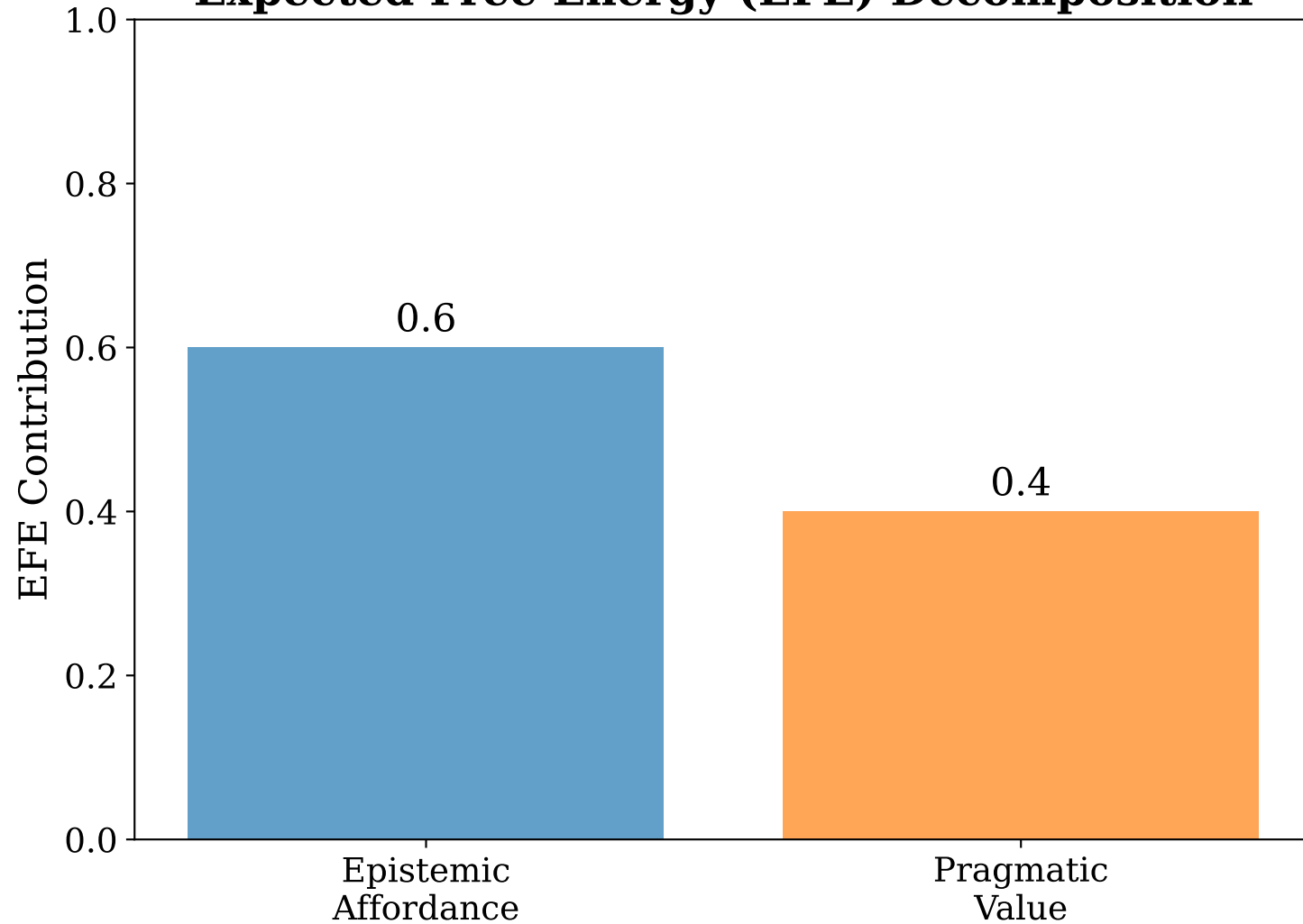## Expected Free Energy (EFE) Decomposition

Mathematical Formulation

$$\mathcal{F}(s, \pi) = \sum_{\tau = t+1}^{T} \mathbb{E}_{q(s_\tau)}[\log q(s_\tau) - \log p(s_\tau|\pi)]$$

$$+ \sum_{\tau = t}^{T} \mathbb{E}_{q(s_\tau)}[\log p(o_\tau|s_\tau) + \log p(s_\tau) - \log q(s_\tau)]$$

$$\text{EFE}(\pi) = G(\pi) + H[Q(\pi)]$$