

# Your Favorite Color Makes Learning More Adaptable and Precise

**Submission ID** 3000035  
**Submission Type** Poster  
**Topic** Cognitive Science  
**Status** Submitted  
**Submitter** Shiva GhaaniFarashahi  
**Affiliation** Dartmouth College

## SUBMISSION DETAILS

**Presentation Type** Poster Presentation

**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.

**Paper Upload (PDF)** [Farashahi\\_etal.pdf](#)

## Co-author Information

\* Presenting Author

First Name	Last Name	Affiliation	E-mail
Shiva *	GhaaniFarashahi *	Dartmouth College	shiva.ghaanifarashahi.gr@dartmouth.edu
Katherine	Rowe	Dartmouth College	katherinearowe16@gmail.com
Zohra	Aslami	Dartmouth College	Zohra.V.Aslami.18@dartmouth.edu
Daeyeol	Lee	Yale University	daeyeol.lee@yale.edu
Alireza	Soltani	Dartmouth College	Alireza.Soltani@dartmouth.edu

## Keywords

Keywords
Adaptability-precision trade, curse of dimensionality