

Andrew Newberg, *The Spiritual Brain: Science and Religious Experience*, Chantilly, The Great Courses, 2012, pp. 448. ISBN 159803886-9 (Paperback & DVDs). £54.99.

Dr. Andrew Newberg is Director of Research at the Myrna Brind Centre of Integrative Medicine at Thomas Jefferson Hospital. He has performed numerous studies investigating the brain physiology of religious experiences using neuroimaging technologies. His papers have been published in peer-reviewed journals, including *Zygon: Journal of Religion and Science*. He has also authored and co-authored a number of books on neuroscience and spiritual experience, including *The Mystical Mind: probing the biology of religious experience* with Eugene d'Aquili, *Why God Won't Go Away* with Vince Rause, *Born To Believe*, and *Principles of Neurotheology*.

The Great Courses are a series of lectures on DVD or CD on many different topics by experts in their particular fields. The U.K. website can be found at www.thegreatcourses.co.uk. This particular course consists of 24 half-hour lectures on DVD accompanied by a course book that provides an overview of the main points, questions to consider, and suggested reading for each lecture. You can also purchase the lecture transcript book, which I would recommend as it makes the lectures easier to digest and refer back to. You may be relieved to know that there is no exam or test at the end of the course! The Great Courses website often puts selected courses on offer, so it may be possible to get hold of a copy more cheaply if you are patient.

Neurotheology is the name given to the study of brain physiology as it relates to spiritual or religious experiences. Almost immediately Newberg demonstrates a similar view of religious experience to that of Sir Alister Hardy, 'Humans exhibit a persistent tendency to believe in things like God, the afterlife, and the soul. Maybe there's something in the way our brains are put together – the way we're wired – that makes us believe.' During the course of the lectures Newberg tells us about some of his own neuroimaging studies, using nMRI, PET, and SPECT technologies. Amongst other studies he has taken brain scans of Franciscan nuns during prayer, Buddhists whilst meditating, people speaking in tongues, atheists thinking about God, and people's perceptions of religious symbols. He has also undertaken an online survey of spiritual experiences that was completed by around 2000 people in the U.S. Newberg also draws together the work of other scientists studying spiritual experience and reviews studies on the 'God gene', Transcendental Meditation, yoga, heart disease, mortality, schizophrenia, psychedelics, altruism, empathy, and NDEs.

So what does Newberg conclude from all of these studies about the neuroscience of spiritual experience? Studies such as these run the risk of becoming a two-edged sword; they can help us understand spiritual experience *from the perspective* of brain science, but they could also be used to reduce spiritual experience *to* brain science. Interestingly, Newberg emphasises a feature of mystical experiences that, for him at least, suggests that *correlation* of brain states with spiritual experiences does not mean *causation* of those experiences by the brain. This is the observation that mystics, and often NDErs, frequently state that their experience felt *more real* than normal consciousness, not only during the experience, but on returning to normal consciousness again afterwards. Newberg argues that ultimately there is no way for us to determine what is real other than the subjective, first-person, felt-sense of reality.

Such experiences, therefore, point to a state of being that is somehow more real than our normal, everyday consciousness.

The delivery of the lectures (on the DVD) is fairly low key with Dr. Newberg simply standing in a studio in a pretend office talking to camera. Some visuals break this potentially monotonous view to illustrate what he is explaining, however they are not the over-the-top special effects used by most modern documentaries. The experience is more realistically lecture-like and sustained concentration is required. However, the science is delivered at a level that can be understood by viewers who have not had a scientific training themselves. Those who are more familiar with the scientific ideas Newberg refers to may find themselves wanting more depth. One slightly frustrating aspect of the transcript book is the lack of proper referencing, although many of the sources are cited in the bibliography at the back.

I found this course, both the DVDs and the accompanying transcript book, to be very interesting and worthwhile. They cover a lot of ground and provide an excellent overview of scientific enquiry into religious and spiritual experience. Newberg's work is also an excellent example of how science can be sensitively applied to spirituality without invoking the polarised positions that are often seen amongst both militant materialists and staunch believers. Newberg's website can be found at www.andrewnewberg.com

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