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

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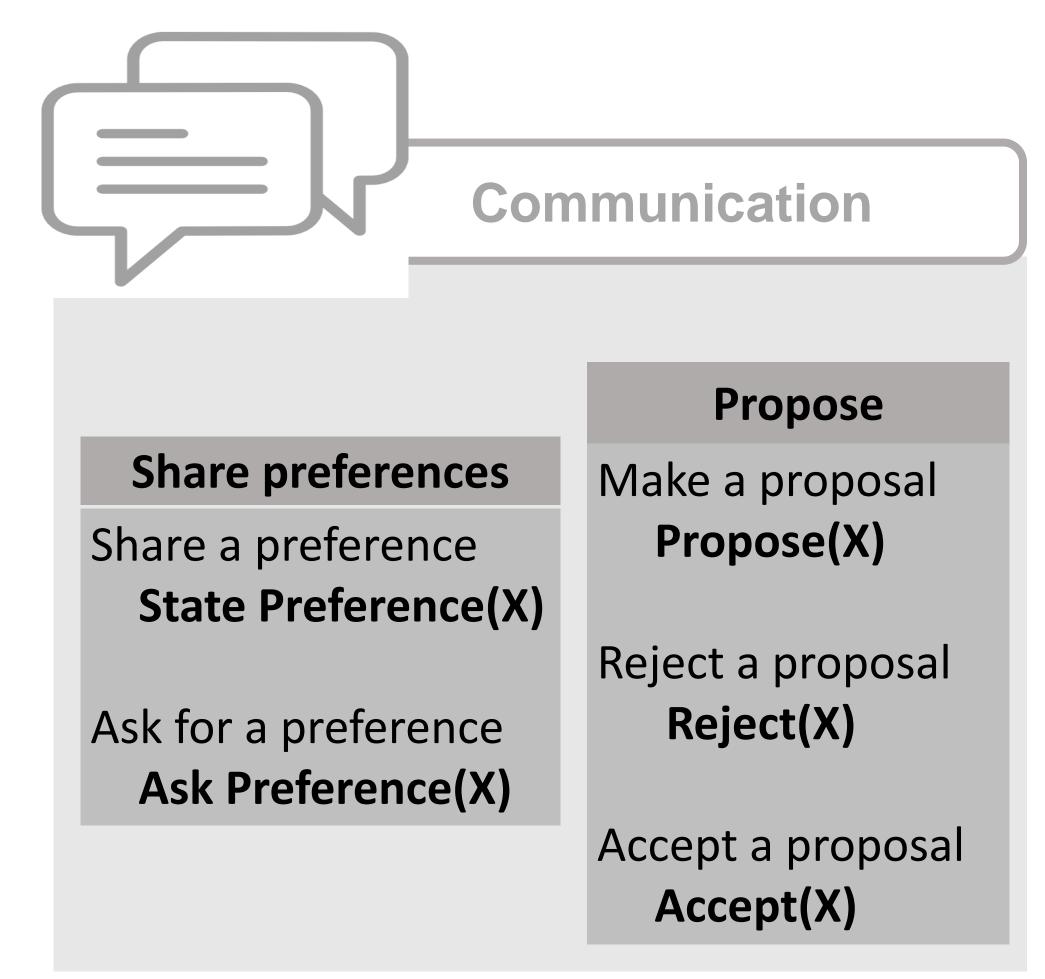
Interpersonal relation of DOMINANCE





Mental State

>POW ∈ [0,1] Partial order of preferences



BEHAVIORS OF POWER IN NEGOTIATION

Dominant behaviors

- 1. High level of **demand** & few concessions [1]
- 2. Self centeredness [2]
- 3. Lead of the negotiation [3]

Submissive behaviors

- Low level of **demand** & higher concessions [1]
- 2. Takes into account the preferences of the partner [2]
- 3. Lack of initiative [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?"

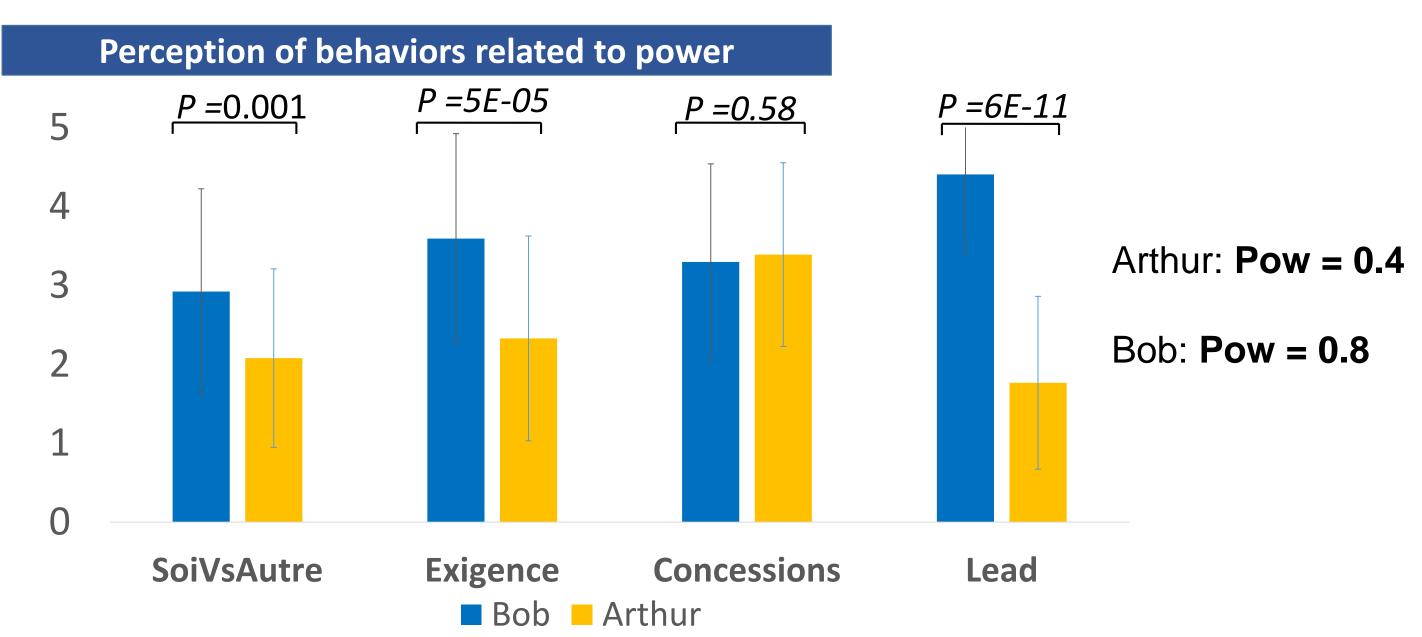
Bob: "I don't like restaurants at Père lachaise."

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

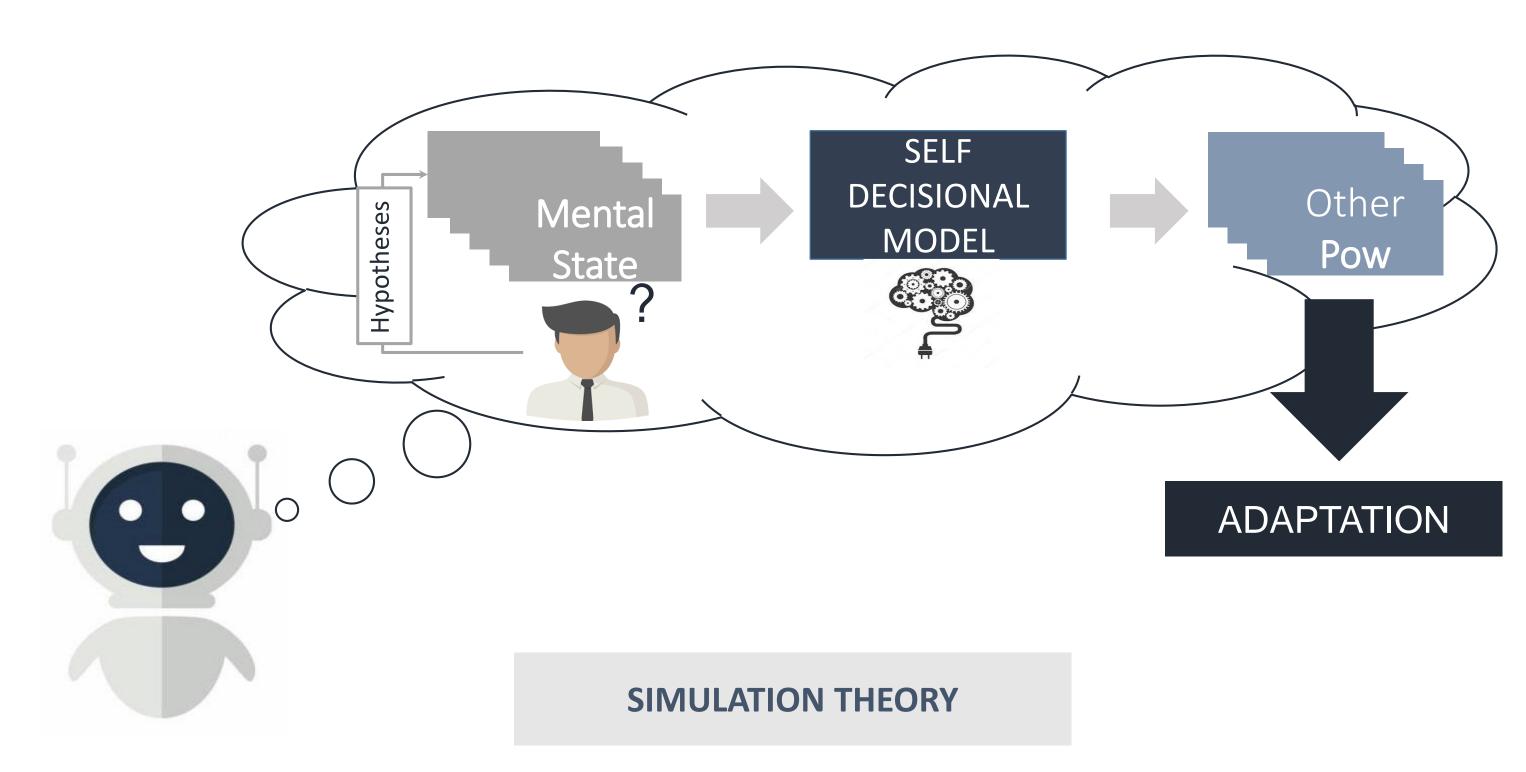
Bob: "Let's go to the Maison blanche restaurant. It's a modern, cheap

French restaurant on the Montparnasse."

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



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]



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. Evaluation Human-agent interaction

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.
- [4] Goldman, A. I. (2006). Simulating minds: The philosophy, psychology, and neuroscience of mindreading. Oxford University Press.







