

Your Favorite Color Makes Learning More Adaptable and Precise

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Presentation Abstract Summary A serious challenge for learning in a naturalistic environment is that options have many features, each of which can take different values, resulting in a large number of options for which reward values have to be learned. Here, we propose that encoding and updating the average value of individual features can provide a heuristic for learning reward values in dynamic multidimensional environments. We predicted that this feature-based learning occurs not just because it can reduce dimensionality, but more importantly because it can increase adaptability without compromising precision. Using a combination of novel experimental and computational approaches, we provide evidence for this prediction, and reveal possible neural mechanisms underlying learning in dynamic multi-dimensional environments.

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