

Google 'neurotheology' neurospirituality

<http://en.wikipedia.org/wiki/Neurotheology>

Neurotheology, also known as spiritual neuroscience,[1] attempts to explain religious experience and behaviour in neuroscientific terms.[2] It is the study of correlations of neural phenomena with subjective experiences of spirituality and hypotheses to explain these phenomena.

Proponents of neurotheology say there is a neurological and evolutionary basis for subjective experiences traditionally categorized as spiritual or religious.[3] The field has formed the basis of several popular science books[4][5][6] and has been the subject of criticism in the scientific press.

Experimental work

During the 1980s Michael Persinger stimulated the temporal lobes of human subjects with a weak magnetic field using an apparatus that popularly became known as the "God helmet"[11] and reported that many of his subjects claimed to experience a "sensed presence" during stimulation[12]. This work has been criticised[2] and has, to date, not been replicated by other researchers.[13][14]

Granqvist et al. claimed that Persinger's work was not "double-blind." Participants were often graduate students who knew what sort of results to expect, and there was the risk that the experimenters' expectations would be transmitted to subjects by unconscious cues. The participants were frequently given an idea of the purpose of the study by being asked to fill in questionnaires designed to test their suggestibility to paranormal experiences before the trials were conducted. Granqvist et al. failed to replicate Persinger's experiments double-blinded, and concluded that the presence or absence of the magnetic field had no relationship with any religious or spiritual experience reported by the participants, but was predicted entirely by their suggestibility and personality traits. Following the publication of this study, Persinger et al. dispute this.[15][16] One published attempt to create a "haunted room" using environmental "complex" electromagnetic fields based on Persinger's theoretical and experimental work did not produce the sensation of a "sensed presence" and found that reports of unusual experiences were uncorrelated with the presence or absence of these fields. As in the study by Granqvist et al., reports of unusual experiences were instead predicted by the personality characteristics and suggestibility of participants.[17] Experimental attempts to replicate effects claimed to occur with use of commercial versions of the God helmet have found no difference whether the device was on or off.

Neuropsychology and Neuroimaging

The first researcher to note and catalog the abnormal experiences associated with temporal lobe epilepsy (TLE) was neurologist Norman Geschwind, who noted a set of religious behavioral traits associated with TLE seizures.[20] These include hypergraphia, hyperreligiosity, reduced sexual interest, fainting spells, and pedantism, often collectively ascribed to a condition known as Geschwind syndrome.

Vilayanur S. Ramachandran explored the neural basis of the hyperreligiosity seen in TLE using the galvanic skin response (GSR), which correlates with emotional arousal, to determine whether the hyperreligiosity seen in TLE was due to an overall heightened emotional state or was specific to religious stimuli. By presenting subjects with neutral, sexually arousing and religious words while measuring GSR,

Ramachandran was able to show that patients with TLE showed enhanced emotional responses to the religious words, diminished responses to the sexually charged words, and normal responses to the neutral words. These results suggest that the medial temporal lobe is specifically involved in generating some of the emotional reactions associated with religious words, images and symbols.[21]

Some studies have used neuroimaging to localize brain regions that are active, or differentially active, during experiences that subjects associate with "spiritual" feelings or images consistent with McKinney's thesis that feelings associated with religious experience are normal aspects of brain function under extreme circumstances rather than communication from God.[22][improper synthesis?]

Research by Mario Beauregard at the University of Montreal, using fMRI imaging of Carmelite nuns, has purported to show that religious and spiritual experiences include several brain regions and not a single 'God spot'. As Beauregard has said, "There is no God spot in the brain. Spiritual experiences are complex, like intense experiences with other human beings." [23] The neuroimaging was conducted when the nuns were asked to recall past mystical states and not while actually experiencing mystical states; "subjects were asked to remember and relive (eyes closed) the most intense mystical experience ever felt in their lives as a member of the Carmelite Order." [24] A 2011 study by researchers at the Duke University Medical Center found hippocampal atrophy is associated with older adults who report life-changing religious experiences, as well as those who are "born-again Protestants, Catholics, and those with no religious affiliation".[25]

Criticism

An attempt to marry a materialistic approach like neuroscience to spirituality attracts much criticism. Some of the criticism is philosophical, dealing with the potential irreconcilability between science and spirituality, while some is more methodological, dealing with the issues of studying an experience as subjective as spirituality.

Philosophical criticism

Critics of this approach, like philosopher Ken Wilber and religious scholar Huston Smith, see the more materialistic formulations of the approach as examples of reductionism and scientism that are only looking at the empirical aspects of the phenomena, and not including the possible validity of spiritual experience with all of its subjectivity

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http://www.innerworlds.50megs.com/The_God_Helmet_Debate.htm

Persinger offers rebuttal here:

Debate concerning the God Helmet.: A flawed attempt at replicating Dr. M.A. Persinger's God Helmet (also called the Koren Helmet) experiments yielded little or no results.

By Todd Murphy & Dr. Michael A. Persinger, 2011

http://www.innerworlds.50megs.com/The_God_Helmet_Debate.htm