

'Inoculation' messages prevent spread of fake news

May 8 2017, by David Stacey

An international team of researchers has demonstrated how people can be 'inoculated' against misinformation and fake news on topical issues such as climate change.

An [inoculation](#) message exposes people to [misinformation](#) in a weakened form to make them more resistant to misinformation they encounter later. It achieves this by explaining a flawed argumentation technique used by misinformers, to ensure people don't fall for such logically flawed misinformation in the future.

The study, published in *PLOS ONE* was carried out by researchers from The University of Western Australia, George Mason University, and the University of Bristol and compares the results of two online experiments that tested nearly 1,500 participants.

Co-author, Associate Professor Ullrich Ecker from UWA's School of Psychological Science said the technique worked in the same way as a vaccination.

"Just as vaccines stimulate the generation of antibodies to resist future viruses, inoculation messages can equip people with counterarguments that potentially convey resistance to future misinformation," Professor Ecker said.

The first experiment looked at the effects of 'false balance' media coverage. This is when a media report pits an [expert](#) voice against a

fringe opinion and there appears to be a 50:50 debate, when in fact there is a strong expert consensus.

The second looked at the 'fake experts' strategy. This occurs when a vested-interest group recruits a large number of alleged experts—who often appear to have relevant expertise but in fact do not—to endorse a false claim.

The team exposed people to misinformation in the form of either a 'false balance' news article, pitting factual [climate change](#) evidence against a contrarian voice, or in the form of fake experts casting doubt on the scientific consensus on climate change.

Some participants but not others received an inoculation message beforehand. This used an analogue from the tobacco debate to explain the misleading effects of the misinformation that participants were about to receive.

In the case of false balance, the inoculation explained how the tobacco industry had previously confused the public by staging a fake debate. In the fake experts experiment, the inoculation featured a tobacco advertisement referring to thousands of physicians who endorsed a particular brand of cigarette.

Professor Ecker said that without an inoculation message, the misinformation increased doubt about climate change, especially in people who tended to be doubtful anyway.

"Consequently, the misinformation had a negative and polarising effect. However, the inoculation was successful and fully neutralised the effect of the misinformation," Professor Ecker said.

"Our study shows that science communication messages should not only

communicate scientific concepts, but also need to take into account ways in which scientific content can be distorted, and include pre-emptive inoculation messages," he said.

More information: John Cook et al. Neutralizing misinformation through inoculation: Exposing misleading argumentation techniques reduces their influence, *PLOS ONE* (2017). [DOI: 10.1371/journal.pone.0175799](https://doi.org/10.1371/journal.pone.0175799)

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