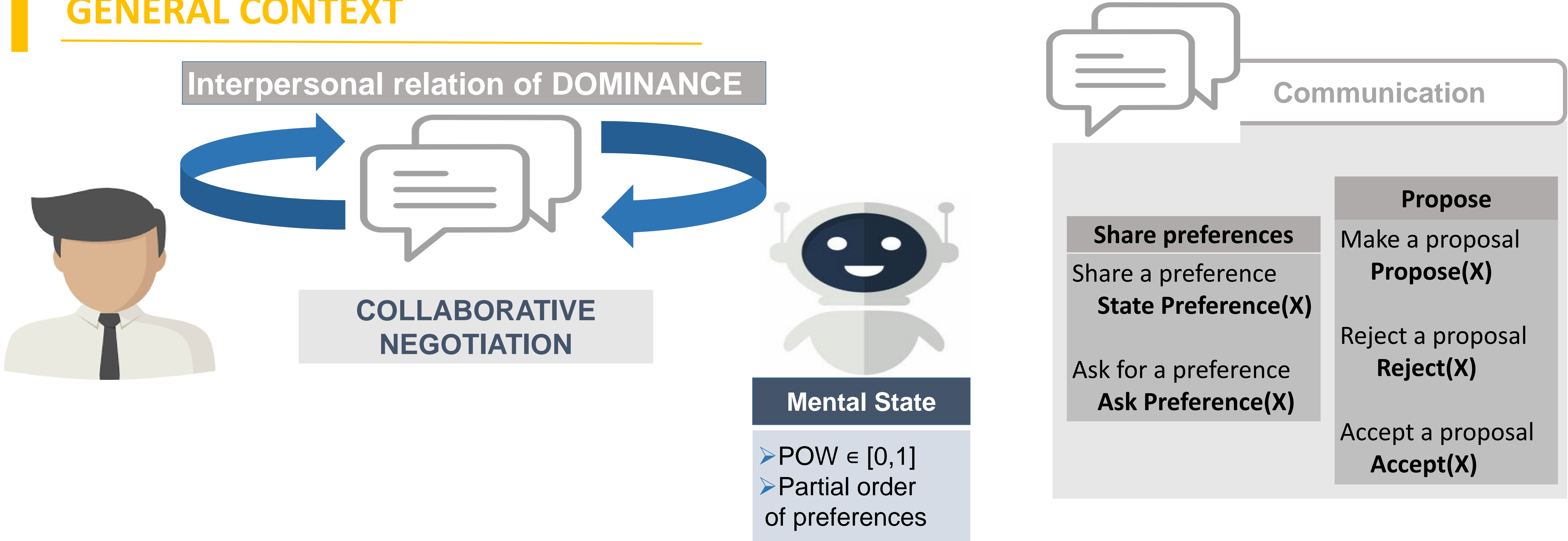


# I'VE GOT THE POWER'S VALUE! A COMPUTATIONAL MODEL TO EVALUATE THE INTERLOCUTOR'S BEHAVIORS IN COLLABORATIVE NEGOTIATION

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## 1 GENERAL CONTEXT



## 2 BEHAVIORS OF POWER IN NEGOTIATION

Dominant behaviors	Submissive behaviors
1. High level of <b>demand</b> & few <b>concessions</b> [1]	1. Low level of <b>demand</b> & higher <b>concessions</b> [1]
2. <b>Self centeredness</b> [2]	2. <b>Takes into account the preferences of the partner</b> [2]
3. <b>Lead of the negotiation</b> [3]	3. <b>Lack of initiative</b> [3]

### Example

**Bob:** "Let's go to a French restaurant ."

**Arthur:** "I don't like restaurants at French, let's choose something else."

**Bob:** "Let's go to the Maison blanche restaurant. It's a modern, cheap French restaurant at Montparnasse."

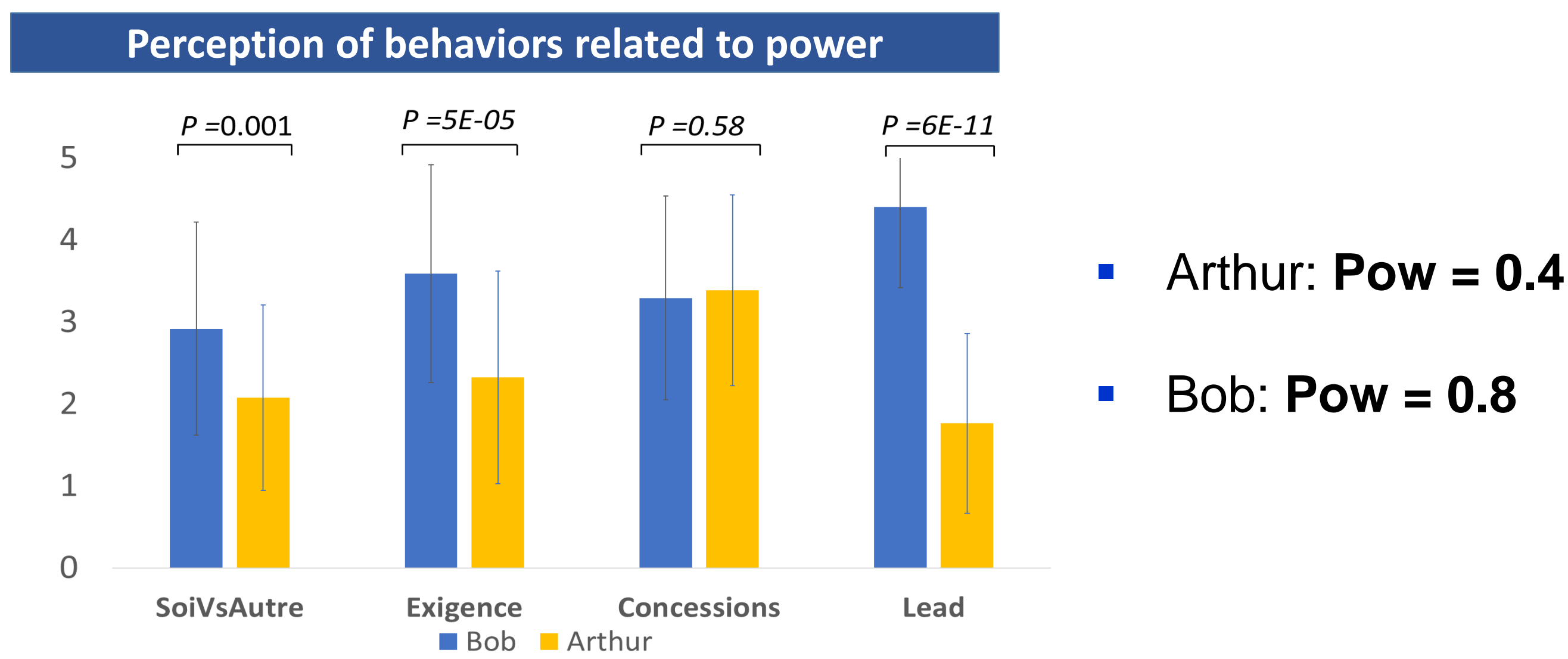
**Arthur:** "Do you like restaurants at Père lachaise?"

**Bob:** "I don't like restaurants at Père lachaise."

**Arthur:** "Do you like restaurants in the center of Paris?"

**Bob:** "Let's go to the Maison blanche restaurant. It's a modern, cheap French restaurant on the Montparnasse."

**Arthur:** "Okay, let's go to the Maison blanche restaurant."



**References**

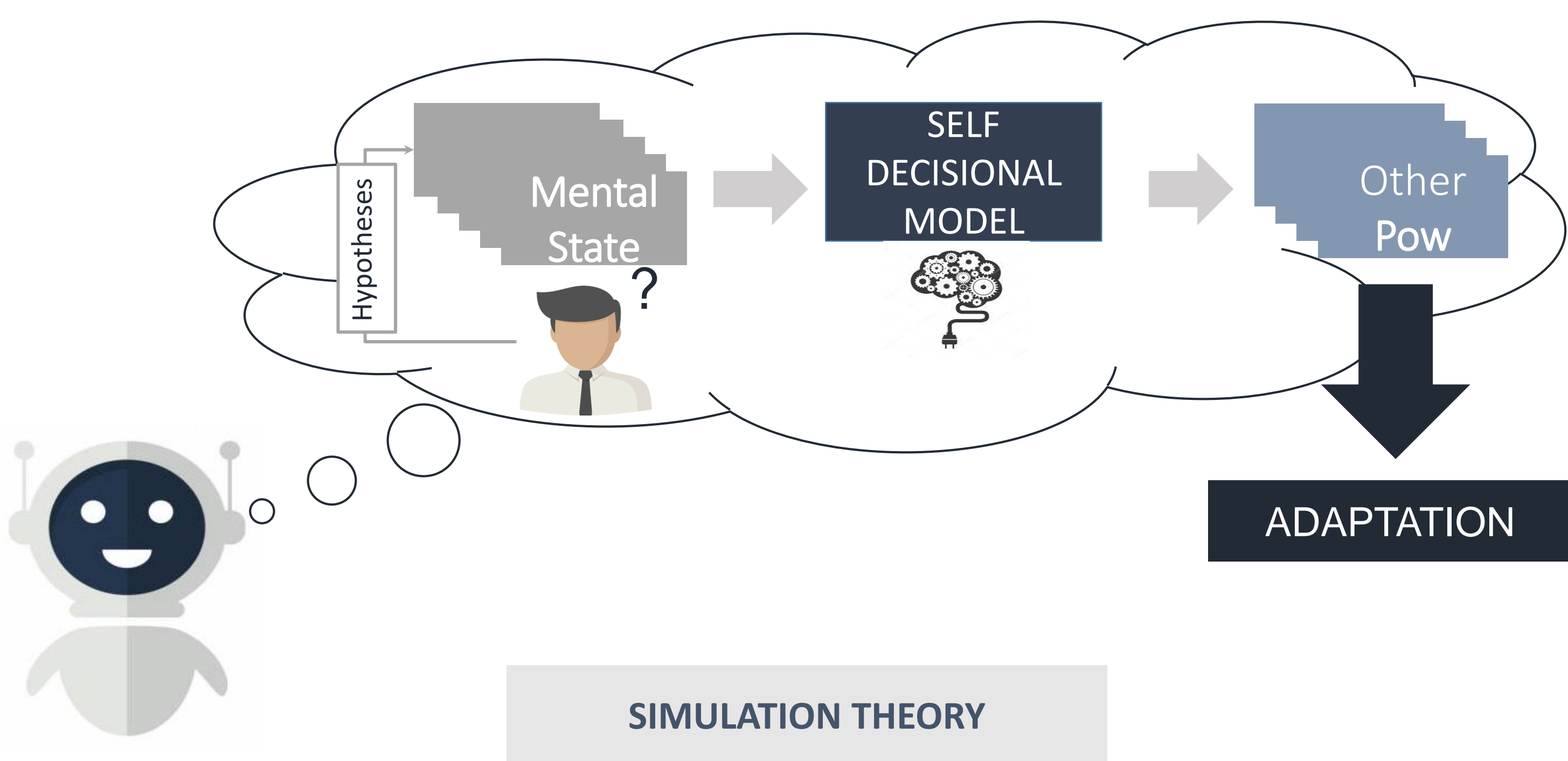
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[3] Van Kleef, G. A., De Dreu, C. K., Pietroni, D., & Manstead, A. S. (2006). Power and emotion in negotiation: Power moderates the interpersonal effects of anger and happiness on concession making.

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## 3 GUESS THE OTHER'S POWER



### Simulation theory

Understanding others through simulation :  
We understand **others' mental and emotional states and intentions** by **simulating their state in our own mind** [4]

## 4 RESULTS & PERSPECTIVES

Residual variation	0.12
Root mean square error	0.015
Time execution	0.12 ms

### Perspectives

1. Simulate an interpersonal relation of dominance between an agent and human user.
2. HRI evaluation