

Religious people less anxious, brain activity shows

17:32 17 March 2009 by [Ewen Callaway](#)
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If the deeply devout seem less self-doubting than others, perhaps it's because religion helps them shrug off mistakes. So say researchers who found religious people exhibit lower activity than non-believers in a brain region linked to anxiety when erring on a simple test.

"Religion offers an interpretative framework to understand the world. It lets you know when to act, how to act, and what to do in specific situation," says

[Michael Inzlicht](#), a neuroscientist at the University of Toronto, Scarborough, who led the new study. "It provides a kind of blueprint on how to interact with the world."



Deeply devout people exhibit lower activity in a brain region linked to anxiety when they give the wrong answer on a simple test (Image: Frederic Sierakowski / Rex Features)

Religion – and perhaps other strongly held belief systems – buffer against second-guessing decisions, he says.

Anxiety zone

Inzlicht's team tested 50 university students from diverse religious and cultural backgrounds. Christians made up most participants, but his team also tested Muslims, Hindus, Buddhists and atheists.

With a technique that gauges brain activity via dozens of electrodes on the scalp called electroencephalography (EEG), Inzlicht's team focused on action in a small brain area called the anterior cingulate cortex (ACC).

"When it's fired, the response engendered is 'uh oh, pay attention, something is amiss here'," he says (see also [Magic reveals the brain's response to the impossible](#)).

People with anxiety disorders tend to show high activity in this region, and drugs that treat their symptoms calm brain activity in the ACC.

Blue, no, yellow!

Volunteers took a simple test that other neuroscientists have used to measure [ACC activity](#).

On a monitor, subjects see a colour spelled out in letters that either correspond to or contradict the meaning of the word – for example, red spelled out in red letters or blue spelled out in yellow letters, for instance. Volunteers must press a button to indicate the colour of the letters.

The students with strong religious beliefs, as measured by their agreement with statements such as "My religion is better than others" or "I would support a war if my religion supported it", exhibited less ACC activation than students with less fervent beliefs.

Tests with another group of students, who were asked how strongly they believed or disbelieved in God, came to a similar conclusion.

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Even after accounting for self-esteem, intelligence and other personality traits, Inzlicht's team found that religious devotion predicted volunteers' ACC activity.

Blissful beliefs?

One explanation is that people with a genetic predisposition to reduced ACC activity gravitate toward religion. "It's possible that if you're born with a certain kind of brain, you're predisposed to religion," Inzlicht says.

However, he suspects that religious belief is driving the association. In unpublished experiments, Inzlicht's team asked religious volunteers to describe in writing either their faith or their favourite season. Those who wrote about their connection to God exhibited reduced ACC activation, compared with people who described the weather.

Inzlicht says it would be interesting to test people as their religious devotion strengthens or weakens over time to see if ACC activation changes accordingly. This could help confirm the correct explanation for the lower ACC activity.

"It's a very provocative finding and it is consistent with a lot of other things we know about religion" says [Ara Norenzayan](#), a psychologist at the University of British Columbia in Vancouver. This might explain why religious belief seems to blunt feelings of anxiety.

Although Inzlicht has focused on religion, he thinks other forms of belief may offer the same kind of reassurance. [A previous study](#) that used similar methods found that politically conservative Americans exhibit less ACC activation than liberals.

Keen sports fans devoted to their home team may also see the world through a framework that assuages day-to-day concerns and confusion, Inzlicht says.

Yet [religious belief](#) offers one thing that sports and politics don't. "I think religion offers the ultimate explanation," Inzlicht says, "for what happens after we leave."

Journal reference: [Psychological Science \(DOI: 10.1111%2Fj.1467-9280.2009.02305.x\)](#)

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