$P(A_t, O|Y_{0:t}; \boldsymbol{\theta_a^*}, \boldsymbol{\theta_o^*}, \Psi_{0:t}, \alpha_{0:t})$ $P_{\cap}(O=6|Y_{0:t-1};\theta_a^*,\theta_o^*,\bar{\Psi}_{0:t},\alpha_{0:t})$ $P_{\cap}(O=6|Y_{0:t};\theta_a^*,\theta_o^*,\Psi_{0:t},\alpha_{0:t})$ $P_{\ominus}(A_t = 6|Y_{0:t})$ 0.25 0.25 0.2 0.2 $\mathcal{\theta}_a$ 0.15 0.15 0.1 0.1 0.05 $P(O=6; \theta_o^*)$ $P(O=6|Y_{0:t}; \boldsymbol{\theta_o})$