

# **Investigating the factorial structure of widespread false beliefs**

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## **Abstract**

Cognitive science often views human learning as rational. Why then do false beliefs arise, and why are they resistant to change? False beliefs might arise when people (1) lack knowledge in some domain, (2) adopt beliefs aligning with implicit causal theories, or (3) encounter, through media or social networks, sets of beliefs that strongly covary. To test these hypotheses we composed a survey assessing beliefs about matters of fact across a wide range of knowledge domains and collected responses from 500 MTurkers. We then conducted a factor analysis to determine which false beliefs covary together, clustered respondents to find groups that adopt comparable false belief sets, and used regression to identify sociodemographic and media-consumption features that predict susceptibility to different kinds of false beliefs. The results suggest that some kinds of false belief may arise and persist merely from covariance in the opinions learners encounter in social life.