(a) Task performance

How to close the gap with humans?

0.5   0.7

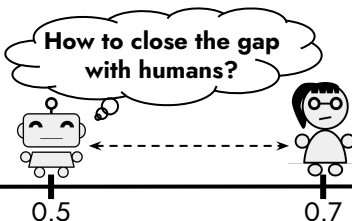(b) **Bounded pragmatic agent**

Repeat K times
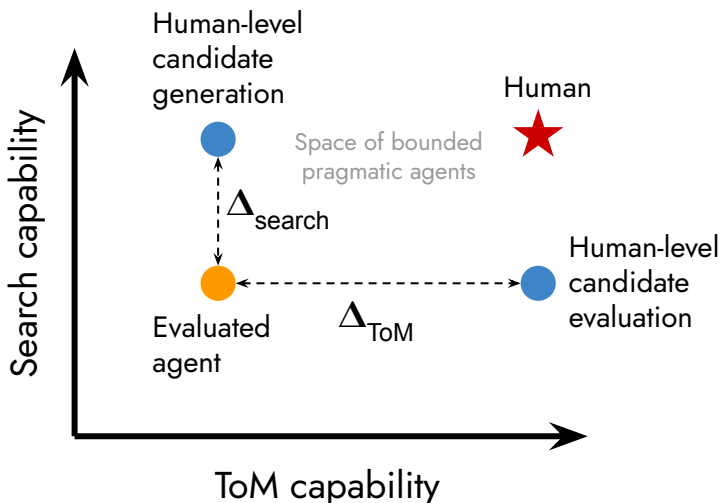   (i) Generate candidate (**search** capability)
      $u_i \sim S_{base}$
    (ii) Evaluate candidate (**ToM** capability)
      $score(u_i) = L_{ToM}(e^* \mid u_i)$
Return $\arg\max_{u \in D} score(u)$, $D = \{ u_1, \dots, u_K \}$

(c)

Search capability

Human-level candidate generation

Human

Space of bounded pragmatic agents

Δ_{search}

Evaluated agent

Human-level candidate evaluation

Δ_{ToM}

ToM capability

(d) **Recommendation:**

- Large Δ_{search}, small Δ_{ToM} $\Rightarrow$ improve inference algorithm
- Large Δ_{ToM}, small Δ_{search} $\Rightarrow$ enhance planning module