**Research**

**The influences of external memory support on memory and meta-memory:**

Much of my research to date has focused on how our use of technology allows us to “offload” or redirect cognitive demands and how this, in turn, influences our memory. One way I have examined this is with a procedure designed to imitate the loss of a reliable external store (e.g., one’s phone).

In this work, we have demonstrated that there is a reliable cost to memory performance when expecting one’s external memory support compared to when there is no such expectation of external memory support, consistent with Eskritt and Ma (2014) and Sparrow et al. (2011).

More specifically, memory phenomena thought to be *more* dependent on intentional or top-down mnemonic efforts (e.g., rehearsal) appear *more* likely to show this memory cost compared to memory phenomena thought to be *less* dependent on intentional or top-down mnemonic efforts:

Kelly, M. O., & Risko, E. F. (2022). Study effort and the cost of external store availability. Cognition, 288, 105228.

Kelly, M. O., & Risko, E. F. (2022). Revisiting the influence of offloading memory on free recall. Memory & Cognition, 50(4), 710-721.

Park, J., Kelly, M. O., Hargis, M., & Risko, E. F. (2022). Influence of external store reliance on predicted and actual value-directed remembering. Psychonomic Bulletin & Review, 29(4), 1367-1376.

Lu, X., Kelly, M. O., & Risko, E. F. (2022). The gist of it: Offloading memory does not reduce the benefit of list categorization. Memory, 30(4), 396-411.

Kelly, M. O., & Risko, E. F. (2019). The isolation effect when offloading memory. Journal of Applied Research in Memory and Cognition, 8(4). DOI: 10.1016/j.jarmac.2019.10.001

Kelly, M. O., & Risko, E. F. (2019). Offloading memory: Serial position effects. Psychonomic Bulletin & Review, 26(4), 1347-1353. DOI: 10.3758/s13423-019- 01615-8

While mostly basic in nature, my research also allows me to consider important applications such as the various qualities of environmental memory supports and how the nature of their use, in turn, affects memory. For example, the perceived reliability of the external memory support plays an important role in how susceptible individuals are to external store manipulation:

Pereira, A., Kelly, M.O., Lu, X., & Risko, E.F. (2022). On our susceptibility to external memory store manipulation: Examining the influence of perceived reliability and expected access to an external store. Memory, 30(4), 412-428.

Risko, E. F., Kelly, M. O., Patel, P., & Gaspar, C. (2019). Offloading memory leaves us vulnerable to memory manipulation. Cognition, 191. DOI: 10.1016/j.cognition.2019.04.023

More recently, I have begun to try to better understand the role of metamemory (metacognition specific to memory) and environmental support, including more complex forms of environmental support (e.g., partially supportive or algorithm-based):

Kelly, M. O., Risko, E. F. Evidence that individuals modulate study effort consistent with the level of anticipated environmental support. Under review.

Kelly, M. O., Unal, B., Risko, E. F., & Benjamin, A. S. Can individuals benefit from partnering with a metacognitively sophisticated nonhuman agent? A test using recognition memory. Under review.

Kelly, M. O., Karimjee, B., Pereira, A., Lu, X., Risko, E. F. Does the reliance on an external memory store influence recognition memory? Under review.

**Understanding basic memory phenomena: The production effect in memory**

My work draws from a variety of subtopics within learning and memory research, such as study effort and study allocation, intentional forgetting, distinctiveness/isolation, production effects, and misinformation/false memory effects. For example, I also have a line of work devoted to better understanding the underlying mechanisms of the production effect, including by implementing a computational model of the production effect using REM.1 (Shiffrin & Steyvers, 1997):

Kelly, M. O., Ensor, T. M., Lu, X., MacLeod, C. M., & Risko, E. F. (2022). Reducing retrieval time modulates the production effect. Journal of Memory and Language, 123, 104299.

Kelly, M. O., Ensor, T. M., MacLeod, C. M., & Risko, E. F. (2023). The Prod Eff: Partially producing an item modulates the production effect. Psychonomic Bulletin & Review, in press.

Kelly, M. O., Lu, X., Ensor, T., MacLeod, C. M., & Risko, E. F. (2023). Productions need not match study items to confer a production advantage... but it helps. Experimental Psychology, in press.

**In the “real world”: Metacognitive calibration and judgments of intelligence analysts**

From September 2023 to March 2024 (inclusive), I completed a full-time research internship at Defence Research and Development Canada, Toronto (a division of the Federal Government of Canada) to conduct research on how to improve the calibration and judgments of intelligence analysts.

Kelly, M.O., & Mandel, D. R. (2023). The Effect of Calibration Training on the Calibration of Intelligence Analysts' Judgments. *Applied Cognitive Psychology.*

Mandel, D. R., & Kelly, M. O. (2024). When Half is At Least 50%: Effect of “Framing” and Probability Level on Frequency Estimates. *Journal of Behavioural Decision-Making.*

Kelly, M. O., Budescu, D. V., Dhami, M., & Mandel, D. R. (2024). The Effects of Source Reliability and Information Credibility on Judgments of Information Quality. Under review.