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Engineering & Scientific Consulting

Danielle King, Ph.D.

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Professional Profile

Dr. King has expertise in human cognition, perception, vision, attention, decision-making, learning, memory, and cognitive limitations with aging. She applies her knowledge and experience to investigate a range of human performance issues including driver perception and behavior, performance with consumer products, warnings, perception-response time, and eyewitness testimony. She has experience overseeing projects that employ a variety of methodologies, including human subjects testing, large-scale data collection and analysis, and comprehensive literature reviews.

Dr. King earned a Ph.D. in Psychology from UC Santa Barbara, with an emphasis on cognitive neuroscience. Her doctoral work focused on understanding how "real" memories (derived through perception) and "false" memories (generated through imagination) are differentially represented in the brain. She relied on a combination of behavioral and neuroimaging techniques to investigate the neural mechanisms underlying true and false memories in young, healthy adults. As a post-doc research fellow at the University of Texas at Dallas, Dr. King broadened her research interests to examine how cognitive abilities change with age. She developed a computationally intensive approach for modeling how the brain supports successful remembering. In collaboration with the neurosurgery team at UT Southwestern, she applied this approach to provide insight regarding memory deficits associated with different neuropsychological disorders.

Academic Credentials & Professional Honors

Ph.D., Psychology, University of California, Santa Barbara, 2013

B.A., Psychology, Skidmore College, 2007

Sage Center Summer Institute in Cognitive Neuroscience Fellowship, 2013, 2009

President's Dissertation Fellowship, University of California, Santa Barbara, 2012

New Horizons in Human Brain Imaging Fellowship, 2010

Undergraduate Honors: cum laude Honors, Department Honors, Psi Chi Honors, 2007

Academic Appointments

Postdoctoral Research Associate, Center for Vital Longevity and School of Behavioral and Brain Sciences, University of Texas at Dallas, 2013-2017

Instructor, Department of Psychological and Brain Sciences, University of California, Santa Barbara, 2011, 2012

Professional Affiliations

Human Factors and Ergonomics Society

Cognitive Neuroscience Society

Society for Neuroscience

Publications

Hill, PF, Seger, SE, Yoo, HB, King, DR, Lega, BL, Rugg, MD. Distinct neuropsychological correlates of the fMRI BOLD signal in the hippocampus and neocortex. *The Journal of Neuroscience*, In Press.

Hill, PF, King, DR, Rugg, MD. Age differences in retrieval-related reinstatement reflect age-related dedifferentiation at encoding. *Cerebral Cortex* 2021; 31(1): 106-122.

Tavassoli, A, King, D, Xiouris, C, Krauss, D. Revealing right-turn behavior of human drivers as a model for autonomous vehicles. *SAE Technical Paper* 2021; 2021-01-0866.

Srokova, S, Hill, PF, Koen, JD, King, DR, Rugg, MD. Neural differentiation is moderated by age in scene-selective, but not face-selective, cortical Regions. *eNeuro* 2020; 7(3): 1-16.

Zimmerman, J, King, D, Crump, C. Battery-related injuries in children and adults. *Proceedings of the 2020 HFES 64th International Annual Meeting* 2020; 64(1): 1665-1670.

Hill PF, King DR, Lega BC, Rugg MD. Comparison of fMRI correlates of successful episodic memory encoding in temporal lobe epilepsy patients and healthy controls. *NeuroImage* 2020; 207: 1-12.

Rugg MD, King DR. Ventral lateral parietal cortex and episodic memory retrieval. *Cortex* 2018; 107: 238-250.

King DR, de Chastelaine M, Elward RL, Wang TH, Rugg MD. Dissociation between the neural correlates of recollection and familiarity in the striatum and hippocampus: Across-study convergence. *Behavioural Brain Research* 2018; 354: 1-7.

King DR, de Chastelaine M, Rugg MD. Recollection-related increases in functional connectivity across the healthy adult lifespan. *Neurobiology of Aging* 2018; 62:1-19.

Steckler CM, Hamlin JK, Miller MB, King DR, Kingstone A. Moral judgment by the disconnected left and right cerebral hemispheres: A split-brain investigation. *Royal Society Open Science* 2017; 4(7):1-6.

King DR, Miller MB. Influence of response bias and internal/external source on lateral posterior parietal successful retrieval activity. *Cortex* 2017; 91:126-141.

King DR, Schubert ML, Miller MB. Lateral posterior parietal activity during reality monitoring discriminations of memories of high and low perceptual vividness. *Cognitive, Affective, and Behavioral Neuroscience* 2015; 15(3): 662-679.

King DR, de Chastelaine M, Elward RL, Wang TH, Rugg MD. Recollection-related increases in functional connectivity predict individual differences in memory accuracy. *Journal of Neuroscience* 2015; 35(4):1763-1772.

King DR, Miller MB. Lateral posterior parietal activity during source monitoring judgments of perceived and imagined events. *Neuropsychologia* 2014; 53:122-136.

Arzi A, Banerjee S, Cox J, D'Souza D, De Brigard F, Doll B, Fairley J, Fleming S, Herholz S, King D, Libby L, Myers J, Neta M, Pitcher D, Power J, Rass O, Ritchey M, Rosales Jubal E, Royston A, Wagner D, Wang W, Waring J, Williams J, Wood S (2014). The significance of cognitive neuroscience: Findings, applications, and challenges. In M.S. Gazzaniga (Ed.), *The Cognitive Neurosciences* (5th ed.). Cambridge, MA: The MIT Press.

Miller MB, Sinnott-Armstrong W, Young L, King DR, Paggi A, Fabri M, Polonara G, Gazzaniga MS. Abnormal moral reasoning in complete and partial callosotomy patients. *Neuropsychologia* 2010; 48(7): 2215-2220.

Ortigue S, King DR, Gazzaniga M, Miller M, Grafton S. Right hemisphere dominance for understanding the intentions of others: Evidence from a split-brain patients. *BMJ Case Reports* 2009.

Gershuny BS, King DR. The superstition of safety: A multimodal approach to understanding trauma. *PsychCritiques* 2007; 52(7).

Selected Presentations

King DR, Rugg MD, Lega BC. Encoding related modulation of regional activity differs depending on how memory is tested. Poster presented at the Annual Meeting of the Society for Neuroscience, Washington, DC, 2017.

King DR, Rugg MD, Lega B. Can functional MRI be used to predict memory decline following anterior temporal lobectomy? Talk presented at UT Southwestern Medical Center Epilepsy Conference, Dallas, TX, 2017.

King DR, Rugg MD, Lega B. Studying temporal lobe epilepsy to make links between measures of connectivity in memory. Center for Vital Longevity Advisory Council Meeting, Dallas, TX, 2016.

King DR. False memories. Guest lecture presented to UT Dallas Graduate Seminar in Cognitive Neuroscience of Human Memory, Dallas, TX, 2016.

King DR, Rugg MD. Recollection-related increases in functional connectivity. Talk presented at the Neural Circuits Interest Group meeting, UT Southwestern Medical Center, Dallas, TX, 2016.

King DR, De Chastelaine M, Rugg MD. Recollection-related changes in connectivity: Relationship with age and recollection performance. Talk presented at the Dallas & Austin Area Memory Meeting, Dallas, TX, 2016.

King DR, de Chastelaine M, Rugg MD. Whole-brain changes in functional connectivity associated with successful and unsuccessful recollection. Poster presented at the 22nd Annual Cognitive Neuroscience Meeting, San Francisco, CA, 2015.

King DR, Miller MB. Lateral parietal activity during successful recognition of previously perceived and imagined events. Talk presented at the Center for Vital Longevity Science Luncheon Series, Dallas, TX, 2014

King DR. Vital longevity: Keeping the mind healthy in older age. Talk presented at the Caruth Haven Court Assisted Living Facility Family Education Seminar, Dallas, TX, 2014.

King DR, de Chastelaine M, Elward RL, Wang TH, Rugg MD. Task-related changes in global connectivity

with angular gyrus predict recollection performance across three episodic memory tasks. Poster presented at the 21st Annual Cognitive Neuroscience Meeting, Boston, MA, 2014.

King DR, Miller MB. Brain activity associated with memories of real and imagined events. June 7, 2013. Talk presented at the UC Santa Barbara Cognitive Neuroscience Seminar, Santa Barbara, CA, 2013.

King DR, Schubert ML, Li J, Miller MB. Successful retrieval effects in lateral posterior parietal cortex during recognition of perceived and imagined events under high and low target probability conditions. Poster presented at the 20th Annual Cognitive Neuroscience Meeting, San Francisco, CA, 2013.

King DR, Miller MB. Lateral posterior parietal activity during reality monitoring judgments of memories of high and low perceptual vividness. Talk presented at the Annual Meeting of the Society for Neuroscience, New Orleans, LA, 2012.

King DR, Miller MB. Can individual differences in functional connectivity between default mode regions predict memory performance? Poster presented at the New Horizons in Brain Imaging Conference, Oahu, HI, 2010.

King DR, Miller MB. Left parietal activation during retrieval of past perceived versus imagined events. Poster presented at the annual meeting of the Organization for Human Brain Mapping, Barcelona, Spain, 2010.

King DR, Miller MB. Individual differences in brain activity associated with memory for perceived and imagined events. Poster presented at the Institute for Collaborative Biotechnologies 2010 Army-Industry Collaboration Conference, Santa Barbara, CA, 2010.

Peer Reviewer

Accident Analysis & Prevention

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