research Fellows at Turing (2017-)

Royal Society Mentorship Scheme (2021-)

Faculty of Brain Sciences IT Committee (2020-)

Deputy Chair (2014-2019)

Head of the Cognitive Systems Area at Texas (2007-2011)

Many Masters and Ph.D. committees.

Member of numerous committees.

ADVISING

Postdoctoral

Christiane Ahlheim (2016-2018, now at Google)
Daniel Barry (2019-2022, now an Editor at *Nature Communications*)
Sebastian Bobadilla-Suarez (2017-2021, now at a startup)
Kurt Braunlich (2016-2019, now at NIH)
Johan Carlin (2016-2017, now Cambridge CBU)
Gyslain Giguere (2009-2013, now a U. of Montreal)
Olivia Guest (2017-2020, now Asst. Prof at Donders)
Aaron Hoffman (2007- 2011)
Matthew Jones (2003-2007, now U. of Colorado Assoc. Prof.)
Xiaoliang “Ken” Luo (2023-)
Mike Mack (2011- 2016, now U. of Toronto Assoc. Prof)
Rob Mok (2017-2020, now a lecturer/asst prof at Royal Holloway)
Brett Roads (2018-2025, Now at Meta)
Nick Sexton (2019-2022)

Graduate

Eric Abel (2009-2010)
Kaarina Aho (2020-2023, now a research scientist at dunnhumby)
Sebastian Bobadilla-Suarez (2013-2017, now at startup)
Franziska Bröker (2019-2022, secondary advisor, now postdoc at CMU)
Nikolay Dagaev (2021- 2023)
Tyler Davis (2005-2010, now Texas Tech Assoc. Prof.)
John Dennis (2003-2004)
Brian Glass (2011-2012)
Todd M. Gureckis (2001-2005, now NYU Full Prof.)
Laura Holland (2008-2009)
Adam Hornsby (2016-2022, senior data scientists at dunnhumby)
Lukas Kopec (2012-2016)
Levi Larkey (2002-2003)
Xiaoliang “Ken” Luo (2018-2022, now postdoc at UCL)
Ross Otto (2007-2012, now McGill Assoc. Prof.)
Katie Parker (2013-2016)
Paula Parpart (2012-2017, now postdoc at Oxford)
Peter Riefer (2012-2016, senior data scientist at Deliveroo)
Yasuaki Sakamoto (2000-2005, now Research Asst. Prof. at Stevens Institute of Technology)
Katherine Snyder (2007-2008)
Marc Tomlinson (2004-2010)
Anne Warlaumont (2006-2007)

A lot (5+ per year) of MSc and BSc students (2012-)

PUBLICATIONS

Sasse, L., Nicolaisen-Sobesky, E., Dukart, J., Eickhoff, S. B., Götz, M., Hamdan, S., Komeyer,

V., Kulkarni, A., Lahnakoski, J. M., Love, B. C., Raimondo, F., & Patil, K. R. (2025).

Overview of leakage scenarios in supervised machine learning. *Journal of Big Data*,

12(1). <https://doi.org/10.1186/s40537-025-01193-8>

Luo, X., Xu, X., Ramscar, M., & Love, B. C. (2025). *Probability Consistency in Large*

Language Models: Theoretical Foundations Meet Empirical Discrepancies (Version 1).

arXiv. <https://doi.org/10.48550/ARXIV.2505.08739>

Luo, X., Mok, R. M., Roads, B. D., & Love, B. C. (2025). Coordinating multiple mental

faculties during learning. *Scientific Reports*, 15(1). [https://doi.org/10.1038/](https://doi.org/10.1038/s41598-025-89732-4)

[s41598-025-89732-4](https://doi.org/10.1038/s41598-025-89732-4)

Luo, X., Recharadt, A., Sun, G., Nejad, K. K., Yáñez, F., Yilmaz, B., Lee, K., Cohen, A. O.,

Borghesani, V., Pashkov, A., Marinazzo, D., Nicholas, J., Salatiello, A., Sucholutsky, I.,

Minervini, P., Razavi, S., Rocca, R., Yusifov, E., Okalova, T., ... Love, B. C. (2025).

Large language models surpass human experts in predicting neuroscience results. *Nature*

Human Behaviour. <https://doi.org/10.1038/s41562-024-02046-9>

Luo, X., Ramscar, M., & Love, B. C. (2024). *Beyond Human-Like Processing: Large Language*

Models Perform Equivalently on Forward and Backward Scientific Text (Version 1).

arXiv. <https://doi.org/10.48550/ARXIV.2411.11061>

Bröker, F., Holt, L. L., Roads, B. D., Dayan, P., & Love, B. C. (2024). Demystifying

unsupervised learning: How it helps and hurts. *Trends in Cognitive Sciences*, 28(11), 974–

986. <https://doi.org/10.1016/j.tics.2024.09.005>

- Della Sala, S., Bathelt, J., Buchtel, H., Tavano, A., Press, C., Love, B., Croy, I., Morris, R., Kotz, S., Kopelman, M. D., Coco, M. I., Reber, P., Forkel, S. J., & Schweinberger, S. R. (2024). The future of science publishing. *Cortex*, 181, 93–100. <https://doi.org/10.1016/j.cortex.2024.10.005>
- Roads, B. D., & Love, B. C. (2024). The Dimensions of dimensionality. *Trends in Cognitive Sciences*, S136466132400189X. <https://doi.org/10.1016/j.tics.2024.07.005>
- Yáñez, F., Luo, X., Minero, O. V., & Love, B. C. (2024). *Confidence-weighted integration of human and machine judgments for superior decision-making* (Version 1). arXiv. <https://doi.org/10.48550/ARXIV.2408.08083>
- Luo, X., Sun, G., & Love, B. C. (2024). *Matching domain experts by training from scratch on domain knowledge* (Version 2). arXiv. <https://doi.org/10.48550/ARXIV.2405.09395>
- Love, B. C. (2024). Linking Models with Brain Measures. In B. U. Forstmann & B. M. Turner (Eds.), *An Introduction to Model-Based Cognitive Neuroscience* (pp. 17–37). Springer International Publishing. https://doi.org/10.1007/978-3-031-45271-0_2
- Luo, X., Mok, R. M., & Love, B. C. (2024). *The inevitability and superfluousness of cell types in spatial cognition*. <https://doi.org/10.7554/eLife.99047.1>
- Broschard, M. B., Kim, J., Love, B. C., Halverson, H. E., & Freeman, J. H. (2024). Disrupting dorsal hippocampus impairs category learning in rats. *Neurobiology of Learning and Memory*, 212, 107941. <https://doi.org/10.1016/j.nlm.2024.107941>
- Poldrack, Russell A., Christopher J. Markiewicz, Stefan Appelhoff, Yoni K. Ashar, Tibor Auer, Sylvain Baillet, Shashank Bansal, et al. (2024). The Past, Present, and Future of the Brain Imaging Data Structure (BIDS). *Imaging Neuroscience*.
- Mack, M. L., Love, B. C., & Preston, A. R. (2024). *Distinct hippocampal mechanisms support concept formation and updating*. <https://doi.org/10.1101/2024.02.14.580181>

Aho, K., Roads, B.D., & Love, B. C. (2023). Signatures of cross-modal alignment in children's early concepts. *PNAS*. <https://doi.org/10.1073/pnas.2309688120>

Sucholutsky, Ilia, Lukas Muttenthaler, Adrian Weller, Andi Peng, Andreea Bobu, Been Kim, Bradley C. Love, et al. 'Getting Aligned on Representational Alignment', 2023. <https://doi.org/10.48550/ARXIV.2310.13018>.

Xin-Ya Zhang, Sebastian Bobadilla-Suarez, Xiaoliang Luo, Marilena Lemonari, Scott L. Brincat, Markus Siegel, Earl K. Miller, & Bradley C. Love. (2023). Adaptive stretching of representations across brain regions and deep learning model layers. *bioRxiv*, 2023.12.01.569615. <https://doi.org/10.1101/2023.12.01.569615>

Love, B. C., & Mok, R. M. (2023). *You can't play 20 questions with nature and win redux* PsyArXiv (Behavioral and Brain Sciences commentary). <https://doi.org/10.31234/osf.io/xaemv>

Roads, B. D., & Love, B. C. (2024). Modeling Similarity and Psychological Space. *Annual Review of Psychology*, 75(1), annurev-psych-040323-115131. <https://doi.org/10.1146/annurev-psych-040323-115131>

Mok, R. M., & Love, B. C. (2023). A multilevel account of hippocampal function in spatial and concept learning: Bridging models of behavior and neural assemblies. *Science Advances*, 9(29), eade6903. <https://doi.org/10.1126/sciadv.ade6903>

Hamdan, S., Love, B. C., von Polier, G. G., Weis, S., Schwender, H., Eickhoff, S. B., & Patil, K. R. (2023). Confound-leakage: Confound removal in machine learning leads to leakage. *GigaScience*, 12, giad071. <https://doi.org/10.1093/gigascience/giad071>

Collins, K. M., Bhatt, U., Liu, W., Piratla, V., Sucholutsky, I., Love, B. C., & Weller, W. (2023). Human-in-the-Loop Mixup. Uncertainty in Artificial Intelligence (UAI). <https://openreview.net/forum?id=BW6oQ0qZI0EI>

- Broschard, M. B., Kim, J., Love, B. C., & Freeman, J. H. (2023). Dorsomedial striatum, but not dorsolateral striatum, is necessary for rat category learning. *Neurobiology of Learning and Memory*, 199, 107732. <https://doi.org/10.1016/j.nlm.2023.107732>
- Nanda, V., Majumdar, A., Kolling, C., Dickerson, J. P., Gummadi, K. P., Love, B. C., & Weller, A. (2023). Do Invariances in Deep Neural Networks Align with Human Perception? *Proceedings of the AAAI Conference on Artificial Intelligence*, 37(8), 9277–9285. <https://doi.org/10.1609/aaai.v37i8.26112>
- Dagaev, N., Roads, B. D., Luo, X., Barry, D. N., Patil, K. R., & Love, B. C. (2023). A too-good-to-be-true prior to reduce shortcut reliance. *Pattern Recognition Letters*, 166, 164–171. <https://doi.org/10.1016/j.patrec.2022.12.010>
- Aho, K., Roads, B. D., & Love, B. C. (2022). System alignment supports cross-domain learning and zero-shot generalisation. *Cognition*, 227, 105200. <https://doi.org/10.1016/j.cognition.2022.105200>
- Barry, D. N., & Love, B. C. (2022). A neural network account of memory replay and knowledge consolidation. *Cerebral Cortex*, bhac054. <https://doi.org/10.1093/cercor/bhac054>
- Bobadilla-Suarez, S., Jones, M., & Love, B. C. (2022). Robust priors for regularized regression. *Cognitive Psychology*, 132, 101444.
- Bröker, F., Love, B. C., & Dayan, P. (2022). When unsupervised training benefits category learning. *Cognition*, 221, 104984.
- Hornsby, A. N., & Love, B. C. (2022). Sequential consumer choice as multi-cued retrieval. *Science Advances*, 8(8), eabl9754. <https://doi.org/10.1126/sciadv.abl9754>
- Sexton, N. J., & Love, B. C. (2022). Reassessing hierarchical correspondences between brain and deep networks through direct interface. *Science Advances*, 8(28), eabm2219. <https://doi.org/10.1126/sciadv.abm2219>
- Barry, D. N., & Love, B. C. (2021). *Human learning follows the dynamics of gradient descent*. *PsyArxiv*.
- Braunlich, K., & Love, B. C. (2021). Bidirectional influences of information sampling and concept learning. *Psychological Review*. <https://doi.org/10.1037/rev0000287>

- Broschard, M. B., Kim, J., Love, B. C., & Freeman, J. H. (2021). Category learning in rodents using touchscreen-based tasks. *Genes, Brain and Behavior*, 20(1), e12665.
- Broschard, M. B., Kim, J., Love, B. C., Wasserman, E. A., & Freeman, J. H. (2021). Prelimbic cortex maintains attention to category-relevant information and flexibly updates category representations. *Neurobiology of Learning and Memory*, 185, 107524.
- Love, B. C. (2021). Levels of biological plausibility. *Philosophical Transactions of the Royal Society B*, 376(1815), 20190632.
- Love, B. C., & Roads, B. D. (2021). Similarity as a Window on the Dimensions of Object Representation. *Trends in Cognitive Sciences*, 25(2), 94–96.
- Luo, X., Roads, B. D., & Love, B. C. (2021). The costs and benefits of goal-directed attention in deep convolutional neural networks. *Computational Brain & Behavior*, 4(2), 213–230.
- Luo, X., Sexton, N. J., & Love, B. C. (2021). A deep learning account of how language affects thought. *Language, Cognition and Neuroscience*, 1–10.
- Roads, B. D., & Love, B. C. (2021). Enriching imagenet with human similarity judgments and psychological embeddings. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 3547–3557.
- Smith, F. B., Roads, B. D., Luo, X., & Love, B. C. (2021). Understanding top-down attention using task-oriented ablation design. *ArXiv Preprint ArXiv:2106.11339*.
- Bickford Smith, F., Luo, X., Roads, B. D., & Love, B. C. (2020). The perceptual boost of visual attention is task-dependent in naturalistic settings. *ArXiv E-Prints*, arXiv-2003.
- Bobadilla-Suarez, S., Ahlheim, C., Mehrotra, A., Panos, A., & Love, B. C. (2020). Measures of neural similarity. *Computational Brain & Behavior*, 3(4), 369–383.
- Bobadilla-Suarez, S., Guest, O., & Love, B. C. (2020). Subjective value and decision entropy are jointly encoded by aligned gradients across the human brain. *Communications Biology*, 3(1), 1–9.
- Botvinik-Nezer, R., Holzmeister, F., Camerer, C. F., Dreber, A., Huber, J., Johannesson, M., Kirchler, M., Iwanir, R., Mumford, J. A., Adcock, R. A., & others. (2020). Variability in the analysis of a single neuroimaging dataset by many teams. *Nature*, 582(7810), 84–88.

- Hornsby, A. N., Evans, T., Riefer, P. S., Prior, R., & Love, B. C. (2020). Conceptual organization is revealed by consumer activity patterns. *Computational Brain & Behavior*, 3(2), 162–173.
- Hornsby, A. N., & Love, B. C. (2020). How decisions and the desire for coherency shape subjective preferences over time. *Cognition*, 200, 104244.
- Love, B. C. (2020b). Model-based fMRI analysis of memory. *Current Opinion in Behavioral Sciences*, 32, 88–93.
- Mack, M. L., Preston, A. R., & Love, B. C. (2020). Ventromedial prefrontal cortex compression during concept learning. *Nature Communications*, 11(1), 1–11.
- Mok, R. M., & Love, B. C. (2020). Abstract neural representations of category membership beyond information coding stimulus or response. *Journal of Cognitive Neuroscience*, 1–17.
- Roads, B. D., & Love, B. C. (2020). Learning as the unsupervised alignment of conceptual systems. *Nature Machine Intelligence*, 2(1), 76–82.
- Smith, F. B., Luo, X., Roads, B. D., & Love, B. C. (2020). The perceptual boost of visual attention is task-dependent in naturalistic settings. *ArXiv Preprint ArXiv:2003.00882*.
- Braunlich, K., & Love, B. C. (2019). Occipitotemporal representations reflect individual differences in conceptual knowledge. *Journal of Experimental Psychology: General*, 148(7), 1192.
- Broschard, M. B., Kim, J., Love, B. C., Wasserman, E. A., & Freeman, J. H. (2019). Selective attention in rat visual category learning. *Learning & Memory*, 26(3), 84–92.
- Guest, O., Kanayet, F. J., & Love, B. C. (2019). Gerrymandering and computational redistricting. *Journal of Computational Social Science*, 2(2), 119–131.
- Guest, O., & Love, B. C. (2019). Levels of representation in a deep learning model of categorization. *BioRxiv*, 626374.
- Mok, R. M., & Love, B. C. (2019). A non-spatial account of place and grid cells based on clustering models of concept learning. *Nature Communications*, 10(1), 1–9.

- Poldrack, R. A., Feingold, F., Frank, M. J., Gleeson, P., de Hollander, G., Huys, Q. J., Love, B. C., Markiewicz, C. J., Moran, R., Ritter, P., & others. (2019). The importance of standards for sharing of computational models and data. *Computational Brain & Behavior*, 2(3), 229–232.
- Schulz, E., Bhui, R., Love, B. C., Brier, B., Todd, M. T., & Gershman, S. J. (2019). Structured, uncertainty-driven exploration in real-world consumer choice. *Proceedings of the National Academy of Sciences*, 116(28), 13903–13908.
- Ahlheim, C., & Love, B. C. (2018). Estimating the functional dimensionality of neural representations. *NeuroImage*, 179, 51–62.
- Bobadilla-Suarez, S., & Love, B. C. (2018). Fast or frugal, but not both: Decision heuristics under time pressure. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 44(1), 24.
- Inhoff, M. C., Libby, L. A., Noguchi, T., Love, B. C., & Ranganath, C. (2018). Dynamic integration of conceptual information during learning. *PloS One*, 13(11), e0207357.
- Love, B. C. (2018). Model comparison, not model falsification. *Behavioral and Brain Sciences*, 41.
- Mack, M. L., Love, B. C., & Preston, A. R. (2018). Building concepts one episode at a time: The hippocampus and concept formation. *Neuroscience Letters*, 680, 31–38.
- Parpart, P., Jones, M., & Love, B. C. (2018). Heuristics as Bayesian inference under extreme priors. *Cognitive Psychology*, 102, 127–144.
- De Martino, B., Bobadilla-Suarez, S., Nouguchi, T., Sharot, T., & Love, B. C. (2017). Social information is integrated into value and confidence judgments according to its reliability. *Journal of Neuroscience*, 37(25), 6066–6074.
- Guest, O., & Love, B. C. (2017). What the success of brain imaging implies about the neural code. *ELife*, 6(e21397), [http-dx](http://dx.doi.org/10.7554/eLife.21397).
- Love, B. C. (2017). Concepts, meaning, and conceptual relationships. *The Oxford Handbook of Cognitive Science*, 137–150.

- Love, B. C., Guest, O., Slomka, P., Navarro, V., & Wasserman, E. (2017). Deep Networks as Models of Human and Animal Categorization. *CogSci*.
- Mack, M. L., Preston, A. R., & Love, B. C. (2017). Medial prefrontal cortex compresses concept representations through learning. *2017 International Workshop on Pattern Recognition in Neuroimaging (Prni)*, 1–4.
- Palmeri, T. J., Love, B. C., & Turner, B. M. (2017). Model-based cognitive neuroscience. In *Journal of Mathematical Psychology* (Vol. 76, pp. 59–64). Academic Press.
- Parpart, P., Schulz, E., Speekenbrink, M., & Love, B. C. (2017). Active learning reveals underlying decision strategies. *BioRxiv*.
- Riefer, P. S., Prior, R., Blair, N., Pavey, G., & Love, B. C. (2017). Coherency-maximizing exploration in the supermarket. *Nature Human Behaviour*, 1(1), 1–4.
- Spiers, H. J., Love, B. C., Le Pelley, M. E., Gibb, C. E., & Murphy, R. A. (2017). Anterior temporal lobe tracks the formation of prejudice. *Journal of Cognitive Neuroscience*, 29(3), 530–544.
- Turner, B. M., Forstmann, B. U., Love, B. C., Palmeri, T. J., & Van Maanen, L. (2017). Approaches to analysis in model-based cognitive neuroscience. *Journal of Mathematical Psychology*, 76, 65–79.
- Blanco, N. J., Love, B. C., Ramscar, M., Otto, A. R., Smayda, K., & Maddox, W. T. (2016). Exploratory decision-making as a function of lifelong experience, not cognitive decline. *Journal of Experimental Psychology: General*, 145(3), 284.
- Love, B. C. (2016). Cognitive models as bridge between brain and behavior. *Trends in Cognitive Sciences*, 20(4), 247–248.
- Mack, M. L., Love, B. C., & Preston, A. R. (2016). Dynamic updating of hippocampal object representations reflects new conceptual knowledge. *Proceedings of the National Academy of Sciences*, 113(46), 13203–13208.
- Blanco, N. J., Love, B. C., Cooper, J. A., McGeary, J. E., Knopik, V. S., & Maddox, W. T. (2015). A frontal dopamine system for reflective exploratory behavior. *Neurobiology of Learning and Memory*, 123, 84–91.

- Gureckis, T. M., & Love, B. C. (2015). Computational reinforcement learning. *The Oxford Handbook of Computational and Mathematical Psychology*, 99–117.
- Love, B. C. (2015). The algorithmic level is the bridge between computation and brain. *Topics in Cognitive Science*, 7(2), 230–242.
- Love, B. C., Kopeć, Lukasz, & Guest, O. (2015). Optimism bias in fans and sports reporters. *Plos One*, 10(9), e0137685.
- Love, B. C., Ramscar, M., Griffiths, T. L., & Jones, M. (2015). Generative and Discriminative Models in Cognitive Science. *CogSci*.
- Newall, P. W., & Love, B. C. (2015). Nudging investors big and small toward better decisions. *Decision*, 2(4), 319.
- Parpart, P., Schulz, E., Speekenbrink, M., & Love, B. C. (2015). Active learning as a means to distinguish among prominent decision strategies. *CogSci*.
- Riefer, P. S., & Love, B. C. (2015). Unfazed by both the bull and bear: Strategic exploration in dynamic environments. *Games*, 6(3), 251–261.
- Anderson, O. R., Love, B. C., & Tsai, M.-J. (2014). Neuroscience perspectives for science and mathematics learning in technology-enhanced learning environments. In *International Journal of Science and Mathematics Education* (Vol. 12, Issue 3, pp. 467–474). Springer Netherlands.
- Davis, T., Xue, G., Love, B. C., Preston, A. R., & Poldrack, R. A. (2014). Global neural pattern similarity as a common basis for categorization and recognition memory. *Journal of Neuroscience*, 34(22), 7472–7484.
- Hornsby, A. N., & Love, B. C. (2014). Improved classification of mammograms following idealized training. *Journal of Applied Research in Memory and Cognition*, 3(2), 72–76.
- Love, B. C. (2014). Categorization. *Oxford Handbook of Cognitive Neuroscience*.
- Love, B. C., Jarecki, J., Busemeyer, J. R., Taatgen, N. A., Griffiths, T. L., & Mirjam, J. (2014). Moot Point Process Models. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 36(36).

- Otto, A. R., Knox, W. B., Markman, A. B., & Love, B. C. (2014). Physiological and behavioral signatures of reflective exploratory choice. *Cognitive, Affective, & Behavioral Neuroscience, 14*(4), 1167–1183.
- Parpart, P., Jones, M., & Love, B. (2014). Heuristics as a special case of Bayesian Inference. *Proceedings of the Annual Meeting of the Cognitive Science Society, 36*(36).
- Patil, K. R., Zhu, J., Kopec, L., & Love, B. C. (2014). Optimal teaching for limited-capacity human learners. *Advances in Neural Information Processing Systems, 27*.
- Riefer, P. S., & Love, B. C. (2014). Choice exploration and exploitation in purchase decisions: A longitudinal study of customers' exploration and exploitation of supermarket products. *Proceedings of the Annual Meeting of the Cognitive Science Society, 36*(36).
- Blanco, N. J., Otto, A. R., Maddox, W. T., Beevers, C. G., & Love, B. C. (2013). The influence of depression symptoms on exploratory decision-making. *Cognition, 129*(3), 563–568.
- Giguère, G., & Love, B. C. (2013). Limits in decision making arise from limits in memory retrieval. *Proceedings of the National Academy of Sciences, 110*(19), 7613–7618.
- Glass, B. D., Maddox, W. T., & Love, B. C. (2013). Real-time strategy game training: Emergence of a cognitive flexibility trait. *PloS One, 8*(8), e70350.
- Kopec, L., & Love, B. C. (2013). Are forgetting processes crucial to category learning? *CogSci*.
- Kusev, P., Love, B. C., & van Schaik, P. (2013). Decision-Network Context: Dynamics and Learning in Preference Formation. *Paper Presented at the 54th Annual Meeting of the Psychonomic Society, Canada. Abstracts of the Psychonomic Society*.
- Love, B. C. (2013). Grounding quantum probability in psychological mechanism. *Behavioral and Brain Sciences, 36*(3), 296–296.
- Mack, M. L., Preston, A. R., & Love, B. C. (2013). Decoding the brain's algorithm for categorization from its neural implementation. *Current Biology, 23*(20), 2023–2027.
- Parpart, P., Jones, M., & Love, B. C. (2013). When is it rational to rely on heuristics? *CogSci*.
- Ramscar, M., Hendrix, P., Love, B., & Baayen, R. H. (2013). Learning is not decline: The mental lexicon as a window into cognition across the lifespan. *The Mental Lexicon, 8*(3), 450–481.

- Richardson, D. C., Riefer, P., Love, B., Lotto, B., Clarke, R. C., Dale, R., Rogers, J., & Ireland, J. (2013). Experiments in dynamic group action and decision making: How crowds of people can walk a tightrope together and survive a zombie attack. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 35(35).
- Sanders, M., Davis, T., & Love, B. C. (2013). Is better beautiful or is beautiful better? Exploring the relationship between beauty and category structure. *Psychonomic Bulletin & Review*, 20(3), 566–573.
- Davis, T., Love, B. C., & Maddox, W. T. (2012). Age-related declines in the fidelity of newly acquired category representations. *Learning & Memory*, 19(8), 325–329.
- Davis, T., Love, B. C., & Preston, A. R. (2012a). Learning the exception to the rule: Model-based fMRI reveals specialized representations for surprising category members. *Cerebral Cortex*, 22(2), 260–273.
- Davis, T., Love, B. C., & Preston, A. R. (2012b). Striatal and hippocampal entropy and recognition signals in category learning: Simultaneous processes revealed by model-based fMRI. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 38(4), 821.
- Dixit, V., Alsup, R., Waller, S., Love, B. C., & Tomlinson, M. (2012). A STATIC MODEL FOR PREDICTING DISRUPTED NETWORK BEHAVIOUR. *TRANSPORTATION & LOGISTICS MANAGEMENT*, 3–10.
- Love, B. C., & Jones, M. (2012). Bayesian Learning. In N. M. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 415–417). Springer US. https://doi.org/10.1007/978-1-4419-1428-6_255
- Eliasmith, C., Griffiths, T., Hardcastle, V. G., Love, B., Bechtel, W., Cooper, R. P., & Peebles, D. (2012). Thirty years of Marr's Vision: Levels of Analysis in Cognitive Science. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 34(34).
- Knox, W. B., Glass, B. D., Love, B. C., Maddox, W. T., & Stone, P. (2012). How humans teach agents. *International Journal of Social Robotics*, 4(4), 409–421.

- Knox, W. B., Otto, A. R., Stone, P., & Love, B. (2012). The nature of belief-directed exploratory choice in human decision-making. *Frontiers in Psychology*, 2, 398.
- Otto, A. R., Markman, A. B., & Love, B. C. (2012). Taking more, now: The optimality of impulsive choice hinges on environment structure. *Social Psychological and Personality Science*, 3(2), 131–138.
- Giguere, G., & Love, B. C. (2011). Determinants of learning difficulty and boundary uncertainty in unidimensional category learning. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 33(33).
- Glass, B. D., Tomlinson, M. T., Maddox, W. T., & Love, B. C. (2011). Becoming a Gamer: Cognitive Effects of Real-Time Strategy Gaming. *CogSci*.
- Goldwater, M. B., Tomlinson, M. T., Echols, C. H., & Love, B. C. (2011). Structural priming as structure-mapping: Children use analogies from previous utterances to guide sentence production. *Cognitive Science*, 35(1), 156–170.
- Jones, M., & Love, B. C. (2011a). Bayesian fundamentalism or enlightenment? On the explanatory status and theoretical contributions of Bayesian models of cognition. *Behavioral and Brain Sciences*, 34(4), 169.
- Jones, M., & Love, B. C. (2011b). Pinning down the theoretical commitments of Bayesian cognitive models. *Behavioral and Brain Sciences*, 34(4), 215–231.
- Love, B., & Spencer, J. (2011). Moving Beyond Where and What to How: Using Models and fMRI to Understand Brain-Behavior Relations. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 33(33).
- Davis, T., & Love, B. C. (2010). Memory for category information is idealized through contrast with competing options. *Psychological Science*, 21(2), 234–242.
- Gureckis, T. M., & Love, B. C. (2010). Direct associations or internal transformations? Exploring the mechanisms underlying sequential learning behavior. *Cognitive Science*, 34(1), 10–50.

- Hoffman, A., Love, B., & Markman, A. (2010). Selective Attention by Structural Alignment: An Eyetracking Study. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 32(32).
- Love, B. C., & Tomlinson, M. (2010). Mechanistic models of associative and rule-based category learning. *The Making of Human Concepts*, 53–74.
- Otto, A. R., & Love, B. C. (2010). You don't want to know what you're missing: When information about forgone rewards impedes dynamic decision making. *Judgment and Decision Making*, 5(1), 1.
- Otto, A. R., Markman, A. B., Gureckis, T. M., & Love, B. C. (2010). Regulatory fit and systematic exploration in a dynamic decision-making environment. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 36(3), 797.
- Sakamoto, Y., & Love, B. C. (2010). Learning and retention through predictive inference and classification. *Journal of Experimental Psychology: Applied*, 16(4), 361.
- Tomlinson, M. T., & Love, B. C. (2010). When learning to classify by relations is easier than by features. *Thinking & Reasoning*, 16(4), 372–401.
- Davis, T., Love, B. C., & Maddox, W. T. (2009a). Anticipatory emotions in decision tasks: Covert markers of value or attentional processes? *Cognition*, 112(1), 195–200.
- Davis, T., Love, B. C., & Maddox, W. T. (2009b). Two pathways to stimulus encoding in category learning? *Memory & Cognition*, 37(4), 394–413.
- Gureckis, T., Love, B., Markman, A., & Otto, A. R. (2009). When things get worse before they get better: Regulatory fit and average-reward learning in a dynamic decision-making environment. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 31(31).
- Gureckis, T. M., & Love, B. C. (2009a). Learning in noise: Dynamic decision-making in a variable environment. *Journal of Mathematical Psychology*, 53(3), 180–193.
- Gureckis, T. M., & Love, B. C. (2009b). Short-term gains, long-term pains: How cues about state aid learning in dynamic environments. *Cognition*, 113(3), 293–313.

- Love, B. C., Jones, M., Tomlinson, M. T., & Howe, M. (2009). Learning to predict information needs: Context-aware display as a cognitive aid and an assessment tool. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 1351–1360.
- Love, B., & Sakamoto, Y. (2009). You Only Had to Ask Me Once: Long-term Retention Requires Direct Queries During Learning. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 31(31).
- Otto, A. R., Gureckis, T. M., Markman, A. B., & Love, B. C. (2009). Navigating through abstract decision spaces: Evaluating the role of state generalization in a dynamic decision-making task. *Psychonomic Bulletin & Review*, 16(5), 957–963.
- Sakamoto, Y., & Love, B. C. (2009). You only had to ask me once: Long-term retention requires direct queries during learning. *Proceedings of the 31st Annual Conference of the Cognitive Science Society. Amsterdam, Netherlands: Cognitive Science Society*.
- Tomlinson, M. T., Howe, M., & Love, B. C. (2009). Seeing the World through an Expert's Eyes: Context-Aware Display as a Training Companion. *International Conference on Foundations of Augmented Cognition*, 668–677.
- Davis, T., & Love, B. C. (2008). How goals shape category acquisition: The role of contrasting categories. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 30(30).
- Love, B. C., Jones, M., Tomlinson, M. T., & Howes, M. (2008). Predicting information needs: Adaptive display in dynamic environments. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 30(30).
- Love, B. C., Tomlinson, M., & Gureckis, T. M. (2008). The concrete substrates of abstract rule use. *Psychology of Learning and Motivation*, 49, 167–207.
- Maddox, W. T., Love, B. C., Glass, B. D., & Filoteo, J. V. (2008). When more is less: Feedback effects in perceptual category learning. *Cognition*, 108(2), 578–589.
- Sakamoto, Y., Jones, M., & Love, B. C. (2008). Putting the psychology back into psychological models: Mechanistic versus rational approaches. *Memory & Cognition*, 36(6), 1057–1065.

Tomlinson, M. T., & Love, B. C. (2008). Monkey see, monkey do: Learning relations through concrete examples. *Behavioral and Brain Sciences*, 31(2), 150–151.

Davis, T., Love, B. C., & Maddox, W. T. (2007). Translating From Perceptual to Cognitive Coding. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 29(29).

Gureckis, T. M., & Love, B. C. (2007). Behaviorism reborn? Statistical learning as simple conditioning. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 29(29).

Jones, M., & Love, B. C. (2007). Beyond common features: The role of roles in determining similarity. *Cognitive Psychology*, 55(3), 196–231.

Love, B. C., & Gureckis, T. M. (2007). Models in search of a brain. *Cognitive, Affective, & Behavioral Neuroscience*, 7(2), 90–108.

Rein, J. R., Love, B. C., & Markman, A. B. (2007). Feature relations and feature salience in natural categories. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 29(29).

Tomlinson, M. T., & Love, B. C. (2007). Relation-based categories are easier to learn than feature-based categories. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 29(29).

Gureckis, T. M., & Love, B. C. (2006). Bridging levels: Using a cognitive model to connect brain and behavior in category learning. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 28(28).

Jones, M., & Love, B. C. (2006). The emergence of multiple learning systems. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 28(28).

Jones, M., Love, B. C., & Maddox, W. T. (2006a). Recency effects as a window to generalization: Separating decisional and perceptual sequential effects in category learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 32(2), 316.

Jones, M., Love, B. C., & Maddox, W. T. (2006b). The role of similarity in generalization. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 28(28).

- Jones, M., Love, B. C., & Sakamoto, Y. (2006). Tracking Variability in Learning: Contrasting Statistical and Similarity-Based Accounts. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 28(28).
- Love, B. C. (2006). In Vivo or In Vitro: Cognitive Architectures and Task-Specific Models. In *Modeling Human Behavior With Integrated Cognitive Architectures* (pp. 369–382). Psychology Press.
- Love, B. C., & Sakamoto, Y. (2006). Sizable Sharks Swim Swiftly: Learning Correlations through Inference in a Classroom Setting. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 28(28).
- Love, B. C., & Tomlinson, M. T. (2006). Learning Abstract Relations Through Analogy to Concrete Exemplars. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 28(28).
- Sakamoto, Y., & Love, B. C. (2006a). Sizable sharks swim swiftly: Learning correlations through inference in a classroom setting. *Proceedings of the 28th Annual Conference of the Cognitive Science Society*. Vancouver, Canada: Cognitive Science Society.
- Sakamoto, Y., & Love, B. C. (2006b). Vancouver, Toronto, Montreal, Austin: Enhanced oddball memory through differentiation, not isolation. *Psychonomic Bulletin & Review*, 13(3), 474–479.
- Sakamoto, Y., Love, B. C., & Jones, M. (2006). Tracking variability in learning: Contrasting statistical and similarity-based accounts. *Proceedings of the 28th Annual Conference of the Cognitive Science Society*. Vancouver, Canada: Cognitive Science Society.
- Tomlinson, M., & Love, B. C. (2006). Learning abstract relations through analogy to concrete exemplars. *Proceedings of the 28th Annual Conference of the Cognitive Science Society*, 2269–2274.
- Tomlinson, M. T., & Love, B. C. (2006). From pigeons to humans: Grounding relational learning in concrete examples. *AAAI*, 199–204.
- Ahn, W. E., Goldstone, R. L., Love, B. C., Markman, A. B., & Wolff, P. E. (2005). *Categorization inside and outside the laboratory: Essays in honor of Douglas L. Medin*.

- Gureckis, T. M., & Love, B. C. (2005). A critical look at the mechanisms underlying implicit sequence learning. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 27(27).
- Jones, M., Love, B. C., & Maddox, W. T. (2005). Stimulus generalization in category learning. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 27(27).
- Love, B. C. (2005a). Environment and goals jointly direct category acquisition. *Current Directions in Psychological Science*, 14(4), 195–199.
- Love, B. C. (2005b). *Method and apparatus for incorporating decision making into classifiers* (USPTO Patent).
- Love, B. C., & Gureckis, T. M. (2005). Modeling Learning Under the Influence of Culture. In *Categorization inside and outside the laboratory: Essays in honor of Douglas L. Medin*. American Psychological Association.
- Gureckis, T. M., & Love, B. C. (2004). Common mechanisms in infant and adult category learning. *Infancy*, 5(2), 173–198.
- Love, B. C., & Gureckis, T. M. (2004). The hippocampus: Where a cognitive model meets cognitive neuroscience. *Proceedings of the 26th Annual Conference of Cognitive Science Society*.
- Love, B. C., Medin, D. L., & Gureckis, T. M. (2004). SUSTAIN: a network model of category learning. *Psychological Review*, 111(2), 309.
- Sakamoto, Y., & Love, B. C. (2004a). Schematic influences on category learning and recognition memory. *Journal of Experimental Psychology: General*, 133(4), 534.
- Sakamoto, Y., & Love, B. C. (2004b). Type/Token Information in Category Learning and Recognition. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 26(26).
- Sakamoto, Y., Matsuka, T., & Love, B. C. (2004). Dimension-Wide vs. Exemplar-Specific Attention in Category Learning and Recognition. *ICCM*, 261–266.

- Gureckis, T. M., & Love, B. C. (2003a). Human unsupervised and supervised learning as a quantitative distinction. *International Journal of Pattern Recognition and Artificial Intelligence*, 17(05), 885–901.
- Gureckis, T. M., & Love, B. C. (2003b). Towards a unified account of supervised and unsupervised category learning. *Journal of Experimental & Theoretical Artificial Intelligence*, 15(1), 1–24.
- Larkey, L. B., & Love, B. C. (2003). CAB: Connectionist analogy builder. *Cognitive Science*, 27(5), 781–794.
- Love, B. C. (2003a). Concept learning. *The Encyclopedia of Cognitive Science*, 1, 646–652.
- Love, B. C. (2003b). The multifaceted nature of unsupervised category learning. *Psychonomic Bulletin & Review*, 10(1), 190–197.
- Love, B. C., & Markman, A. B. (2003). The nonindependence of stimulus properties in human category learning. *Memory & Cognition*, 31(5), 790–799.
- Sakamoto, Y., & Love, B. C. (2003). Category structure and recognition memory. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 25(25).
- Gureckis, T. M., & Love, B. C. (2002a). Modeling Unsupervised Learning with SUSTAIN. *FLAIRS Conference*, 163–167.
- Gureckis, T. M., & Love, B. C. (2002b). Who says models can only do what you tell them? Unsupervised category learning data, fits, and predictions. *Proceedings of the Twenty-Fourth Annual Conference of the Cognitive Science Society*, 399–404.
- Love, B. C. (2002a). Comparing supervised and unsupervised category learning. *Psychonomic Bulletin & Review*, 9(4), 829–835.
- Love, B. C. (2002b). Similarity and categorization: A review. *AI Magazine*, 23(2), 103–103.
- Yamauchi, T., Love, B. C., & Markman, A. B. (2002). Learning nonlinearly separable categories by inference and classification. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 28(3), 585.
- Love, B. C. (2001). Uncovering analogy. *Trends in Cognitive Sciences*, 5(10), 454–455. [https://doi.org/10.1016/S1364-6613\(00\)01747-2](https://doi.org/10.1016/S1364-6613(00)01747-2)

- Love, B. C. (2001). Three deadly sins of category learning modelers. *Behavioral and Brain Sciences*, 24(4), 687.
- Love, B. C. (2000a). A computational level theory of similarity. *Proceedings of the 22nd Annual Meeting of the Cognitive Science Society*, 316–321.
- Love, B. C. (2000b). Learning at different levels of abstraction. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 22(22).
- Love, B. C., Markman, A. B., & Yamauchi, T. (2000). Modeling classification and inference learning. *AAAI/IAAI*, 136–141.
- Love, B., Markman, A., & Yamauchi, T. (2000). Modeling inference and classification learning. *The National Conference on Artificial Intelligence (AAAI2000)*, 13641.
- Love, B. C. (1999). *Modeling human category learning* [PhD Thesis]. Northwestern University.
- Love, B. C., Rouder, J. N., & Wisniewski, E. J. (1999). A structural account of global and local processing. *Cognitive Psychology*, 38(2), 291–316.
- Love, B. C. (1998). Utilizing time: Asynchronous Binding. *Advances in Neural Information Processing Systems*, 11.
- Love, B. C., & Medin, D. L. (1998a). Modeling item and category learning. *Proceedings of the 20th Annual Conference of the Cognitive Science Society*, 639–644.
- Love, B. C., & Medin, D. L. (1998b). SUSTAIN: A model of human category learning. *Aaai/laai*, 671–676.
- Sloman, S. A., Love, B. C., & Ahn, W.-K. (1998). Feature centrality and conceptual coherence. *Cognitive Science*, 22(2), 189–228.
- Wisniewski, E. J., & Love, B. C. (1998). Relations versus properties in conceptual combination. *Journal of Memory and Language*, 38(2), 177–202.
- Love, B. C. (1996). Mutability, conceptual transformation, and context. *Proceedings of the Eighteenth Annual Conference of the Cognitive Science Society*, 459–463.
- Love, B. C., & Sloman, S. A. (1995). Mutability and the determinants of conceptual transformability. *Proc. 17th Annu. Conf. Cogn. Sci. Soc.*, 65–59

SELECTED POPULAR WRITINGS (see <http://bradlove.org/#press> for press coverage)

The lab's blog, <https://bradlove.org/blog/#blog>

Love, B. C. (2019). BBC homepage for a week (500k hits first day). Do supermarkets know more about us than we do? <https://www.bbc.co.uk/news/business-47357292>

Love, B. C. (2016). Will AI spell the end of humanity? The tech industry wants you to think so. *The Register* from *The Conversation*, https://www.theregister.co.uk/2016/10/25/will_ai_spell_the_end_of_humanity_the_tech_industry_wants_you_to_think_so

Love, B. C. (2015). Gaming improves your brain power – reality or hype? *IFL* from *The Conversation*, <https://theconversation.com/gaming-improves-your-brain-power-reality-or-hype-41002>

INVITED TALKS

7/2025	"Evaluating Probability Consistency and Trust in Large Language Models", Trillion Parameter Consortium, San Jose, CA.
5/2025	"Modes of Interaction with LLMs," Sandia and Los Alamos National Laboratories joint workshop on the future role of LLMs in science.
2/2025	"Taming the neuroscience literature with predictive and explanatory models", Goethe University of Frankfurt.
12/2024	"Taming the neuroscience literature with predictive and explanatory models", University of California at Davis
12/2024 Area)	"AI to Accelerate Scientific Discovery", Foresight Vision Weekend (Bay
11/2024	"Embeddings of and for the mind", Keynote", 17th International Conference on Similarity Search and Applications, Brown University
10/2024	"Accelerating scientific discovery using foundational models", Embracing/Exploiting AI for Neuroscience. Stanford University
10/2024	Donders. (had to cancel)
10/2024	"Taming the neuroscience literature with predictive and explanatory models", University of Birmingham.
9/2024	"Accelerating scientific discovery using foundational models" (joint presentation with Microsoft team), Discover L2D: Coding the Future. London.
7/2024	"Embeddings of and for the mind", Oxford ML Summer School.
7/2024	"Embeddings of and for the mind", PKU-UCL Summer School.
5/2024	"Aligning to learn", ICLR 2024 Workshop on Representational Alignment
3/2024	"Taming the neuroscience literature with explanatory and predictive models", Brain and Behaviour Institute at the Research Centre Jülich.

3/2024	Discussion of BrainGPT project, Polish Academy of Sciences.
3/2024	"Taming the neuroscience literature with explanatory and predictive models", AI Centre, City University of London.
3/2024	"Taming the neuroscience literature with explanatory and predictive models", UCL Brain Talk
2/2024	"Taming the neuroscience literature with computational models", NIH NIDA division.
11/2023	Neurotech Panel, Foresight Institute's Vision Weekend (France)
11/2023	"The mind is simultaneously discriminative and generative". Workshop: Bayesian and Not so Bayesian Belief Update in Economics, Neuroscience, and Machine Learning. UCL.
10/2023	Participant, " <i>Science x AI Safety: Horizon-scanning AI safety risks across scientific disciplines</i> ". Royal Society.
10/2023	"Embeddings of and for the mind", Birkbeck, University of London.
10/2023	"Embeddings of and for the mind", University of Bath.
10/2023	"Aligning embedding spaces for model evaluation and learning", Symposium on mathematics of neuroscience, Neuromonster, Rhodes, Greece.
8/2023	"Advancing neuroscience using large language models", Foresight Institute. San Francisco, CA. https://youtu.be/7G4gR8LfI04?si=Z-HUpWvuVklwF5_D
8/2023	"Comparing biological and artificial networks: are we limited by tools, hypotheses, or data?" Workshop at Cognitive Computational Neuroscience (CCN).
6/2023	Workshop on the "Neurobiology of statistical learning". Kavli Institute for Theoretical Physics, Santa Barbara, USA.
5/2023	"Process models to understand mind and brain", University of Freiburg.
12/2022	"Aligning Embedding Spaces", Data science group at dunnhumby Ltd.
11/2022	"Evaluating deep learning models as accounts of mind and brain", Inter-CDT conference on AI (symposium on computational neuroscience, Bristol.
10/2022	"Cross-domain learning and zero-shot generalisation", ELLIS Natural Intelligence Worksop, Crete, Greece.
4/2022	"Medial prefrontal cortex and the hippocampus support a domain-general learning mechanism", British Neuroscience Association.

4/2022	"Multilevel theories for completeness", Symposium at CNS on Marr's levels, organised by Tomaso Poggio.
4/2022	"Process models to understand mind and brain", University of Pennsylvania's MindCORE Seminar.
10/2021	"Embedding Spaces for Decision Making", University of Basel
10/2021	"Embedding Spaces for Decision Making", Max Planck for Adaptive Rationality.
10/2021	"Embedding Spaces for Decision Making" University of Zurich, Neuroeconomics.
9/2021	"Bridging Brain and Behaviour with Process Models", Max Planck for Human Cognitive and Brain Sciences
3/2021	"Do you make decisions or do your decisions make you?", Who's in control? UCL human sciences symposium.
2/2021	"Integrating Embedding Spaces", University of Tübingen (Felix Wichmann).
2/2021	"Integrating Embedding Spaces", University of Trento.
2/2021	"Integrating Embedding Spaces", University of Wisconsin at Madison.
11/2020	"Large-scale embeddings from human behaviour", The Alan Turing Institute.
9/2020	"Category Learning as Compression", Max Plank Centre for Computational Psychiatry and Ageing Research.
6/2020	"From Bayesian models to heuristics and back again", Max Planck Institute for Intelligent Systems.
5/2020	Role of Bayesian Models in Neuroscience. Neuromatch 2.0 (4.5k in attendance; https://www.crowdcast.io/e/neuromatch2/23)
5/2020	"Big data, smart analyses", UCL Changing Minds webinar.
5/2020	"A clustering account of spatial and non-spatial concept learning", University of Bristol.
5/2020	"Category Learning as Compression" Cognitive Neuroscience Society (CNS).
9/2020	"Category Learning as Compression", Max Plank Centre for Computational Psychiatry and Ageing Research
6/2020	"From Bayesian models to heuristics and back again" Max Planck Institute for Intelligent Systems.

5/2020	Role of Bayesian Models in Neuroscience. Neuromatch 2.0 (4.5k in attendance; https://www.crowdcast.io/e/neuromatch2/23)
5/2020	"Big data, smart analyses", UCL Changing Minds webinar
5/2020	"A clustering account of spatial and non-spatial concept learning" University of Bristol.
5/2020	"Category Learning as Compression" Cognitive Neuroscience Society (CNS) symposium.
2/2020	"Concept learning as compression", Hamburg Center of NeuroScience at UKE.
1/2020	"A common mechanism for spatial and concept learning", Max Planck Institute for Human Cognitive and Brain Sciences.
9/2019	ELLIS, "Top-down attention in the human brain and convolutional networks," Berlin.
7/2019	DoD Future Directions Workshop on Human-Machine Learning, Arlington, VA.
7/2019	General AI discussion panel, Royal Institution.
5/2019	"Levels of Representation in a Deep Learning Model of Categorisation," University of Bristol.
5/2019	"Concept Learning as Compression," Control Processes 2019, Brown University.
4/2019	"Coherency Seeking as a Driver of Preferences," Wharton Business School.
4/2019	Working group on Brain Imaging Data Structure (BIDS) extension for computational modelling. Princeton University.
3/2019	"A deep learning account of shape and colour biases in categorisation," SRCB Biennial, Baltimore.
3/2019	"Concept Learning as Compression," ICPS, Paris.
9/2018	Workshop presentation at "Interpreting BOLD: Furthering the dialogue between cellular and cognitive neuroscience" at Oxford.
9/2018	"Evaluation of the predictive value of the HoNOS," St Andrew's Healthcare.
6/2018	"Predicting when consumers will be unpredictable ", Cheltenham Science Festival - How Predictable Are You? Hosted by Hannah Fry.
6/2018	"Building useful representations based on human activity patterns", UBEL DTC, UCL Innovation event.

6/2018	"A deep learning account of shape and colour biases in categorisation", for Multi-Disciplinary Developmental Dynamics (ETF2018).
5/2018	"Distinct Accumulation and Aggregation Stages or Processes?", Santa Fe Institute, working group on "Distributed Decision Making: Universal features of decision making via collective computation".
6/2018	"Concept Learning as Compression", Cambridge CBU.
5/2018	"Selective Attention for Dimensionality Reduction", SBDM, Symposium on Biology of Decision Making, Paris.
4/2018	"Concept Learning as Compression", Brain and Behaviour Institute at the Research Centre Jülich.
3/2018	"Attention as Uncertainty-Minimising Information Sampling", reinforcement learning workshop at COSYNE in Colorado.
2/2018	"Heuristics as Bayesian inference under extreme priors" keynote, for "Computational modeling of decision-making across scales: from neural coding to Policy-making", Paris.
8/2017	"Different Modes of Exploration", Invited to join a symposium at ICON, Amsterdam.
5/2017	"Exploration with Objective and Subjective Awards", Warwick Business School.
2/2017	"Predicting and Understanding Consumer Behaviour", Keynote, Microsoft Tech Days.
11/2016	"Predicting and Understanding Human Behaviour", keynote address at Big Data Analytics, London.
11/2016	"Tuning Conceptual Knowledge through Hippocampal-Prefrontal Interactions", University of Glasgow.
8/2016	"Coherency Maximizing Exploration in the Supermarket", Invited Symposium organised by Dan Bartels, Int. Conference on Thinking.
6/2016	"Psychology meets Big Data in the Supermarket", Knowledge Exchange Event, British Museum.
3/2016	"People's Inductive Biases in Learning and Decision Making", Keynote at Visual Analytics event at the Alan Turing Institute.
3/2016	"The Categorising Brain", University of Edinburgh.
3/2016	"The Categorising Brain", University of Sussex.
11/2015	Food Matters Live.
10/2015	"Optimal Teaching to Infer the Nature of the Human Learner and Knowledge Organisation", Conference on Complex Systems.

8/2015	Ogilvy Change Summer School.
5/2015	"Do People and Intelligent Machines Make Decisions in the Same Way?" Pint of Science, London.
5/2015	"Apparent attentional limits during learning as limits in memory retrieval", Workshop on Memory Processes in Judgment and Decision Making, hosted by University of Basel.
4/2015	"Do we make food choices rationally?" write-up in Lancet: http://t.co/rTrFo87FnJ , Edinburgh International Science Festival.
3/2015	"Decoding the Brain's Algorithm for Categorisation from its Neural Implementation", University of Plymouth.
1/2015	"Decoding the Brain's Algorithm for Categorisation from its Neural Implementation", Institute of Psychiatry, King's College London
1/2015	"Decoding the Brain's Algorithm for Categorisation from its Neural Implementation", 2015 EPS semantics symposium.
9/2014	"Decoding the Brain's Algorithm for Categorisation from its Neural Implementation", NYU.
5/2014	"Exploration and Exploitation: Converging Computational, Physiological, Psychiatric, Genetic, and Consumer-Choice Perspectives", University of Bristol.
9/2014	"Decoding the Brain's Algorithm for Categorisation from its Neural Implementation," NYU.
5/2014	"Exploration and Exploitation: Converging Computational, Physiological, Psychiatric, Genetic, and Consumer-Choice Perspectives," University of Bristol.
3/2014	"Decoding the Brain's Algorithm for Categorisation from its Neural Implementation," University of Lueven.
2/2014	"Limits in decision making arise from limits in memory retrieval," University of Basel.
2/2014	"Gaming as a Convergence Point of Cognitive Science Theory and Practice," HULT International Business School, London.
1/2014	"Decoding the Brain's Algorithm for Categorisation from its Neural Implementation", MRC-Cognition and Brain sciences Unit at Cambridge University.
11/2013	"Improving Cognitive Function Through Gaming", Decision-making in neurological rehabilitation Inaugural Symposium, Centre for Neurorehabilitation @UCLP.
8/2013	"Limits in Decision Making Reflect Limits in Memory Retrieval", dunnhumby Corporation, London, UK.

6/2013	AECT International Conference on the Frontier in e-Learning Research, Taipei, Taiwan.
5/2013	"Limits in Decision Making Reflect Limits in Memory Retrieval", Workshop on Integrating Approaches to Computational Cognition, Sponsored by the National Science Foundation, Arlington, VA, USA.
3/2013	"Limits in Decision Making Reflect Limits in Memory Literature", Computational Models of Cognition Workshop, Birkbeck.
2/2013	"Limits in Decision Making Reflect Limits in Memory Literature", London JDM group.
2/2013	"Linking Brain, Behaviour, and Computation in Category Learning", City University London
11/2012	"Cognitive Psychology in Service of Retail", dunnhumby corporation, London, UK.
9/2012	"Linking Brain, Behaviour, and Computation in Category Learning", Center for Cognitive Neuroscience. University of Pennsylvania.
8/2012	Talks at National Taiwan University of Science and Technology (NTUST), Taipei, Taiwan, and National Central University (NCU), Jhongli City, Taiwan.
8/2012	Invited symposium, "Thirty years of Marr's Vision: Levels of Analysis in Cognitive Science ", Annual Meeting of the Cognitive Science Society, Sapporo, Japan.
6/2012	"Boosting Executive Function through Video Game Training", Cognitive Control and Associative Learning workshop, Exeter, UK.
4/2012	"Linking Brain, Behaviour, and Computation in Category Learning", Swansea University.
3/2012	"Linking Brain, Behaviour, and Computation in Category Learning", Wellcome Functional Imaging Laboratory, UCL.
3/2012	"Linking Brain, Behaviour, and Computation in Category Learning", University of Oxford.
3/2012	"Linking Brain, Behaviour, and Computation in Category Learning", University of Warwick.
2/2012	"Linking Brain, Behaviour, and Computation in Category Learning", Birkbeck, University of London.
12/2011	"Learning the exception to the rule," Department of Linguistics, University of Texas at Austin
4/2011	Panellist, "Sustainable Design Symposium 2011," hosted by Kate Catterall.
2/2011	"The Memory and Attention Interface," Brown University.

2/2011	"Attention as a Consequence of Dynamic Decision Making," UNSW.
1/2011	"Attention as a Consequence of Dynamic Decision Making," UCL.
11/2010	"Looking to Learn, Learning to Look: Attention Emerges from Cost Sensitive Information Sampling", Workshop on Persistent & Generative Cognitive Models, funded and hosted by Air Force Research Laboratory (Mesa, AZ).
5/2010	"When Short- and Long-Term Rewards Conflict," Cognitive Science Program, Simon Fraser University.
3/2010	"Putting the Pieces Together: Contributions and Interactions of Various Learning Systems," University of Iowa.
10/2009	"The Bayesian Program as Progeny of Evolutionary Psychology and Behaviorism," CDS Pre-Conference talk, sponsored by the DELTA center and organized by John Spencer.
8/2009	"The not so abstract nature of concepts, rules, and grammar," address to Max Planck Institute for Psycholinguistics (Nijmegen, NL).
8/2009	"Connectionist Perspectives on the Development of Category Learning Abilities," development and modelling symposium organized by Maartje Raijmakers, Amsterdam, The Netherlands.
11/2008	"Category Learning by Clustering with Extension to Dynamic Environments," AFOSR Cognition & Decision Program Workshop, Washington, D.C. Hosted by Jun Zhang.
8/2008	"Where do we get new research ideas?" Connecting probabilistic models of cognition and neural networks workshop, Hosted by Tom Griffiths and Jay McClelland, Berkeley, CA.
6/2008	"The Role of Initial Conditions in Concept Organization," Concept Modelling Workshop, University of Lueven, Belgium.
5/2008	"Using Mechanistic (non-rational) Models of Learning to Link Behavior, Brain, and Body," Keynote, Perceptual Expertise Network (PEN) Workshop XVI in Banff, Canada.
5/2008	"Using Mechanistic (non-rational) Models of Learning to Link Behavior, Brain, and Body," Department of Psychology, Ohio State.
12/2007	"Anticipating Information Needs: Adaptive Display in Dynamic Environments," Sustaining Performance Under Stress Symposium, Center for Strategic and Innovative Technologies, Austin, TX.
9/2007	"Human Inference Mechanisms," Cowles Foundation for Research in Economics, Yale University, workshop on "Analogies, Rules, and Probabilities."
3/2007	"Learning by Example with Extension to Dynamic Environments," AFOSR Cognition & Decision Program Workshop, Washington, D.C.

2/2007	"The Emergence of Multiple Learning Systems," University of Arizona.
2/2007	"Putting the Psychology Back Into Psychological Models," AFOSR sponsored workshop in Dynamic Decision Making, Dayton, OH.
11/2006	"The Emergence of Multiple Learning Systems," University of Louisiana.
7/2006	"The Emergence of Multiple Learning Systems," ICOM, Sydney, Australia.
7/2006	"Models in Search of a Brain," workshop, Margaret River, Australia.
6/2006	"The Emergence of Multiple Learning Systems," UWA, Australia.
4/2006	"The Emergence of Multiple Learning Systems," AFOSR Cognition & Decision Program Workshop, Dayton, OH.
4/2006	"The Emergence of Multiple Learning Systems," APA Convention Invited Division 3 speaker, New Orleans, LA.
10/2005	Speaker/Symposium Organizer, "The Cognitive Neuroscience of Category Learning," at the Computational Cognitive Neuroscience Conference, Washington, D.C.
9/2005	"Acquiring Knowledge One Cluster at a Time," Department of Psychology, New York University, NYC.
7/2005	"Exemplar-based relational category learning," Annual Summer Interdisciplinary Conference (ASIC) 2005, Briançon, France.
6/2005	Workshop Participant, NSF sponsored "Dynamical and Connectionist Accounts of Development," University of Iowa, organized by John Spencer and Jay McClelland.
5/2005	"A Clustering Account of Human Categorization," Department of Psychology, University of Sydney, Australia.
4/2005	"Cluster-based Modeling of Human Learning: Joint Influences of Task and Environment," AFOSR Perception & Cognition Program Workshop, St. Augustine, FL.
4/2005	"Environment and goals jointly direct category acquisition," Department of Psychology, Texas A&M, College Station, TX.
2/2005	Keynote speaker for Lake Ontario Visionary Establishment Conference.
2/2005	"Beyond common features: The role of roles in determining similarity. " Department of Psychology, The University of Western Ontario.
1/2005	"Clustering Account of Human Learning" Department of Psychology, Stanford University.
1/2005	"Clustering Account of Human Learning" Department of Psychology, UCSD.

10/2004	"Bridging Levels: A Cognitive Model of Hippocampal Mediated Learning," J. S. McDonnell Foundation meeting on the cognitive neuroscience of category learning, New York City, NY.
9/2004	"Bridging Levels: A Cognitive Model of Hippocampal Mediated Learning" Department of Communication Sciences and Disorders, The University of Texas at Austin.
6/2004	"Infants, amnesiacs, aging, and the MTL," Annual Summer Interdisciplinary Conference (ASIC) 2004, Dolomiti, Italy.
3/2004	"A Clustering Account of Human Learning," AFOSR Perception & Cognition Program Workshop, Phoenix, AZ.
2/2004	"Human Learning, Memory, and the Categories in and Imposed on Our World," UT Odyssey lecture, Austin, TX.
1/2004	"A Clustering Account of Human Category Learning," Caltech, Computation and Neural Systems, Pasadena, CA.
11/2003	"Infants, Amnesiacs, and the MTL," ARMADILLO, Texas A&M, College Station, TX.
9/2003	"Category Learning in Infants and Amnesiacs," J. S. McDonnell Foundation meeting on the cognitive neuroscience of category learning, New York City, NY.
6/2003	"The influence of culture on conceptual organization," talk given at a conference to honour Douglas Medin, Chicago Botanical Gardens, Chicago, IL.
9/2002	"Two systems or just one," J. S. McDonnell Foundation meeting on the cognitive neuroscience of category learning, New York City, NY.
8/2002	Invited Discussant, AMBR symposium at the Cognitive Science Society Conference, Washington, D.C.
11/2001	"Aging effects in category learning," Mind, Brain, & Behavior Forum Series, Harvard University, Cambridge, MA.
7/2001	"Inference and classification learning: Data and models," ICOM-3: Third International Conference on Memory. Valencia, Spain.
11/2000	"Modeling Human Category Learning," Forum for Artificial Intelligence, Department of Computer Science, The University of Texas at Austin, Austin, TX.
10/2000	"Inference and Classification Learning," Association for Research in Memory, Attention, Decision-making, Intelligence, Language, Learning& Organization (ARMADILLO), Texas A&M, College Station, TX.
2/1999	"SUSTAIN: A Clustering Account of Category Learning," Psychology Department, Columbia University, New York City, NY.