

The social brain: Does guessing others' intentions make a difference when we learn?

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People regularly engage in sophisticated 'mentalizing' (i.e. guessing the intentions or beliefs of others) whenever they convince, teach, deceive, and so on. Research published this week in *PLOS Computational Biology* demonstrates the laws that govern these intuitions and how efficient they are for anticipating the behaviour of other people.

Jean Daunizeau and colleagues from INSERM and CNRS combine [mathematical modelling](#), [experimental psychology](#) and behavioural economics to measure the sophistication of human 'mentalizing'.

The authors asked 26 participants to play repeated games against artificial (Bayesian) 'mentalizing' agents, which differ in their sophistication. Critically, the participants were told that they were either playing against each other, or that they were gambling without any in-the-flesh opponent, like in a casino. The results show that participants won against the artificial 'mentalizing' agents when the game was socially framed, and lost in the non-socially framed games.

This study demonstrates that 'mentalizing' enables humans to guess how others learn about themselves, even in the absence of any explicit communication. This mental skill increases the chances of success in the context of repeated competitive social interactions.

The authors are currently applying this work to assess how this 'mentalizing' process and learning ability may differ in people with [autism spectrum disorders](#), and [neuropsychiatric conditions](#), such as

schizophrenia.

The researchers say: "Our work is in line with an ongoing effort tending toward a computational (i.e. quantitative and refutable) understanding of animal cognition. Importantly, we showed that human 'mentalizing' intuitions are endowed with remarkable but limited sophistication, notwithstanding how critical they are for deciphering intentional behaviour."

More information: Devaine M, Hollard G, Daunizeau J (2014) The Social Bayesian Brain: Does Mentalizing Make a Difference When We Learn? *PLoS Comput Biol* 10(12): e1003992. [DOI: 10.1371/journal.pcbi.1003992](https://doi.org/10.1371/journal.pcbi.1003992)

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