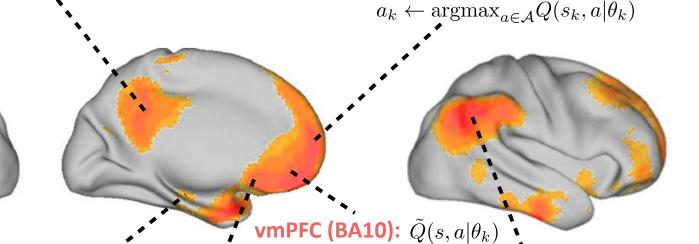
## **PMC:** Global monitoring and information integration

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$$\delta\theta_k \propto -\mathbb{E}_{(s,a,r,s')\sim\mathcal{D}}[(\tilde{Q}(s,a|\theta_k)-y_k)\nabla_{\theta_k}\tilde{Q}(s,a|\theta_k)]$$



Stimulus-value association

**Left TPJ:** World semantics  $s_0 \stackrel{r_1}{\rightarrow} s_1 \stackrel{r_2}{\rightarrow} s_2 \stackrel{r_3}{\rightarrow} \dots$ 

> Hippocampus: Memory, space, and experience replay

> > $(s, a, r, s') \sim \mathcal{D}$

Ncl. Accumbens:

Reward / punishment signals

**Right TPJ:** Prediction error signaling  $Q(s, a|\theta_k) - y_k$ 

dmPFC (BA9): Action consideration