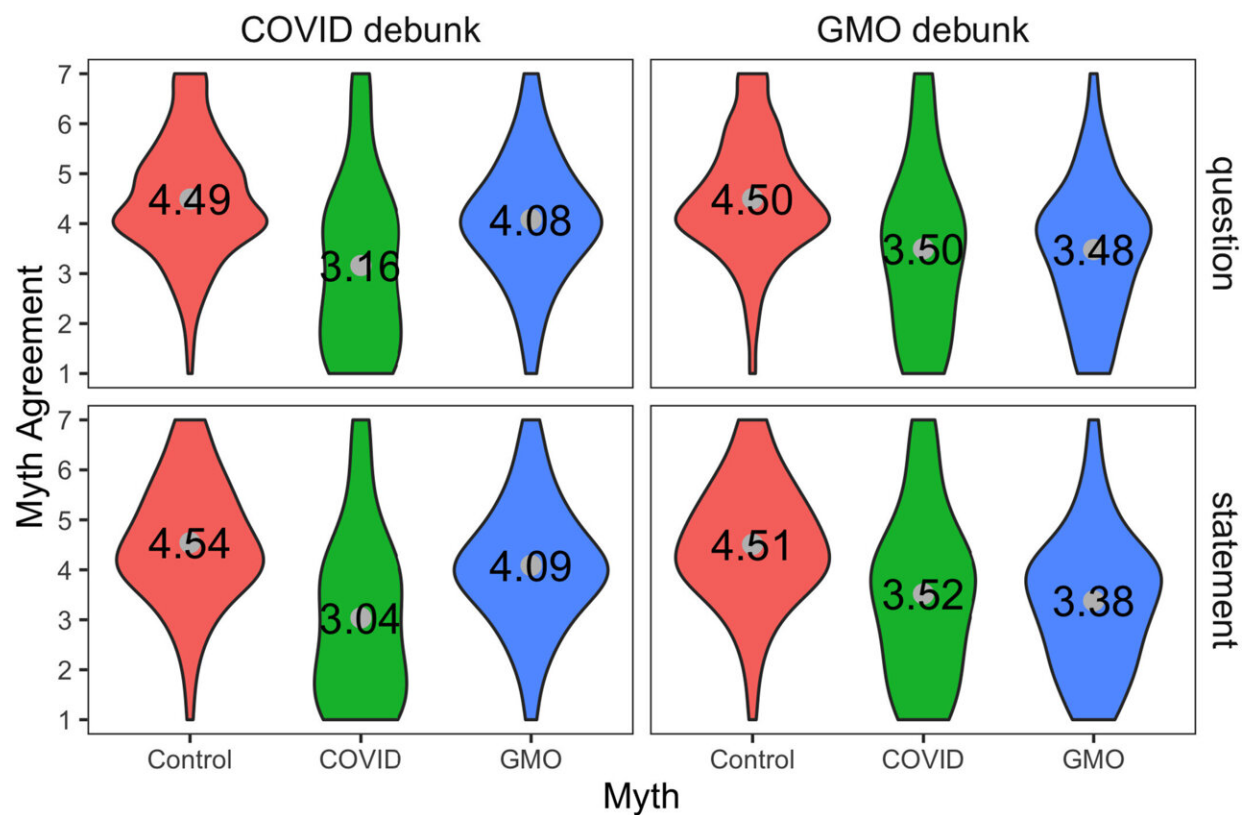


Representative study examines text strategies for refuting myths and fake news

June 19 2023, by Christian Wißler



Agreement to myths depending on the presented debunking text and headline format. Gray dots indicate means; outlines depict the distribution of the data.
Credit: *British Journal of Health Psychology* (2023). DOI: 10.1111/bjhp.12670

The spread of false information is increasingly hindering the clarification of socially relevant, scientifically proven facts. A

representative study led by Prof. Dr. Laura König at the University of Bayreuth has now examined the impact of texts aimed at refuting myths and fake news concerning COVID-19 vaccines and genetically modified foods.

The study, one of two published in the *British Journal of Health Psychology*, shows that content-related factors are considerably more important for the intended enlightening effect than the text structures much discussed in [communication research](#).

A representative survey

A total of 4,906 adults took part in the study, covering a representative sample for Germany in terms of age, gender, level of education and household income. As part of an online [survey](#), they were confronted with texts designed to debunk misinformation about COVID-19 vaccines and genetically modified foods.

"In both cases, these are novel technologies that cause uncertainty and fear, especially since misleading information circulates among the public regarding their harmlessness to health," says Prof. Dr. Laura König, who holds the junior professorship for Public Health Nutrition at the University of Bayreuth's Kulmbach site.

In designing and conducting the study, she collaborated with the research group of Social Psychology and Motivation at the University of Konstanz and the Heisenberg Professor for Medical Risk Competence and Evidence-Based Decision Making at Charité—Universitätsmedizin Berlin.

At the beginning of the survey, all participants provided information on the trust they place in research in general, in researchers at universities, and in researchers in the health care sector. They also rated the

usefulness of vaccinations and genetically modified organisms. The subsequent online survey aimed to test the effects of the headlines and structures of the submitted texts.

Two models developed in communication science were used for this purpose: In the three-part "truth sandwich" structure, true information and arguments frame the false statement to be refuted; in the two-part "bottom-heavy" structure, the false statement is followed by its refutation. In an [empirical study](#) published in April 2023, König had already demonstrated that the "truth sandwich" structure is effective in refuting misconceptions about nutrition.

Content design more important than text structures

The new study now examines whether the "truth sandwich" structure is superior to other text structures in its effectiveness. Among all respondents, acceptance of information that portrayed COVID-19 vaccines and genetically modified foods as safe increased—albeit to varying degrees.

However, as the research team found, this general effect was only loosely related to the structures of the texts presented. While the "truth sandwich" structure again helped increase acceptance, and headings in the format of a statement also proved effective, they were no more effective than the "bottom-heavy" structure or headings in the format of a question.

"Strategies for debunking fake news should primarily strive to present a factual context that is based on reliability. Texts should have a congenial and argumentative rather than abrasive tone, and should put emphasis on established [scientific knowledge](#) that has been proven in practice. Text structures, on the other hand, are of only secondary importance," says König.

Lower increase in acceptance with distrust in science

People with a low level of trust in science who had expressed reservations about vaccines and genetic engineering at the beginning of the survey were not unimpressed by the refutation of false statements. But their increased agreement with debunking and corrective information ("debunking messages") was weaker than among individuals who had entered the survey with a stronger confidence in science.

The authors of the study did not observe any cases in which an already existing distrust of research as a whole or of vaccines and [genetic engineering](#) in particular was significantly strengthened by the survey. They see the absence of such defiant reactions as evidence that presentations of scientific facts and arguments are in principle a suitable strategy for counteracting false information circulating in public.

Open questions: Sustainability and shaping of behavior

However, the study did not investigate how sustainably the belief in false information is weakened by a confrontation with facts and arguments. Similarly, the study does not reveal the extent to which agreement to refute fake news shapes respondents' actual behavior.

"Previous research suggests that people tend to continue to align their decisions and actions with false core beliefs even after they have already been weakened or relativized by refuting messages," König says.

Participants in the survey knew that the study was designed and conducted by a university research team. "It is possible that this increased the credibility of the disconfirming information, at least among those respondents who showed a comparatively high level of trust

in scientific expertise at the outset of the survey. Therefore, it would be worthwhile to include different types of information sources in future studies on debunking [fake news](#) to learn more about their influence on acceptance," explains the Bayreuth junior professor.

More information: Johannes Kotz et al, How to debunk misinformation? An experimental online study investigating text structures and headline formats, *British Journal of Health Psychology* (2023). [DOI: 10.1111/bjhp.12670](https://doi.org/10.1111/bjhp.12670)

Laura M. König, Debunking nutrition myths: An experimental test of the 'truth sandwich' text format, *British Journal of Health Psychology* (2023). [DOI: 10.1111/bjhp.12665](https://doi.org/10.1111/bjhp.12665)

Provided by University of Bayreuth

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