

Research finds that lizards are fast learners

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(Phys.org)—An Australian lizard, the Eastern Water Skink, has dispelled a long held myth that reptiles are slow learners. Researchers studying the lizard have found they do have the ability for rapid and flexible learning, challenging previous work that has suggested reptiles are less cognitively sophisticated than other vertebrates.

"Previous studies have reported that lizards require dozens of trials before learning a relatively simple spatial task if they learn at all. We found this wasn't the case," says lead researcher Daniel Noble, Macquarie University.

The breakthrough to this research was testing the lizards in an environment that more closely mimics their natural conditions. The lizards were given [spatial tasks](#), which required them to learn the location of safe refuges. Under these conditions approximately one third of the skinks were able to learn both a spatial learning and spatial reversal task within a little over a week.

An animal's ability to act on information from its surroundings and to change what they learn has a strong bearing on its survival. In the case of a lizard, learning the location of safe refuges in their environment could mean the difference between life and death.

"The idea that lizards and [snakes](#) have poor [cognitive abilities](#) has been spurred in part by the use of ecologically irrelevant tasks. We observed flexible spatial learning in water skinks by testing them under a biologically meaningful context and in semi-natural conditions. This learning may have been fast because of the diversity of available cues lizards could use to make associations with particular refuges. In contrast, [laboratory experiments](#) are often only interested in a subset of these cues, which may inhibit lizards from learning quickly " says Noble.

Though further research is needed to understand the precise mechanisms responsible for spatial learning in these reptiles, it is clear that lizards can learn a task quickly if it has important bearing on fitness.

"Our results make a lot of sense because [lizards](#) are often faced with predatory threats in the wild where they are required to escape to a refuge to avoid being eaten. This requires the knowledge of the spatial locations of refuges within their environment and to be able to flexibly adjust the use of the refuges depending on whatever contingencies arise " says Noble.

Provided by Macquarie University

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