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Who knows what? Bayesian Inference of Competence guides Knowledge Attribution and Information Search

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Abstract

Inferring others' competence is a central challenge of social cognition, often occurring in contexts of limited information. Recent research suggests that competence judgements might rely on Bayesian inference, but it is unclear whether these findings generalize to naturalistic settings with rich prior knowledge. Using trivia questionnaires, we test whether people can infer others' competence and search for informative evidence in a way consistent with a rational Bayesian model. In Study 1, participants were presented with an individual's performance on a trivia question and predicted the individual's ability to answer other trivia questions from the same theme. Participants accurately predicted performance from limited information. Study 2 shows that participants can select which information would be most diagnostic for inferring an individual's competence. Computational modelling shows that participants' inferences, both when searching for and when integrating information about others' competence, are better described by Bayesian processes than by plausible heuristics.

Keywords: Computational Modeling; Social Cognition; Competence; Knowledge Attribution; Information Search