Letter to the Editors of *Psychological Science*: Boosting Consensus Reasoning Might Correct False Beliefs Across Science Domains: Regarding van der Linden & Lewandowsky (2022) and Zarzeczna et al. (2021) on van Stekelenburg et al. (2021)

In our original contribution, we showed that boosting understanding and identification of scientific consensus can help to correct a misperception about genetically engineered food. Results regarding a misperception about climate change were less clear, but indicated that this boosting approach might not help to correct a belief regarding this topic. In their response, Zarzeczna et al. (2021) argue that boosting scientific consensus reasoning is unlikely to correct false beliefs about most science domains, while instead van der Linden and Lewandowsky (2022) argue that it is likely to do this. We weigh in on this discussion and argue that it is still an empirical question whether boosting consensus reasoning can correct false beliefs across domains, but that there are reasons to expect it would.

First, we agree with the observation by Zarzeczna et al. (2021) that beliefs about important topics that are contested among the public, such as climate change, are often rooted in ideologies and worldviews. The work that they refer to provides substantial support for this observation. We disagree with them, however, that this correlation between ideologies or worldviews and belief in scientific facts means that knowledge-based approaches to science communication cannot be effective in informing people. We concur with van der Linden and Lewandowsky (2022) that evidence that factual information polarizes is rooted in correlation research (e.g., Drummond & Fischhoff, 2017). Such evidence does not necessarily support the assumption that ideology or worldview will prevent factual information from helping people become better informed.

Additionally, this discussion would benefit from a focus on the outcome at hand: belief in scientific facts. This is the outcome that we focus on in the original work and about which we draw conclusions. As Zarzeczna et al. (2021) point out, providing evidence may have different consequences for beliefs than for other outcomes, such as policy evaluations. While factual information might sometimes lead to polarization for these other outcomes, there is substantial causal evidence that factual information does not polarize beliefs (e.g., Swire-Thompson et al., 2020; Wood & Porter, 2019). Instead, if we specifically look at providing information about a scientific consensus, we have recently demonstrated meta-analytically that it is extremely unlikely that this will have a negative effect on belief in scientific facts, including climate change (van Stekelenburg et al., in press). Importantly, moderator analyses provided no support for the idea that such a communication strategy would be less effective for parts of the public with specific ideologies or worldviews (such as conservatives or people with opposing pre-existing beliefs). A boosting approach to scientific consensus communication might then magnify the already strong informational value of consensus information.

In conclusion, scientific consensus communication is very likely effective in informing people, even when misperceptions might be rooted in ideology or worldview. It is still an empirical question whether boosting consensus reasoning can potentially magnify this informing effect across domains and across groups differing in ideology or worldview. However, based on the reasoning above, we do not agree with the assumption that it is unlikely to work.

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References

Drummond, C., & Fischhoff, B. (2017). Individuals with greater science literacy and education have more polarized beliefs on controversial science topics. *Proceedings of the National Academy of Sciences*, *114*(36), 9587–9592. https://doi.org/10.1073/pnas.1704882114

Swire-Thompson, B., DeGutis, J., & Lazer, D. (2020). Searching for the backfire effect: Measurement and design considerations. *Journal of Applied Research in Memory and Cognition*, *9*(3), 286–299. https://doi.org/10.1016/j.jarmac.2020.06.006

van der Linden, S., & Lewandowsky, S. (2022). Letter to the editors of P*sychological Science*: Boosting scientific consensus is likely to correct false beliefs across domains: Regarding Zarzeczna et al. (2021) on van Stekelenburg et al. (2021). *Psychological Science*. https://doi.org/10.25384/SAGE.17022059.v2

van Stekelenburg, A., Schaap, G., Veling, H., & Buijzen, M. (2021). Boosting understanding and identification of scientific consensus can help to correct false beliefs. *Psychological Science*, *32*(10), 1549–1565. https://doi.org/10.1177/09567976211007788

van Stekelenburg, A., Schaap, G., Veling, H., van ’t Riet, J., & Buijzen, M. (in press). Scientific consensus communication about contested science: A preregistered meta-analysis. *Psychological Science.* https://doi.org/10.31219/osf.io/etsrw

Wood, T., & Porter, E. (2019). The elusive backfire effect: Mass attitudes’ steadfast factual adherence. *Political Behavior*, *41*(1), 135–163. https://doi.org/10.1007/s11109-018-9443-y

Zarzeczna, N., Većkalov, B., Gligorić, V., & Rutjens, B. T. (2021). Letter to the editors of *Psychological Science*: Boosting understanding is unlikely to correct false beliefs about most science domains: Regarding van Stekelenburg et al. (2021). *Psychological Science*. https://doi.org/10.25384/SAGE.16640672.v2