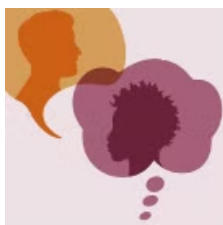


Belief and the brain's 'God spot'

Independent (<https://www.independent.co.uk/news/science/belief-and-the-brain-s-god-spot-1641022.html>)



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A belief in God is deeply embedded in the human brain, which is programmed for religious experiences, according to a study that analyses why religion is a universal human feature that has encompassed all cultures throughout history.

Scientists searching for the neural "God spot", which is supposed to control religious belief, believe that there is not just one but several areas of the brain that form the biological foundations of religious belief.

The researchers said their findings support the idea that the brain has evolved to be sensitive to any form of belief that improves the chances of survival, which could explain why a belief in God and the supernatural became so widespread in human evolutionary history.

"Religious belief and behaviour are a hallmark of human life, with no accepted animal equivalent, and found in all cultures," said Professor Jordan Grafman, from the US National Institute of Neurological Disorders and Stroke in Bethesda, near Washington. "Our results are unique in demonstrating that specific components of religious belief are mediated by well-known brain networks, and they support contemporary psychological theories that ground religious belief within evolutionary-adaptive cognitive functions."

Scientists are divided on whether religious belief has a biological basis. Some evolutionary theorists have suggested that Darwinian natural selection may have put a premium on individuals if they were able to use religious belief to survive hardships that may have overwhelmed those with no religious convictions. Others have suggested that religious belief is a side effect of a wider trait in the

human brain to search for coherent beliefs about the outside world. Religion and the belief in God, they argue, are just a manifestation of this intrinsic, biological phenomenon that makes the human brain so intelligent and adaptable.

The latest study, published in the journal Proceedings of the National Academy of Sciences, involved analysing the brains of volunteers, who had been asked to think about religious and moral problems and questions. For the analysis, the researchers used a functional magnetic-resonance imaging machine, which can identify the most energetically-active regions of the brain.

They found that people of different religious persuasions and beliefs, as well as atheists, all tended to use the same electrical circuits in the brain to solve a perceived moral conundrum – and the same circuits were used when religiously-inclined people dealt with issues related to God.

The study found that several areas of the brain are involved in religious belief, one within the frontal lobes of the cortex – which are unique to humans – and another in the more evolutionary-ancient regions deeper inside the brain, which humans share with apes and other primates, Professor Grafman said.

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"There is nothing unique about religious belief in these brain structures. Religion doesn't have a 'God spot' as such, instead it's embedded in a whole range of other belief systems in the brain that we use everyday," Professor Grafman said.

The search for the God spot has in the past led scientists to many different regions of the brain. An early contender was the brain's temporal lobe, a large section of the brain that sits over each ear, because temporal-lobe epileptics suffering seizures in these regions frequently report having intense religious experiences. One of the principal exponents of this idea was Vilayanur Ramachandran, from the University of California, San Diego, who asked several of his patients with temporal-lobe epilepsy to listen to a mixture of religious, sexual and neutral words while measuring their levels of arousal and emotional reactions. Religious words elicited an unusually high response in these patients.

This work was followed by a study where scientists tried to stimulate the temporal lobes with a rotating magnetic field produced by a "God helmet". Michael Persinger, from Laurentian University in Ontario, found that he could artificially create the experience of religious feelings – the helmet's wearer reports being in the presence of a spirit or having a profound feeling of cosmic bliss.

Dr Persinger said that about eight in every 10 volunteers report quasi-religious feelings when wearing his helmet. However, when Professor Richard Dawkins, an evolutionist and renowned atheist, wore it during the making of a BBC documentary, he famously failed to find God, saying that the helmet only affected his breathing and his limbs.

Other studies of people taking part in Buddhist meditation suggested the parietal lobes at the upper back region of the brain were involved in controlling religious belief, in particular the mystical elements that gave people a feeling of being on a higher plane during prayer.

Andrew Newberg, from the University of Pennsylvania, injected radioactive isotope into Buddhists at the point at which they achieved meditative nirvana. Using a special camera, he captured the distribution of the tracer in the brain, which led the researchers to identify the parietal lobes as playing a key role during this transcendental state.

Professor Grafman was more interested in how people coped with everyday moral and religious questions. He said that the latest study, published today, suggests the brain is inherently sensitive to believing in almost anything if there are grounds for doing so, but when there is a mystery about something, the same neural machinery is co-opted in the formulation of religious belief.

"When we have incomplete knowledge of the world around us, it offers us the opportunities to believe in God. When we don't have a scientific explanation for something, we tend to rely on supernatural explanations," said Professor Grafman, who believes in God. "Maybe obeying supernatural forces that we had no knowledge of made it easier for religious forms of belief to emerge."