July 3, 2022

Michael J. Kahana, Ph.D.

Address

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Personal

Born: May 7, 1969, St. Louis, MO
Citizenship: USA
Married to Jessica A. Wachter, Ph.D.
`finance.wharton.upenn.edu/~jwachter/`

Children:

Nathan Abraham, April 26, 2006
Joseph Morris, February 29, 2008
Benjamin Aryeh, January 25, 2011
Samuel Tzvi, May 14, 2013
Leah Eta Shari, June 19, 2015

Professional

- 2019 — present, Edmund and Louise Kahn Term Professor of Psychology, University of Pennsylvania
- 2004 — present, Professor, Department of Psychology, University of Pennsylvania
- 2000 — 2004, Associate Professor, Department of Psychology and Center for Complex Systems, Brandeis University.
- 1994 — 2000, Assistant Professor, Department of Psychology and National Center for Complex Systems, Brandeis University

Education

- 1989 B. A., Case Western Reserve University.
- 1993 Ph.D., University of Toronto (Psychology); (Ph.D. Thesis: *Interactions between item, associative, and serial order information*, B. B. Murdock, chair).
- 1993–1994 Postdoctoral Fellow, Harvard University (Psychology). Individual National Research Service Award (N.I.H. Grant NS09559, Sponsor: W. K. Estes) *A temporal coding model of human memory*)

Honors and Awards

- Grossman Award, *Society of Neurological Surgeons*, 2021
- Invited Address – Wu Tsai Symposium, Stanford University, 2020
- Plenary Address – World Society for Stereotactic and Functional Neurosurgery, New York, NY, 2019
- Howard Crosby Warren Medal, *Society of Experimental Psychologists*, 2018.
- Mid-Career Award, *Psychonomic Society*, 2018
- Troland Award, *National Academy of Sciences*, 2010.
- Fellow, *Society of Experimental Psychologists*, 2008
- Fellow, *American Psychological Society*, 2010
- Merritt-Putnum Distinguished Lecture — American Epilepsy Society, 2017
- Keynote address, *The 6th International Conference on Memory*, 2016
- Plenary address – 40th Annual Meeting of the Society for Mathematical Psychology, Irvine, CA, 2007
- Plenary address – Computational Cognitive Neuroscience Conference, Houston, 2006

Editorial Activities

- Associate Editor: *Psychological Review*, 2015 – 2021
- Associate Editor: *Cognitive Psychology*, 2005 – 2009
- Associate Editor: *Memory & Cognition*, 2001 – 2005
- Guest Editor: *NeuroImage* special issue "New Horizons for Neural Oscillations", 2014

- Consulting Editor: *Journal of Experimental Psychology: General*, 2008 – 2010
- Consulting Editor: *Journal of Mathematical Psychology*, 2012 –
- Consulting Editor: *Psychonomic Bulletin & Review*, 2005 – 2007.
- Consulting Editor: *Memory & Cognition*, 1997 – 2001.
- Consulting Editor: *Journal of Experimental Psychology: Learning, Memory and Cognition*, 1999 – 2001.

Patents

- Kahana, M. J. and Rizzuto, D. S. (2019). Method and apparatus for improving cognitive performance. U.S. Patent No. 10,449,359. *U.S. Patent and Trademark Office*.
- Kahana, M.J., and Rizzuto, D.S., Method and apparatus for improving cognitive performance through cortical stimulation, US20190282815A1, patent pending

Other Professional Activities

- Founder and Organizer of the Context and Episodic Memory Symposium, an annual meeting since 2002
- Director of graduate studies, Psychology Graduate Group, University of Pennsylvania, 2008-2011
- Chair of the 2010 meeting of the *Society of Experimental Psychologists*
- Member, BBBP-4 (Cognition and Perception) study section, *Centers for Scientific Review, National Institutes of Health*, 2003–2007
- Member, Scientific Advisory Board of the International Cogitate Team
- Member, Advisory Board, Princeton Neuroscience Institute, 2012
- Organizer – 39th Annual Meeting of the Society for Mathematical Psychology, 2006
- Member, Advisory Panel. Doris Duke Charitable Foundation, 2005
- Member, Advisory Panel. N.I.H. Silvio O. Conte Center for Neuroscience Research: Cognitive and Neural Mechanisms of Conflict and Control (Princeton University), 2003
- N.I.M.H. First Award, 1996
- **Invited Colloquia:** Albert Einstein College of Medicine, Albert-Ludwigs-Universität Freiburg, Boston University, Brandeis University, Brown Uni-

versity, California Institute of Technology, Carnegie Mellon University (2), Columbia University (Psychology), Columbia University (Neuroscience), Cornell University, Courant Institute (NYU), Dartmouth College, Donders Institute, Nijmejen, Netherlands, Duke University, Harvard University, Hebrew University (Psychology), Edmund and Lily Safra Center for Brain Sciences (Jerusalem), Hungarian Academy of Sciences, Indiana University (2), Jerusalem Brain Institute, Johns Hopkins University, Max Planck Institute-Berlin, McGill University, Monell Research Institute, Montreal Neurological Institute, National Institute of Neurological Disorders and Stroke, New York University (2), Northwestern University, Ohio State University (2), Princeton University, Rutgers University, Salk Institute, Shriver Center, Stanford University, Swiss Federal Institute of Technology (EPFL), Syracuse University, Tel Aviv University, Thomas Jefferson University, Tufts University, University of California, Davis, University of California, Irvine, U.C.L.A. School of Medicine, U.C.L.A Psychology, University of California, San Diego, University of California at San Francisco, University of Delaware, University of Massachusetts at Amherst, University of New Mexico, University of Toronto, University of Zurich, Switzerland, Washington University, Weizmann Institute of Science, Williams College, Yale University (2).

Professional Society Memberships:

- Psychonomic Society
- Society for Neuroscience
- American Psychological Society (Elected Fellow)
- Memory Disorders Research Society
- Society for Cognitive Neuroscience
- Society for Mathematical Psychology
- Society of Experimental Psychologists

Grant Support

- MTEC-20-06-MOM-013 (U.S. Army Medical Research and Development Command). Restoring memory with task-independent semi- chronic closed-loop direct brain stimulation and non-invasive closed-loop stimulus timing optimization. M. J. Kahana, P.I. $3,409,954, Jan, 2020 - Sept 30, 2022
- NIH/NINDS Grant U01 NS1113198 *Using Direct Brain Stimulation to Study Cognitive Electrophysiology.* M. J. Kahana, P.I. September 15, 2019

– June 30, 2024. (total cost= $6,851,486).

- NIH/NINDS Grant R01 NS106611 *Targeted closed-loop intracranial brain-stimulation to improve episodic memory.* M. J. Kahana, P.I. June 01, 2019 – May 31, 2024. (total costs = $3,140,044)
- NIH Grant 4R01 MH55687 *Associative Processes in Episodic Memory.* M. J. Kahana, P.I. May 5, 2016 – January 31, 2021. $250,000 annual direct costs.
- NSF/CRCNS Grant NSF 1724243 *US-German Research Proposal: Role of place and grid cells and phase precession in human spatial and episodic memory.* J. Jacobs, P.I., M. J. Kahana, Co-P.I. November 1, 2017 – October 31, 2020. $60,000 annual direct costs.
- NIH Grant 3R01 MH61975 *Electrophysiology of Human Spatial Cognition.* M. J. Kahana, P.I. March 1, 2014 – January 31, 2020. $263,131 annual direct costs.
- DARPA RAM Cooperative Agreement N66001-14-2-4-032 *Memory Enhancement with Modeling, Electrophysiology, and Stimulation.* M. J. Kahana, P.I. July 16, 2014 – January 31, 2020. $4,758,025 annual direct costs.
- NIH Grant R21 AG048233 *A model-based approach to understanding memory impairments.* M. J. Kahana, P.I. August 15, 2015 – May 31, 2017. $150,000 annual direct costs.
- Educational Testing Service Grant *EEG Correlates of Engagement.* M. J. Kahana, P.I. August 15, 2013 – December 31, 2014. $41,445 annual direct costs.
- NIH Grant 4R01 MH55687 *Associative Processes in Episodic Memory.* M. J. Kahana, P.I. May 1, 2011 – May 4, 2016. $300,386 annual direct costs.
- NSF grant 1058886 *Retrieved Context Models of Episodic Memory.* M. J. Kahana, P.I. June 1, 2011– May 31, 2014. $93,600 annual direct costs.
- NIH Grant 2R01 MH61975 *Electrophysiology of Spatial Cognition.* M. J. Kahana, P.I. Sept 26, 2007 – July 31, 2013. $252,687 annual direct costs.
- NIH Grant 1R21 NS067316 *Intracranial EEG for Neuronal Oscillatory Contingency during Cognitive Tasks.* M. J. Kahana, P.I. September 30, 2009 – August 31, 2012. $163,228 annual direct costs.
- NIH Grant R90 DA023424 *Integrated Interdisciplinary Training in Computational Neuroscience.* M. J. Kahana, P.I. September 30, 2006 – July 31, 2011. $296,519 annual direct costs.
- NIH Grant T90 DA022763 *Integrated Interdisciplinary Training in Com-*

putational Neuroscience. M. J. Kahana, P.I. September 30, 2006 – July 31, 2011. $166,888 annual direct costs.

- NIH Grant 2R01 MH68404 *Short Term Visual Episodic Recognition Memory.* R. Sekuler, P.I., M. J. Kahana, Co-I. June 6 2009 – June 5, 2011.
- Dana Foundation Grant *Intracranial EEG for Theta Rhythm Contingency During Cognitive Tasks.* December, 2007 – February, 2011. $100,000 annual direct costs.
- NIH/NIMH Grant P50 MH062196. Subproject on Conte Center Grant *Retrieval Dynamics in Item and Source Memory.* October 1, 2005 – August 31, 2011
- NIH Grant 3R01 MH55687 *Associative Processes in Episodic Memory.* M. J. Kahana, P.I. February 1, 2007 – Jan 30, 2011.
- NSF grant SBE 0354378 Subproject 14 on Science of Learning Center Grant *CELEST: A Center for Learning in Education, Science, and Technology.* S. Grossberg P.I. October 1, 2004 – September 30, 2009.
- NIH Grant R01 MH68404 *Short Term Visual Episodic Recognition Memory*, R. Sekuler, P.I., M. J. Kahana, Co-P.I.. April 1, 2004 – March 31, 2009.
- Swartz Foundation Grant 2004/10-04 *Electrophysiology of Human Memory Formation.* M. J. Kahana P.I. November 28, 2003 – November 27, 2004.
- NIH Grant 2R01 MH55687 *Associative Processes in Episodic Memory.* M. J. Kahana, P.I. April 1, 2002 – January 30, 2007.
- NIH Grant R29 MH55687 *Mathematical Models of Human Memory.* M. J. Kahana, P.I., April 1, 1997 – March 30, 2002.
- NIH Grant R01 MH61975 *Using intracranial recordings to study task-dependent theta..* M. J. Kahana, P.I. December 12, 2001 – December 11, 2006.
- AFOSR Grant F49620-03-1-0376 *Model driven study of visual memory.* R. Sekuler, P.I., M. J. Kahana, Co-P.I.. July 1, 2003 – December 31, 2003.
- NIH Grant R01 AG15852 *Aging and the temporal dynamics of self-initiated recall* A. Wingfield, P.I., M. J. Kahana, Co-P.I. August 1, 1998 – July 30, 2003.

Postdoctoral Supervision

- Dan Kimball, J.D., Ph.D. (Postdoc, 2002 – 2003). Morris Associate Professor, Department of Psychology, *University of Oklahoma.*

- Sean Polyn, Ph.D. (Postdoc, 2005 – 2008). Associate Professor, Department of Psychology, *Vanderbilt University*.
- Christoph Weidemann, Ph.D. (Postdoc, 2006 – 2010). Assistant Professor, Department of Psychology, *Swansea University*
- Kareem A. Zaghloul, M.D. Ph.D. (Postdoc, 2007 – 2008). Senior Investigator, *National Institutes of Health and George Washington University*.
- Mijail Serruya, M.D., Ph.D. (Postdoc, 2009 – 2011). Assistant Professor, Department of Neurology, *Jefferson Hospital*.
- Brad Lega, M.D. (Postdoc, 2009 – 2011). Associate Professor, Department of Neurosurgery, *University of Texas Southwestern, Dallas*.
- Karl Healey, Ph.D. (Postdoc, 2011 – 2016). Assistant Professor, Department of Psychology, *Michigan State University*
- Max Merkow, M.D. (Postdoc, 2013 – 2016). Neurosurgeon, Bayarea Neurosciences, *John Muir Hospital*
- James Kragel, Ph.D. (Postdoc, 2015 – 2018). Postdoctoral fellow, *Northwestern University*.
- Youssef Ezzyat, Ph.D. (Postdoc, 2014 – 2018). Assistant Professor, Department of Psychology, *Wesleyan College*.
- Nora Herweg, Ph.D. (Postdoc, 2017 – 2020). Postdoctoral Fellow. Universitat Bochum.
- Nicholas Diamond, Ph.D. (Postdoc, 2019 – 2021).
- John Sakon, Ph.D. (Postdoc, 2019 –).
- Noa Herz, Ph.D. (Postdoc, 2020 –).
- David Halpern, Ph.D. (Postdoc, 2020–)

Doctoral Supervision

- Marc W. Howard, Ph.D. (1995 – 2000). Professor, Department of Psychology, *Boston University*.
- Jeremy B. Caplan, Ph.D. (1997 – 2002). Professor, Department of Psychology, *University of Alberta*.
- Daniel S. Rizzuto, Ph.D. (1997 – 2002). CEO, *Nia Therapeutics*.
- Arne D. Ekstrom, Ph.D. (2001 – 2004). Professor, Departments of Psychology and Neuroscience, *University of Arizona*.
- Kelly Addis, Ph.D. (2000 – 2004). Thesis Title: *Constraining models of serial learning*.

- Per Sederberg (2001 – 2006). Associate Professor, Department of Psychology and Director of Cognitive Science Program, *University of Virginia.*
- Grace Hwang, Ph.D. (2002 – 2005). Engineer, *Mitre Corporation.*
- Marieke van Vugt, Ph.D. (2003 – 2008). Assistant Professor, Cognitive Science, *University of Groningen.*
- Joshua Jacobs, Ph.D. (2004 – 2008). Associate Professor, Department of Bioengineering, *Columbia University.*
- Jeremy R. Manning, Ph.D. (2006 – 2011). Assistant Professor, Psychological and Brain Sciences, *Dartmouth University.*
- Lynn Lohnas, Ph.D. (2007 – 2012). Assistant Professor, Department of Psychology, *Syracuse University.*
- John Burke, M.D./Ph.D. (2010 – 2013). Resident in Neurosurgery, *U.C.S.F*
- Ashwin Ramayya M.D./Ph.D. (2011 – 2014). Resident in Neurosurgery, *University of Pennsylvania.*
- Nicole Long, Ph.D. (2010 – 2015). Assistant Professor, Department of Psychology, *University of Virginia.*
- Ethan Solomon (2015 – 2019). Resident in Psychiatry, *Stanford University.*
- Daniel Schonhaut (2018 –). Neuroscience Ph.D. Student, *University of Pennsylvania.*
- Riley DeHaan (2021 –). Psychology Ph.D. Student, *University of Pennsylvania.*

Other Trainees

- Etan Cohen, Director/Screenwriter.
- Emily Dolan, Ph.D., Evaluation Coordinator, *VA Puget Sound.*
- Gennady Erlikhman, Ph.D., Postdoctoral Fellow, *University of Nevada, Reno.*
- Lynne Gauthier, Ph.D., Associate Professor, *University of Massechusetts.*
- Aaron S. Geller, M.D., Resident Physician (Neurology), *New York University.*
- Roger Khazan, Ph.D., Leader of secure resilient systems and technology, *MIT Lincoln Laboratory.*
- Matt P. Kirschen, M.D., Ph.D., Assistant Professor of Critical Care Medicine, *Children's Hospital of Pennsylvania.*
- Rajan Lukose, Ph.D. Chief Technology Office, *Cambridge Technology.*

- Igor Korolev, D.O., Ph.D. Resident Physician (Psychiatry), *University of Miami Hospital*.
- Richard Lawrence, Ph.D., *U.C. Berkley*.
- Eben Lazarus, Assistant Professor of Finance, *MIT*.
- Ningcheng Li, M.D., *Yale University*.
- Jonathan Miller, Ph.D. Postdoctoral Fellow,*Columbia University*
- Matt Mollison, Ph.D. Data Scientist, *Silicon Valley Data Science*.
- Neal Morton, Ph.D. Postdoctoral Fellow, *University of Texas at Austin*.
- Ehren Newman, Ph.D. Associate Professor of psychology, *Indiana University*.
- Peter Pantelis, Ph.D. Postdoctoral Researcher, *Indiana University-Bloomington*.
- Eric Pressman, Principal User Experience Researcher, *UpToDate*.
- Colin Sauder, Ph.D. Scientific Director, *Adams Clinical*.
- Greg Schwartz, Ph.D. Assistant Professor, *Northwestern University*.
- Yevgeniy Sirotin, Ph.D. Human Factors Scientist, *Scitor Corporation*.
- Alec Solway, Ph.D. Assistant Professor, *University of Maryland*.
- Jessica Spencer, M.D., Associate Professor, *Emory School of Medicine*.
- Michelle Tully Tine, Ph.D. Associate Professor, *Dartmouth College*.
- Daniil Utin, Technical Staff, *MIT Lincoln Laboratory*.
- Brad Wyble, Ph.D. Associate Professor, *Penn State University*.
- Robert Yaffe, Ph.D. Software Engineer, *Google*.
- Franklin Zaromb, Ph.D. Data Science Consultant, *Code Cygnus*.

Monographs and Edited Books

- Kahana, M. J. (2012).*Foundations of Human Memory*. Oxford University Press. 2nd Edition under contract with OUP.
- Kahana, M. J. and Wagner, A. D. (under contract).*Oxford Handbook of Human Memory*, Vol 1 and 2. Oxford University Press.

Working Papers

1. Dougherty, M. R., Halpern, D. J., and Kahana, M. J. *Forward and backward recall*. PsyArXiv.
2. Huang, J., Kahana, M. J., and Sekuler, R. *Similarity effects in name-*

face recognition: A dual-process, summed-similarity account. Manuscript submitted for publication.

3. Kahana, M. J. and Adler, M. *Note on the power law of forgetting.* Manuscript submitted for publication.
4. Kahana, M. J., Lohnas, L. J., Healey, M. K., Aka, A., Broitman, A. W., Crutchley, P., et al. *The Penn electrophysiology of encoding and retrieval study.* bioRxiv.
5. Kahana, M. J., Wanda, P. A., Ezzyat, Y., Adamovich-Zeitlin, R., Lega, B., Jobst, B. C., et al. *Biomarker-guided neuromodulation aids memory in traumatic brain injury.* MedRxiv.
6. Randazzo, M., Ezzyat, Y., & Kahana, M.J. *Spectral tilt underlies mathematical problem solving.* Manuscript submitted for publication.
7. Rudoler, J. H., Herweg, N. A., and Kahana, M. J. *Hippocampal theta and episodic memory.* bioRxiv.
8. Sakon, J.J. and Kahana, M. J. *Hippocampal ripples signal contextually-mediated episodic recall.* bioRxiv
9. Schonhaut, D.R., Ramayya, A.G., Solomon, E.A., Herweg, N.A., Fried, I., and Kahana, M.J. *Single neurons throughout human memory regions phase-lock to hippocampal theta.* Manuscript submitted for publication.
10. Wachter, J.A. and Kahana, M.J. *A retrieved context theory of financial decision making.* Manuscript submitted for publication.

Publications

1. Kahana, M. J., Diamond, N. B., and Aka, A. Oxford handbook of human memory. In M. J. Kahana and A. D. Wagner (Eds.), (vol. 1, \BCHAP Laws of Human Memory). Oxford University Press.
2. Cohen, R. and Kahana, M.J. (in press). A memory-based theory of emotional disorders, *Psychological Review.*
3. Pazdera, J.K. & Kahana, M.J. (in press). Modality effects in free recall: A retrieved-context account. *Journal of Experimental Psychology: Learning, Memory, and Cognition.*
4. Camarillo-Rodriguez, L., Leenen, I., Waldman, Z., Serruya, M., Wanda, P. A., Herweg, N. A., Kahana, M. J., Rubinstein, D., Orosz, I., Lega, B., Podkorytova, I., Gross, R. E., Worrell, G., Davis, K. A., Jobst, B. C., Sheth, S. A., Weiss, S. A., Sperling, M. R. (2022). Temporal lobe interictal spikes disrupt encoding and retrieval of verbal memory: A subregion analysis. *Epilepsia,* 1–13.

5. Katerman, B.S., Li, Y., Pazdera, J.K., Keane, C., and Kahana, M.J. (2022). EEG biomarkers of free recall. *NeuroImage, 246*.

6. Aka, A., Phan, T., & Kahana, M.J. (2021). Predicting recall of words and lists. *Journal of Experimental Psychology: Learning, Memory and Cognition*, *47*(5), 765-784.

7. Halderman, L.K., Finn, B., Lockwood, J., Long, N.M., and Kahana, M.J. (2021). EEG correlates of engagement during assessment. *ETS Research Report Series*.

8. Kragel, J.E., Worrell, G.A., Sperling, M.R., Gross, R.E., Lega B.C., Jobst, B.C., Sheth, S.A., Zaghloul, K.A., Stein, J.M., & Kahana, M.J. (2021). Distinct cortical systems reinstate content and context information during memory search, *Nature Communications, 12*.

9. Kunz, L., Brandt, A. Reinacher, P.C., Staresina, B.P., Reifenstein, E. T., Weidemann, C.T., Herweg, N.A., Tsitsiklis, M. , Kempter, R., Kahana, M.J. Schulze-Bonhage, A., Jacobs, J. (2021). A neural code for egocentric spatial maps in the human medial temporal lobe. *Neuron*, *109*, 2781–2796.

10. Meisenhelter, S., Quon, R.J, Steimel, S.A., Testorf, M. E., Camp, E.J., Moein, P., Culler, G.W., Gross, R.E., Lega, B.C., Sperling, M.R., Kahana, M.J., Jobst, B.C. (2021). Interictal Epileptiform Discharges are Task Dependent and are Associated with Lasting Electrocorticographic Changes, *Cerebral Cortex Communications, 2*(2).

11. Quon, R.J., Meisenhelter, M, Adamovich-Zeitlin, R.H., Steimel, S.A., Camp, E.J., Testor, M.E., Song, Y., MacKenziee, T.A., Gross, R.E., Lega, B.C., Sperling, M.R., Kahana, M.J., and Jobst, B.C. (2021). Factors correlated with intracranial interictal epileptiform discharges in refractory epilepsy, *Epilepsia*, *62*, 481–491.

12. Solomon, E.A. Sperling, M.R., Sharan, A.D., Wanda, P.A., Levy, D.F., Lyalenko, A., Pedisich, I., Rizzuto, D.S., Kahana, M.J. (2021). Theta-burst stimulation entrains frequency-specific oscillatory responses. *Brain Stimulation, 14*, 1271–1284.

13. Weidemann, C.T., & Kahana, M.J. (2021). Neural measures of subsequent memory reflect endogenous variability in cognitive function. *Journal of Experimental Psychology: Learning, Memory and Cognition*, *47*, 641–651.

14. Adamovich-Zeitlin, R., Wanda, P.A., Solomon, E., Phan, T., Lega, B., Jobst, B.C., Gross, R.E., Ding, K., Diaz-Arrastia, R. and Kahana, M.J. (2020). Biomarkers of Memory Variability in Traumatic Brain Injury. *Brain Communications, 3*(1), fcaa202.

15. Uma Mohan, ..., Kahana, M.J., Jacobs, J. (2020). The effects of direct

brain stimulation in humans depend on frequency, amplitude and white-matter proximity. *Brain Stimulation*, *13*, 1183-1195.

16. Lohnas, L.J., Davachi, L., & Kahana, M.J. (2020). Neural fatigue influences memory encoding in the human hippocampus. *Neuropsychologia, 143*, 107471..
17. Herweg, N.A., Solomon, E.A., and Kahana, M.J. (2020). Theta Oscillations in Human Memory. *Trends in Cognitive Sciences*, *24*(3), 208-227.
18. Healey, M.K., & Kahana, M.J. (2020). Age-related differences in the temporal dynamics of spectral power during memory encoding. *PLOS One*, *15*(1): e0227274.
19. Kahana, M. J. (2020). Computational models of memory search. *Annual Review of Psychology*, *71*, 107-138.
20. Herweg, N.A., Sharan, A.D., Sperling, M.R., Brandt, A., Schulze-Bonhage, A. & Kahana, M.J. (2020). Reactivated spatial context guides episodic recall. *Journal of Neuroscience, 40*(10), 2119-2128.
21. Umbach, G., Kantak, P., Jacobs, J. Kahana, M.J., Pfeiffer, B.E., Sperling, M.R., and Lega, B.C. (2020). Time cells in the human hippocampus and entorhinal cortex support episodic memory. *Proceedings of the National Academy of Sciences*, *117*, 28463–28474.
22. Broitman, A.W., Kahana, M.J., & Healey, M.K. (2019). Modeling retest effects in a longitudinal measurement burst study of memory. *Computational Brain & Behavior, 3*(2), 200–207.
23. Khambhati, A.N., Kahn, A.E., Costantini, J., Ezzyat, Y., Solomon, E.A., Gross, R.E., Jobst, B.C., Sheth, S.A., Zaghloul, K.A., Worrell, G.A., Seger, S., Lega, B.C., Weiss, S., Sperling, M.R., Gorniak, R., Das, S.R., Stein, J.M., Rizzuto, D.S., Kahana, M.J., Lucas, T.H., Davis, K.A., Tracy, J.I. & Bassett, D.S. (2019). Functional control of electrophysiological network architecture using direct neurostimulation in humans. *Network Neuroscience*, 1–30.
24. Goldstein, H.E., Smith, E.H., Gross, R.E., Jobst, B.C., Lega, B.C., Sperling, M.R., Worrell, G.A., Zaghloul, K.A., Wanda, P.A., Kahana, M.J., Rizzuto, D.S., Schevon, C.A., McKhann II, G.M., Sheth, S.A. (2019), Risk of seizures induces by intracranial research stimulation: Analysis of 770 Stimulation Sessions. *Journal of Neural Engineeering*, *16*(6), 066039.
25. Meisler, S.L., Kahana, M.J. & Ezzyat, Y. (2019). Does data cleaning improve brain state classification? *J. Neuroscience Methods, 328*, 108421.
26. Solomon, E.A., Lega, B.C., Sperling, M.R. & Kahana, M.J. (2019). Hippocampal theta codes for distances in semantic and temporal spaces. *Pro-*

ceedings of the National Academy of Sciences, 116(48), 24343-24352.

27. Phan, T.D., Wachter, J.A., & Kahana, M.J. (2019). Multivariate stochastic volatility modeling of neural data. *eLife, 8*, 42950.
28. Healey, M.K., Long, N.M., & Kahana, M.J. (2019). Contiguity in episodic memory. *Psychonomic Bulletin & Review, 26*(3), 699-720.
29. Gifford, A.M., Sperling, M.R., Sharan, A.D., Gorniak, R.J., Williams, R.B., Davis, K.A., Kahana, M.J., & Cohen, Y.E. (2019). Neuronal phase consistency tracks dynamic changes in acoustic spectral regularity. *European Journal of Neuroscience, 49*(10), 1268-1287.
30. Solomon, E.A., Stein, J.M., Das, S., Gorniak, R., Sperling, M.R., Worrell, G., Inman, C., Lega, B., Jobst, B.C., Rizzuto, D.S., & Kahana, M. J. (2019). Dynamic theta networks within the human medial temporal lobe support episodic encoding and retrieval. *Current Biology, 29*(7), 1100-1111.
31. Weidemann, C.T., & Kahana, M.J. (2019). Dynamics of brain activity reveal a unitary recognition signal. *Journal of Experimental Psychology: Learning, Memory and Cognition, 45*(3), 440-451.
32. Weidemann, C.T., Kragel, J.E., Lega, B.C., Worrell, G.A., Sperling, M.R., Sharan, A.D., Jobst, B.C., Khadjevand, F., Davis, K.A., Wanda, P. A., Kadel, A., Rizzuto, D.S., & Kahana, M.J. (2019). Neural activity reveals interactions between episodic and semantic memory systems during retrieval. *Journal of Experimental Psychology: General, 148*(1), 1-12.
33. Kucewicz, M.T., Saboo, K., Berry, B.M., Kremen, V., Miller, L.R., Khadjevand, F., Inman, C., Wanda, P., Sperling, M.R., Gorniak, R., Davis, K.A., Jobst, B.C., Lega, B., Sheth, S.A., Rizzuto, D.S., Iyer, R., Kahana, M.J., & Worrell, G.A. (2019). Human verbal memory encoding is hierarchically distributed in a continuous processing stream. *eNeuro.*
34. Long, N.M., & Kahana, M.J. (2019). Hippocampal contributions to serial-order memory. *Hippocampus, 29*(3), 252-259.
35. Arora, A., Lin, J., Gasperian, A., Maldjian, J., Stein, J., Kahana, M.J. & Lega, B.C. (2018). Comparison of logistic regression, support vector machines, and deep learning classifiers for predicting memory encoding success using human intracranial EEG recordings. *Journal of Neural Engineering, 15*(6), 066028.
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