

The conflict between science and religion lies in our brains, researchers say

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The conflict between science and religion may have its origins in the structure of our brains, researchers at Case Western Reserve University and Babson College have found.

Clashes between the use of faith vs. [scientific evidence](#) to explain the world around us dates back centuries and is perhaps most visible today in

the arguments between evolution and creationism.

To believe in a supernatural god or universal spirit, people appear to suppress the brain network used for [analytical thinking](#) and engage the empathetic network, the scientists say. When thinking analytically about the physical world, people appear to do the opposite.

"When there's a question of faith, from the analytic point of view, it may seem absurd," said Tony Jack, who led the research. "But, from what we understand about the brain, the leap of faith to belief in the supernatural amounts to pushing aside the critical/analytical way of thinking to help us achieve greater social and emotional insight."

Jack is an associate professor of philosophy at Case Western Reserve and research director of the university's Inamori International Center of Ethics and Excellence, which helped sponsor the research.

"A stream of research in cognitive psychology has shown and claims that people who have faith (i.e., are religious or spiritual) are not as smart as others. They actually might claim they are less intelligent.," said Richard Boyatzis, distinguished university professor and professor of organizational behavior at Case Western Reserve, and a member of Jack's team.

"Our studies confirmed that statistical relationship, but at the same time showed that people with faith are more prosocial and empathic," he said.

In a series of eight experiments, the researchers found the more empathetic the person, the more likely he or she is religious.

That finding offers a new explanation for past research showing women tend to hold more religious or spiritual worldviews than men. The gap may be because women have a stronger tendency toward empathetic

concern than men.

Atheists, the researchers found, are most closely aligned with psychopaths—not killers, but the vast majority of psychopaths classified as such due to their lack of empathy for others.

The new study is published in the online journal *PLOS ONE*. The other authors are Jared Friedman, a research assistant and recent graduate in Philosophy and Cognitive Science who will begin his PhD in organizational behavior at Case Western Reserve in the fall, and Scott Taylor, assistant professor of [organizational behavior](#) at Babson College.

Brain structure

The research is based on the hypothesis that the human brain has two opposing domains in constant tension. In earlier [research](#), Jack 's Brain, Mind & Consciousness lab used functional magnetic resonance imaging to show the brain has an analytical network of neurons that enables us to think critically and a social network that enables us to empathize. When presented with a physics problem or ethical dilemma, a healthy brain fires up the appropriate network while suppressing the other.

"Because of the tension between networks, pushing aside a naturalistic world view enables you to delve deeper into the social/emotional side," Jack explained. "And that may be the key to why beliefs in the supernatural exist throughout the history of cultures. It appeals to an essentially nonmaterial way of understanding the world and our place in it."

Friedman said, "Having empathy doesn't mean you necessarily have anti-scientific beliefs. Instead, our results suggest that if we only emphasize analytic reasoning and scientific beliefs, as the New Atheist movement suggests, then we are compromising our ability to cultivate a different

type of thinking, namely social/moral insight."

"These findings," Friedman continued, "are consistent with the philosophical view, espoused by (Immanuel) Kant, according to which there are two distinct types of truth: empirical and moral."

Experiments and results

The researchers examined the relationship between belief in God or a universal spirit with measures of analytic thinking and moral concern in eight different experiments, each involving 159 to 527 adults.

Consistently through all eight, the more religious the person, the more moral concern they showed. But no cause and effect was established.

They found that both spiritual belief and empathic concern were positively associated with frequency of prayer, meditations and other spiritual or religious practices, but neither were predicted by church dinners or other social contact associated with religious affiliation.

While others theorize that mentalizing—interpreting human behavior in terms of intentional mental states such as needs, desires or purposes—has a positive association with belief, the researchers found none.

Like other studies, these experiments showed that analytic thinking discourages acceptance of spiritual or religious beliefs. But the statistical analysis of data pooled from all eight experiments indicates empathy is more important to religious belief than analytic thinking is for disbelief.

So why can the conflict between science and religion become so strong?

"Because the networks suppress each other, they may create two extremes," Boyatzis said. "Recognizing that this is how the brain

operates, maybe we can create more reason and balance in the national conversations involving science and religion."

Using both networks

The researchers say humans are built to engage and explore using both networks.

"Far from always conflicting with science, under the right circumstances religious belief may positively promote scientific creativity and insight," Jack said. "Many of history's most famous scientists were spiritual or religious. Those noted individuals were intellectually sophisticated enough to see that there is no need for religion and science to come into conflict."

They refer to Baruch Aba Shalev's book 100 years of Nobel Prizes, which found that, from 1901 to 2000, 654 Nobel laureates, or nearly 90 percent, belonged to one of 28 religions. The remaining 10.5 percent were atheists, agnostics or freethinkers.

"You can be religious and be a very good scientist," Jack said.

The researchers agree with the New Atheists that suspension of analytical thinking—at the wrong time—can be dangerous, and point to the historical use of religious differences to persecute or fight wars.

"Although it is simply a distortion of history to pin all conflict on religion," Jack said. "Non-religious political movements, such as fascism and communism, and quasi-scientific movements, such as eugenics, have also done great harm."

The researchers suggest, however, that taking a carefully considered leap of religious faith appears to be an effective route to promoting emotional

insight. Theirs and other studies find that, overall, religious belief is associated with greater compassion, greater social inclusiveness and greater motivation to engage in pro-social actions.

Jack said the conflict can be avoided by remembering simple rules: "Religion has no place telling us about the physical structure of the world; that's the business of science. Science should inform our ethical reasoning, but it cannot determine what is ethical or tell us how we should construct meaning and purpose in our lives."

To dig deeper into belief, the researchers are planning studies to learn if individuals who increase their empathy then increase their religious or spiritual belief, or vice versa.

Provided by Case Western Reserve University

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