Cognition, Aging, and Brain Imaging Lab

Vol. II Spring 2026

We have a new email address! Look out for emails from cabi-lab@uwm.edu

Message from the Lab Director

Dear CABI research participant,

Thank you for your participation and support of our research! Our big update is that we were **awarded a new grant from the National Institute on Aging!** It is a 5-year grant focusing on the brain circuits involved in generalization - the ability to apply knowledge to new situations. The grant involves brain imaging in young and older adults across three separate experiments that all involve learning pieces of information that have common elements with one another and generalizing across experiences with common elements. We have already started recruiting for the first experiment. **We may be reaching out in the coming months to ask about your interest in participating!**

We were also proud to have **SEVEN (!!!) CABI Lab undergraduate research assistants present at UWM's Undergraduate Research Symposium**. Topics of their presentations ranged from testing strategies to boost memory for relationships between pieces of information, using AI to generate fake emails that can be used to train people to recognize fraud, causes of false memories, the relationship between memory specificity and the ability to learn new concepts, and the aspects of cognition that older adults subjectively value and want to maintain. Great work all around!

Lastly, **three of our undergraduate research assistants graduated this semester**! Yanelis Santiago will be staying on at the lab over the summer as part of a fellowship through the STAR program at UWM. Patricia Iwok will also be sticking around UWM - as a PhD student in the Human and Machine Learning Lab starting in the Fall. Sophia Taavao is completing an internship in radiology at UW-Madison this summer, then will be working as a medical assistant in Milwaukee. We are so proud of all of them and appreciate their contributions to the lab!

Sincerely,

Caitlin Bowman, PhD

Publication Spotlight

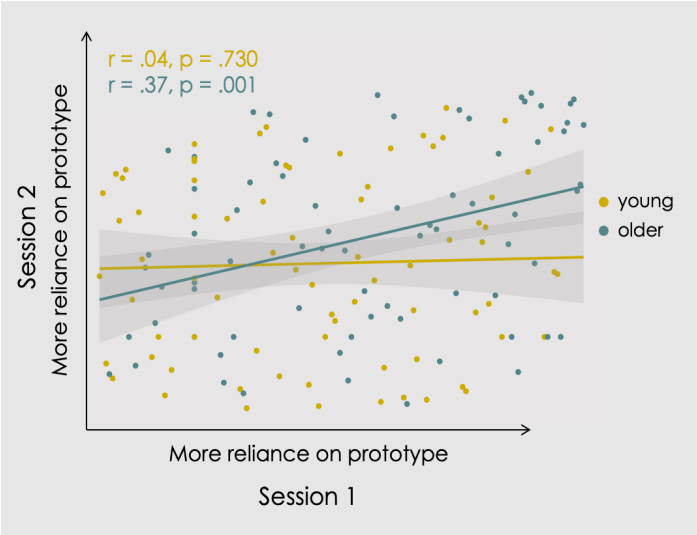
Once a prototype thinker, always a prototype thinker?

Are some people consistently quick to get the big picture while others tend to learn and remember individual pieces of information? Are big picture learners more common in older age? These are some of the questions in our recently published article based on a study conducted by our former lab manager, Maddie Valdez, and a graduate student, Kana Kimura, (pictured) from Summer 2022-Summer 2023.

In that study, 77 young adults (aged 18-30) and 74 older adults (aged 60+) completed a three-session study: one session to measure a range of cognitive abilities, and two sessions where participants learned to sort cartoons into categories based on their features. The cartoons and categories were different across the two sessions, allowing us to test how consistently people used the same strategy to categorize.

We focused on two well established categorization strategies: the prototype strategy that involves averaging across individual category members to classify based on the typical features of each category (the big picture strategy), and the exemplar strategy that involves memorizing individual category members. What's more, there are mathematical models that we can fit to participant's responses to determine which strategy they are using, so we don't have to rely only on what people tell us since people are not always aware of their learning strategy.

Results showed that young and older adults tended to rely on the prototype strategy more than the exemplar strategy, without meaningful differences between age groups. That means that people were good at figuring out the big picture commonalities among members of the same category regardless of age. We did, however, see age differences when we looked at the consistency of strategies across the two sessions: Older adults were more consistent in their prototype strategy use than young adults. The older adults who were the strongest "prototypists" in session 1 also tended to be the strongest "prototypists" in session 2, which was not the case for the young adults.



So once a prototype thinker, not ALWAYS a protoype thinker - you have to wait to be aged 60+!

For more information, see Lab Director Dr. Bowman's recent video about the project.

New and ongoing projects

In addition to the MRI experiments for the new grant, we will be collecting data for two other projects that do not involve MRI.

Understanding the relationships between different forms of memory

Memory is not just one thing. There are multiple forms of memory that are supported by distinct brain systems. One form of memory that we study in the lab is known as episodic memory - the ability to remember specific past experiences like your last birthday party or what you ate for breakfast yesterday. Episodic memory abilities are known to decline in older age. Another form of memory is concept learning - the ability to build new knowledge about the world. Less is known about how healthy aging impacts concept learning and the extent to which changes to episodic memory affect the ability to learn new concepts. Our aim with this project is to determine the extent to which age-related changes in episodic memory function affect concept learning abilities and the types of strategies that young and older adults use to learn new concepts.

Strategies for making new inferences

We can use our memories to make inferences about pieces of information we experience at different times. For example, when prescrbed a new medication, your doctor might tell you that it can cause an upset stomach. Your pharmacist might tell you that you should take the medicine with food. Although neither person said it directly, you might infer that taking the medication with food will prevent the upset stomach. The ability to make these kinds of inferences increases the usefulness of our memories because they allow us to go beyond what is stated directly and “read betwfeen the lines” of our experiences. Our aim with a new study is to test a strategy for helping individuals remember the information necessary to make these inferences. And we can’t tell you more about the strategy without spoiling it!

We expect to be collecting data for both of these studies throughout the summer and into the fall, so you may hear from us soon!

Introducing...Elizabeth Sharp!

Elizabeth joined the CABI Lab in August 2025 as a Neuroscience PhD student. She holds a degree from Cornell University in Psychology with a concentration in behavioral and environmental neuroscience. Before joining the CABI Lab, she was a lab manager at Brown University and a clinical research coordinator at Massachusetts General Hospital/Harvard Medical School. Broadly, her prior work focused on identifying dementia risk factors and biomarkers. Elizabeth’s research interests include understanding how memory and cognition change with age as well as identifying resilience factors and strategies that promote healthy cognitive aging. We are looking forward to working with her, and she is looking forward to working with you!