**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)**

Van Stekelenburg and colleagues (2021) show that boosting understanding of scientific consensus reduces false beliefs about genetically modified foods (GMOs). Specifically, demonstrating the value of scientific consensus and providing information about scientific consensus on GMOs helps to correct misperceptions about GMOs being harmful. However, this technique is ineffective in reducing climate change misbeliefs. This is not surprising. We argue that the reported strategy, being a knowledge-based technique, has limited applicability to other contentious science domains. This is because misperceptions of such domains often do not involve poor science knowledge, but rather specific ideologies.

The strategy of boosting understanding and providing information about scientific consensus relies on the idea that false beliefs about science stem from a lack of reasoning skills and science knowledge. While science knowledge has long been thought to contribute to greater science acceptance, this is not the case for many science domains. For example, climate change skepticism is primarily associated with conservatism (Hornsey et al., 2016; Rutjens et al., 2021), whilst rejection of evolution and nanotechnology is associated with religiosity (Rutjens et al., 2021; Vandermoere et al., 2010). Skepticism towards artificial intelligence (AI) involves worries about losing one’s job (e.g., Vu & Lim, 2021). Further, vaccination skepticism is primarily associated with spirituality and conspiracy thinking, though there is evidence for science knowledge to play an additional role (Rutjens et al., 2021). Overall, ample empirical evidence indicates that science misperceptions are more strongly linked to different ideologies or worldviews than to science knowledge (Hornsey et al., 2018; Rutjens et al., 2021).

The one glaring exception to this is, indeed, GMOs skepticism. Evidence consistently shows that GMOs misperceptions are not associated with ideology/worldviews. Instead, these are primarily related to low science knowledge (Rutjens et al., 2021). Not surprisingly, evidence shows that educating people about GMOs leads to an increase in acceptance (McPhetres et al., 2019).

Although people can update their beliefs when provided with evidence about a political issue (Kim, 2020; Tappin et al., 2021), factual knowledge can, in fact, polarize science attitudes (Drummond & Fischhoff, 2017). Providing evidence may therefore have different consequences for science beliefs than for policy evaluations (see Rutjens & Brandt, 2018).

Overall, the consensus boosting strategy is likely to be effective only for correcting misbeliefs about science domains that are not primarily rooted in ideologies and worldviews. That is, evolution, nanotechnology, and AI can be added to climate change as science domains for which the boosting strategy will *not* work in correcting false beliefs. Yet, it is possible that the boosting strategy which van Stekelenburg et al. describe might be somewhat effective in reducing vaccine misperceptions. However, a more promising strategy in tackling vaccine misbeliefs—which involve spirituality (Rutjens et al., 2021) and conspiracy thinking (Hornsey et al., 2018)—would be an application of both: knowledge strategies (like consensus-boosting) and tailored science messaging to match individual ideological beliefs.

To conclude, boosting understanding of and educating people about scientific consensus may help to correct false beliefs in specific science domains. However, the effectiveness of this strategy would be limited to false beliefs that are largely free from ideology, as is the case with beliefs about GMOs.

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