Why God Won't Go Away

James B. Miller
Senior Program Associate
AAAS Program of Dialogue on Science, Ethics, and Religion

"Why God Won't Go Away: Brain Science and the Biology of Belief" was the provocative title of the February lecture in the series sponsored by the Program of Dialogue on Science, Ethics and Religion of the American Association for the Advancement of Science. Lecturer Andrew Newberg, M.D., from the Department of Radiology of the University of Pennsylvania Hospital, began his presentation by asking, "Why was God supposed to go away?" He noted that 200 years ago many in the intelligensia expected that religion would disappear with the advance of science. But, today religion and spirituality are experiencing resurgence. "Traditional religions -- such as Judaism, Christianity, Islam, Hinduism, and Buddhism -- are gaining strength and new age ideologies are also appearing."

Religion seems to be made of tenacious stuff but why is this so? As neuroscientists, Newberg and his colleague, the late Eugene D'Aquili, have been exploring the relationship between religious practices and experiences and the structure and functions of the brain. Newberg began by describing general brain structure and function. He stressed that we need to think of the brain as an integrated whole. None of the brain structures functions totally autonomously. They are all interconnected in many ways and work together to give us our general view of the world.

In addition to the brain structures there is also the autonomic nervous system that ties the brain into the rest of the body. It has two arms: the sympathetic, which functions in states of arousal; and the parasympathetic, which allows us to relax to rejuvenate our energy stores. The complex interaction or mutual activation of both of these systems may be part of the physiological substrate to some of the mystical experiences that people describe as involving both a profoundly quiescent sense of oceanic bliss and at the same time a strong sense of awareness, alertness of even hyperarousal.

Newberg suggested that we can summarize the functions of all of these structures with two ideas about what the brain does for us: it helps us survive in the world; and it helps us transcendence ourselves. "By self-transcendence I am not necessarily referring to transcendent experiences or mystical experiences but more generally to the capacity of the brain to adapt, evolve and change over time," he said. "Even though we are the same person we were five or ten years ago, we have learned new things and have acquired new behaviors; we have transcended ourselves from one stage of life to the next."

With this background Newberg reported on SPECT (single photon emission computed tomography) brain imaging studies of meditating Tibetan monks and Franciscan nuns at prayer. The studies of the two groups showed interesting similarities. Both groups reported a movement from concentration on an object or a prayer to a state in which neither the self nor the object/prayer exist, in which there is a profound sense of unity that is timeless and spaceless. This state Newberg identified as "absolute unitary being." For both groups the movement from a waking state to this deep meditational state was correlated with an increase in brain activity in the frontal lobes (the attention area) and a decease in activity in the parietal lobe (the orientation

area). In light of these studies Newberg proposed that there is a unitary continuum of spiritual experience from mild (e.g., the aesthetic experience of nature) to very powerful (e.g., "absolute unitary being") and that this continuum correlates with a continuum of changes in functional brain activity.

In concluding his presentation, Newberg addressed the issue of reductionism. Is the finding of this research that religious experience is nothing more than brain function? He noted that this is not really a question of neuroscience but of philosophy and especially epistemology. "We are constantly processing millions and millions of bits of information, different sights and sounds and smells, and our brain puts all of that together to give us a clear, vivid and coherent rendition of what our world is like." But the brain also enables us to develop "stories that have a deep-seated meaning and a great deal of authority that help us understand and order our world." Some of these stories are scientific and others are religious. There is no scientific way, Newberg asserted, to determine the what is "really real" in relation to these stories. He affirmed that both scientific and religious stories are important to human life. The challenge, he concluded, is to understand how these stories are related. Given the correlation between brain function and religious or spiritual experience, he also concluded, that "religion will be around for a very long time."

Ilia Delio, Ph.D., a member of the faculty of the Washington Theological Union, with graduate degrees in both pharmacology and church history, offered a commentary on the work of Newberg and D'Aquili. She began by noting that the research is pioneering and "raises neuroscience to a new level by focusing on the area of religious experience." She raised four questions: is it appropriate to make philosophical/theological judgments based on empirical observations; what is unique about human transcendence; do such neurological studies imply a kind of "metatheology"; is it possible to "measure the mystical?"

Delio suggested that in Newberg's work there seems to be a conceptual leap from observations of brain function to an affirmation that the source of these observations is the experience of "absolute unitary being" or God. This is not a scientific conclusion but rather a faith declaration that leaps beyond the observations as such. It is one thing to say that the brain is a means by which humans can experience God. It is another thing to identify any particular neurological process as the experience of God. What justification is there of identifying the reported experience of "absolute unitary being" with God? Delio cautioned that too quick an identification can lead to what she called "the fallacy of misplaced contingency" whereby the reality of God depends on ones experience of God.

Second, Delio proposed that human transcendence needs to be considered more fundamentally in terms of the evolutionary history of humanity and the universe as a whole. Self-transcendence can be seen as a general feature of an evolving universe that is understood theologically as "matter becoming spirit." She noted that in the Christian tradition this view can be found in the writings of Irenaeus of Lyon (2nd century), Bonaventure (13th century), and, most especially, Teilhard de Chardin (20th century).

On the matter of "megatheology" Delio noted that this proposal derives from the idea that we all have the same structures in our brain that are involved in religious experience. She cautioned

that, while there does seem to be a universal human tendency toward religion, religious differences should not be reduced simply to differences in culture. These differences she proposed are deeper that cultural variation and need to be taken into account even as the commonality of human neurological structures and forms of religious experience are also recognized.

Finally, with respect to the "measurement of the mystical," Delio found it "ironic that science wants to explain the mechanisms of mystical or religious experience." She noted that the word "mystical" means "hidden." She asked, "When religion and science intersect can scientists truly embrace the mystical? Can science allow mystery to be hidden and unexplainable?" Newberg and colleagues, she concluded, have "opted to pursue the mystery of the reality of God as integrally bound to the human brain …But God is more than the circuits and pathways of the brain … the mystery of God is incomprehensible and inexhaustible … only when one leaps between … what can be known by reason and what can be known by faith does one approach the mystery of God."