

Notes of Gershman & Daw 2017 and Borstein et al., 2017

These two papers, as well as a few others they cite, consider an alternative to most RL accounts that assume that expected values are learned as summary statistics, such as the average reward provided by each model. The alternative account assumes that instances of past events are stored in episodic memory and expected values are computed by sampling these episodic memories at the time of choice. An interesting analogue is prototype versus exemplar theories of category learning where the prototype is an average and exemplars are individual memories of past stimuli from each category, and summed similarity calculations are computed at the time of choice. Daw & Gershman go further into how complex behaviors could be accounted for by episodic memories, and how machine-learning has incorporated non-parametric or kernel-based methods with great success.

Seems like a timely topic.