

## **A "God-module" in the human brain?**

Scientists at UC San Diego reported last year that one part of the human brain is especially active during intense religious experiences.\*\*1 There are a variety of techniques to study which parts of our brains are specialized for different tasks. It is hardly considered news anymore when scientists locate specific brain regions that are especially active when we read words, or solve equations, or listen to music. Finding a "religion region" in the brain, however, caught the media's attention.

Experiments were performed on three patients suffering from a type of temporal lobe epilepsy in which seizures are often accompanied by intense mystical or religious experiences. Patients were sometimes preoccupied with mystical thoughts between seizures as well. The scientists found that increased activity in a particular brain circuit was associated with a heightened involuntary response to religious symbols and words.

It should not surprise us that our brains show specific activity during religious experiences. Christians do not (or should not) believe that our relationship to God occurs entirely within immaterial souls, of which our bodies are mere vessels. Our whole being -- soul and body, mind and brain --- should respond to God. Nor do our brains have a singular "God module" as the site of all religious activity. Our relationship to God is personal and complex, not limited to just one kind of experience. No doubt many parts of our brain participate in many kinds of religious experiences. The temporal lobe, for example, is known to be important for intense emotional experiences. We should expect it to participate in intense religious experiences. It is certainly intriguing that a particular sub-region is rather specialized, at least in these patients, for religious imagery.

This experiment did not prove that God exists and communicates with us. Neither did it prove that God doesn't exist, and that religious experiences are reducible to nothing but brain chemistry. The scientists themselves cautioned against any such sweeping conclusions. Our experience of sunlight causes electrical and chemical changes in our brains, but it does not follow that the sun is reducible to nothing but brain chemistry. The same is true of religious experiences. Questions of God's existence and human accountability have been debated for millennia. In the last centuries people have used and misused scientific results to argue for their beliefs. Such arguments will intensify as neuroscientists study the biological basis for our memory, decision-making, and self-awareness. Although neuroscience cannot answer those age-old questions, these sorts of experiments can and should prompt us to consider other potentially troubling questions.

These patients, due to a brain abnormality, had strengthened involuntary responses to religious words and symbols. What does that imply for all of us, and our responses to God? It may be true that much of our initial, emotional response to any situation, religious or otherwise, is strongly influenced by factors outside our conscious control. Our genes and childhood experiences have shaped our personalities. Fortunately, God's

gift of saving grace does not depend upon how our brain is wired. Our personalities do not merit saving grace; our actions do not earn it. We are commanded to live lives of faithful obedience, but our faith in God is not measured by the strength of our emotional responses; nor is our obedience to God determined solely by our personalities. The predispositions which are hard-wired into our brains may hinder or help us to live obediently. By God's grace, through a life of faith, those predispositions will increasingly conform to God's will.

During seizures, these patients had what they described as religious experiences. Was God really communicating during these seizures? Perhaps, but perhaps not. Do we, also, sometimes experience "neurological events" in which we incorrectly perceive God's personal communication? Perhaps we sometimes do. As Elijah the prophet learned before he heard the gentle whisper, God does not directly speak to us in every windstorm, earthquake, or fire --- appropriate as those events might seem (I Kings 19:11-13). God is in control of every event, but God does not always communicate personally in the way we expect. Discernment is an important part of biblical faith.

If religious experiences have a neurological basis, where does the soul fit into the picture? This question points to another age-old debate: Is human nature fundamentally dualist (immaterial soul animating a material body) or monist (all of one united nature)? Some ancient Greek

philosophers and some medieval scholars chose dualism, and hypothesized about which functions are performed by our immaterial souls. Modern neuroscience is finding that those same functions appear to be done by our brains, and so seems to favor monism. God's revelation does not clearly spell out which is the best picture of human nature. God's revelation does clearly teach that our continued existence, both in this life now and in life after death, depends upon God's constant sustaining grace. That is surely true no matter how we define the "soul" or imagine its relationship to the body. God's revelation also clearly teaches that our bodies and souls will continue after death. We will be resurrected into new forms. God's promise is certain, despite our limited understanding of how it might be accomplished.

Just as the psalmists praised the Creator for the wonders they saw in creation, Christian biologists (as well as astronomers and chemists) today praise the Creator for the wonders they discover. No doubt more wonders await discovery as we study our astonishingly complex brains. Not only will what we learn enable us to help people suffering from mental illness, but also what we discover might challenge some of our presuppositions about human nature and the means God uses to interact with us. These challenges are also a gift, if used the right way, which will prompt us to greater understanding and mature faith.

\*\*1 V.S. Ramachandran et. al., "Neural Basis of Religious Experience," 1997 Society for Neuroscience Conference Abstracts, p.1316.