M Karl Healey

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Department of Psychology
Computational Memory lab

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Research Focus

The overarching goal of my research program is to develop a computationally explicit theory of age-related and individual differences in memory and how this variation contributes to general intellectual ability. In pursuit of this goal I use a combination of behavioral experiments, computational modeling, computational statistics, and electrophysiological recordings.

Academic Appointments

2011–Present	Postdoctoral Fellow	University of Pennsylvania Supervisor: Michael J. Kahana

Education

2011	Ph.D. Psychology	University of Toronto Supervisor: Lynn Hasher
2006	M.A. Psychology	University of Toronto Supervisor: Akira Miyake
2004	B.Sc. (Hons) Psychology	Memorial University Supervisor: Rita Anderson

Publications

1. **Healey, M. K.** and Kahana, M. J. (in press). A four–component model of age–related memory change. psychological review. *Psychological Review*. PDF.

2. **Healey, M. K.** (in press). Interference. In S. K., Whitbourne (Ed.), *The Encyclopedia of Adulthood and Aging*. New York: Wiley-Blackwell.

3. **Healey, M. K.**, Crutchley, P., and Kahana, M. J. (2014). Individual differences in memory search and their relation to intelligence. *Journal of Experimental Psychology: General*, 143, 1553–1569. PDF.

4. **Healey, M. K.** and Kahana, M. J. (2014). Is memory search governed by universal principles or idiosyncratic strategies? *Journal of Experimental Psychology: General*, 143, 575–596. PDF.

5. **Healey, M. K.**, Ngo, K. W. J., and Hasher, L. (2014). Below baseline suppression of competitors during interference resolution by younger but not older adults. *Psychological Science*, 25, 145–151. PDF.

6. Burke, J. F., Sharan, A. D., Evans, J., Ramayya, A., **Healey, M. K.**, Sperling, M. R., and Kahana, M. J. (in press). Theta and high-frequency activity mark spontaneous episodic retrieval during free recall. *Journal of Neuroscience*. PDF.

7. **Healey, M. K.**, Hasher, L., and Campbell, K. L. (2013). The role of suppression in resolving interference: evidence for an age-related deficit. *Psychology and Aging*, 28, 721–728. PDF.

8. Campbell, K. L., Zimerman, S., **Healey, M. K.**, Lee, M. M. S., and Hasher, L. (2012). Age differences in visual statistical learning. *Psychology and Aging*, 27, 650–656. PDF.

9. **Healey, M. K.**, Hasher, L., and Danilova, E. (2011). The stability of working memory: do previous tasks influence complex span? *Journal of Experimental Psychology: General*, 140, 650–656. **(Earned APA New Investigator Award)**. PDF.

10. **Healey, M. K.**, Campbell, K. L., Hasher, L., and Ossher, L. (2010). Direct evidence for the role of inhibition in resolving interference in memory. *Psychological Science*, 21, 1464–1470. PDF.

11. **Healey, M. K.** and Hasher, L. (2009). Limitations to the deficit attenuation hypothesis: aging and decision making. *Journal of Consumer Psychology*, 19, 17–22. PDF.

12. **Healey, M. K.** and Miyake, A. (2009). The role of attention during retrieval in working-memory span: a dual-task study. *Quarterly Journal of Experimental Psychology*, 62, 733–745. PDF.

13. **Healey, M. K.**, Campbell, K. L., and Hasher, L. (2008). Cognitive aging and increased distractibility: Costs and potential benefits. In W. S. Sossin, J. C. Lacaille, V. F. Castellucci, & S. Belleville (Eds.) *Progress in Brain Research, Vol. 169: Essence of Memory* (pp. 353-363). Amsterdam, the Netherlands: Elsevier. PDF.

14. Kim, S., **Healey, M. K.**, Goldstein, D., Hasher, L., and Wiprzycka, U. J. (2008). Age differences in choice satisfaction: a positivity effect in decision making. *Psychology and Aging*, 23. PDF.

Manuscripts Under Review

1. Anderson, J. A. E., **Healey, M. K.**, Peterson, M. A., and Hasher, L. (under revision). Age related deficits in inhibition in figure ground assignment in stationary displays. *Revise and Resubmit at Journal of Vision*.

First Author Conference Presentations (last 3 years)

Talks

1. **Healey, M. K.** and Kahana, M. J. (2015, November). A four–component model of age–related memory change. Psychonomic Society **Select-Speaker Award Talk** at the 56th annual meeting of The Psychonomic Society, Chicago, IL.

2. **Healey, M. K.** and Kahana, M. J. (2015, May). A four–component model of age–related memory change. Featured Talk at the Context and Episodic Memory Symposium, Philadelphia, PA.

3. **Healey, M. K.** and Kahana, M. J. (2014, May). A new approach to understanding age–related memory impairments. Data Blitz Talk at the Context and Episodic Memory Symposium, Philadelphia, PA.

4. **Healey, M. K.** and Kahana, M. J. (2014, May). Commentary on: Long–term memory representations limit the capacity of free recall of unrelated words. Commentary at the Context and Episodic Memory Symposium, Philadelphia, PA.

5. **Healey, M. K.** and Kahana, M. J. (2014, April). A new approach to understanding age–related memory impairments. Paper presented at the Cognitive Aging Conference, Atlanta, GA.

6. **Healey, M. K.** and Kahana, M. J. (2013, May). Memory search is governed by universal principles—not idiosyncratic strategies. Data Blitz Talk at the Context and Episodic Memory Symposium, Philadelphia, PA.

7. **Healey, M. K.** and Kahana, M. J. (2013, May). Commentary on: Why do participants initiate their immediate free recall of short lists of words with the first list item?. Commentary at the Context and Episodic Memory Symposium, Philadelphia, PA.

Posters

1. **Healey, M. K.** and Kahana, M. J. (2015, October). Neural context reinstatement during episodic memory retrieval with scalp electroencephalography. Poster presented at the annual meeting of The Society for Neuroscience, Chicago, IL.

2. **Healey, M. K.**, Crutchley, P., and Kahana, M. J. (2013, November). Individual differences in memory search and their relation to intelligence. Poster presented at the 54th annual meeting of The Psychonomic Society, Toronto, ON, Canada.

3. **Healey, M. K.**, Ngo, K. W. J., and Hasher, L. (2013, November). Below baseline suppression of competitors during interference resolution by younger but not older adults. Poster presented at the 54th annual meeting of The Psychonomic Society, Toronto, ON, Canada.

Invited Talks

1. **Healey, M. K.** (2013, November). University of Toronto.

2. **Healey, M. K.** (2014, December). University at Buffalo.

Funding

Competitive fellowships with application/review process comparable to NIH NRSA:

2009	Ontario Graduate Scholarship ($15,000)
2007	Ontario Graduate Scholarship ($15,000)
2004-06	Natural Sciences and Engineering Research Council of Canada Scholarship ($17,300/yr)
2004	Offered an Ontario Graduate Scholarship ($15,000/yr; declined in favor of NSERC)

Honors and Awards

2015	Psychonomic Society Select–Speaker Award ($1500 for travel)
2012	APA New Investigator Award: Division 3 for *The stability of working memory: Do previous tasks influence complex span?* in *JEP:G*
2009	Best graduate student poster for Division 3 at APA convention
2009	Men's Service Group Graduate Student Fellowship ($6900)
2005	Mary H. Beatty Scholarship ($5000)

Training

2010	European Society for Cognitive Psychology Summer School in Computational and Mathematical Modeling of Cognition

Ad Hoc Reviewing

· Psychological Review
· JEP: General
· JEP: Learning, Memory, and Cognition
· Psychonomic Bulletin & Review
· Cortex
· Memory
· Psychology and Aging
· Memory & Cognition
· Consciousness and Cognition
· Cognitive Processing

· Experimental Aging Research
· Journal of Experimental Social Psychology
· Aging, Neuropsychology and Cognition
· Sage Open

Professional Memberships

· Association for Psychological Science
· Psychonomic Society
· Society for Neuroscience

Courses Taught

· Statistics II (PSY202 - University of Toronto)
        · Covering experimental design, multiple regression, and ANOVA

Teaching Assistantships

University of Toronto:
· Biological Rhythms
· Introduction to Cognition
· Introduction to Psychology
· Memory and Learning Lab
· Statistics I – 4 times
· Statistics II
University of Pennsylvania:
· Big Data, Memory and the Human Brain

Potential Future Courses

· Statistics
        · Introductory and upper–level statistics courses
· Computational Modeling
        · Basics of computer programing, model development, and parameter optimization algorithms
· Memory
        · Introduction to memory research
· Cognitive Aging
        · An upper-level undergraduate course or a graduate seminar
· Individual Differences in Memory and Intelligence
        · An upper-level undergraduate course or a graduate seminar

Mentorship

2007	Jamie Benoit	Senior Thesis Project
2007	Elena Danilova	Senior Thesis Project
2007	Lauren Long	Senior Thesis Project
2008	Lynn Ossher	Senior Thesis Project
2008	Margot Sullivan	Senior Thesis Project
2009	Jane Kouptsova	Senior Thesis Project
2010	Polong Lin	Senior Thesis Project
2015	Stamati Liapis	Senior Thesis Project

References

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