

Model helps explore how changing certainty in belief of one statement can lead to changing belief in truth of others

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Credit: Francisco Farias Jr/public domain

A small team of researchers with members from the U.S., the Netherlands, Russia and Italy has developed a new model that illuminates how changing the degree of certainty a person holds for a given belief can lead to changes in beliefs about other things that a person believes to be true. In their paper published in the journal *Science*, the team outlines their model and offers some possible ways it might be used. Carter Butts with the University of California offers a Perspective piece on the model developed by the team and suggests that it could be used to model attitudes as well as beliefs in empirical propositions.

As Butts notes, there are many examples of people harboring beliefs that fly in the face of logic—people believing that humans sprang into existence just 10,000 years ago, for example, or groups of people adamantly insisting that inoculating infants causes autism despite mountains of evidence to the contrary. Such beliefs, the researchers say, can be based on other beliefs that prevent the acceptance of that which may seem obvious. Believing that we humans, for example, are too insignificant compared to the rest of the world to be able to cause something as impressive as [global warming](#) would make it very difficult to accept the idea regardless of the evidence. To make sense of such belief systems by groups of people, the researchers have extended prior work that led to the development of the Friedkin-Johnson model used to illustrate how individual people use information under complex circumstances to make decisions that can result in the formation of beliefs.

The new model adds interpersonal influences where acceptance of one idea influences the acceptance of another—the result is a weighted network that allows for highlighting interdependent beliefs. Butts suggests that the [new model](#) and others that may follow could be used to identify the factors that prevent groups from accepting what others see as common knowledge and then to use that information as a means to allow them to see what is actually true.

More information: "Why I know but don't believe," *Science* 21 Oct 2016: Vol. 354, Issue 6310, pp. 286-287. [DOI: 10.1126/science.aaj1817](https://doi.org/10.1126/science.aaj1817)

N. E. Friedkin et al. Network science on belief system dynamics under logic constraints, *Science* (2016). DOI: 10.1126/science.aag2624

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