

Spiritual people more likely to be skeptical about science, study finds

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Scientists surveyed 600 Dutch people on what they think and believe about certain topics and how that affects their opinions on science. Specifically, it involved what they thought about nanotechnology, human

genome editing and artificial intelligence. People who identify as spiritual—and that group is growing rapidly in Western Europe—proved to be highly skeptical about all three. According to the researchers, this is the first evidence that "spirituality" is associated with distrust in science beyond the realm of vaccination.

Developments at the intersection of science and technology are progressing rapidly, especially in the fields of [nanotechnology](#) (the use of extremely small materials), genetic manipulation and AI. This can bring a lot of good, such as help in combating certain diseases or having all kinds of knowledge at our fingertips, but it can also raise concerns. Are there any side effects? Public debates on these topics can sometimes be highly polarized, with both sides rallying behind different perspectives.

Psychologists from the University of Amsterdam and Radboud University wondered why people reject certain scientific innovations. What beliefs are associated with this? "We surveyed two groups of people in the Netherlands, a total of 614 individuals, about their opinions on nanotechnology, human genome editing and [artificial intelligence](#)," says one of the researchers, social psychologist Bastiaan Rutjens from the University of Amsterdam. The research is published in the journal *Science Communication*.

Looking beyond political beliefs

While skepticism toward science is often attributed to political and [religious beliefs](#), the researchers took a much broader perspective and also examined the influence of spirituality, aversion to humans tampering with nature, general trust in science, conspiracy beliefs and level of knowledge.

"Political ideology and religiosity are usually not the primary factors contributing to skepticism about specific topics such as nanotechnology

and AI," Rutjens explains. "Other aspects of a person's worldview and beliefs, like spirituality, moral concerns and general trust in science, play a larger role."

Spiritual people more likely to be skeptical

The survey revealed that individuals who identify as spiritual are more likely to be skeptical about nanotechnology, genetic manipulation and artificial intelligence. "We have found clear evidence that people who identify as spiritual are more skeptical in all three areas we investigated," says Rutjens. Those who have less trust in science also tended to hold negative views about these topics, and the two are related. "Generally, spiritual individuals have less trust in science."

The researchers also discovered that, as expected, religious individuals are particularly skeptical about human genome editing and, to a lesser extent, nanotechnology. People who oppose tampering with nature also expressed skepticism about [genetic manipulation](#). Political ideology, often suspected to play a role in skepticism toward science, had no influence on skepticism toward scientific innovations.

Important to make a distinction

According to the researchers, this study shows that a person's religion, spirituality and view of nature influence how they think about new scientific developments. "It is therefore important to make a distinction between religious and [spiritual beliefs](#) if we want to understand why people reject certain forms of science," Rutjens argues.

This distinction may be particularly relevant in highly secular countries like the Netherlands and Western European countries in general, where the number of individuals identifying as spiritual is increasing while the

number of religious individuals is declining.

More information: Bojana Većkalov et al, Who Is Skeptical About Scientific Innovation? Examining Worldview Predictors of Artificial Intelligence, Nanotechnology, and Human Gene Editing Attitudes, *Science Communication* (2023). [DOI: 10.1177/10755470231184203](https://doi.org/10.1177/10755470231184203)

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