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Title

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 45(45)

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Publication Date

2023

Peer reviewed

Evidence for Heuristic Evidence Weighting in Real-World Beliefs

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Abstract

Cognitive models of learning often propose that belief formation is rational: new experience is combined with prior belief to support statistically optimal inferences. Why then are false beliefs so ubiquitous and difficult to correct? Prior work using a novel category-learning paradigm suggests that false beliefs may arise from the way that learners, when presented with contradictory information, choose to weight different information sources. When at least one source provides evidence highly consistent with the learner's current belief, other sources are strongly discounted and little belief change is observed; but when evidence from the most agreeable source is more discrepant with the learner, other sources receive proportionally more weight and effect larger belief change. The current work assesses whether a similar model explains patterns of belief change, not in a novel lab-based task, but for propositional real-world beliefs held by participants prior to coming into the lab. In a paradigm analogous to the previous category-learning study, participants known to hold a polarized opinion on a controversial topic read arguments varying in agreement and/or opposition to that opinion. The discrepancy between the participant's existing belief and that expressed by the arguments was experimentally varied. The pattern of belief change was remarkably similar to that observed in the novel category-learning task, suggesting that a similar underlying model can explain belief elasticity even for existing real-world beliefs.