

The trade-off between rule-based thinking and mutual benefit in tacit coordination

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Abstract

One way to solve a repeated coordination problem is to generalize from past solutions: acting based on precedent or relying on existing rules. An alternative way is to reason about what would be optimally mutually beneficial in the moment. We investigate the trade-off between backward-looking behavior based on precedent and forward-looking reasoning about mutual benefit in a novel real-time incentivized coordination game ($n = 252$; 22,680 choices; preregistered). Then, we develop a cognitive model based on virtual bargaining and Bayesian inverse joint-planning which combines two components: one based on precedent, and one based on mutual benefit. Our model captures participants' behavior in the task, performs better than alternatives, and reproduces key differences between conditions in simulations.