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Macaques preferentially attend to intermediately surprising information

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Abstract

Normative learning theories dictate that we should preferentially attend to informative sources, but only up to the point that our limited learning systems can process their content. Humans, including infants, show this predicted strategic deployment of attention. Here we demonstrate that rhesus monkeys, much like humans, attend to events of moderate surprisingness over both more and less surprising events. They do this in the absence of any specific goal or contingent reward, indicating that the behavioral pattern is spontaneous. We suggest this U-shaped attentional preference represents an evolutionarily preserved strategy for guiding intelligent organisms toward material that is maximally useful for learning.