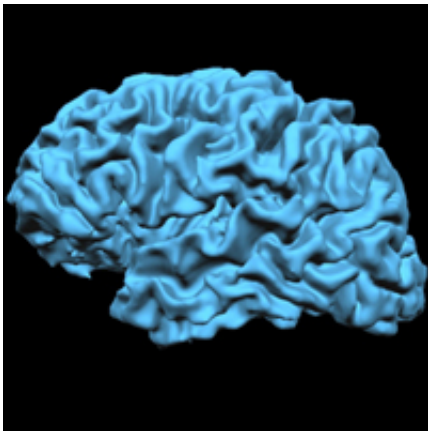


Study: Brain interactions differ between religious and non-religious subjects

January 20 2014, by Morgan Stashick



MRI brain scan

(Medical Xpress)—An Auburn University researcher teamed up with the National Institutes of Health to study how brain networks shape an individual's religious belief, finding that brain interactions were different between religious and non-religious subjects.

Gopikrishna Deshpande, an assistant professor in the Department of Electrical and Computer Engineering in Auburn's Samuel Ginn College of Engineering, and the NIH researchers recently published their results in the journal *Brain Connectivity*.

The group found differences in brain interactions that involved the theory of mind, or ToM, brain network, which underlies the ability to

relate between one's personal beliefs, intents and desires with those of others. Individuals with stronger ToM activity were found to be more religious. Deshpande says this supports the hypothesis that development of ToM abilities in humans during evolution may have given rise to religion in [human societies](#).

"Religious belief is a unique human attribute observed across different cultures in the world, even in those cultures which evolved independently, such as Mayans in Central America and aboriginals in Australia," said Deshpande, who is also a researcher at Auburn's Magnetic Resonance Imaging Research Center. "This has led scientists to speculate that there must be a biological basis for the evolution of religion in human societies."

Deshpande and the NIH scientists were following up a study reported in the *Proceedings of the National Academy of Sciences*, which used functional magnetic resonance imaging, or fMRI, to scan the brains of both self-declared religious and non-religious individuals as they contemplated three psychological dimensions of [religious beliefs](#).

The fMRI – which allows researchers to infer specific brain regions and networks that become active when a person performs a certain mental or physical task – showed that different brain networks were activated by the three psychological dimensions; however, the amount of activation was not different in religious as compared to non-religious subjects.

To address this anomaly, Deshpande and NIH researchers characterized the interactions between the different [brain networks](#) that were activated during the study.

More information: "Brain Networks Shaping Religious Belief." Kapogiannis D, Deshpande G, Krueger F, Thornburg MP, Grafman JH. *Brain Connect*. 2014 Jan 15. [DOI: 10.1089/brain.2013.0172](https://doi.org/10.1089/brain.2013.0172).

Provided by Auburn University

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