



RESEARCH REVIEW

A DIGEST OF NEW SCIENTIFIC RESEARCH
CONCERNING RELIGION, BRAIN & BEHAVIOR

DECEMBER, 2009

INTRODUCTION

IBCSR Research Review (IRR) is published by the Institute for the Biocultural Study of Religion, a non-profit research institute dedicated to the scientific study of the biocultural aspects of religion. *IRR* briefly annotates and furnishes online information about scientific research articles related to brain, behavior, culture, and religion published in leading journals. It also lists relevant books. Articles in press are listed without annotation. Annotations for articles aim to supply a preliminary understanding of the methods and results of a research study, or the argument of a paper. Annotations typically furnish more detail for articles in the scientific study of religion related to religion, brain, and behavior, than for articles in the area of spirituality and health, in accordance with IBCSR research priorities.

Articles for this issue were located by searching the following databases: Applied Science and Technology, ASFA Biological Sciences, ATLA Religion Database, General Science, PubMed, Psychology and Behavioral Sciences Collection, PsycARTICLES, PsycINFO, ScienceDirect, and Web of Science. The search terms were altruism, cooperation, evolution, meditat*, prayer, Qi Gong, relig*, psych*, science, spiritu*, and yoga, tailored to the database being searched. Books were located on Amazon.com and Worldcat. Articles not directly relevant to the scientific study of religion were excluded, as was correspondence. From a universe of 820 articles, 104 articles have been retained from 60 journals. There are 51 pre-publication citations from 34 journals.

IRR is distributed free via email to those who register at <http://www.ibcsr.org>. The publisher is Wesley J. Wildman and the editor is Joel Daniels, a doctoral student in Religion and Science at Boston University. Please send comments and suggestions to info@ibcsr.org. To unsubscribe, send an email to irr@ibcsr.org with "unsubscribe" in the subject line.

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PART 1: ARTICLES IN RELIGION, BRAIN, AND BEHAVIOR

1.1 SCIENTIFIC STUDY OF RELIGION: COGNITIVE NEUROSCIENCE

- Butler, Paul M., Patrick McNamara & Raymon Durso. 2009. Deficits in the automatic activation of religious concepts in patients with Parkinson's disease. *Journal of the International Neuropsychological Society: JINS*. 1-10.
doi:[10.1017/S1355617709991202](https://doi.org/10.1017/S1355617709991202).

To probe processing dynamics of religious cognition and its potential brain correlates, researchers used a novel priming procedure to assess the integrity of religious and control semantic networks in 25 patients with Parkinson's disease (PD) and 25 controls. Priming for control concepts, but not religious concepts, was intact in PD patients. Patients with left-onset (right-forebrain disease) evidenced severe impairment activating religious concepts. Researchers then modeled the priming performance with modified cable equations. These analyses suggested that deficient performance of PD patients on activation of religious concepts was due to a change in the time constants governing gain and rate of decay of activation in these semantic networks. These modeling results are consistent with dopaminergic dysfunction in right-sided striatal-prefrontal networks. The authors conclude that right striatal-prefrontal dopaminergic networks support activation of complex religious concepts but not equally complex and related control concepts.

- Ge, Jianqiao, Xiaosi Gu, Meng Ji & Shihui Han. 2009. Neurocognitive processes of the religious leader in Christians. *Human Brain Mapping* 30(12). 4012-4024.
doi:[10.1002/hbm.20825](https://doi.org/10.1002/hbm.20825).

Through two experiments, this study tested the hypothesis that Christian belief and practice result in the production of a trait summary about Jesus in believers, and thus that episodic memory retrieval is involved when making trait judgments about Jesus. Experiment 1, performed on 16 self-identified non-religious adults and 16 self-identified Christian adults, showed that recalling a specific incident that exemplified Jesus' trait facilitated behavioral performances associated with the following trait judgment of Jesus in nonreligious subjects, but not in Christians. Experiment 2, performed on 14 self-identified non-religious adults and 14 self-identified Christian adults, showed that, for nonreligious subjects, trait judgments of both government and religious leaders resulted in enhanced functional connectivity between medial prefrontal cortex (MPFC) and posterior parietal cortex (PPC)/precuneus, compared with self-judgment. For Christian subjects, however, the functional connectivity between MPFC and PPC/precuneus differentiated between trait judgments of a government leader and self, but not between trait judgments of Jesus and the self. The authors conclude that Christian belief and practice modulate the neurocognitive processes of thinking about Jesus, so that trait judgment of Jesus results in increased employment of semantic trait summary, but decreased memory retrieval of behavioral episodes.

- Halsband, Ulrike, Susanne Mueller, Thilo Hinterberger & Simon Strickner. 2009. Plasticity changes in the brain in hypnosis and meditation. *Contemporary Hypnosis* 26(4). 194-215.
doi:[10.1002/ch.386](https://doi.org/10.1002/ch.386).

In a study of 1 highly-suggestible subject, researchers analyzed shared and non-shared neural substrates during hypnosis and meditation, using EEG, PET, and fMRI. The most pronounced EEG changes were in deep, as compared to light, hypnosis (step-by-step induction), and in arm levitation where suggested movement was perceived as external. In a within-subject-design, changes in brain activity during hypnosis and Tibetan Buddhist meditation were compared. High amplitudes in alpha frequency bands were most pronounced with meditation at frontal positions and with hypnosis in central and temporal locations. Significantly greater activity in theta 2 band was observed only with hypnosis in both hemispheres. PET cerebral activation patterns of imagery-mediated learning were analyzed in hypnosis in a within-subject-design. Compared with baseline, the learning of high-

imagery words was associated with (i) more pronounced bilateral activation in the occipital cortex and prefrontal areas, and (ii) improved memory performance. Visual illusion in hypnosis was studied with fMRI, then analysed with Granger Causality Mapping, and showed changes in the effective connectivity relations of fusiform gyrus, anterior cingulate cortex and intraparietal sulcus.

- Khalsa, Dharma Singh, Daniel Amen, Chris Hanks, Nisha Money & Andrew Newberg. 2009. Cerebral blood flow changes during chanting meditation. *Nuclear Medicine Communications* 30(12). 956-961.
doi:[10.1097/MNM.0b013e32832fa26c](https://doi.org/10.1097/MNM.0b013e32832fa26c).

In this study, single-photon emission computed tomography scans were acquired in 11 healthy individuals during either a resting state or chanting meditation practice randomly performed on two separate days. Statistical parametric mapping analyses were conducted to identify significant changes in regional cerebral blood flow (rCBF) between the two conditions. When the meditation state was compared with the baseline condition, significant rCBF increases were observed in the right temporal lobe and posterior cingulate gyrus, and significant rCBF decreases were observed in the left parietotemporal and occipital gyri. Researchers conclude that these results offer evidence that this form of meditation practice is associated with changes in brain function in a way that is consistent with earlier studies of related types of meditation, as well as with the positive clinical outcomes anecdotally reported by its users.

- McGeown, William J., Giuliana Mazzoni, Annalena Venneri & Irving Kirsch. 2009. Hypnotic induction decreases anterior default mode activity. *Consciousness and Cognition* 18(4). 848-855.
doi:[10.1016/j.concog.2009.09.001](https://doi.org/10.1016/j.concog.2009.09.001).

Researchers assessed brain activation patterns of people with high and low suggestibility while resting in the fMRI scanner, and while engaged in visual tasks, in and out of hypnosis. High suggestible participants (N = 10) in hypnosis showed decreased brain activity in the anterior parts of the default mode circuit. In low suggestible people (N = 7), hypnotic induction produced no detectable changes in these regions, but instead deactivated areas involved in alertness. Researchers conclude that hypnotic induction creates a distinctive and unique pattern of brain activation in highly suggestible subjects and reduces anterior default mode activity during rest without increasing activity in other cortical regions.

- Vialatte, François B, Hovagim Bakardjian, Rajkishore Prasad & Andrzej Cichocki. 2009. EEG paroxysmal gamma waves during Bhramari Pranayama: a yoga breathing technique. *Consciousness and Cognition* 18(4). 977-988.
doi:[10.1016/j.concog.2008.01.004](https://doi.org/10.1016/j.concog.2008.01.004).

Paroxysmal gamma waves (PGW) were observed in 8 subjects practicing a yoga technique of breathing control called Bhramari Pranayama; 1 subject had no experience, 6 had 1 month's experience, 1 had 4 months' experience. Researchers analyzed EEG signals using time-frequency representations (TFR), independent component analysis, and EEG tomography (LORETA). They found that the PGW consisted of high-frequency biphasic ripples. No difference was found relative to length of experience. The authors discuss this activity in relation to previous reports on yoga and meditation, and conclude that this EEG activity is most probably non-epileptic, and that applying the same methodology to other meditation recordings might yield an improved understanding of the neurocorrelates of meditation.

1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION

- Burdette, Amy M., Victor Wang, Glen H. Elder, Terrence D. Hill & Janel Benson. 2009. Serving God and Country? Religious Involvement and Military Service Among Young Adult Men. *Journal for the Scientific Study of Religion* 48(4). 794-804.

doi:[10.1111/j.1468-5906.2009.01481.x](https://doi.org/10.1111/j.1468-5906.2009.01481.x).

Using data from the National Longitudinal Study of Adolescent Health, researchers used a person-oriented analysis to categorize young men according to patterns of adolescent religious involvement. They found that youth indentified as “highly religious evangelical” are more likely to enlist in the military compared to their “highly religious nonevangelical” and “nonreligious” counterparts; however, these findings hold only for those young men without college experience.

Chaouachi, Anis, John B Leiper, Nizar Souissi, Aaron J Coutts & Karim Chamari. 2009. Effects of ramadan intermittent fasting on sports performance and training: a review. *International Journal of Sports Physiology and Performance* 4(4). 419-434.

The authors review research on the effects of Ramadan fasting on Islamic athletes, and find that few aspects of physical fitness are negatively affected and only modest decrements are observed. Though subjective feelings of fatigue and other mood indicators are often cited as implying additional stress on the athlete throughout Ramadan, these measures may not be reflected in decreases in performance. The authors conclude that the development and early implementation of sensible eating and sleeping strategies can greatly alleviate the disruptions to training and competitiveness, thus allowing the athlete to perform at a high level while undertaking the religious intermittent fast.

Cohen, Dov & Angela K.-Y. Leung. 2009. The hard embodiment of culture. *European Journal of Social Psychology* 39(7). 1278-1289.

doi:[10.1002/ejsp.671](https://doi.org/10.1002/ejsp.671).

Using 3 previously-published experiments as illustrations, researchers show how moral systems become embodied. In pre-wired embodiments, body comportment triggers basic, evolutionarily prepared affective and cognitive reactions that subsequently prime more complex representations. Culture suffuses this process, because (1) cultural artifacts, affordances, and practices make certain body comportments more likely, (2) cultural practices, rituals, schemas, and rules promote the learning of an otherwise underspecified connection between a given body comportment and a particular basic reaction, and (3) cultural meaning systems elaborate basic affective and cognitive reactions into more complex representations. The authors also discuss totem embodiments, in which cultural practices and rituals establish connections between body comportment and complex cultural representations, without the aid of any evolutionarily prepared connection to basic affective and cognitive states.

Iani, Cristina, Federico Ricci, Giulia Baroni & Sandro Rubichi. 2009. Attention control and susceptibility to hypnosis. *Consciousness and Cognition* 18(4). 856-863.

doi:[10.1016/j.concog.2009.07.002](https://doi.org/10.1016/j.concog.2009.07.002).

Researchers tested high- (N = 14) and low-susceptible (N = 14) participants using a Simon-like interference task after the administration of a suggestion aimed at preventing the processing of the irrelevant spatial information conveyed by the stimuli. The suggestion was administered either in the absence or following a standard hypnotic induction. The authors found that, outside of the hypnotic context, the Simon effect was similar in high and low-susceptible participants and it was significantly reduced following the posthypnotic suggestion in high-susceptible participants only. The authors conclude that a specific posthypnotic suggestion can alter information processing in high-susceptible individuals and reduce the interfering effect exerted by arrow stimuli.

Lima, F.W.S., Tarik Hadzibeganovic & Dietrich Stauffer. 2009. Evolution of ethnocentrism on undirected and directed Barabási-Albert networks. *Physica A: Statistical Mechanics and its Applications* 388(24). 4999-5004.

doi:[10.1016/j.physa.2009.08.029](https://doi.org/10.1016/j.physa.2009.08.029).

The authors studied the evolution of contingent cooperation and ethnocentrism in the one-shot game using Monte Carlo simulations. Interactions and reproduction among computational agents were simulated on undirected and

directed Barabási-Albert (BA) networks. After replicating the Hammond-Axelrod model of in-group favoritism on a square lattice and then generalizing this model on undirected and directed BA networks for both asexual and sexual reproduction cases, simulations demonstrated that irrespective of the mode of reproduction, the ethnocentric strategy becomes common even though cooperation is individually costly and mechanisms such as reciprocity or conformity are absent. The authors conclude that the spread of favoritism towards similar others highly depends on the network topology and the associated heterogeneity of the studied population.

- Nedelcu, Aurora M. 2009. Environmentally induced responses co-opted for reproductive altruism. *Biology Letters* 5(6). 805-808.
doi:[10.1098/rsbl.2009.0334](https://doi.org/10.1098/rsbl.2009.0334).

*Researchers report that the gene responsible for the permanent suppression of reproduction in the somatic cells of the multicellular green alga, *Volvox carteri*, evolved from a gene that in its unicellular relative, *Chlamydomonas reinhardtii*, is part of the general acclimation response to various environmental stress factors, which includes the temporary suppression of reproduction, a central factor in the evolution of multicellularity and eusociality. The author proposes a model for the evolution of soma, in which, by simulating the acclimation signal (i.e., a change in cellular redox status) in a developmental rather than environmental context, responses beneficial to a unicellular individual can be co-opted into an altruistic behavior at the group level. The co-option of environmentally induced responses for reproductive altruism can contribute to the stability of this behavior, as the loss of such responses would be costly for the individual. This hypothesis also predicts that temporally varying environments, which will select for more efficient acclimation responses, are likely to be more conducive to the evolution of reproductive altruism.*

- Pienkowski, Dariusz. 2009. Selfishness, cooperation, the evolutionary point of view and its implications for economics. *Ecological Economics* 69(2). 335-344.
doi:[10.1016/j.ecolecon.2007.10.003](https://doi.org/10.1016/j.ecolecon.2007.10.003).

The author holds that the social evolution of human beings away from selfishness (where someone has to lose) and towards cooperation has been advantageous to the human species, and that, from the social point of view, pro-social behavior is “natural” as well as desirable, and it has been preferred by the cultural evolution. While the assumption of macroeconomic theory, that market actors are intrinsically selfish in economic matters, results in the market mechanism as the most effective from the social well-being or the wealth of a nation points of view, the same assumption applied on a microeconomic level is a conclusion about the nature of the human being.

- Smith, Robert Rowland. 2009. Beware humans bearing gifts. *The New Scientist* 204(2739). 34-35.
doi:[10.1016/S0262-4079\(09\)63320-0](https://doi.org/10.1016/S0262-4079(09)63320-0).

The author points out that assumptions about the generosity of gift-giving, and the pleasure of receiving gifts, ignore important mitigating psychological factors, including the power imbalance that results – the source of Nietzsche’s recommendation to “avenge the gift.”

- St-Pierre, Angèle, Karine Larose & Frédérique Dubois. 2009. Long-term social bonds promote cooperation in the iterated Prisoner’s Dilemma. *Proceedings of the Royal Society: Biological Sciences* 276(1676). 4223-4228.
doi:[10.1098/rspb.2009.1156](https://doi.org/10.1098/rspb.2009.1156).

*To assess the hypothesis that human actors don’t cooperate in controlled experiments because they behave as if they were to play only once, researchers conducted an experiment with monogamous zebra finches (*Taeniopygia guttata*) that were tested in a two-choice apparatus: with either their social partner, or with an experimental opponent of the opposite sex. They found that zebra finches maintained high levels of cooperation in an iterated Prisoner’s Dilemma game only when interacting with their social partner. Researchers conclude that animals do not*

systematically give in to the short-term temptation of cheating when long-term benefits exist, and that the commonly accepted idea that reciprocal altruism will be rare in non-human animals is false.

Weingarten, Carol Popp & James S. Chisholm. 2009. Attachment and Cooperation in Religious Groups: An Example of a Mechanism for Cultural Group Selection. *Current Anthropology* 50(6). 759-785.

doi:[10.1086/605767](https://doi.org/10.1086/605767).

Utilizing John Bowlby's description of how a relationship with a group leader, which is rooted in early attachments between mother and infant, can motivate an individual to cooperate for the benefit of the group, the authors apply these insights to studies of attachment relationships with a deity, and the application of multilevel and group selection to cooperation in religious groups. They find that these show how attachment to a deity could be a mechanism for intragroup cooperation, including the within-group cooperation required for group selection. It links the attachment system, a pillar of human relationships and personality, to cooperation in groups. The authors also consider how the attachment system could be a basis for intragroup cooperation generally and compare this possibility to two other theories about human social cooperation, the "tribal social instincts" hypothesis and the evolution of "shared intentionality." With brief responses by J. Bering, J. Bulbulia and F. Krueger, B. King, L. Kirkpatrick, R. Sosis and J. Shaver, and M. Winkelman.

1.3 SCIENTIFIC STUDY OF RELIGION: GENERAL PSYCHOLOGY

Achterberg, Peter, Dick Houtman, Stef Aupers, Willem de Koster, Peter Mascini & Jeroen van der Waal. 2009. A Christian Cancellation of the Secularist Truce? Waning Christian Religiosity and Waning Religious Privatization in the West. *Journal for the Scientific Study of Religion* 48(4). 687-701.

doi:[10.1111/j.1468-5906.2009.01473.x](https://doi.org/10.1111/j.1468-5906.2009.01473.x).

Analysis of International Social Survey Program data collected in 18 Western countries in 1998 demonstrates that Christian desires for a public role of religion are strongest in countries where Christian religiosity is numerically most marginal. Moreover, Dutch data covering the period 1970-1996 confirm that the decline of the number of Christians in the Netherlands has coincided with a strengthening of the call for public religion among the remaining faithful and by increased polarization about this with the nonreligious. Religious decline and religious privatization, two of the most crucial dimensions of secularization, hence develop dialectically: as the number of Christians declines, the remaining faithful seem increasingly unwilling to accept the "secularist truce" - the secularist contract that guarantees religious freedom yet bans religion from the public sphere by relegating it to the private realm.

Baker, Joseph O'Brian & Buster Smith. 2009. None Too Simple: Examining Issues of Religious Nonbelief and Nonbelonging in the United States. *Journal for the Scientific Study of Religion* 48(4). 719-733.

doi:[10.1111/j.1468-5906.2009.01475.x](https://doi.org/10.1111/j.1468-5906.2009.01475.x).

The authors distinguish three categories of people who are religiously nonbelieving or nonbelonging: atheists, agnostics, and unchurched believers. Examining issues of religious belief and identity, they compare private spiritual life, attitudes on political issues, and stance toward religion in the public sphere for these three categories of nonreligious respondents. Atheists are the most uniformly antireligious. Agnostics, by comparison, are less opposed to religion overall, while unchurched believers display higher levels of personal religiosity and spirituality than atheists or agnostics. While atheists, agnostics, and unchurched believers are similar in their political identification and attitudes related to religiously infused political topics, unchurched believers are as strongly opposed to religion in the public sphere as atheists.

Chaves, Mark & Diana Garland. 2009. The Prevalence of Clergy Sexual Advances Toward Adults in Their Congregations. *Journal for the Scientific Study of Religion* 48(4). 817-824.
doi:[10.1111/j.1468-5906.2009.01482.x](https://doi.org/10.1111/j.1468-5906.2009.01482.x).

Using the 2008 General Social Survey, researchers found that 3.1 percent of women who attend religious services at least monthly reported being the object of a sexual advance by a clergy person or religious leader in their own congregation since turning 18; 2.2 percent of regularly attending women reported a sexual advance from a married leader that did not lead to an openly acknowledged relationship.

Dienes, Zoltán, Elizabeth Brown, Sam Hutton, Irving Kirsch, Giuliana Mazzoni & Daniel B. Wright. 2009. Hypnotic suggestibility, cognitive inhibition, and dissociation. *Consciousness and Cognition* 18(4). 837-847.
doi:[10.1016/j.concog.2009.07.009](https://doi.org/10.1016/j.concog.2009.07.009).

In this study, participants were administered the Waterloo-Stanford Group Scale of Hypnotic Susceptibility, Form C. Under the guise of an unrelated study, 180 of these participants also completed: a version of the Dissociative Experiences Scale that is normally distributed in non-clinical populations; a latent inhibition task; a spatial negative priming task; and a memory task designed to measure negative priming. Researchers failed to find even moderate correlations between hypnotic suggestibility and all the measures of dissociation and cognitive inhibition overall, though they also indicated gender differences.

Halkitis, Perry N., Jacqueline S. Mattis, Joel K. Sahadath, Dana Massie, Lina Ladyzhenskaya, Kimberly Pitrelli, Meredith Bonacci & Sheri-Ann E. Cowie. 2009. The Meanings and Manifestations of Religion and Spirituality among Lesbian, Gay, Bisexual, and Transgender Adults. *Journal of Adult Development* 16(4). 250-262.
doi:[10.1007/s10804-009-9071-1](https://doi.org/10.1007/s10804-009-9071-1).

From a cross-sectional survey consisting of open- and close-ended items among 498 LGBT (lesbian, gay, bisexual, transgender) identified individuals attending an annual Pride event in a large northeastern city, quantitative and qualitative findings suggested that spirituality was defined largely in relational terms (e.g., in terms of one's relationship with God and with self). Religion, in contrast, was defined largely in terms of communal worship and in terms of its negative influences in the lives of individuals and communities. For this sample, spiritual identities were more pronounced than religious ones, and this pattern may be explained by their understanding of the spiritual self in relation to prosocial engagement and interconnectedness with others, the world around them, and the universe. Further, religious affiliation and practices were explained, in part, by the religion in which the individual was raised, level of educational attainment, as well as the developmental stage in which the person is currently situated. The authors conclude that the commitment to religious and spiritual life by LGBT individuals may be related to a motivation to make sense of one's place in the world especially in light of societal misunderstandings and intolerance to LGBT individuals.

Healy, John Paul. 2009. Spiritual Experience and Seeking: A New Religious Movement Case Study. *Religion Compass* 3(6). 1015-1025.
doi:[10.1111/j.1749-8171.2009.00186.x](https://doi.org/10.1111/j.1749-8171.2009.00186.x).

The author investigated participants' spiritual experiences prior to their affiliation with Siddha Yoga. Results show that individuals' prior spiritual experience eventually became integrated into their conversion motif and, in retrospect, appeared as almost a calling or their 'Road to Damascus.' When participants in this study reported having spiritual experience prior to involvement in Siddha Yoga, it was both a positive revelation and also something at times overwhelming and difficult to place in everyday experience or the dominant religious traditions. It was also a powerful and transformative experience which remained a significant aspect of their continuing

spiritual journey and personal narrative (even 30 years after the event), and it found a context in the framework of Siddha Yoga.

Kalkstein, Solomon & Roni Beth Tower. 2009. The daily spiritual experiences scale and well-being: demographic comparisons and scale validation with older Jewish adults and a diverse internet sample. *Journal of Religion and Health* 48(4). 402-417.
doi:[10.1007/s10943-008-9203-0](https://doi.org/10.1007/s10943-008-9203-0).

Administration of the Daily Spiritual Experiences Scale to 410 subjects who participated in a community study, and to 87 residents at the Hebrew Home for the Aged at Riverdale, revealed significantly fewer daily spiritual experiences among Jews, and lowest scores among those respondents endorsing no religious affiliation. Women exhibited more frequent daily experience than men, and attainment of higher levels of education was associated with less frequent daily spiritual experience. More frequent daily spiritual experience correlated with less psychopathology, more close friendships, and better self-rated health.

Wann, Daniel L. & Len Zaichkowsky. 2009. Sport Team Identification and Belief in Team Curses: The Case of the Boston Red Sox and the Curse of the Bambino. *Journal of Sport Behavior* 32(4). 489-502.

In a study of belief in the Boston Red Sox Curse (the "Curse of the Bambino"), researchers interviewed students at two universities (N = 250), and identified variables that were independently related to beliefs in the curse: beliefs in luck and magic; high levels of baseball fandom; and high levels of team identification with the Boston Red Sox. Participants in the study completed measures assessing each of the aforementioned variables, as well as items specifically designed to assess beliefs in the Red Sox Curse. Regression analyses revealed that each of the variables accounted for a significant proportion of unique variance in beliefs in the Red Sox Curse.

Zak, Paul J, Robert Kurzban, Sheila Ahmadi, Ronald S Swerdloff, Jang Park, Levan Efremidze, Karen Redwine, Karla Morgan & William Matzner. 2009. Testosterone administration decreases generosity in the ultimatum game. *PloS One* 4(12). e8330.
doi:[10.1371/journal.pone.0008330](https://doi.org/10.1371/journal.pone.0008330).

Researchers administered testosterone to 25 men and, in a double-blind within-subjects design using the Ultimatum Game, found that men with artificially raised T, compared to themselves on placebo, were 27% less generous towards strangers with money they controlled. The effect scaled with a man's level of total-, free-, and dihydro-testosterone (DHT). Men in the lowest decile of DHT were 560% more generous than men in the highest decile of DHT. In addition, results show that men with elevated testosterone were more likely to use their own money to punish those who were ungenerous toward them. Results continue to hold after controlling for altruism.

1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY

Bekoff, Marc. 2009. Animal emotions, wild justice and why they matter: Grieving magpies, a pissy baboon, and empathic elephants. *Emotion, Space and Society* 2(2). 82-85.
doi:[10.1016/j.emospa.2009.08.001](https://doi.org/10.1016/j.emospa.2009.08.001).

In this article regarding comparative and evolutionary research on animal emotions and morality, the author holds that non-human animals have emotional lives, and considers human emotions as gifts from other animals. Emotions serve as a social glue to bond animals with one another, catalyze and regulate a wide variety of social encounters among friends, lovers, and competitors, and permit animals to behave adaptively and flexibly using various behavior patterns in a wide variety of venues. In addition, emotions are also important in nonsocial situations and influence how humans and other animals relate to their wider environment. The author asserts that non-human animals have a kind of moral intelligence, and presents scientific theory, experimental evidence, and anecdotal evidence to support that view.

Cloninger, C. Robert. 2009. Evolution of human brain functions: the functional structure of human consciousness. *Australian & New Zealand Journal of Psychiatry* 43(11). 994-1006.
doi:[10.3109/00048670903270506](https://doi.org/10.3109/00048670903270506).

The functional structure of self-aware consciousness in human beings is described, based on the evolution of human brain functions in the succession of ancestors leading to human beings. Comparative neuroanatomy is reviewed to identify the brain structures and networks that emerged coincident with the emergent brain functions. The functional structure described is concerned with the regulation of five planes of being: sexuality, materiality, emotionality, intellectuality, and spirituality. Each plane elaborates neocortical functions organized around one of the five special senses. The interactions among these five planes gives rise to a 5×5 matrix of subplanes, which are functions that coarsely describe the focus of neocortical regulation. Each of these 25 neocortical functions regulates each of five basic motives, or drives, that can be measured as temperaments, or basic emotions related to fear, anger, disgust, surprise, and happiness/sadness. The resulting $5 \times 5 \times 5$ matrix of human characteristics provides a general and testable model of the functional structure of human consciousness that includes personality, physicality, emotionality, cognition, and spirituality in a unified developmental framework.

Deane-Drummond, Celia. 2009. Are animals moral? A theological appraisal of the evolution of vice and virtue. *Zygon* 44(4). 932-950.
doi:[10.1111/j.1467-9744.2009.01042.x](https://doi.org/10.1111/j.1467-9744.2009.01042.x).

In a discussion of the status of non-human animals as moral beings, the author addresses questions about the ontology of animals, rather than ethical approaches to the treatment of non-human animals. She explores the evolutionary origins of behavior that can be considered vices or virtues, suggesting that Thomas Aquinas is closer to Darwin's view of non-human animals than might be supposed, and advocates for an appreciation of the complexity of the emotional lives of social animals and their cooperative behaviors, which may suggest that social animals can be considered moral in their own terms. Drawing on the work of archaeologist Steven Mithen, and arguments about the evolution of conscience from anthropologist Christopher Boehm, she concludes that only the biological basis for the development of conscience and religion has evolved in non-human animals, and this should not be confused with sophisticated moral systems of analysis or particular religious beliefs found in the human community.

Douglas, Kate. 2009. Religion is based on ritual. *The New Scientist* 204(2739). 62-64.
doi:[10.1016/S0262-4079\(09\)63330-3](https://doi.org/10.1016/S0262-4079(09)63330-3).

The author explores why rituals are the key to growing a religious belief, drawing on the research of University of Oxford anthropologist Harvey Whitehouse.

Funk, Chadd M & Michael S Gazzaniga. 2009. The functional brain architecture of human morality. *Current Opinion in Neurobiology* 19(6). 678-681.
doi:[10.1016/j.conb.2009.09.011](https://doi.org/10.1016/j.conb.2009.09.011).

The authors review research in cognitive neuroscience that has made progress in the effort to understand the neural basis of human morality. They hold that emerging insights from this research point toward a model in which automatic processing in parallel neural circuits, many of which are associated with social emotions, evaluate the actions and intentions of others. Through various mechanisms of competition, only a subset of these circuits ultimately causes a decision or an action. This activity is experienced consciously as a subjective moral sense of right or wrong, and an interpretive process offers post hoc explanations designed to link the social stimulus with the subjective moral response using whatever explicit information is available.

Geertz, Armin W. 2009. When cognitive scientists become religious, science is in trouble: On neurotheology from a philosophy of science perspective. *Religion* 39(4). 319-324.
doi:[10.1016/j.religion.2009.08.001](https://doi.org/10.1016/j.religion.2009.08.001).

This essay argues that neurotheology, the study of the brain and religious experience, is the site of a struggle between confessional and critical approaches to the study of religion. Where brain science, together with knowledge accrued through psychology and psychiatry, has stimulated disciplines such as social neuroscience, the cognitive science of religion, cognitive anthropology, and cognitive archaeology, the discipline of neurotheology has often had a religious agenda: as examples, the author lists early proponents of neurotheology such as d'Aquili and Newberg, as well as proponents of Transcendental Meditation and experimental shamanists. The differences between science, therapy and spirituality have been blurred or denied, and the neurotheological attempts to discover areas of the brain responsible for religious experiences have led to untenable results. He concludes that the fact that such research has passed the peer review process of leading psychological, psychiatric, and neurological journals is perhaps more indicative of the pervasiveness of religiosity throughout American society than of the production of objective brain science. Part of a special issue, "The Philosophy of Science and the Study of Religion."

Goldberg, David W. 2009. d'Aquili and Newberg's neurotheology: A hermeneutical problem with their neurological solution. *Religion* 39(4). 325-330.
doi:[10.1016/j.religion.2009.08.002](https://doi.org/10.1016/j.religion.2009.08.002).

Against the positions of d'Aquili and Newberg (in their book 'The Mystical Mind: Probing the Biology of Religious Experience'), that author holds that the conceptual framework from within which the mystic views his or her religious or mystical experience not only affects the experience itself, but also leads to a hermeneutical component that differentiates the phenomenal feel of said mystical experience, and that a neurological foundation for this can be found in the notion of the brain as plastic and embodied. D'Aquili and Newberg, on the other hand, contend that a similar-in-kind neurological deafferentation of the associative areas of the brain leads to a dissolution of the sense of "self", and unification with what they term "Absolute Being", and that these mystical religious experiences can be classified as similar in kind across mystical traditions. In fact, they state that the conceptual description of the mystical state is derivative after the experience and results in the similarity of phenomenological description for these experiences. Part of a special issue, "The Philosophy of Science and the Study of Religion."

Haight, John F. 2009. Theology, evolution, and the human mind: how much can biology explain? *Zygon* 44(4). 921-931.
doi:[10.1111/j.1467-9744.2009.01041.x](https://doi.org/10.1111/j.1467-9744.2009.01041.x).

The author focuses on human intelligence as an emergent aspect of nature, and examines the question of whether theology can still have an explanatory role to play alongside biology in attempts to understand mind. This view is opposed to that which holds that Darwin's science supplants theology altogether by providing the ultimate explanation of all manifestations of life, not only biologically but also metaphysically.

Hirschl, Thomas A., James G. Booth & Leland L. Glenna. 2009. The Link Between Voter Choice and Religious Identity in Contemporary Society: Bringing Classical Theory Back In. *Social Science Quarterly* 90(4). 927-944.
doi:[10.1111/j.1540-6237.2009.00670.x](https://doi.org/10.1111/j.1540-6237.2009.00670.x).

The authors analyze voter choice data from 6 U.S. presidential elections (1980-2000) using multivariate statistical models, and find a link between voter choice and religious identity, where the effect of religious identity on voter choice is contingent on location within the stratification order defined by race, class, and gender. The authors propose a theory, derived from classical sociology, to explain the contingent link between voter choice and religious identity.

Jensen, Jeppe Sinding. 2009. Explanation and interpretation in the comparative study of religion. *Religion* 39(4). 331-339.
doi:[10.1016/j.religion.2009.08.003](https://doi.org/10.1016/j.religion.2009.08.003).

The author notes that the study of religion seems to have gone from the formative, descriptive “what?” phase to the theoretically more interesting “how?” phase – the one that focuses on relations between religion and other matters – and, more recently, to the “why?” phase, which is characteristic of “mature” sciences. These “why?” questions are typically explanatory in the more causal sense and explain the occurrence and evolution of the object of study. In the study of religion this is now evident especially in the cognitive approaches. The author identifies other possibilities for explanatory avenues than those most frequently copied from the natural sciences, and proposes a revised research stance that is supported by theoretical and philosophical developments that seem to have been overlooked by scholars of religion. Part of a special issue, “The Philosophy of Science and the Study of Religion.”

Machamer, Peter. 2009. Philosophy of science and the study of religion. *Religion* 39(4). 356-360.
doi:[10.1016/j.religion.2009.08.006](https://doi.org/10.1016/j.religion.2009.08.006).

This paper responds to the 6 articles in the special issue of the journal, “The Philosophy of Science and the Study of Religion.” The author notes that the papers share discussions of concepts such as explanation, interpretation, causality, models, and, especially, reduction; specifically, there appears to be a basic fear of reduction and the elimination of what is distinctively religious about religious studies. He observes that the authors seem to be afraid that if the philosophical category of the “realm of causes” extends to persons and the social, then there can be no attributions of reason, responsibility, morality, or religious spirit; no norms, in other words, only descriptions. In replies to the papers, he seeks to present arguments for an alternative view.

Rennie, Bryan. 2009. Myths, models, and metaphors: Religion as model and the philosophy of science. *Religion* 39(4). 340-347.
doi:[10.1016/j.religion.2009.08.009](https://doi.org/10.1016/j.religion.2009.08.009).

The introduction to the special issue, “The Philosophy of Science and the Study of Religion,” with papers taken from sessions at the XIXth International Association for the History of Religions Quinquennial Congress held in Tokyo in 2005.

Ryba, Thomas. 2009. Contemporary religious studies and science--A postcritical witches’ brew. *Religion* 39(4). 361-369.
doi:[10.1016/j.religion.2009.08.007](https://doi.org/10.1016/j.religion.2009.08.007).

This paper also responds to the six articles in the special issue of “Religion,” identifying a common set of themes: contextualism, reduction, scientific or critical realism, explanation, and scientific models. In addition, two general positions can be discerned: on one hand, the reductionist-contextualist-realist position (Geertz, Goldberg, Saler, and Segal); on the other hand, the anti-reductionist-contextualist-constructivist position (Jensen and Rennie). The author concludes with an argument for a scientific approach to the study of religions which is moderately reductionist, contextualist, and critical realist, but one which is also capacious enough to include hermeneutical explanation and the role of models in religious studies. Part of a special issue, “The Philosophy of Science and the Study of Religion.”

Saler, Benson. 2009. Reduction, integrated theory, and the study of religion. *Religion* 39(4). 348-351.
doi:[10.1016/j.religion.2009.08.004](https://doi.org/10.1016/j.religion.2009.08.004).

To mediate the conflicting claims about reduction in the study of religion, the author proposes that scholars subsume considerations of reduction into efforts to find compatibilities among the claims and theoretical constructs of different disciplines. The postulation of compatibilities, advanced under rubrics such as “unified theory”, “consilience”, and “integrated theory”, holds great promise for studies of religion undertaken with reference to the contemporary cognitive and evolutionary sciences. Numbers of such studies view religious phenomena as, in part, expressions of evolved capacities and propensities that are not themselves necessarily religious. Part of a special issue, “The Philosophy of Science and the Study of Religion.”

Segal, Robert A. 2009. Kuhn and the science of religion. *Religion* 39(4). 352-355.

doi:[10.1016/j.religion.2009.08.005](https://doi.org/10.1016/j.religion.2009.08.005).

This article focuses on the philosophy of Thomas Kuhn, and seeks to determine what use religious studies scholars can make of it in defending the status of their discipline. The author seeks to answer a number of questions regarding the objective nature of natural science itself, in light of the critiques of Popper, Hempel, and others: Can it still be deemed the model of objectivity to be emulated by the social sciences and even by the humanities? What bearing does criticism of conventional philosophy of science have on religious studies? Specifically, can the religionist approach to religion, the approach that purports to be the sole appropriate one for religious studies, be defended? Does radical philosophy of science, by challenging the objectivity of scientific claims, make the world safe for religious ones? Part of a special issue, "The Philosophy of Science and the Study of Religion."

Starks, Brian & Robert V. Robinson. 2009. Two Approaches to Religion and Politics: Moral Cosmology and Subcultural Identity. *Journal for the Scientific Study of Religion* 48(4). 650-669.

doi:[10.1111/j.1468-5906.2009.01471.x](https://doi.org/10.1111/j.1468-5906.2009.01471.x).

The authors explore two competing approaches to internal religious divisions and their political consequences. The "moral cosmology" approach focuses on religious worldviews. It juxtaposes the religiously orthodox to modernists, arguing that the former are theologically communitarian in belief while the latter are individualistic. The religiously orthodox worldview (relative to modernists) is posited to lead to politically conservative stances on cultural issues of abortion, sexuality, and family but politically liberal stances on economic issues. In contrast, the "subcultural identity" approach focuses on identity rather than worldview. According to this approach, self-identified evangelicals and fundamentalists are expected to be more politically conservative on both cultural and economic issues when compared to mainline or liberal Protestants. Through analyses of the 1998 GSS, which allows operationalization of the two approaches and their extension to Catholic identities, the authors find that cosmology and identity are associated, but they have independent—and sometimes opposite—effects on Americans' political beliefs.

Stenmark, Mikael. 2009. Three theories of human nature. *Zygon* 44(4). 894-920.

doi:[10.1111/j.1467-9744.2009.01040.x](https://doi.org/10.1111/j.1467-9744.2009.01040.x).

Against the view of Steven Pinker, that the Darwinian theory of human nature will triumph over the Christian and "blank slate" theories, the author argues that neither the outcome of such competition, nor the particular content of these theories, is as clear as Pinker believes. The paper includes a critical, as well as a constructive, look at the challenge presented by a Darwinian theory of human nature – a challenge to the social sciences and the humanities as well as theology, and specifically to a Christian understanding of human nature.

Zuckerman, Phil. 2009. Atheism, Secularity, and Well-Being: How the Findings of Social Science Counter Negative Stereotypes and Assumptions. *Sociology Compass* 3(6). 949-971.

doi:[10.1111/j.1751-9020.2009.00247.x](https://doi.org/10.1111/j.1751-9020.2009.00247.x).

This article offers a thorough presentation and discussion of the latest social scientific research concerning the identities, values, and behaviors of people who don't believe in God or are non-religious, and addresses the ways in which atheism and secularity are positively correlated with societal well-being.

PART 2. ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

2.1 SPIRITUALITY & HEALTH: MEDICAL CONDITIONS

Ai, Amy L., Paul Wink, Terrence N. Tice, Steven F. Bolling & Marshall Shearer. 2009. Prayer and reverence in naturalistic, aesthetic, and socio-moral contexts predicted fewer complications following coronary artery bypass. *Journal of Behavioral Medicine* 32(6). 570-581.
doi:[10.1007/s10865-009-9228-1](https://doi.org/10.1007/s10865-009-9228-1).

In this prospective study of 177 patients 2 weeks before undergoing coronary artery bypass graft surgery, frequency of prayer was associated post-operation with reduced complications but not hospitalization. Sense of reverence in secular contexts predicted fewer complications and shorter hospitalization. Controlling for complications reduced the initial influence of reverence on hospitalization, suggesting the potential mediation of complications.

Askay, Shelley Wiechman & Gina Magyar-Russell. 2009. Post-traumatic growth and spirituality in burn recovery. *International Review of Psychiatry* 21(6). 570-579.
doi:[10.3109/09540260903344107](https://doi.org/10.3109/09540260903344107).

In surveys with trauma survivors of burn injury, survivors report that spiritual or religious beliefs played an important part in their recovery and they wished more healthcare providers were comfortable talking about these issues. Further evidence suggests that trauma survivors who rely on spiritual or religious beliefs for coping may show a greater ability for post-traumatic growth. This article reviews the literature on these two constructs as it relates to burn survivors.

Kosuri, Madhu & Gumpeny R Sridhar. 2009. Yoga practice in diabetes improves physical and psychological outcomes. *Metabolic Syndrome and Related Disorders* 7(6). 515-517.
doi:[10.1089/met.2009.0011](https://doi.org/10.1089/met.2009.0011).

In a 40-day yoga camp at the Institute of Yoga and Consciousness, ambulatory subjects with type 2 diabetes mellitus (N = 35) were measured at baseline and after camp. Measurements after the camp showed a reduction of body mass index (26.514 ± 3.355 to 25.771 ± 3.40) and anxiety (6.20 ± 3.72 to 4.29 ± 4.46), and an improvement in total general well-being (48.6 ± 11.13 to 52.66 ± 12.87).

Lengacher, Cecile A., Versie Johnson-Mallard, Janice Post-White, Manolete S. Moscoso, Paul B. Jacobsen, Thomas W. Klein, Raymond H. Widen et al. 2009. Randomized controlled trial of mindfulness-based stress reduction (MBSR) for survivors of breast cancer. *Psycho-Oncology* 18(12). 1261-1272.
doi:[10.1002/pon.1529](https://doi.org/10.1002/pon.1529).

Researchers conducted a randomized controlled trial of female survivors of breast cancer (Stages 0-III) who were assigned to a 6-week Mindfulness-Based Stress Reduction (MBSR) program (N = 41), or to usual care (N = 43). Compared with usual care, subjects assigned to MBSR had significantly lower adjusted mean levels of depression (6.3 vs. 9.6), anxiety (28.3 vs. 33.0), and fear of recurrence (9.3 vs. 11.6) at 6 weeks, along with higher energy (53.5 vs. 49.2), physical functioning (50.1 vs. 47.0), and physical role functioning (49.1 vs. 42.8).

Nidich, Sanford I, Maxwell V Rainforth, David A F Haaga, John Hagelin, John W Salerno, Fred Travis, Melissa Tanner, Carolyn Gaylord-King, Sarina Grosswald & Robert H Schneider. 2009. A randomized controlled trial on effects of the Transcendental Meditation program on blood pressure, psychological distress, and coping in young adults. *American Journal of Hypertension* 22(12). 1326-1331.
doi:[10.1038/ajh.2009.184](https://doi.org/10.1038/ajh.2009.184).

Researchers undertook a randomized controlled trial of 298 university students, randomly allocated to either the Transcendental Meditation (TM) program or wait-list control. After 3 months, the TM group, compared to control, showed decreased blood pressure, in association with decreased psychological distress (anxiety, depression, anger/hostility, coping).

- Park, Crystal L., Donald Edmondson, Amy Hale-Smith & Thomas O. Blank. 2009. Religiousness/spirituality and health behaviors in younger adult cancer survivors: does faith promote a healthier lifestyle? *Journal of Behavioral Medicine* 32(6). 582-591.
doi:[10.1007/s10865-009-9223-6](https://doi.org/10.1007/s10865-009-9223-6).

A study of 167 younger adult survivors of cancer showed that religious attendance had little impact on health behaviors, but that daily spiritual experiences were related to greater performance of health behaviors, while religious struggle was related to less. Self-assurance partially mediated the effects of daily spiritual experiences, while guilt/shame partially mediated the effects of religious struggle.

- Pehler, Shelley-Rae & Martha Craft-Rosenberg. 2009. Longing: the lived experience of spirituality in adolescents with Duchenne muscular dystrophy. *Journal of Pediatric Nursing* 24(6). 481-494.
doi:[10.1016/j.pedn.2008.06.008](https://doi.org/10.1016/j.pedn.2008.06.008).

This descriptive phenomenological study of male adolescents with Duchenne muscular dystrophy (N = 9) showed that the essential theme of their spirituality was "longing," the strong desire for something unattainable. Participants mediated their longing through "Connecting with others, self, and beyond self."

- Reinhard, Joscha, Helga Huesken-Janßen, Hendrike Hatzmann & Sven Schiermeier. 2009. Preterm labour and clinical hypnosis. *Contemporary Hypnosis* 26(4). 187-193.
doi:[10.1002/ch.387](https://doi.org/10.1002/ch.387).

In a sample of pregnant women who were in their 28th to 34th weeks' gestation and trained in self-hypnosis (N = 64), compared to a historical control group (N = 2135), there were 3 preterm deliveries in the hypnosis group (4.7%) and 220 preterm deliveries in the control group (10.3%). Average cigarette usage during the current pregnancy was lower in the hypnosis group. Higher work-educated employments, higher age of the mother, and fewer previous pregnancies were found in the hypnosis group. Preterm birth correlated with the number of previous pregnancies but not with smoking.

- Saper, Robert B, Karen J Sherman, Diana Cullum-Dugan, Roger B Davis, Russell S Phillips & Larry Culpepper. 2009. Yoga for chronic low back pain in a predominantly minority population: a pilot randomized controlled trial. *Alternative Therapies in Health and Medicine* 15(6). 18-27.

After being offered 12 weeks of weekly hatha yoga classes, educational information, and yoga equipment, 30 adults (M = 44, 83% female, 83% racial/ethnic minorities; 48% with incomes ≤ \$30,000) with chronic low back pain showed decreases in mean pain scores (6.7 to 4.4) compared to usual care (7.5 to 7.1). Mean Roland scores for yoga decreased (14.5 to 8.2) compared to usual care (16.1 to 12.5). At 12 weeks, yoga compared to usual care participants reported less analgesic use (13% vs. 73%), less opiate use (0% vs. 33%), and greater overall improvement (73% vs. 27%).

- Scott, M., M. Masterson, L. Elmer, L. Coca, E. Jarouche, A. Krumdieck & E. Kovar. 2009. P2.160 The effects of a yoga program on Parkinson's disease. *Parkinsonism & Related Disorders* 15(Supplement 2). S133.
doi:[10.1016/S1353-8020\(09\)70511-5](https://doi.org/10.1016/S1353-8020(09)70511-5).

After participating in a 12-week, twice-weekly yoga program, 9 subjects with Parkinson's disease (2 females, M = 67.9) showed significant improvements in the chair stand test, Functional Reach Test, and Geriatric Depression Scale score.

Thygeson, M. & M.C. Hooke. 2009. Peaceful Play Program: Yoga for hematology/oncology inpatient children and their parents. *European Journal of Integrative Medicine* 1(4). 207-208.
doi:[10.1016/j.eujim.2009.08.121](https://doi.org/10.1016/j.eujim.2009.08.121).

A single 45-minute yoga intervention had the following results on inpatient children with cancer and their parents: in a cohort of 11 children aged 7-11, little change was noted in Spielberger State Trait Anxiety Inventory (STAI) scores; in a cohort of 5 adolescents aged 13-16, STAI scores decreased, evidencing less anxiety; in the parent cohort (N = 33), STAI scores showed decreases in anxiety and increase in well-being.

2.2 SPIRITUALITY & HEALTH: MENTAL HEALTH

Ando, Michiyo, Tatsuya Morita, Tatsuo Akechi, Sayoko Ito, Masaya Tanaka, Yuka Ifuku & Toshimichi Nakayama. 2009. The efficacy of mindfulness-based meditation therapy on anxiety, depression, and spirituality in Japanese patients with cancer. *Journal of Palliative Medicine* 12(12). 1091-1094.
doi:[10.1089/jpm.2009.0143](https://doi.org/10.1089/jpm.2009.0143).

Following 2 sessions of mindfulness-based meditation therapy, plus practice at home over 2 weeks, 28 patients who were receiving anticancer treatment showed significantly decreased levels of anxiety and depression on the Hospital Anxiety and Depression Scale (12 ± 5.3 to 8.6 ± 6.3).

Büssing, A. & G. Mundle. 2009. Trust in God's help as a measure of intrinsic religiosity and its association with depression and life satisfaction in patients with depressive disorders and addictions. *European Journal of Integrative Medicine* 1(4). 190-191.
doi:[10.1016/j.eujim.2009.08.087](https://doi.org/10.1016/j.eujim.2009.08.087).

Using the 5-item Trust in God's Help Scale (TGH) with other psychological measures, researchers found that in 96 German psychotherapy patients (48 female; M = 47.2; 67% Christian) TGH was only moderately expressed in the patients (47.1 ± 35.2), indicating that this coping strategy was of minor significance.

Corcoran, Kathleen M. & Sheila R. Woody. 2009. Effects of suppression and appraisals on thought frequency and distress. *Behaviour Research and Therapy* 47(12). 1024-1031.
doi:[10.1016/j.brat.2009.07.023](https://doi.org/10.1016/j.brat.2009.07.023).

Researchers found that instructed suppression of a potentially blasphemous thought in 120 participants resulted in sustained frequency of thoughts, especially among highly religious subjects (N = 60), in contrast to the decline in thought frequency observed for non-suppression.

Ebadi, Abbas, Fazlollah Ahmadi, Mostafa Ghanei & Anoshirvan Kazemnejad. 2009. Spirituality: A key factor in coping among Iranians chronically affected by mustard gas in the disaster of war. *Nursing & Health Sciences* 11(4). 344-350.
doi:[10.1111/j.1442-2018.2009.00498.x](https://doi.org/10.1111/j.1442-2018.2009.00498.x).

Spirituality was recognized as a key factor among participants (N = 20) in accepting and coping with their chronic illnesses caused by exposure to mustard gas. Themes of coping were "religious sentiment" (including the subthemes "divine will", "illness as a means of absolving sin", "saying prayers in the anticipation of divine rewards") and "patriotism" (including the subthemes "defending the motherland" and "self-sacrifice as a source of pride").

Feltman, Roger, Michael D. Robinson & Scott Ode. 2009. Mindfulness as a moderator of neuroticism-outcome relations: A self-regulation perspective. *Journal of Research in Personality* 43(6). 953-961.
doi:[10.1016/j.jrp.2009.08.009](https://doi.org/10.1016/j.jrp.2009.08.009).

The relationship between neuroticism, and depressive symptoms or trait anger was found to be stronger among individuals low in dispositional mindfulness in a study of 289 college students. Neuroticism was an inverse predictor of mindfulness, and both neuroticism and mindfulness independently predicted trait anger and depressive symptoms.

Homan, Kristin J. & Chris J. Boyatzis. 2009. Body Image in Older Adults: Links with Religion and Gender. *Journal of Adult Development* 16(4). 230-238.
doi:[10.1007/s10804-009-9069-8](https://doi.org/10.1007/s10804-009-9069-8).

In a sample of 127 older men and women (M = 74), for the men body satisfaction correlated with many religiosity variables and was predicted by religious well-being, existential well-being, and manifestation of God in their body; aging-appearance anxiety was unrelated to religiosity. For women, body satisfaction was weakly related to religiosity, but aging-appearance anxiety was predicted by intrinsic orientation, religious well-being, and existential well-being; in all cases higher religiosity predicted lower anxiety about an aging appearance.

Khalsa, Sat Bir S, Stephanie M Shorter, Stephen Cope, Grace Wyshak & Elyse Sklar. 2009. Yoga ameliorates performance anxiety and mood disturbance in young professional musicians. *Applied Psychophysiology and Biofeedback* 34(4). 279-289.
doi:[10.1007/s10484-009-9103-4](https://doi.org/10.1007/s10484-009-9103-4).

Young adult musicians in two yoga groups (one practicing yoga [N = 15], one practicing yoga and meditation [N = 15]) exhibited less music performance anxiety and significantly less general anxiety/tension, depression, and anger after 2 months relative to the control group (N = 15), but showed no changes in performance-related musculoskeletal disorders, stress, or sleep.

Krause, Neal. 2009. Church-Based Social Relationships and Change in Self-Esteem Over Time. *Journal for the Scientific Study of Religion* 48(4). 756-773.
doi:[10.1111/j.1468-5906.2009.01477.x](https://doi.org/10.1111/j.1468-5906.2009.01477.x).

Using data from a nationwide survey of older adults, the author finds that a close personal relationship with God is associated with a stronger sense of self-esteem at the baseline and follow-up interviews. In contrast, emotional support from fellow church members was not associated with self-esteem at either point in time.

Lesmana, C. B. & N. Tiliopoulos. 2009. Schizotypal personality traits and attitudes towards Hinduism among Balinese Hindus. *Mental Health, Religion & Culture* 12(8). 773-785.
doi:[10.1080/13674670902930344](https://doi.org/10.1080/13674670902930344).

In a survey of 309 Balinese Hindus, Attitude towards Hinduism, frequency of prayer, and temple attendance had a weak positive relationship with each other, while prayer behavior exhibited negative low-to-moderate relationships with schizotypal traits. The disorganized elements of schizotypy predicted attitude towards Hinduism. Finally, age showed negative associations with schizotypy and positive ones with Hinduism, while women were less schizotypal and had more positive attitude towards their faith than men.

Ross, Keisha, Paul J Handal, Eddie M Clark & Jillon S Vander Wal. 2009. The relationship between religion and religious coping: religious coping as a moderator between religion and adjustment. *Journal of Religion and Health* 48(4). 454-467.
doi:[10.1007/s10943-008-9199-5](https://doi.org/10.1007/s10943-008-9199-5).

In this study of 189 college students (144 female; M = 20; 73.5% Christian), it was found that the four religious coping styles of Self-Directing, Deferring, Collaborative, and Turning to Religion were significant moderators between religion and psychological adjustment. The high self-directing and high religion group were the most maladjusted and least satisfied with life; the participants high on religion and high deferring, high

collaborative, and high turning to religion groups were less maladjusted and more satisfied than the other three groups.

- Solomon, Zahava, Rachel Dekel & Gadi Zerach. 2009. Posttraumatic Stress Disorder and Marital Adjustment: The Mediating Role of Forgiveness. *Family Process* 48(4). 546-558.
doi:[10.1111/j.1545-5300.2009.01301.x](https://doi.org/10.1111/j.1545-5300.2009.01301.x).

Researchers studied 157 Israeli veterans of the Yom Kippur War, and divided them into 3 groups: 21 POWs with Posttraumatic Stress Disorder (PTSD), 58 former POWs without PTSD, and 70 control veterans. Former POWs with PTSD reported lower levels of marital satisfaction and forgiveness than veterans in the other 2 groups. In addition, men's perception of level of forgiveness mediated the relationship between their posttraumatic symptoms and their marital adjustment.

- Williamson, Ian Todd & Steven J. Sandage. 2009. Longitudinal analyses of religious and spiritual development among seminary students. *Mental Health, Religion & Culture* 12(8). 787-801.
doi:[10.1080/13674670902956604](https://doi.org/10.1080/13674670902956604).

Seminary students (N = 119) at a religiously affiliated university in the Midwest U.S. were studied over time, and researchers found that the seminary context facilitated increases in students' questing, intrinsic religiosity, spiritual well-being, spiritual openness, and spiritual activity. Increases in intrinsic religiosity led to improvements in spiritual well-being, spiritual openness, realistic acceptance, and spiritual activity. Increases in spiritual questing led to greater spiritual openness and activity but decreased spiritual well-being.

- Yang, Ke-Ping, Whei-Ming Su & Chen-Kuan Huang. 2009. The effect of meditation on physical and mental health in junior college students: a quasi-experimental study. *The Journal of Nursing Research* 17(4). 261-269.
doi:[10.1097/JNR.0b013e3181c17f77](https://doi.org/10.1097/JNR.0b013e3181c17f77).

Meditation treatment of Taiwanese college students for 2 hours per week for 18 weeks resulted in better Life Adaptation Scale scores, and fewer physical and mental symptoms, for the treatment group (N = 119) than the control group (N = 123).

2.3 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

- Schwartz, Carolyn E., Penelope M. Keyl, John P. Marcum & Rita Bode. 2009. Helping Others Shows Differential Benefits on Health and Well-being for Male and Female Teens. *Journal of Happiness Studies* 10(4). 431-448.
doi:[10.1007/s10902-008-9098-1](https://doi.org/10.1007/s10902-008-9098-1).

From data collected from 457 teens (M = 15.6, recruited through the Presbyterian Church (U.S.A.)), researchers found that altruism is positively associated with health for females and with well-being for both males and females. No association was found between providing emotional support and psychosocial health. Family helping was the most salient aspect of altruism for males, showing associations with positive social relations, purpose in life, and self-acceptance. For females, self-reported General Helping Behavior was associated with positive social relations, and Helping Orientation was associated with better purpose in life. Family Helping was associated with better physical health in females, but not for males. The only correlates of altruism were higher age, more physical activity, and engaging in positive religious coping.

- Stanley, Ruth. 2009. Types of Prayer, Heart Rate Variability, and Innate Healing. *Zygon* 44(4). 825-846.
doi:[10.1111/j.1467-9744.2009.01036.x](https://doi.org/10.1111/j.1467-9744.2009.01036.x).

Observing the heart rate variability of 5 female volunteers (M = 42) engaging in 5 types of prayer (supplication, devotion, intercession, gratefulness, and contemplative prayer), the author found that centering prayer resulted in psychophysiological coherence closest to the optimal 0.1 Hz (0.12 Hz for 86% of the prayer interval), suggesting that that method provides the highest optimal restoration of autonomic balance and adaptability.

2.4 SPIRITUALITY & HEALTH: RELIGIOSITY

Abdel-Khalek, Ahmed M. 2009. Religiosity, subjective well-being, and depression in Saudi children and adolescents. *Mental Health, Religion & Culture* 12(8). 803-815.
doi:[10.1080/13674670903006755](https://doi.org/10.1080/13674670903006755).

In a study of Saudi school children (2159 boys [M = 16.1]; 5052 girls [M = 15.6]), it was found that males obtained significantly higher mean scores than their female counterparts on the religiosity and the subjective well-being (SW-B) self-rating-scales, whereas females obtained a significantly higher mean score on depression than their male peers. All the correlations among males and female were significant between religiosity and both SW-B rating scales (positive) and depression (negative).

Bartkowski, John P. & Lynn M. Hempel. 2009. Sex and Gender Traditionalism Among Conservative Protestants: Does the Difference Make a Difference? *Journal for the Scientific Study of Religion* 48(4). 805-816.
doi:[10.1111/j.1468-5906.2009.01487.x](https://doi.org/10.1111/j.1468-5906.2009.01487.x).

Researchers found that theological conservatism is significantly related to gender traditionalism among conservative Protestant women, but not men. For men, strength of denominational affiliation is more strongly related to traditionalist ideology. Strength of affiliation also affects gender ideology for women, but its effects, as well as those of religious attendance, are largely indirect through theological conservatism.

Corsentino, Elizabeth A, Nicole Collins, Natalie Sachs-Ericsson & Dan G Blazer. 2009. Religious attendance reduces cognitive decline among older women with high levels of depressive symptoms. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences* 64(12). 1283-1289.
doi:[10.1093/gerona/glp116](https://doi.org/10.1093/gerona/glp116).

In a study using data from waves 1 and 2 of the Duke Established Populations for Epidemiologic Studies of the Elderly (N = 2,938), researchers found that greater religious attendance was related to less cognitive decline (CD). In addition, there was a three-way interaction between religious attendance, gender, and depressive symptoms in predicting CD. Among women with higher levels of depressive symptoms, those who less frequently attended religious services experienced greater CD than those who more frequently attended religious services. The interaction between attendance and depressive symptoms in men did not reach significance.

Chu, Doris C & Hung-En Sung. 2009. Racial differences in desistance from substance abuse: the impact of religious involvement on recovery. *International Journal of Offender Therapy and Comparative Criminology* 53(6). 696-716.
doi:[10.1177/0306624X08320207](https://doi.org/10.1177/0306624X08320207).

Using data from the intake and 12-month follow-up survey of the Drug Abuse Treatment Outcome Study, It was found that Black clients of drug treatment clinics reported higher levels of religious involvement (measured by church attendance) than did White clients. Religious behavior at 1-year follow-up was positively associated with Black clients' recovery from substance abuse. In contrast, religious behavior was not a significant predictor of White clients' desistance from substance abuse.

Liu, Eric Y. 2009. Beyond the West: Religiosity and the Sense of Mastery in Modern Taiwan. *Journal for the Scientific Study of Religion* 48(4). 774-788.
doi:[10.1111/j.1468-5906.2009.01478.x](https://doi.org/10.1111/j.1468-5906.2009.01478.x).

Using data from a sample of 1,881 Taiwanese adults, the author finds that (a) beliefs in karma and one supreme God and prayer are negatively associated with the sense of mastery; and (b) the estimated net effect of some devotional activities, such as meditation, appear to be robust, statistically significant, and positive.

Lucchetti, G., A.L. Granero & M.F.P. Peres. 2009. 033 Sleep patterns and religiosity in an urban, low-income community in Sao Paulo, Brazil. *Sleep Medicine* 10(Supplement 2). S9-S10.
doi:[10.1016/S1389-9457\(09\)70035-8](https://doi.org/10.1016/S1389-9457(09)70035-8).

No association between sleep patterns and spirituality/religiosity was found in this study. Of the 383 participants, 74% were female; 41% had less than 4 years of education; 88.8% earned less than US\$500 per month.

Maheshwari, Saurabh & Purnima Singh. 2009. Psychological well-being and pilgrimage: Religiosity, happiness and life satisfaction of Ardh-Kumbh Mela pilgrims (Kalpvasis) at Prayag, India. *Asian Journal of Social Psychology* 12(4). 285-292.
doi:[10.1111/j.1467-839X.2009.01291.x](https://doi.org/10.1111/j.1467-839X.2009.01291.x).

In this study of 154 Kalpvasis (pilgrims who stay at the banks of the Sangam for a month in the holy city of Prayag, India during the Mela period), positive association was found between religiosity, happiness and life satisfaction. Results showed that gender did not have a significant role.

Mulligan, Thomas & Frank M. Skidmore. 2009. Religiosity May Alter the Cold Pressor Stress Response. *EXPLORE: The Journal of Science and Healing* 5(6). 345-346.
doi:[10.1016/j.explore.2009.08.002](https://doi.org/10.1016/j.explore.2009.08.002).

Researchers found a measurable difference in the blood pressure, pulse, and serum cortisol response to acute painful stress in Christian (N = 7) versus nonreligious (N = 7) subjects; from similar baselines, blood pressure, pulse, and serum cortisol increased in all subjects, but the increases were attenuated in religious subjects compared to nonreligious subjects (diastolic blood pressure of 5 mm. vs. 13 mm, respectively; systolic blood pressure of 11 vs. 21 mm. Hg, respectively; pulse rate of 2 vs. 9 beats/minute, respectively; and serum cortisol of 0.7 vs. 3.8 µg/dL, respectively).

Rodek, Jelena, Damir Sekulic & Emir Pasalic. 2009. Can we consider religiousness as a protective factor against doping behavior in sport? *Journal of Religion and Health* 48(4). 445-453.
doi:[10.1007/s10943-008-9207-9](https://doi.org/10.1007/s10943-008-9207-9).

In this study of 27 weightlifting/powerlifting athletes from Bosnia and Herzegovina, researchers found that religiousness can be considered as a potential protective factor against doping, but also that religious subjects tend to deny and underestimate the doping behaviors in their sport.

Winter, Laraine, Marie P Dennis & Barbara Parker. 2009. Preferences for life-prolonging medical treatments and deference to the will of God. *Journal of Religion and Health* 48(4). 418-430.
doi:[10.1007/s10943-008-9205-y](https://doi.org/10.1007/s10943-008-9205-y).

Through phone interviews with 304 men and women over 60 years of age, researchers found that higher scores on the God's Will scale (indicative of greater deference to God's will) were associated with stronger life-prolonging treatment preferences in poor-prognosis scenarios.

2.5 SPIRITUALITY & HEALTH: METHOD AND THEORY

Alladin, Assen. 2009. Evidence-based cognitive hypnotherapy for depression. *Contemporary Hypnosis* 26(4). 245-262.

doi:[10.1002/ch.391](https://doi.org/10.1002/ch.391).

This article describes Cognitive Hypnotherapy (CH), an evidence-based multimodal treatment for depression. The components of CH are described in sufficient detail to allow for their replication and validation.

Anand, Jyoti. 2009. Psychological healing and faith in the doctrine of Karma. *Mental Health, Religion & Culture* 12(8). 817-832.

doi:[10.1080/13674670903020889](https://doi.org/10.1080/13674670903020889).

A narrative study was conducted on middle-to-late age women who had undergone major life crises, investigating how they used the doctrine of Karma to make sense of their suffering and readapt to the changed reality. The belief in Karma facilitated acceptance of and emergence from their tragic life events.

Bjarnason, Dana. 2009. Nursing, religiosity, and end-of-life care: interconnections and implications. *The Nursing Clinics of North America* 44(4). 517-525.

doi:[10.1016/j.cnur.2009.07.010](https://doi.org/10.1016/j.cnur.2009.07.010).

The author asserts that nurses' own belief systems can influence end-of-life patient care. When nurses understand their own beliefs and respect the religious practices and needs of patients and their families, it deepens the humanistic dimensions of the nurse-patient relationship.

Cadge, Wendy & Elaine Howard Ecklund. 2009. Prayers in the clinic: how pediatric physicians respond. *Southern Medical Journal* 102(12). 1218-1221.

doi:[10.1097/SMJ.0b013e3181bfac71](https://doi.org/10.1097/SMJ.0b013e3181bfac71).

In-depth interviews with 30 academic pediatricians and pediatric oncologists revealed that when the subject of prayer came up in clinical contexts, it was patients and families who raised it. Pediatric physicians responded to prayer in one of four ways: by participating; accommodating but not participating; reframing; and directing families to other resources.

Coker, Elizabeth M. 2009. Claiming the Public Soul: Representations of Qur'anic Healing and Psychiatry in the Egyptian Print Media. *Transcultural Psychiatry* 46(4). 672-694.

doi:[10.1177/1363461509351390](https://doi.org/10.1177/1363461509351390).

In the debate between Western psychiatry and traditional Qur'anic medicine in Egypt, the media reflects the dominance of psychiatry, but religious healing and religion in general exert an equal, if not more powerful, influence on the form of these media portrayals. Different strategies used to negotiate the tensions between Qur'anic healing and psychiatry by those on both sides of the argument come across in the ways these arguments are portrayed in the media.

Gostecnik, Christian, Tanja Repic, Mateja Cvetek & Robert Cvetek. 2009. The salvational process in relationships: A view from projective-introjective identification and repetition compulsion. *Journal of Religion and Health* 48(4). 496-506.

doi:[10.1007/s10943-008-9215-9](https://doi.org/10.1007/s10943-008-9215-9).

The authors assert that compulsive behavior represents a re-triggering of an original trauma, and that each repeated instance can be seen as a hope for purification and salvation. Some basic Biblical and theological concepts provide the basis for integrating the psychological and theological domains of family systems.

Glicksman, Allen & Tanya Koropecykj-Cox. 2009. Aging among Jewish Americans: implications for understanding religion, ethnicity, and service needs. *The Gerontologist* 49(6). 816-827.

doi:[10.1093/geront/gnp070](https://doi.org/10.1093/geront/gnp070).

Using data from the 2000-2001 National Jewish Population Survey (NJPS), the authors differentiated three groups of Jewish adults aged 65 and older: those who reported observing only Judaism and were affiliated with a denomination within Judaism (N = 776) or were not affiliated (N = 277) and those who reported observing another faith in addition to Judaism (N = 46). Compared to the 1990 NJPS, respondents were older, wealthier, and less likely to be members of a religious denomination than those in the 1990 NJPS. Denominational affiliates were more likely than the other two groups to have a strong ethnic identity but less likely to indicate that religion was important in their lives. Denomination members were also more likely to be children or grandchildren of immigrants.

Haughn, Clifford & John C. Gonsiorek. 2009. The Book of Job: Implications for construct validity of posttraumatic stress disorder diagnostic criteria. *Mental Health, Religion & Culture* 12(8). 833-845.

doi:[10.1080/13674670903101218](https://doi.org/10.1080/13674670903101218).

Researchers found high ratings of congruence between descriptions of Job's reactions and symptoms of PTSD as described in DSM-IV-TR, but lower congruence with the traumatizing events.

Iseminger, Karen, Francesca Levitt & Lisa Kirk. 2009. Healing during existential moments: the "art" of nursing presence. *The Nursing Clinics of North America* 44(4). 447-459.

doi:[10.1016/j.cnur.2009.07.001](https://doi.org/10.1016/j.cnur.2009.07.001).

In this article, the concept of "nursing presence" is introduced and explained, supporting background information is reviewed, barriers are identified, and successful applications are illustrated in different clinical settings, using the "Transformative Nursing Presence Model."

Jensen, Mark P. 2009. Hypnosis for chronic pain management: A new hope. *Pain* 146(3). 235-237.

doi:[10.1016/j.pain.2009.06.027](https://doi.org/10.1016/j.pain.2009.06.027).

The author advocates for research to identify and develop methods for enhancing the efficacy of hypnotic treatments in the face of a resurgence of interest in hypnosis and hypnotic analgesia. This resurgence may be fueled by three recent trends: (1) the clear evidence that the experience of chronic pain is closely related to supraspinal nervous system activity; (2) research demonstrating that hypnosis has direct effects on the supraspinal sites that are linked to the experience of pain; and (3) research demonstrating that self-hypnosis training is effective for reducing the severity of chronic pain.

Krucoff, Mitchell W & Suzanne W Crater. 2009. What do "we" want and need to know about prayer and healing? *Journal of Alternative and Complementary Medicine* 15(12). 1259-1261.

doi:[10.1089/acm.2009.0675](https://doi.org/10.1089/acm.2009.0675).

Because prayer research is still in its infancy, the authors warn against overvaluation of the specific findings or provocative results of prayer research, focusing instead on the overall development of the research.

Lee, Jerry W, Kelly R Morton, James Walters, Denise L Bellinger, Terry L Butler, Colwick Wilson, Eric Walsh, Christopher G Ellison, Monica M McKenzie & Gary E Fraser. 2009. Cohort profile: The biopsychosocial religion and health study (BRHS). *International Journal of Epidemiology* 38(6). 1470-1478.

doi:[10.1093/ije/dyn244](https://doi.org/10.1093/ije/dyn244).

The authors describe the cohort of approximately 10,000 Seventh-Day Adventists about whom data is currently being collected for the biopsychosocial religion and health study (BRHS). Data will continue to be collected for at least 3 years.

Levin, Jeff. 2009. Restoring the spiritual: reflections on arrogance and myopia-allopathic and holistic. *Journal of Religion and Health* 48(4). 482-495.
doi:[10.1007/s10943-008-9212-z](https://doi.org/10.1007/s10943-008-9212-z).

The author states that, until researchers focus on the conceptual and theoretical issues involved in the religion-health connection, the field will remain marginalized and ineffective.

Litz, Brett T, Nathan Stein, Eileen Delaney, Leslie Lebowitz, William P Nash, Caroline Silva & Shira Maguen. 2009. Moral injury and moral repair in war veterans: a preliminary model and intervention strategy. *Clinical Psychology Review* 29(8). 695-706.
doi:[10.1016/j.cpr.2009.07.003](https://doi.org/10.1016/j.cpr.2009.07.003).

To stimulate a critical examination of the possible health effects on war veterans of "moral injury", the authors review available literature, define terms, and offer a working conceptual framework and set of intervention strategies designed to repair moral injury.

Maxwell, Richard W. 2009. The Physiological Foundation of Yoga Chakra Expression. *Zygon* 44(4). 807-824.
doi:[10.1111/j.1467-9744.2009.01035.x](https://doi.org/10.1111/j.1467-9744.2009.01035.x).

This essay on chakras hypothesizes that intercellular gap junction connections provide a physiological mechanism underlying the subtle energy systems described in yoga and other disciplines. Three physical aspects of chakras are distinguished that are integrated through gap junction mechanisms, and are proposed to have arisen during embryological development. Furthermore, electrical conductance associated with a high concentration of gap junctions could generate phenomena that, when subjectively experienced, have the radiant qualities attributed to chakras.

Mistry, Himanshu, Dinesh Bhugra, Kutaiba Chaleby, Farooq Khan & Justin Sauer. 2009. Veiled communication: is uncovering necessary for psychiatric assessment? *Transcultural Psychiatry* 46(4). 642-650.
doi:[10.1177/1363461509351366](https://doi.org/10.1177/1363461509351366).

In an email survey of psychiatrists and psychologists across the world, 9 of 11 believed that clinical judgment may be compromised when Muslim women wear veils (Niqab) during psychiatric assessment.

Naeem, Farooq, Mary Gobbi, Muhammad Ayub & David Kingdon. 2009. University students' views about compatibility of cognitive behaviour therapy (CBT) with their personal, social and religious values (a study from Pakistan). *Mental Health, Religion & Culture* 12(8). 847-855.
doi:[10.1080/13674670903115226](https://doi.org/10.1080/13674670903115226).

In discussions with University students in Rahim Yar Khan, Pakistan, researchers found that students felt that the principles of CBT are consistent with their belief system.

Newcombe, Suzanne. 2009. The Development of Modern Yoga: A Survey of the Field. *Religion Compass* 3(6). 986-1002.
doi:[10.1111/j.1749-8171.2009.00171.x](https://doi.org/10.1111/j.1749-8171.2009.00171.x).

This article considers how the apparent dichotomy between yoga as a physical fitness activity (often termed 'hatha yoga') and/or as a 'spiritual practice' developed historically, and discusses recent trends in the research.

Pesut, Barbara, Marsha Fowler, Sheryl Reimer-Kirkham, Elizabeth Johnston Taylor & Rick Sawatzky. 2009. Particularizing spirituality in points of tension: enriching the discourse. *Nursing Inquiry* 16(4). 337-346.
doi:[10.1111/j.1440-1800.2009.00462.x](https://doi.org/10.1111/j.1440-1800.2009.00462.x).

The authors problematize three claims about spirituality: (1) that all individuals are spiritual; (2) that human spirituality can be assessed and evaluated; and (3) that spirituality is a proper domain of nursing's concern and intervention. They conclude by suggesting that the widely shared values of social justice, compassion and human dignity may well serve as a grounding for the critique of spiritual discourses in nursing.

Sinclair, Shane, Marlene Mysak & Neil A Hagen. 2009. What are the core elements of oncology spiritual care programs? *Palliative & Supportive Care* 7(4). 415-422.
doi:[10.1017/S1478951509990423](https://doi.org/10.1017/S1478951509990423).

Researchers interviewed and observed participants in 5 oncology spiritual care programs, and identified underlying organizational challenges, cultural and professional issues, academic program development challenges, administrative duties, and therapeutic interventions that determined the success of oncology spiritual care programs in practice.

Tanyi, Ruth A, Monica McKenzie & Cynthia Chapek. 2009. How family practice physicians, nurse practitioners, and physician assistants incorporate spiritual care in practice. *Journal of the American Academy of Nurse Practitioners* 21(12). 690-697.
doi:[10.1111/j.1745-7599.2009.00459.x](https://doi.org/10.1111/j.1745-7599.2009.00459.x).

Through semi-structured interviews with 3 physicians, 5 nurse practitioners, and 2 physician assistants, researchers found that, in spite of documented barriers, they incorporate spirituality into their medical practice in five ways: (1) discerning instances for overt spiritual assessment; (2) displaying a genuine and caring attitude; (3) encouraging the use of existing spiritual practices; (4) documenting spiritual care for continuity of care; (5) managing perceived barriers to spiritual care.

Warnock, Carla Jean Pease. 2009. Who pays for providing spiritual care in healthcare settings? The ethical dilemma of taxpayers funding holistic healthcare and the first amendment requirement for separation of church and state. *Journal of Religion and Health* 48(4). 468-481.
doi:[10.1007/s10943-008-9208-8](https://doi.org/10.1007/s10943-008-9208-8).

The author raises the ethical dilemma that surfaces between taxpayers funding holistic healthcare, which includes spiritual health assessment and care, through services such as the United States Department of Veterans Affairs (VA), and the requirement for the separation of church and state in the First Amendment of the Constitution.

Washington, Olivia G M, David P Moxley, Lois Garriott & Jennifer P Weinberger. 2009. Five dimensions of faith and spirituality of older African American women transitioning out of homelessness. *Journal of Religion and Health* 48(4). 431-444.
doi:[10.1007/s10943-008-9198-6](https://doi.org/10.1007/s10943-008-9198-6).

Interviews with 84 older homeless African American women revealed five dimensions of faith and spirituality that serve as resources in understanding the life spaces of homeless minority women: (1) identity and beliefs; (2) affiliation and membership; (3) involvement; (4) practices; and (5) benefits. Understanding these dimensions can facilitate better advocacy.

Zahi, Arnon. 2009. Spiritual-transpersonal hypnosis. *Contemporary Hypnosis* 26(4). 263-268.
doi:[10.1002/ch.392](https://doi.org/10.1002/ch.392).

The field of spiritual and transpersonal psychotherapy and hypnotherapy can be divided into three major categories: research of near-death and out-of-body experiences; past life experiences; and spiritual interpretations in accordance with the patient's beliefs. The present article suggests a fourth category: spiritual interpretations not in accordance with the patient's beliefs. Three cases are reported, and the curative force of the interpretations is discussed.

PART 3. BOOKS

3.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

- Bell, Catherine. 2009. *Ritual: Perspectives and Dimensions--Revised Edition*. Revised. New York: Oxford University Press.
- Chiao, Juan Y. (ed.). 2009. *Cultural Neuroscience: cultural influences on brain function, Volume 178*. (Progress in Brain Research). New York: Elsevier.
- Fales, Evan. 2009. *Divine Intervention: Metaphysical and Epistemological Puzzles*. (Routledge Studies in the Philosophy of Religion). New York: Routledge.
- Morgan, David (ed.). 2009. *Religion and Material Culture: The Matter of Belief*. New York: Routledge.
- Nicholson, Philip T. 2009. *Meditation & Light Visions: A Neurological Analysis*. BookSurge Publishing.
- Ray, Darrel W. 2009. *The God Virus: How religion infects our lives and culture*. Bonner Spring, KS: IPC Press.
- Wildman, Wesley J. 2009. *Science and Religious Anthropology: A Spiritually Evocative Naturalist Interpretation of Human Life*. (Ashgate Science and Religion Series). Aldershot, UK: Ashgate.

3.2 SPIRITUALITY & HEALTH RESEARCH

- Ellens, J. Harold. 2009. *The Healing Power of Spirituality: How Faith Helps Humans Thrive*. (Psychology, Religion and Spirituality). Westport, CT: Praeger.
- Johansen, Thor. 2009. *Religion and Spirituality in Psychotherapy: An Individual Psychology Perspective*. New York: Springer Publishing Company.
- McCown, Donald, Diane Reibel & Marc S. Micozzi. 2009. *Teaching Mindfulness: A Practical Guide for Clinicians and Educators*. New York: Springer Publishing Company.

PART 4. ARTICLES IN PRESS

4.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

- Barresi, John. 2010. On seeing our selves and others as persons. *New Ideas in Psychology*.
doi:[10.1016/j.newideapsych.2009.11.003](https://doi.org/10.1016/j.newideapsych.2009.11.003).
- Barrett, Justin L. 2010. The relative unnaturalness of atheism: On why Geertz and Markússon are both right and wrong. *Religion*.
doi:[10.1016/j.religion.2010.11.002](https://doi.org/10.1016/j.religion.2010.11.002).
- Bering, Jesse. 2010. Atheism is only skin deep: Geertz and Markússon rely mistakenly on sociodemographic data as meaningful indicators of underlying cognition. *Religion*.
doi:[10.1016/j.religion.2010.11.001](https://doi.org/10.1016/j.religion.2010.11.001).
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doi:[10.1007/s10339-009-0352-1](https://doi.org/10.1007/s10339-009-0352-1).
- Cerulo, Karen A. 2010. Mining the intersections of cognitive sociology and neuroscience. *Poetics*.
doi:[10.1016/j.poetic.2010.11.005](https://doi.org/10.1016/j.poetic.2010.11.005).
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doi:[10.1016/j.neubiorev.2008.07.001](https://doi.org/10.1016/j.neubiorev.2008.07.001).
- Epley, Nicholas, Benjamin A Converse, Alexa Delbosc, George A Monteleone & John T Cacioppo. 2010. Believers' estimates of God's beliefs are more egocentric than estimates of other people's beliefs. *Proceedings of the National Academy of Sciences of the United States of America*.
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- Falkenström, Fredrik. 2010. Studying mindfulness in experienced meditators: A quasi-experimental approach. *Personality and Individual Differences* 48(3). 305-310.
doi:[10.1016/j.paid.2010.10.022](https://doi.org/10.1016/j.paid.2010.10.022).
- Granqvist, Pehr, Mario Mikulincer & Phillip R Shaver. 2010. Religion as Attachment: Normative Processes and Individual Differences. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc.*
doi:[10.1177/1088868309348618](https://doi.org/10.1177/1088868309348618).
- Hall, Deborah L, David C Matz & Wendy Wood. 2010. Why Don't We Practice What We Preach? A Meta-Analytic Review of Religious Racism. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc.*
doi:[10.1177/1088868309352179](https://doi.org/10.1177/1088868309352179).
- Jaseja, Harinder. 2010. Potential role of self-induced EEG fast oscillations in predisposition to seizures in meditators. *Epilepsy & Behavior*.
doi:[10.1016/j.yebeh.2010.10.022](https://doi.org/10.1016/j.yebeh.2010.10.022).
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doi:[10.1177/1088868309353750](https://doi.org/10.1177/1088868309353750).

- Koole, Sander L, Michael E McCullough, Julius Kuhl & Peter H M P Roelofsma. 2010. Why Religion's Burdens Are Light: From Religiosity to Implicit Self-Regulation. *Personality and Social Psychology Review*.
doi:[10.1177/1088868309351109](https://doi.org/10.1177/1088868309351109).
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doi:[10.1097/PAF.0b013e3181c03e2e](https://doi.org/10.1097/PAF.0b013e3181c03e2e).
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doi:[10.1177/1088868309352323](https://doi.org/10.1177/1088868309352323).
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4.2 SPIRITUALITY & HEALTH RESEARCH

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