
How to change harmful beliefs

Science denialism is not new, but its dangerous consequences have been more apparent than ever: COVID-19 infections have risen due to vaccination hesitancy, inaction on climate change has created a global crisis, and the disbelief in the safety of genetically modified (GM) crops has created barriers to fight against malnutrition and hunger. It is thus crucial for the scientific community to better understand how skeptical beliefs can be changed. In a recent work, Jonas Dalege and Tamara van der Does proposed a cognitive network model that combines social beliefs (beliefs about one's social groups) and moral beliefs (or personal beliefs) to estimate predictors of belief change in the context of skepticism toward GM food and childhood vaccination.

The authors made use of a model inspired by statistical physics that conceptualizes individuals' overall attitudes as networks of beliefs. For instance, social and moral beliefs are represented as nodes in the network; belief states (from agreement to disagreement) are described as node states, and relationships between beliefs as the connections between nodes. Other statistical physics concepts, such as energy and temperature of the system, are used to reflect psychological processes, such as discrepancies between beliefs and processes that decrease randomness and disorder between beliefs. To test whether their model can be used to predict belief change, the authors used empirical data by conducting a longitudinal study with close to 1,000 participants that included questions about both social and moral beliefs. Among the study's results, the authors showed that the predictability of belief change improves when one takes into account the network structure of beliefs, which can help to elucidate when certain beliefs are more likely to change than others. As science denialism is becoming increasingly dangerous to our society, the proposed model could be used to assist with designing effective educational interventions for combating harmful disbeliefs.

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Original reference: *Sci. Adv.*
<https://doi.org/10.1126/sciadv.abm0137> (2022)