

How to Talk to a Science Denier

Science denialism appears in different parts of society on different topics: Climate change, coronavirus and vaccines, evolution, and many others. How to respond effectively to science denial is still an open question, but we know that **not responding to denial does more harm than good**.

Adjust Expectations

You cannot convince someone with evidence, who doesn't believe in evidence. - Lee McIntyre [1]

Existing belief systems are often stronger than evidence. Due to the confirmation bias we tend to look for and interpret information in ways that match our beliefs. Many pseudoscientific movements also have a moral core (e.g. Creationism) and are therefore intertwined with personal identity and social identity. [2]

When talking to a science denier, we need empathy to understand the other people's emotions, motivation and fears, to determine what blocks might cause them to keep their belief system.

Building Trust Before Sharing Information

The key is trust! After understanding the person's emotions, create a common ground by finding shared goals or shared social identity. Only after building this minimal basis of trust, share information about the topic. Conclude by reinforcing the positive change in the other persons' thinking. [3]

Misinformation Cannot be Undone

Once people are exposed to (mis)information, one cannot undo it. The best thing is not to allow the science denier to spread their information. It's not only about the hard-core leading science deniers, it's about (their) audience! [1]

Methods of Rebuttal

First empirical evidence about fighting back against science deniers was published by Schmidt & Betsch in 2019 [3]. They investigated two types of rebuttal:

Content Rebuttal: When you know something about the field, you can provide scientific information and debunk the misinformation.

Technique Rebuttal: If you know the techniques of science denial, you don't have to be an expert in a field to refute misinformation. You can point out the following weaknesses of a belief system:

- ▶ Fake Experts
- ▶ Logical Fallacies
- ▶ Impossible Expectations
- ▶ Cherry Picking Evidence
- ▶ Conspiracy Theories

It is worse to let false scientific claims, no matter how absurd, go unchallenged than to deal with them.

References

- [1] Lee McIntyre - How to Talk to a Science Denier, [watch on YT](#)
- [2] Rosenau, J. (2012). Science denial: A guide for scientists. *Trends in microbiology*, 20(12), 567-569.
- [3] Gleb Tsipursky - How to Talk to a Science Denier without Arguing, [online](#)
- [4] Schmid, P., & Betsch, C. (2019). Effective strategies for rebutting science denialism in public discussions. *Nature Human Behaviour*, 3(9), 931-939