

A pragmatic speaker utility

+ lexical uncertainty

$$U_S(u; o, \phi) = \underbrace{\log L_0(o|u, \phi)}_{\text{fixed lexicon}} - \underbrace{w_C \cdot c(u)}_{\text{cost}}$$

→

$$U_S(u; o) = \underbrace{\int P_S(\phi|D) \log L(o|u, \phi) d\phi}_{\text{lexical uncertainty}} - \underbrace{w_C \cdot c(u)}_{\text{cost}}$$

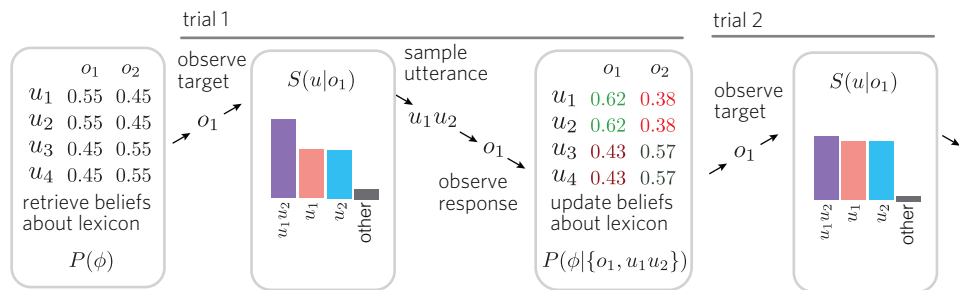
+ continual hierarchical adaptation (CHAI)

$$\underbrace{P(\phi, \Theta|D)}_{\text{updated beliefs}} \propto \underbrace{P(D|\phi, \Theta)}_{\text{observations from shared history}} \underbrace{P(\phi, \Theta)}_{\text{prior beliefs}}$$

ϕ : partner-specific (*ad hoc*) conventions

Θ : community-level conventions

B



C

