

# A snapshot-based, planning-free model of food caching behavior

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## SUBMISSION DETAILS

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**Presentation Abstract Summary** What algorithms underlie the decision making of agents that cannot solely rely on the current stimulus but need to remember singular, past experiences? Some birds, for example, cache different food items at thousands of different locations in their habitat and successfully recover a large fraction, sometimes months later or covered under snow. In laboratory experiments it was observed that jays do not only adapt the strategy of cache recovery to the what-where-when of previous caching events but also adapt their caching behavior to future needs. To find the simplest algorithms that replicate this observed behavior we simulate caching experiments on a computer. We find that it is sufficient to have, first, a mechanism to take ``snapshots'' of the sensory states during caching; second, a stimulus-driven retrieval mechanism; and third, retrieval and caching policies that can be adapted at moments of retrieval. In particular, the future directed behavior does not require any sort of planning.

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