

DECISION-MAKING

Cognitive models of cooperation

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Our daily lives are full of interaction with other people, requiring us to make decisions about whether and when to cooperate or compete. Such decisions are often studied in the context of game theoretic models. These models generally start from a description of what ideal behaviour would look like and try to understand human decision-making in reference to that. Game theoretic models have uncovered a number of ways in which humans deviate from rational choice, but some of their assumptions are debated.

In a new publication, Russell Golman and colleagues took a different starting point to model human decision-making. Instead of relying on models that begin with ideal behaviour, the researchers developed a model building on established features of cognitive models, which successfully describe human decision-making in other domains. In their dual-accumulator model, humans form strategic preferences and also establish beliefs about how opponents tend to behave by considering scenarios. Importantly, both preferences and beliefs affect the scenarios that come to mind and thus affect each other dynamically. In a series of simulations of classic behavioural findings, the authors show that their model accounts for such human behaviours as limited iterated reasoning, payoff sensitivity, and risk–reward trade-offs in coordination games.

This work is an example for the fruitful application of cognitive models to long-standing problems usually studied in other domains.

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