

# Psychological 'Vaccine' Could Help Immunize Against Fake News

 [psychcentral.com/news/2017/01/22/psychological-vaccine-could-help-immunize-against-fake-news/115419.html](https://psychcentral.com/news/2017/01/22/psychological-vaccine-could-help-immunize-against-fake-news/115419.html)

Janice Wood

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In medicine, vaccinating against a virus involves exposing a body to a weakened version of the threat, enough to build a tolerance.

Social psychologists believe that a similar logic can be applied to help "inoculate" the public against misinformation, including the damaging influence of fake news websites propagating myths about climate change.

A new study compared reactions to a well-known climate change fact with those to a popular misinformation campaign.

When presented consecutively, the false material completely cancelled out the accurate statement in people's minds — opinions ended up back where they started, researchers discovered.

The researchers then added a small dose of misinformation to the delivery of the climate change fact, by briefly introducing people to distortion tactics used by certain groups. This "inoculation" helped shift and hold opinions closer to the truth, despite the follow-up exposure to fake news, the researchers reported.

The study on U.S. attitudes found the inoculation technique shifted the climate change opinions of Republicans, Independents, and Democrats alike, according to the study, which was published in the journal *Global Challenges*.

The study was conducted by researchers from the University of Cambridge, Yale University and George Mason University. Researchers say it is one of the first on inoculation theory to try and replicate a real world scenario of conflicting information on a highly politicized subject.

"Misinformation can be sticky, spreading and replicating like a virus," said lead author Dr. Sander van der Linden, a social psychologist from the University of Cambridge and director of the Cambridge Social Decision-Making Lab. "We wanted to see if we could find a vaccine by preemptively exposing people to a small amount of the type of misinformation they might experience — a warning that helps preserve the facts."

"The idea is to provide a cognitive repertoire that helps build up resistance to misinformation, so the next time people come across it they are less susceptible."

To find the most compelling climate change falsehood currently influencing public opinion, the researchers tested popular statements found on the Internet on a nationally representative sample of U.S. citizens, with each one rated for familiarity and persuasiveness.

The winner: The assertion that there is no consensus among scientists, apparently supported by the Oregon Global Warming Petition Project. This website claims to hold a petition signed by "over 31,000 American scientists" stating there is no evidence that human CO<sub>2</sub> release will cause climate change.

The study also used the accurate statement that "97 percent of scientists agree on man-made climate change."

Note: This document has been edited.



Prior work by van der Linden has shown this fact about scientific consensus is an effective gateway for public acceptance of climate change.

In an experiment, researchers tested the opposing statements on more than 2,000 participants across the U.S. using the online platform Amazon Mechanical Turk.

To gauge shifts in opinion, each participant was asked to estimate current levels of scientific agreement on climate change throughout the study.

Those shown only the fact about climate change consensus (in pie chart form) reported a large increase in perceived scientific agreement — an average of 20 percentage points, according to the study's findings. Those shown only misinformation (a screenshot of the Oregon petition website) dropped their belief in a scientific consensus by nine percentage points.

Some participants were shown the accurate pie chart followed by the erroneous Oregon petition. The researchers said they were surprised to find the two neutralized each other (a tiny difference of 0.5 percentage points).

"It's uncomfortable to think that misinformation is so potent in our society," said van der Linden. "A lot of people's attitudes toward climate change aren't very firm. They are aware there is a debate going on, but aren't necessarily sure what to believe. Conflicting messages can leave them feeling back at square one."

Two groups in the study were randomly given "vaccines:"

1. A general inoculation, consisting of a warning that "some politically motivated groups use misleading tactics to try and convince the public that there is a lot of disagreement among scientists."
2. A detailed inoculation that picks apart the Oregon petition specifically. For example, by highlighting some of the signatories are fraudulent, such as Charles Darwin and members of the Spice Girls, and less than one percent of signatories have backgrounds in climate science.

For those inoculated with this extra data, the misinformation that followed did not cancel out the accurate message, according to the study's findings.

The general inoculation saw an average opinion shift of 6.5 percentage points towards acceptance of the climate science consensus, despite exposure to fake news, the researchers reported.

When the detailed inoculation was added to the general, it was almost 13 percentage points — two-thirds of the effect seen when participants were just given the consensus fact.

The researchers point out that tobacco and fossil fuel companies have used psychological inoculation in the past to sow seeds of doubt, and to undermine scientific consensus in the public consciousness.

They say the latest study demonstrates that such techniques can be partially "reversed" to promote scientific consensus, and work in favor of the public good.