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Episodic-like memory in Great green macaws (Ara ambiguus)

Background

Episodic memory is the ability to recall a self-experienced event from the past and reconstruct details from it in the future. It gives answers as in the "**what**", "**where**" and "**when**" to a recollection.

An important part of episodic memory is is the ability to recall one's past actions. I studied whether Great green macaws were able to do so.

Aims

Methods

I trained 8 macaws for

- a. Performing 4 base behaviors ["spin", "leg", "bow", "fluff"]
- b. Repeating their last behavior

Testing was divided into two phases.

Phase I. During 6 sessions the birds had to perform a randomized sequence of base behaviors, including "Repeat" commands, and two "Repeats" in a row.

Phase II. During 12 sessions the birds had to repeat a behavior with a 3 s delay for the command. If they

- To test for episodic-like memory in Great green macaws using the "repeat" paradigm.
- To assess the time constraints of their episodic short-term memory using this specific test method.

Results & Discussion

Phase I. All parrots performed above chance level (single repeat 75%; double repeat ~60% accuracy).

succeeded, the next delay increased by 3 more s. If they did not, the delay decreased by 3 s.



Phase II. The parrots performed above chance level for the 21 s delay. The probability of a correct response diminished as the delay time increased.

These results are coherent to those reported on similar studies with dolphins, macaques, pinnipeds, dogs, and blue-throated macaws. They give insight on the ability of Great green macaws to recall their previous actions.





