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Memory: Moments of Recollection Observed

Can you tell when someone else is making or recalling a lasting memory? Neuroscientist [Dmitriy Aronov](#) can—at least when that someone else is a bird. By studying the brains of the chickadee and the tufted titmouse, his team has been learning what a memory looks like.

“A memory isn’t something you can observe easily,” said Dr. Aronov. “That’s why we’re working with unusual animals that have a very special relationship to memory.”

Unlike most birds that live in cold climates, the ones that Dr. Aronov studies don’t fly south for the winter. They stash snacks in thousands of locations, remembering those hiding spots months later. Dr. Aronov brought these memory geniuses into the lab—something no one had done before. His team built intricate indoor habitats inspired by nature where the birds could hide sunflower seeds.

The [Aronov lab](#) developed technologies for monitoring the birds’ brain activity as they hid and retrieved the seeds. The researchers found connections critical for memory between different parts of the brain, as well as memory-routing brain regions. The researchers then found a unique pattern of brain activity, a [barcode of sorts](#), associated with the specific location of each saved seed. Dr. Aronov has a hunch that these unique barcodes could be found in humans too.

“We understand something that is going on in the natural world that has been hidden from us,” he said. “Maybe that will give us insight into what’s happening in a patient who cannot recall memories, or lead to the development of machines that can better store information.”

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