

RESEARCH REVIEW

A DIGEST OF NEW SCIENTIFIC RESEARCH CONCERNING RELIGION, BRAIN & BEHAVIOR OCTOBER, 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, and yoga, tailored to the database being searched. Books were located on Amazon.com, Google Books, and Worldcat. Articles not directly relevant to the scientific study of religion were excluded, as was correspondence. From a universe of 716 articles, 159 articles have been retained from 119 journals. There are 69 pre-publication citations from 47 journals.

IRR is distributed free of charge 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

Eggert, LD, BK Holzel, MR Quirin, JC Pruessner & SW Lazar. 2009. Differences in gray matter volume associated with insight meditation: a voxel-based morphometry study. *Psychophysiology* 46(Suppl. 1). S118-S118.

Meeting abstract from the 49th Annual Meeting of the Society for Psychophysiological Research in Berlin, Germany, Oct. 21-24, 2009.

Harris, Sam, Jonas T Kaplan, Ashley Curiel, Susan Y Bookheimer, Marco Iacoboni & Mark S Cohen. 2009. The neural correlates of religious and nonreligious belief. *PloS One* 4(10). e0007272.

doi:10.1371/journal.pone.0007272.

The authors used fMRI to measure signal changes in the brains of 30 subjects (15 committed Christians and 15 nonbelievers) as they evaluated the truth and falsity of religious and nonreligious propositions. For each trial either a religious statement (e.g., "Jesus Christ really performed the miracles attributed to him in the Bible") or a nonreligious statement (e.g., "Alexander the Great was a very famous military leader") appeared, and participants pressed a button to indicate whether the statement was true or false. Stimuli were designed to produce roughly equal numbers of believed and disbelieved trials in each category. Greater signal for belief compared with disbelief appeared in the ventromedial prefrontal cortex (VMPFC), lateral occipital cortex, and superior frontal gyrus. For both groups, and in both categories of stimuli, belief (judgments of "true" vs. judgments of "false") was associated with greater signal in the VMPFC, an area important for self-representation, emotional associations, reward, and goal-driven behavior.

Lutz, A, HA Slagter, NB Rawlings, AD Francis, LL Greischar & RJ Davidson. 2009. Mental Training Enhances Attentional Stability: Neural and Behavioral Evidence. *Journal of Neuroscience* 29(42). 13418-13427.

doi:10.1523/jneurosci.1614-09.2009.

Using EEG and dichotic listening task performance, the researchers show that the practice of training attention through meditation can improve brain function and the ability to sustain attention, and they highlight the mechanisms underlying those practices. Three months of intensive meditation training reduced variability in attentional processing of target tones, as indicated by both enhanced theta-band phase consistency of oscillatory neural responses over anterior brain areas and reduced reaction time variability. Individuals who showed the greatest increase in neural response consistency showed the largest decrease in behavioral response variability. Researchers also observed reduced variability in neural processing, particularly in low-frequency bands, regardless of whether the deviant tone was attended or unattended. Focused attention meditation may thus affect both distracter and target processing, perhaps by enhancing entrainment of neuronal oscillations to sensory input rhythms, a mechanism important for controlling the content of attention.

Raffone, Antonino & Narayanan Srinivasan. 2009. An adaptive workspace hypothesis about the neural correlates of consciousness: insights from neuroscience and meditation studies. *Progress in Brain Research* 176. 161-180.

doi:10.1016/S0079-6123(09)17620-3.

The authors develop a unitary theoretical framework for neural correlates of consciousness (NCC), with an interdependent characterization of endogenous attention, access consciousness, phenomenal awareness, metacognitive consciousness, and a non-referential form of unified consciousness. They advance an adaptive workspace hypothesis

about the NCC based on the global workspace model emphasizing transient resonant neurodynamics and prefrontal cortex function, as well as meditation-related characterizations of conscious experiences. According to this hypothesis, transient dynamic links within an adaptive coding net in prefrontal cortex, especially in anterior prefrontal cortex, and between it and the rest of the brain, in terms of ongoing intrinsic and long-range signal exchanges, flexibly regulate the interplay between endogenous attention, access consciousness, phenomenal awareness, and metacognitive consciousness processes. Such processes are established in terms of complementary aspects of an ongoing transition between context-sensitive global workspace assemblies, modulated moment-to-moment by body and environment states. Brain regions associated with momentary interoceptive and exteroceptive self-awareness, or first-person experiential perspective as emphasized in open monitoring meditation, play an important modulatory role in adaptive workspace transitions.

Rakic, Pasko. 2009. Evolution of the neocortex: a perspective from developmental biology. *Nature Reviews Neuroscience* 10(10). 724-735. doi:10.1038/nrn2719.

The author holds that the enlargement and species-specific elaboration of the cerebral neocortex during evolution holds the secret to the mental abilities of humans, though the genetic origin and cellular mechanisms that generated the distinct evolutionary advancements are not well understood. The article describes how novelties that make us human may have been introduced during evolution, based on findings in the embryonic cerebral cortex in different mammalian species. The data on the differences in gene expression, new molecular pathways and novel cellular interactions that have led to these evolutionary advances may also provide insight into the pathogenesis and therapies for human-specific neuropsychiatric disorders.

Tei, Shisei, Pascal L Faber, Dietrich Lehmann, Takuya Tsujiuchi, Hiroaki Kumano, Roberto D Pascual-Marqui, Lorena R R Gianotti & Kieko Kochi. 2009. Meditators and non-meditators: EEG source imaging during resting. *Brain Topography* 22(3). 158-165. doi:10.1007/s10548-009-0107-4.

Researchers hypothesized that the neuroplasticity effects of meditation (correlates of increased awareness and detachment) would be detectable in a no-task resting state. EEG recorded during resting was compared between Qi Gong meditators and controls. Using LORETA (low resolution electromagnetic tomography) to compute the intracerebral source locations, differences in brain activations between groups were found in the inhibitory delta EEG frequency band. In the meditators, appraisal systems were inhibited, while brain areas involved in the detection and integration of internal and external sensory information showed increased activation.

Wasi, P. 2009. Brain and meditation. *Journal of the Neurological Sciences* 285(Supplement 1). S36. doi:10.1016/S0022-510X(09)70171-6.

This article reviews recent brain imaging studies about changes in the structures and functions of the brain that are associated with meditation. The prefrontal cortex (PFC) is the site of prominent alteration. Increased thickness of central PFC is detected in long termed meditators. The left PFC is remarkably active during meditation, associated with reduction of activity of the limbic system. The amygdale shows decreased activity during meditation. Through the thalamus gateway inhibitory firing is conveyed to the sensory parietal area, resulting in more focus attention. There is a shifting of brain activity from the self-centered area to the other-centered area, thus decreasing the sense of self. Effects on the hypothalamus connect to the autonomic nervous system with shifting toward the parasympathetic activity. This leads to slowing down, relaxation, decreased blood pressure and heart rates, and reduction of cortisol level. Neurotransmitters and neurochemicals associated with wellbeing such as endorphins, dopamine, serotonin, GABA, and arginine vasopressin have been found to increase as well.

1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION

Abbot, Patrick. 2009. On the evolution of dispersal and altruism in aphids. *Evolution: International Journal of Organic Evolution* 63(10). 2687-2696.

doi:10.1111/j.1558-5646.2009.00744.x.

The author used microsatellites to evaluate the patterns of variation in the clonal group structure of both social and nonsocial aphid species. Multiclonal groups are consistent features across sites and host plants, and all species, regardless of sociality, can be found in groups composed of large fractions of multiple clones, and even multiple species. Between-group dispersal in gall-forming aphids is ubiquitous, implying that factors acting ultimately to increase between-clone interactions and decrease within-group relatedness were present in aphids prior to the origins of sociality. By demonstrating that between-group dispersal is common in aphids, and thus interactions between clones are also common, results suggest that understanding the ecological dynamics of dispersal and competition may offer unique insights into the evolutionary puzzle of sociality in aphids.

Anderson, Lisa R. & Jennifer M. Mellor. 2009. Religion and cooperation in a public goods experiment. *Economics Letters* 105(1). 58-60. doi:10.1016/j.econlet.2009.05.016.

The authors tested 64 subjects, 50 years of age and older, to examine the association between religious affiliation and church attendance, and repeated cooperative behavior, in the experimental setting of a public goods experiment. Researchers examined dynamic decision making by repeating the game for several rounds and providing feedback about others' choices after each round. They found that contribution levels were not influenced by religious affiliation or participation. When controlling for religious affiliation, weekly attendance is associated with a larger decline in group account contributions over time. The decline with repetition is smaller among religious subjects, suggesting that religion may sustain cooperation.

Coakley, Sarah. 2009. Evolution and Sacrifice. Christian Century 126(21). 10-11.

The article discusses the scientific concept of cooperation in modern understandings of evolution, quoting evolutionary biologist Martin A. Nowak saying cooperation should be counted as a third evolutionary principle along with mutation and selection. The author holds that cooperation allows for acts that do not benefit the individual directly but that benefit another, and thus the population as a whole. The article also discusses the possibility of God as the cause of the evolutionary process.

Edwards, David P. 2009. The roles of tolerance in the evolution, maintenance and breakdown of mutualism. *Die Naturwissenschaften* 96(10). 1137-1145. doi:10.1007/s00114-009-0559-0.

Tolerance strategies are cost-reduction mechanisms that enable organisms to recover some of the fitness lost to damage, but impose limited or no cost on antagonists. They are frequently invoked in studies of plant-herbivore and of host-parasite interactions, but the possible roles of tolerance in mutualism (interspecific cooperation) have yet to be thoroughly examined. First, the review identifies candidate roles for tolerance in the evolution, maintenance and breakdown of mutualism, and finds that reducing the cost of damage tolerance provides a key pathway by which pre-mutualistic hosts can reduce the cost of association with their parasites, promoting cooperation. Second, tolerance might maintain cooperation in outright mutualism by reducing the cost of a persisting negative trait in a symbiotic partner. Finally, the evolution of tolerance might also provide a pathway out of mutualism because the host could evolve a cheaper alternative to continued cooperation with its mutualistic partner, permitting autonomy.

Jacobson, Anne Jaap. 2009. Empathy and Instinct: Cognitive Neuroscience and Folk Psychology. Inquiry: An Interdisciplinary Journal of Philosophy 52(5). 467-482. doi:10.1080/00201740903302618.

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This paper explores a model under development in cognitive neuroscience that enables an understanding of helpful actions as possibly instinctive. The account that emerges puts some pressure on key concepts in the philosophical understanding of folk psychology. In developing the contrast, a notion of embodied beliefs is introduced that arguably fits folk conceptions better than philosophical ones.

Johnson, Richard. 2009. Gods and monsters: Religion as a survival strategy. *Heythrop Journal* 50(5). 864-876.

doi:10.1111/j.1468-2265.2009.00491.x.

The article discusses religion, its evolution, and morality, according to the thought of anthropological philosopher René Girard. The different aspects and components of Girard's theory are discussed, and the author concludes that Girard's theory on religion contains a more scientific approach to the theory of evolution and religion than most.

Khare, Anupama, Lorenzo A Santorelli, Joan E Strassmann, David C Queller, Adam Kuspa & Gad Shaulsky. 2009. Cheater-resistance is not futile. *Nature* 461(7266). 980-982. doi:10.1038/nature08472.

The authors show that the presence of a cheater in a population of randomly mutated social amoebae can select for cheater-resistance. Furthermore, we show that this cheater-resistance can be a noble strategy because the resister strain does not necessarily exploit other strains. Thus, the evolution of resisters may be instrumental in preserving cooperative behavior in the face of cheating.

Mesoudi, Alex. 2009. How cultural evolutionary theory can inform social psychology and vice versa. *Psychological Review* 116(4). 929-952.

doi:10.1037/a0017062.

The author shows how an integration of research in social psychology and cultural evolution can be mutually beneficial. Social psychological experiments and theories provide details of the microevolutionary mechanisms through which cultural evolution operates, while cultural evolutionary theory provides details regarding the origins and population-level consequences of many social psychological phenomena. After outlining contemporary cultural evolutionary theory, the article provides details of the specific research areas in which this mutual benefit can be observed.

Paul, Gregory. 2009. The Chronic Dependence of Popular Religiosity upon Dysfunctional Psychosociological Conditions. *Evolutionary Psychology* 7(3). 398-441. www.epjournal.net/filestore/EP07398441 c.pdf.

Using the Successful Societies Scale, the author does a cross-natural comparison of socioeconomic conditions and popular religiosity, and finds that population diversity and immigration correlate weakly with first-world socioeconomic conditions, and high levels of income disparity, popular religiosity as measured by differing levels of belief and activity, and rejection of evolutionary science correlate strongly negatively with improving conditions. The author holds that the ease with which large populations abandon serious theism when conditions are sufficiently benign refute hypotheses that religious belief and practice are the normal, deeply set human mental state.

Pierce, Jessica & Marc Bekoff. 2009. Moral in Tooth and Claw. *Chronicle of Higher Education* 56(9). B10-B11.

The article discusses the study of animals as social and moral beings, reviewing literature that shows the intricate social lives of animals and the roles of cooperation and caring in evolution in addition to competition and ruthlessness. It discusses play as a way of working to understand social rules and fine-tune behavior, and notes that in animals, the four aspects of fair play — ask first, be honest, follow the rules and admit you are wrong — are ways of establishing trust.

Schtickzelle, Nicolas, Else J Fjerdingstad, Alexis Chaine & Jean Clobert. 2009. Cooperative social clusters are not destroyed by dispersal in a ciliate. *BMC Evolutionary Biology* 9. 251. doi:10.1186/1471-2148-9-251.

Researchers tested the assumption that there is a fundamental trade-off between cooperation and dispersal by using 10 genetically isolated strains of a ciliate, Tetrahymena thermophila. They found that the propensity for social aggregation was greater in strains with reduced cell quality and lower growth performance. While they found a trade-off between costly aggregation and local dispersal in phenotypic analyses, aggregative strains showed a dispersal polymorphism by producing either highly sedentary or long-distance dispersive cells, in contrast to less aggregative strains whose cells were monomorphic local dispersers.

Souza, Max O, Jorge M Pacheco & Francisco C Santos. 2009. Evolution of cooperation under N-person snowdrift games. *Journal of Theoretical Biology* 260(4). 581-588. doi:10.1016/j.jtbi.2009.07.010.

The authors study the evolutionary dynamics of cooperators and defectors in a population in which groups of individuals engage in N-person, non-excludable public goods games, using the well-known two-person snowdrift game. Whereas in infinite populations an N-person snowdrift game leads to a stable coexistence between cooperators and defectors, the introduction of a threshold leads to the appearance of a new interior fixed point associated with a coordination threshold. The fingerprints of the stable and unstable interior fixed points affect the evolutionary dynamics in finite populations, despite evolution leading the population inexorably to a monomorphic end-state. However, when the group size and population size become comparable, spite sets in, rendering cooperation unfeasible.

du Toit, Cornel W. 2009. Is religion grounded in evolution? A critical look at some models. *European Journal of Science and Technology* 5(3). 13-35.

The article deals with religion as a product of evolution, seen as adaptive modification, albeit not necessarily progressive. It focuses on René Girard, because of his integration of human biology and human culture from pre-historic to modern times. The author holds that we need to adopt both an anthropological and scientific view of human culture.

Wu, Jia-Jia, Bo-Yu Zhang, Zhen-Xing Zhou, Qiao-Qiao He, Xiu-Deng Zheng, Ross Cressman & Yi Tao. 2009. Costly punishment does not always increase cooperation. *Proceedings of the National Academy of Sciences of the United States of America* 106(41). 17448-17451. doi:10.1073/pnas.0905918106.

The authors examined the hypothesis that individuals will behave more cooperatively if they know that their opponent has the option of using costly punishment by conducting two repeated two-player Prisoner's Dilemma experiments that differed in their payoffs associated to cooperation. Using college students in Beijing as subjects, experiments showed that the level of cooperation either stayed the same or decreased when compared with the control experiments in which costly punishment was not an option. The authors hold that this result, which contradicts a similar experiment done earlier in Boston, is likely due to cultural differences.

Yamamoto, Shinya, Tatyana Humle, Masayuki Tanaka & Stewart Plaistow. 2009. Chimpanzees Help Each Other upon Request. *PLoS ONE* 4(10). e7416. doi:10.1371/journal.pone.0007416.

Researchers investigated chimpanzees' targeted helping in a tool transfer paradigm, and found that spontaneous tool transfer events between paired chimpanzees occurred predominantly following recipients' request; chimpanzees rarely performed acts of voluntary altruism. Even without the possibility of reciprocation, however, the chimpanzees continued to help the partner as long as the partner required help.

1.3 SCIENTIFIC STUDY OF RELIGION: GENERAL PSYCHOLOGY

Apperly, Ian A & Stephen A Butterfill. 2009. Do humans have two systems to track beliefs and belief-like states? *Psychological Review* 116(4). 953-970. doi:10.1037/a0016923.

The lack of consensus on how to characterize humans' capacity for belief reasoning has been brought into sharp focus by recent research on nonhuman animals, children, and adults. The authors interpret these findings by drawing an analogy with the domain of number cognition. They propose that the success of infants and nonhuman animals on some belief reasoning tasks may be best explained by a cognitively efficient but inflexible capacity for tracking belief-like states. In humans, this capacity persists in parallel with a later-developing, more flexible but more cognitively demanding theory-of-mind abilities.

Arzheimer, Kai & Elisabeth Carter. 2009. Christian Religiosity and Voting for West European Radical Right Parties. *West European Politics* 32(5). 985-1011. doi:10.1080/01402380903065058.

This article examines the relationship between Christian religiosity and the support for radical right parties in Western Europe. Drawing on theories of electoral choice and on socio-psychological literature, the authors find that while religiosity has few direct effects, and while religious people are neither more nor less hostile towards ethnic minorities (and thereby neither more nor less prone to vote for a radical right party), they are not 'available' to these parties because they are still firmly attached to Christian Democratic or conservative parties. However, given increasing de-alignment, this "vaccine effect" is likely to become weaker with time.

Balkin, Richard S., Lewis Z. Schlosser & Dana Heller Levitt. 2009. Religious Identity and Cultural Diversity: Exploring the Relationships Between Religious Identity, Sexism, Homophobia, and Multicultural Competence. *Journal of Counseling and Development* 87(4). 420-427.

The authors present the results from a national American study investigating the relationships between religious identity, sexism, homophobia, and multicultural competence. Participants were 111 randomly sampled counseling professionals and graduate students. The results indicated a relationship between religious identity and various aspects of valuing cultural diversity, including sexism, homophobia, and multicultural competence.

Ballester, Sandrine, María Teresa Muñoz Sastre & Etienne Mullet. 2009. Forgivingness and lay conceptualizations of forgiveness. *Personality and Individual Differences* 47(6). 605-609. doi:10.1016/j.paid.2009.05.016.

The relationships between conceptualizations of forgiveness and general propensity to forgive were assessed. A positive association was found between unconditional forgiveness and the beliefs that (a) forgiveness corresponds to a decrease in negative feelings and to an increase in positive feelings towards the offender and (b) forgiveness is a broad process that is not limited to the victim-offender dyad. A positive association between the view that forgiveness is immoral and propensity to lasting resentment was also found. These associations were evidenced beyond the associations already found with educational level, religious involvement, and personality variables.

Berti, Anna Emilia, Isabella Baldin & Laura Toneatti. 2009. Empathy in history. Understanding a past institution (ordeal) in children and young adults when description and rationale are provided. *Contemporary Educational Psychology* 34(4). 278-288. doi:10.1016/j.cedpsych.2009.06.002.

A total of 150 students, from 8 to 25 years old, were interviewed about ordeal in the Middle Ages, after reading a shorter and simplified version of a text used in previous research on this topic. Nearly all students understood that ordeal involved the intervention of God, and was related to religious beliefs different from the present. With age, there was an increase in the number of students also referring to the backwardness of the Middle Ages, or

stating that at least some Medieval peoples did not expect ordeal to be decisive about the guilt or innocence of an accused.

Garland, Eric L & Matthew Owen Howard. 2009. Neuroplasticity, psychosocial genomics, and the biopsychosocial paradigm in the 21st century. *Health & Social Work* 34(3). 191-199.

The article reviews findings that demonstrate that the adult brain can continue to form novel neural connections and grow new neurons in response to learning or training even into old age. Combined with psychosocial genomics, a field of scientific inquiry that explores the modulating effects of experience on gene expression, the authors hold that these new sciences provide external validation for the biopsychosocial perspective and offer important insights into how socioenvironmental experiences influence neurobiological structure and function across the life course.

Krause, N & E Bastida. 2009. Exploring the interface between religion and contact with the dead among older Mexican Americans. *Review of Religious Research* 51(1). 5-20.

Researchers performed 52 in-depth interviews with Mexican Americans residing in Texas to examine the relationship between religion and post death contact among older Mexican Americans. Four major themes emerged. First, while many older study participants reported contact with the dead, others indicated this was not possible. Second, the form in which contact with the dead was made varied greatly. Third, although some older Mexican American study participants believed that it was in the best interests of the dead to contact the living, others felt the dead should instead be in Heaven with God. Fourth, participants reported that having contact with the dead provides a number of important social and psychological benefits.

Krueger, JW. 2009. Empathy and the Extended Mind. *Zygon* 44(3). 675-698. doi:10.1111/j.1467-9744.2009.01024.x

The author draws upon the extended mind thesis (EM) to analyze empathy and interpersonal understanding, arguing that empathy is fundamentally an extended bodily activity. Using narratives of individuals with Moebius syndrome, an expressive deficit resulting from bilateral facial paralysis, as support, he offers an "extended" characterization of empathy, and concludes with a discussion of how a Zen Buddhist ethics of responsiveness is helpful for articulating the practical significance of an extended, body-based account of empathy.

Maibom, Heidi L. 2009. Feeling for Others: Empathy, Sympathy, and Morality. *Inquiry: An Interdisciplinary Journal of Philosophy* 52(5). 483-499. doi:10.1080/00201740903302626.

The author provides evidence from people with frontal lobe damage to show that, against popular notions, neither empathy nor sympathy is necessary for the understanding of harm norms. Further, she holds that the sorts of considerations of welfare that are central to sympathy and empathy are often already moralized, and therefore cannot form the non-moral foundation of harm norms.

Mullet, Etienne & Fabiola Azar. 2009. Apologies, Repentance, and Forgiveness: A Muslim-Christian Comparison. *International Journal for the Psychology of Religion* 19(4). 275-285. doi:10.1080/10508610903146274.

Forgivingness (dispositional forgiveness) was assessed in three different samples of 119 Lebanese Muslims, 121 Lebanese Christians, and 151 French Christians. The Lebanese and French Christian sample evidenced forgivingness structures that corresponded to the three-factor Western European model (Lasting Resentment, Sensitivity to Circumstances, and Unconditional Forgiveness); the Lebanese Muslim sample gave a special status to repentance and apologies. The Lebanese Muslims' unconditional forgiveness score was lower than the corresponding Lebanese Christians' and French Christians' scores, a difference not attributable to possible differential acquiescence effects.

de Neys, Wim & Samuel Franssens. 2009. Belief inhibition during thinking: Not always winning but at least taking part. *Cognition* 113(1). 45-61. doi:10.1016/j.cognition.2009.07.009.

The authors clarify the nature of an inhibition failure and the resulting belief bias by probing the accessibility of cued beliefs after people reasoned. Results indicated that even the poorest reasoners showed an impaired memory access to words that were associated with cued beliefs after solving reasoning problems in which the beliefs conflicted with normative considerations. The study also established that the impairment was only temporary in nature and did not occur when people were explicitly instructed to give intuitive judgments. Findings present solid evidence for the postulation of an inhibition process and imply that belief bias does not result from a failure to recognize the need to inhibit inappropriate beliefs, but from a failure to complete the inhibition process, indicating that people are more logical than previously believed.

Platt, C. 2009. The Medium and the Matrix: Unconscious Information and the Therapeutic Dyad. *Journal of Consciousness Studies* 16(9). 55-76.

Recent scientific research has shown how genetic predisposition plus trauma cause dissociation, along with observable changes in the brain. EEG and PET scans have demonstrated that distinct neural networks lie at the base of dissociative states, with differences as striking as blindness vs. sight. Research is pointing as well to the role of the right hemisphere in developing a core sense of self through the mother-infant bond and dividing it in response to childhood trauma and later stressors. This paper reports case studies of an empathic therapeutic matrix where unconscious transfers of information occurred with surprising revelations and imaginative constructs that both healed the patient and changed the therapist's own beliefs.

Sen, R & W Wagner. 2009. Cultural Mechanics of Fundamentalism: Religion as Ideology, Divided Identities and Violence in Post-Gandhi India. *Culture & Psychology* 15(3). 299-326. doi:10.1177/1354067X09337869.

This study analyses the history of Hindu fundamentalism from India's independence up to the present time. The authors argue that religious fundamentalist groups in India, versus fundamentalist groups based in Abrahamic traditions, are sociocultural, and as such trigger a heightened awareness of ethnic identity, prime a religiously ideological mindset and, as a consequence, release communal violence.

Shao, RD & DP Skarlicki. 2009. The Role of Mindfulness in Predicting Individual Performance. Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement 41(4). 195-201. doi:10.1037/a0015166.

The authors examined whether mindfulness was related to performance among a group of 149 MBA students. The results show that mindfulness interacted with gender to predict performance. Specifically, the positive association between mindfulness and performance was stronger for women than for men.

Shelov, Danielle V, Sonia Suchday & Jennifer P Friedberg. 2009. A pilot study measuring the impact of yoga on the trait of mindfulness. *Behavioural and Cognitive Psychotherapy* 37(5). 595-598. doi:10.1017/S1352465809990361.

The authors studied whether yoga would increase levels of mindfulness in a healthy population of 23 participants taking part in an 8-week yoga intervention group versus 23 on a wait-list control group. The yoga group experienced a significant increase in Overall mindfulness, and in three mindfulness subscales: Attention to the present moment; Accepting and open attitudes toward experience; and Insightful understanding.

Sie, Maureen. 2009. Moral Agency, Conscious Control, and Deliberative Awareness. *Inquiry: An Interdisciplinary Journal of Philosophy* 52(5). 516-531. doi:10.1080/00201740903302642.

This paper argues in favor of a refinement of our common perception of moral agency, given research showing that conscious control and deliberative awareness are not all-pervasive aspects of our everyday dealings with one another. However, it also argues against the suggestion that this refined concept is the result of a radical new understanding of our everyday moral practices.

Siev, Jedidiah. 2009. Attitude and Behavior in (Classic) Social Psychology and Rabbinic Thought: Implications for Psychology of Religion Research. International Journal for the Psychology of Religion 19(3). 187-199.

doi:10.1080/10508610902880097.

This article explores literature about the relationship between attitude and behavior in social psychology and the rabbinic tradition, given empirical literature revealing that external behavior affects internal attitudes. These relate to the causal influence of behavior on attitude, behavioral factors leading to internalization or externalization, and the relationship between effort and satisfaction.

Sousa, Paulo, Colin Holbrook & Jared Piazza. 2009. The morality of harm. Cognition 113(1). 80-92. doi:10.1016/i.cognition.2009.06.015.

The authors discuss the range of concerns people weigh when evaluating the acceptability of harmful actions and propose a new perspective on the relationship between harm and morality. The results of the authors' research shows that actions involving harm and injustice or rights violation are judged to be authority independent and general in scope.

van Dam, Nicholas T., Mitch Earleywine & Sharon Danoff-Burg. 2009. Differential item function across meditators and non-meditators on the Five Facet Mindfulness Questionnaire. Personality and Individual Differences 47(5). 516-521. doi:10.1016/j.paid.2009.05.005.

The authors demonstrate that an online sample of meditators and non-meditators with similar overall levels of mindfulness differentially endorse response options for positively and negatively worded items. While meditators endorse mindfulness-present and mindfulness-absent items with nearly equivalent frequency, student non-meditators are much more likely to reject mindfulness-absent items than to accept mindfulness-present items. The differential item functioning between these two groups represents a potential problem regarding construct validity when comparing meditators to non-meditators and when assessing mindfulness as a pre-post measure with meditation practice.

1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY

Andrews, Kristin. 2009. Understanding Norms Without a Theory of Mind. Inquiry: An Interdisciplinary *Journal of Philosophy* 52(5). 433-448.

doi:10.1080/00201740903302584.

The author argues that having a theory of mind requires having at least implicit knowledge of the norms of the community, and that an implicit understanding of the normative is what drives the development of a theory of mind. She concludes with an explanation for the priority of norms over a theory of mind: given an understanding of norms in a society, and the ability to recognize and sanction violations, there developed a need to understand actions that violated the norms, and such explanations could only be given in terms of a person's reasons.

Ausloos, M. & F. Petroni. 2009. Statistical dynamics of religion evolutions. Physica A: Statistical Mechanics and its Applications 388(20). 4438-4444. doi:10.1016/j.physa.2009.06.051.

The authors review data analysis and modelization of religious questions in order to suggest, and if possible initiate, further research. After using a "statistical physics filter," they discuss the evolution of 18 religions, as measured through their number of adherents between 1900 and 2000. Besides the "at birth" attachment effect, they also show a competitive ingredient at work.

Fayard, Carlos, Melissa J. Pereau & Antonia Ciovica. 2009. 'Love the Lord With All Your Mind': Explorations on a Possible Neurobiology of the Experience of God and Some Implications for the Practice of Psychotherapy. *Journal of Psychology & Christianity* 28(2). 167-181.

This article reviews literature on neurobiology, developmental and cognitive psychology, as organized and guided by a Christian perspective. They hold that humans are designed to relate to God, and the coordinated activation and deactivation of diverse brain systems provide the matrix for a neurobiology of the experience of God. They propose three systems — Seeking System, Attachment System, Theory-of-Mind System — that inform who humans believe God to be like. Clinical examples are provided to illustrate potential applications of this model to a spiritually informed psychotherapeutic process.

Hunt, Harry. 2009. A Cognitive-Developmental Theory of Human Consciousness: Incommensurable Cognitive Domains of Purpose and Cause as a Conjoined Ontology of Inherent Human Unbalance. *Journal of Consciousness Studies* 16(9). 27-54.

The author develops a theory of human nature in terms of developmental interactions between initially separate cognitive domains. The cognitive development of mind through childhood can itself be understood as multiple but necessarily incomplete fusions between person knowing ('theory of mind') and thing/tool knowing ('naive physics'). A consequence is that human consciousness, while based on these selective and necessarily partial domain integrations, is fundamentally and permanently unbalanced, leading to the very best and very worst of the human condition.

Kappinen, Matti. 2009. Rationality, Religion and Intentional Systems Theory: From Objective Ethnography to the Critical Study of Religious Beliefs. *Method & Theory in the Study of Religion* 21(3). 274-284.

doi:10.1163/157006809X460329.

The essay argues that rationality has three roles in the study of religion: as a presupposition in the ethnographic descriptions of religious behaviour; as the explanatory principle in ethnography of religion; and as a normative tool in the critical assessments of religion. It is argued that all three roles are rooted in the Dennettian intentional system theory and are thus intricately linked with each other. It is further argued that any ethnographic study of religion that uses the best available scientific methods in the description and explanation of human behaviour commits itself to the relative optimality of scientific outlook and therefore to a critique of religion in principle.

Kugelmann, Robert & Jacob A. Belzen. 2009. Historical intersections of psychology, religion, and politics in national contexts. *History of Psychology* 12(3). 125-131. doi:10.1037/a0016855.

An introduction to the articles in the special issue of History of Psychology that focus on the intertwinements between institutional religion and national political structures, and on their influence on developing forms of psychology in four different national contexts: Spain; the Netherlands; the United Kingdom; and the United States. Within these four settings, aspects of the ways in which varying forms of Christian religion coconstituted, facilitated, and shaped psychology, theoretically, practically, and institutionally, are examined.

Lehtinen, Esa. 2009. Conversation analysis and religion: Practices of talking about Bible texts in Seventh-day Adventist Bible study. *Religion* 39(3). 233-247. doi:10.1016/j.religion.2009.02.006.

IBCSR Research Review: October, 2009

Using audio-recordings of Bible study sessions in a Seventh-day Adventist church in Finland, the article shows what ethnomethodology and conversation analysis have to offer to the study of Bible reading, comparing conversation analysis with ethnography of reading. The conversation analytical perspective is demonstrated through examining some recurrent practices of talking about Bible texts in the Bible study, namely, recontextualizing words and expressions, and inferences about the characters and events in the texts.

McCauley, Robert N. 2009. Time is of the essence: Explanatory pluralism and accommodating theories about long-term processes. *Philosophical Psychology* 22(5). 611-635. doi:10.1080/09515080903238906.

The author critiques unified, all-purpose, philosophical models of reduction in science that lack the resources for capturing varieties of cross-scientific relations. He proposes explanatory pluralism, which accommodates a wider range of connections between theories and inquiries in science than all-purpose models of reduction do.

Raichle, Marcus E. 2009. A Paradigm Shift in Functional Brain Imaging. *Journal of Neuroscience* 29(41). 12729-12734.

doi:10.1523/jneurosci.4366-09.2009.

Since 1973, imaging of the human brain, first with PET, and now with MRI, has become an increasingly important part of research, as well as an important face for brain research in the lay community. The thirst for information about brain function is universal, and imaging, for better or worse, has been used by many as a medium for the discussion.

Santoro, Giuseppe, Mark Wood, Lucia Merlo, Giuseppe Anastasi, Francesco Tomasello & Antonino Germanò. 2009. The anatomic location of the soul from the heart, through the brain, to the whole body, and beyond: a journey through Western history, science, and philosophy. *Neurosurgery* 65(4). 633-643.

doi:10.1227/01.neu.0000349750.22332.6A.

The authors surveyed a history of Western philosophical, theological, and scientific thought and found that the search for the soul historically has led to a deepening of our scientific knowledge regarding the physiological and, in particular, cardiovascular and neurological nature of human beings. They call for an appreciation of the significant role that the concept of the soul has played in the development of Western scientific, medical, and spiritual life.

Schjoedt, Uffe. 2009. The Religious Brain: A General Introduction to the Experimental Neuroscience of Religion. *Method & Theory in the Study of Religion* 21(3). 310-339. doi:10.1163/157006809X460347.

The article introduces the experimental neuroscience of religion to scholars who have an interest in the neurobiological and cognitive aspects of religion, but who do not have the necessary technical and methodological knowledge to evaluate this field's limitations and potential. It reviews six lines of research, with particular focus on issues of ecological validity, the use of contrast conditions, and theoretical grounding.

PART 2. ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

2.1 SPIRITUALITY & HEALTH: MEDICAL CONDITIONS

Argoff, Charles E, Phillip Albrecht, Gordon Irving & Frank Rice. 2009. Multimodal analgesia for chronic pain: rationale and future directions. *Pain Medicine* 10(Suppl 2). S53-66. doi:10.1111/j.1526-4637.2009.00669.x.

This review of treatment options for chronic pain discusses the biochemical basis of pain, factors that govern its severity and chronicity, and foundational elements for current and emerging multimodal treatment strategies. These treatment options, influenced by patient-specific emotions, cognition, and memories, including relaxation therapies, coping skills development, and cognitive-behavioral therapy.

Badsha, Humeira, Vishwas Chhabra, Cathy Leibman, Ayman Mofti & Kok Ooi Kong. 2009. The benefits of yoga for rheumatoid arthritis: results of a preliminary, structured 8-week program. *Rheumatology International* 29(12). 1417-1421. doi:10.1007/s00296-009-0871-1.

This study measured the effects of a bi-weekly Raj yoga program on rheumatoid arthritis (RA) disease activity. A total of 47 patients were enrolled: 26 yoga and 21 controls. Patients who underwent 12 sessions of yoga had statistically significant improvements in the shortened Disease Activity Scale (DAS28) and the Health Assessment Questionnaire, but not on reported quality of life.

Bormann, Jill, Kathleen A Warren, Laura Regalbuto, Dale Glaser, Ann Kelly, Judy Schnack & Lakemba Hinton. 2009. A spiritually based caregiver intervention with telephone delivery for family caregivers of veterans with dementia. *Family & Community Health* 32(4). 345-353. doi:10.1097/FCH.0b013e3181b91fd6.

This exploratory study, using 16 caregivers, tested the efficacy of an innovative, spiritually-based mantram caregiver intervention delivered using teleconference calls. Significant effects for time and linear terms were found for decreasing caregiver burden, perceived stress, depression, and rumination, and for increasing quality of life enjoyment and satisfaction, all with large effect sizes.

Brotto, Lori A., Lisa Mehak & Cassandra Kit. 2009. Yoga and Sexual Functioning: A Review. *Journal of Sex & Marital Therapy* 35(5). 378-390. doi:10.1080/00926230903065955.

This article reviews the philosophy and forms of yoga, reviews the nonempirical and limited empirical literatures linking yoga with enhanced sexuality, and proposes some future research avenues focusing on yoga as a treatment for sexual complaints.

Carson, James W, Kimberly M Carson, Laura S Porter, Francis J Keefe & Victoria L Seewaldt. 2009. Yoga of Awareness program for menopausal symptoms in breast cancer survivors: results from a randomized trial. Supportive Care in Cancer: Official Journal of the Multinational Association of Supportive Care in Cancer 17(10). 1301-1309. doi:10.1007/s00520-009-0587-5.

37 disease-free women experiencing hot flashes, who were survivors of breast cancer, were randomized to an 8-week Yoga of Awareness program or to wait-list control. Women who received the yoga program showed significantly greater improvements relative to the control condition in hot-flash frequency, severity, and total scores, and in levels of joint pain, fatigue, sleep disturbance, symptom-related bother, and vigor.

Crane, Jacquelyn N. 2009. Religion and Cancer: Examining the Possible Connections. *Journal of Psychosocial Oncology* 27(4). 469-486. doi:10.1080/07347330903182010.

This article argues that even if it is the mediating factors associated with religion, not religion itself, that helps cancer patients adjust to and cope with cancer, there is still intrinsic value to religion in that the mediators themselves are strongly connected to religion, and therefore important to the patient in terms of coping, support, hope, and meaning.

Edwards, Robert R., Claudia Campbell, Robert N. Jamison & Katja Wiech. 2009. The Neurobiological Underpinnings of Coping With Pain. *Current Directions in Psychological Science* 18(4). 237-241.

doi:10.1111/j.1467-8721.2009.01643.x.

The authors hold that the interface between pain-related neurobiology and the use of specific pain-coping techniques, such as meditation, represents an important avenue for pain research. These pain-coping activities should be considered biological, not just psychological treatments.

Greenlee, Heather, Marilyn L Kwan, Isaac Joshua Ergas, Karen J Sherman, Sarah E Krathwohl, Christine Bonnell, Marion M Lee & Lawrence H Kushi. 2009. Complementary and alternative therapy use before and after breast cancer diagnosis: the Pathways Study. *Breast Cancer Research and Treatment* 117(3). 653-665.

doi:10.1007/s10549-009-0315-3.

Researchers studied complementary and alternative medicine (CAM) use among participants in the Pathways Study, an ongoing prospective cohort study of over 2300 women diagnosed with breast cancer. They found that use of CAM was frequent both before and after diagnosis, (>20% before, and 86% after, diagnosis), and associated with other positive health behaviors.

Griffiths, K, P M Camic & J M Hutton. 2009. Participant experiences of a mindfulness-based cognitive therapy group for cardiac rehabilitation. *Journal of Health Psychology* 14(5). 675-681. doi:10.1177/1359105309104911.

This study reports on the first known Mindfulness-based Cognitive Therapy group adapted for cardiac rehabilitation. Analysis identified the development of awareness, commitment, within group experiences, relating to the material and acceptance as central experiential themes.

Hasson-Ohayon, Ilanit, Michal Braun, Daliah Galinsky & Lea Baider. 2009. Religiosity and hope: a path for women coping with a diagnosis of breast cancer. *Psychosomatics* 50(5). 525-533. doi:10.1176/appi.psy.50.5.525.

In 233 Israeli Jewish women with breast cancer, hope was found to be a mediator between religiosity and three styles of coping with cancer. Measurements were taken using the Mental Adjustment to Cancer Scale, the Systems of Belief Inventory, and the Hope Scale.

Howsepian, Barbara A & Thomas V Merluzzi. 2009. Religious beliefs, social support, self-efficacy and adjustment to cancer. *Psycho-Oncology* 18(10). 1069-1079. doi:10.1002/pon.1442.

Data collected from 164 in-treatment cancer patients found that religious beliefs were more strongly connected to perceived social support than with other constructs. While religious beliefs may not directly affect self-efficacy and adjustment, cancer patients who have religious beliefs may experience an enhanced sense of social support from a community with whom they share those beliefs.

Lunde, LH, IH Nordhus & S Pallesen. 2009. The Effectiveness of Cognitive and Behavioural Treatment of Chronic Pain in the Elderly: A Quantitative Review. *Journal of Clinical Psychology in Medical Settings* 16(3). 254-262.

doi:10.1007/s10880-009-9162-y.

In a meta-analytic review of cognitive and behavioral interventions for chronic pain in the elderly (12 studies published between 1975 and 2008), analysis indicated that cognitive and behavioral interventions were effective on self-reported pain experience, yielding an overall effect size of 0.47. However, there were no significant effects of cognitive and behavioral treatment on symptoms of depression, physical functioning and medication use.

MacKinlay, Elizabeth. 2009. Using Spiritual Reminiscence with a Small Group of Latvian Residents with Dementia in a Nursing Home: A Multifaith and Multicultural Perspective. *Journal of Religion, Spirituality & Aging* 21(4). 318-329.

doi:10.1080/15528030903030003.

This article examines spirituality and meaning in the experience of dementia of older Latvian residents, using indepth interviews and small group work, based on a model of spiritual tasks of aging. The main themes identified were the need for connectedness; spiritual and religious practices; vulnerability and transcendence; physical health issues; wisdom and memory; war experiences; hope/fear; and communication style of facilitator.

Morse, Elizabeth E & Kathleen O'Rourke. 2009. Spirituality of Childhood Cancer Survivors. *Journal of the Society for Integrative Oncology* 7(4). 146-154.

Research on the spirituality of childhood cancer survivors, reviewed in this article, provided insight into their overall spiritual journeys, their strategies to promote well-being, and the dynamics of hope and meaning within their lives.

Mourya, M, AS Mahajan, NP Singh & AK Jain. 2009. Effect of Slow- and Fast-Breathing Exercises on Autonomic Functions in Patients with Essential Hypertension. *Journal of Alternative and Complementary Medicine* 15(7). 711-717. doi:10.1089/acm.2008.0609.

60 patients with stage 1 essential hypertension were randomly and equally divided into 1 control and 2 intervention groups, the latter of which were advised to do 3 months of yoga-style slow-breathing and fast-breathing exercises, respectively. Both intervention groups benefited in blood pressure and autonomic function tests relative to the control group, with slow breathing having a stronger effect than fast breathing.

Nidich, SI, JZ Fields, MV Rainforth, R Pomerantz, D Celia, J Kristeller, JW Salerno & RH Schneider. 2009. A Randomized Controlled Trial of the Effects of Transcendental Meditation on Quality of Life in Older Breast Cancer Patients. *Integrative Cancer Therapies* 8(3). 228-234. doi:10.1177/1534735409343000.

This single-blind, randomized controlled trial evaluated the impact of the Transcendental Meditation program plus standard care (N=64) as compared with standard care alone (N=66) on the QOL of older women with stage II to IV breast cancer. Significant improvements were found in the Transcendental Meditation group compared with controls in overall QOL.

Olivo, Erin L, Brooke Dodson-Lavelle, Anava Wren, Yixin Fang & Mehmet C Oz. 2009. Feasibility and effectiveness of a brief meditation-based stress management intervention for patients diagnosed with or at risk for coronary heart disease: a pilot study. *Psychology, Health & Medicine* 14(5). 513-523.

doi:10.1080/13548500902890087.

The objective of this pilot study was to gather preliminary information regarding the feasibility of implementing a brief meditation-based stress management (MBSM) program for patients with coronary heart disease (CHD),

and those at high risk for CHD, as well as to evaluate its effectiveness in improving general physical and mental health scores. Results show that the program was highly feasible with regard to both recruitment and retention of participants, and effective in reducing depression and perceived stress.

Oppenheim, WL. 2009. Complementary and alternative methods in cerebral palsy. *Developmental Medicine and Child Neurology* 51(Supplement 4). 122-129. doi:10.1111/j.1469-8749.2009.03424.x.

This article discusses current CAM use in children with cerebral palsy, which may be carried over into adulthood. Studies show that the majority of adults with chronic disabilities use CAM with positive results, but no studies have addressed cerebral palsy specifically.

2.2 SPIRITUALITY & HEALTH: RELIGIOSITY

Colbert, LK, JL Jefferson, R Gallo & R Davis. 2009. A Study of Religiosity and Psychological Wellbeing Among African Americans: Implications for Counseling and Psychotherapeutic Processes. *Journal of Religion & Health* 48(3). 278-289. doi:10.1007/s10943-008-9195-9.

In a study of 315 African-American Baptist adults, age had a significant independent effect on intrinsic and extrinsic religiosity, and a linear relationship was found between extrinsic religiosity and seven demographic variables. The levels of spirituality of African American adults were not related to their levels of depression, levels of self-esteem, or types of coping styles.

Davis, Kelly A. & Catherine C. Epkins. 2009. Do Private Religious Practices Moderate the Relation Between Family Conflict and Preadolescents' Depression and Anxiety Symptoms? *Journal of Early Adolescence* 29(5). 693-717.

Researchers studied 160 11- to 12-year-olds, and found that private religious practices moderated the relations between (a) both mother- and preadolescent-reported family conflict and preadolescents' anxiety symptoms; and (b) both mother- and preadolescent-reported family conflict and preadolescents' depression symptoms.

Farmer, Melissa A, Paul D Trapnell & Cindy M Meston. 2009. The relation between sexual behavior and religiosity subtypes: a test of the secularization hypothesis. *Archives of Sexual Behavior* 38(5). 852-865.

doi:10.1007/s10508-008-9407-0.

In a study of 1302 young adults (mean age = 18.77 years), religious subtypes (spirituality, fundamentalism, and paranormal belief), rather than more narrow definitions of religiosity (religious affiliation, religious participation, or forms of religiousness), were more effective in predicting sexual behavior. The secularization hypothesis of a gap between religious doctrine and sexual behavior was supported by consistent levels of sexual activity across affiliations, and contradicted by the differential impact of religiosity subtypes on sexual behavior.

Good, Marie, Teena Willoughby & Jan Fritjers. 2009. Just another club? The distinctiveness of the relation between religious service attendance and adolescent psychosocial adjustment. *Journal of Youth and Adolescence* 38(9). 1153-1171. doi:10.1007/s10964-008-9320-9.

Religious attendance, club attendance, and adolescent adjustment was studied in 1050 students. Religious attendance was uniquely associated with several indicators of positive as well as negative adjustment. Club involvement, conversely, was only associated with positive adjustment, particularly for individuals who reported sustained involvement over time.

Goodman, Herbert & Mark H Stone. 2009. The efficacy of adult Christian support groups in coping with the death of a significant loved one. *Journal of Religion and Health* 48(3). 305-316. doi:10.1007/s10943-008-9201-2.

Researchers found that individuals who participated in Christian and secular support groups showed no statistically significant difference in their mean endorsement of negative criteria on the Beck Hopelessness Scale, and no statistically significant difference for their mean score endorsement of positive criteria on the Brief Religious Coping Scale. However, a Christian-oriented approach was no less effective than a psychological-oriented one. In both groups, a spiritual connection to a specific or generalized higher power was frequently identified, which clients ascribed to facilitating the management of their coping.

Hivey, Sarah, Nicholas Pace, John P Garside & Andrew R Wolf. 2009. Religious practice, blood transfusion, and major medical procedures. *Paediatric Anaesthesia* 19(10). 934-946. doi:10.1111/j.1460-9592.2009.03139.x.

The authors explore the dilemmas between the law, ethical issues, good clinical practice, and the wishes of the family in a hypothetical scenario (based on a synthesis of actual clinical scenarios). While there are no absolute rights and wrongs in the situation, in the final analysis the surgeon and the anesthetist must also be comfortable with the decisions, as they are the participants who have to practically manage a clinical crisis should it occur.

Ji, Chang-Ho C., Yodi Ibrahim & Soo Dong Kim. 2009. Islamic Personal Religion and Moral Reasoning in Social Justice and Equality: The Evidence From Indonesian College Students. *International Journal for the Psychology of Religion* 19(4). 259-274. doi:10.1080/10508610903143537.

This article explores the extent to which religious orientations and Islamic doctrinal orthodoxy relate to Kohlbergian principled reasoning in justice and equality in a survey of Muslim college and graduate students in Indonesia. Researchers found that the respondents were skewed toward the nonprincipled mode of Kohlbergian moral reasoning, and those with greater intrinsic religiosity were likely to respond in an increasingly principled manner to moral dilemmas, whereas personal extrinsic religiosity tends to increase conventional practice of moral reasoning.

Kendler, Kenneth S & John Myers. 2009. A developmental twin study of church attendance and alcohol and nicotine consumption: a model for analyzing the changing impact of genes and environment. *The American Journal of Psychiatry* 166(10). 1150-1155. doi:10.1176/appi.ajp.2009.09020182.

In a study of 1796 male twins, based on two interview waves 6 years apart, researchers found that as twins developed from childhood through adulthood, the influence of shared environmental factors on church attendance declined dramatically while genetic factors increased. In early and late adolescence, the negative correlations between church attendance and alcohol and nicotine consumption resulted largely from shared environmental factors. In adulthood, the inverse relationship between church attendance and substance use became stronger and arose largely from genetic factors.

Kerry, Stephen. 2009. Intersex individuals' religiosity and their journey to wellbeing. *Journal of Gender Studies* 18(3). 277-285.

doi:10.1080/09589230903057092.

This article introduces recent findings that intersex individuals are turning to traditional discourses of religiosity to understand not only the 'treatments' they have undergone, but also the meaning(s) of their intersex bodies. While counseling and peer support are increasingly recommended to, and sought by, intersex individuals, it is in spiritual and/or religious life that intersex individuals are finding answers, health and wellbeing.

Kim, Jungmeen, Michael McCullough & Dante Cicchetti. 2009. Parents' and Children's Religiosity and Child Behavioral Adjustment Among Maltreated and Nonmaltreated Children. *Journal of Child & Family Studies* 18(5). 594-605.

doi:10.1007/s10826-009-9262-1.

In a study of 170 maltreated and 159 nonmaltreated children from low-income families (mean age = 10 years), researchers found evidence that (1) parents' frequent church attendance was related to lower levels of internalizing symptomatology among nonmaltreated children with low church attendance and (2) parents' importance of faith was associated with lower levels of internalizing and externalizing symptomatology among nonmaltreated children with low faith.

Koenig, Laura B., Matt McGue & William G. Iacono. 2009. Rearing environmental influences on religiousness: An investigation of adolescent adoptees. *Personality and Individual Differences* 47(6). 652-656.

doi:10.1016/j.paid.2009.06.003.

Researchers examined genetic and environmental influences on religiousness in a sample of 284 adoptive families (two adopted adolescent siblings and their rearing parents); 208 biological families (two full biological adolescent siblings and their parents); and 124 mixed families (one adopted and one biological adolescent sibling and their parents). Religiousness showed little evidence of heritability and large environmental effects.

Law, Rita W & David A Sbarra. 2009. The effects of church attendance and marital status on the longitudinal trajectories of depressed mood among older adults. *Journal of Aging and Health* 21(6). 803-823.

doi:10.1177/0898264309338300.

Using data on 791 older adults from the Australian Longitudinal Study of Aging, researchers found that church attendance was found to have a protective effect against the emergence of mood problems among older adults. In addition, although becoming married was associated with a decrease in depressed mood, becoming nonmarried was associated with an increase in depressed mood.

Merrill, Ray, Curtis Read & Alisha LeCheminant. 2009. The influence of religiosity on positive and negative outcomes associated with stress among college students. *Mental Health, Religion & Culture* 12(5). 501-511.

doi:10.1080/13674670902774106.

Analysis of a survey of 742 college students at a large, church-sponsored school in the Western United States found that religiosity had the potential to prevent negative outcomes (feelings of anger) and promote positive outcomes (feelings of confidence) in response to stressful situations.

Patel, CJ, S Ramgoon & Z Paruk. 2009. Exploring religion, race and gender as factors in the life satisfaction and religiosity of young South African adults. *South African Journal of Psychology* 39(3). 266-274.

In a study of 235 South African students, research showed that correlations between life satisfaction, religiosity, and religious well-being were significant. (Well-being was measured using an adapted version of the Spiritual Well-Being Scale, the Religious Orientation Test, and the Satisfaction with Life Scale.) As scores on the Satisfaction with Life Scale increased, levels of religiosity and religious well-being also increased. Analysis was also performed based on ethnicity and particular religion.

Payne, Jennifer Shepard. 2009. Variations in pastors' perceptions of the etiology of depression by race and religious affiliation. *Community Mental Health Journal* 45(5). 355-365. doi:10.1007/s10597-009-9210-y.

The author conducted a survey with 204 Protestant pastors in California, and found a statistically significant difference in how depression is perceived based on race. Caucasian American pastors more readily agreed with the statement that depression was a biological mood disorder, while African American pastors more readily agreed that depression was a moment of weakness when dealing with trials and tribulations. This difference influences how pastors intervene with depressed individuals.

Phillips, Russell E., Clara Michelle Cheng, Kenneth I. Pargament, Carmen Oemig, Sonya D. Colvin, Ashley N. Abarr, Michael W. Dunn & Ashlee S. Reed. 2009. Spiritual Coping in American Buddhists: An Exploratory Study. *International Journal for the Psychology of Religion* 19(4). 231-243. doi:10.1080/10508610903143263.

The authors interviewed 24 Buddhists across the United States, examining how their spirituality is used to cope with stress. Analysis revealed six forms of Buddhist coping: right understanding; meditation; mindfulness; spiritual struggles; morality; and finding support in one's sangha.

Robins, Alee & Amy Fiske. 2009. Explaining the relation between religiousness and reduced suicidal behavior: social support rather than specific beliefs. *Suicide & Life-Threatening Behavior* 39(4). 386-395.

doi:10.1521/suli.2009.39.4.386.

A survey measuring religiousness, social support, suicidal ideation, and suicide attempts was administered to 454 undergraduate students. Involvement in public, but not private, religious practices was associated with lower levels of both suicidal ideation and history of suicide attempts. Social support mediated these relations but religious beliefs did not.

Röhricht, Frank, Raphaela Basdekis-Jozsa, Juggy Sidhu, Amer Mukhtar, Iris Suzuki & Stefan Priebe. 2009. The association of religiosity, spirituality, and ethnic background with ego-pathology in acute schizophrenia. *Mental Health, Religion & Culture* 12(6). 515-526. doi:10.1080/13674670902800133.

In an exploratory study, involving 42 patients with a diagnosis of acute paranoid schizophrenia, the authors assessed religiosity (Religious Orientation Test), spirituality (Spiritual Transcendence Scale), and ego-pathology (Ego Pathology Inventory) and found statistically significant negative associations between the scores on ego and common pathology and religiosity and spirituality as covariates. This was seen across all ethnic groups.

Rosmarin, David H., Kenneth I. Pargament & Kevin J. Flannelly. 2009. Do Spiritual Struggles Predict Poorer Physical/Mental Health Among Jews? *International Journal for the Psychology of Religion* 19(4). 244-258.

doi:10.1080/10508610903143503.

The authors found that spiritual struggles were modestly associated with lower levels of physical/mental health in a sample of adults Jews, even after controlling for demographic covariates. However, at the highest levels of spiritual struggle, Orthodox Jews exhibited an increase in physical and mental health whereas non-Orthodox Jews' health continued to decrease.

Rupasingha, Anil & John b. Chilton. 2009. Religious adherence and county economic growth in the US. *Journal of Economic Behavior & Organization* 72(1). 438-450. doi:10.1016/j.jebo.2009.05.020.

Using data from the American Religious Data Archive, the authors found a statistically significant correlation between religious adherence and U.S. county (N > 3000) income growth between 1990 and 2000.

Scandrett, Karen Glasser & Susan L Mitchell. 2009. Religiousness, religious coping, and psychological well-being in nursing home residents. *Journal of the American Medical Directors Association* 10(8). 581-586.

doi:10.1016/j.jamda.2009.06.001.

In a study of cognitively intact to moderately impaired long-stay nursing home residents in Boston, Massachusetts (N = 140), residents who viewed religion as "somewhat important" or "very important," and who did not engage in negative religious coping strategies, were associated with better psychological well-being.

Skitka, Linda J., Christopher W. Bauman & Brad L. Lytle. 2009. Limits on legitimacy: Moral and religious convictions as constraints on deference to authority. *Journal of Personality and Social Psychology* 97(4). 567-578. doi:10.1037/a0015998.

This study tested compliance with and reactions to legitimate authorities in the context of a natural experiment that tracked public opinion before and after the U.S. Supreme Court ruled in a case that challenged states' rights to legalize physician-assisted suicide. Results indicated that citizens' degree of moral conviction about the issue of physician-assisted suicide predicted post-ruling perceptions of outcome fairness, decision acceptance, and changes in perceptions of the Court's legitimacy from pre- to post-ruling.

Toni-Uebari, Thelma K & Baba Pd Inusa. 2009. The role of religious leaders and faith organisations in haemoglobinopathies: a review. *BMC Blood Disorders* 9(6). doi:10.1186/1471-2326-9-6.

A review of 11 studies (published 1990-2008) examining the influence of religious leaders and faith organizations in health, with particular reference to haemoglobinopathies, found that involvement of religious leaders and faith organizations in health-related interventions improved the level of acceptance, participation and positive health outcomes of individuals within the faith communities.

Yeung, Jerf W K, Yuk-Chung Chan & Boris L K Lee. 2009. Youth religiosity and substance use: a meta-analysis from 1995 to 2007. *Psychological Reports* 105(1). 255-266.

Based on 22 studies in peer-reviewed journals published between 1995 and 2007, the authors found a statistically significant (Zr = .16) protective effect of religiosity on four types of substance use, namely, alcohol, cigarette, marijuana, and other illicit drugs.

Yong, Hua-Hie, Stephen L Hamann, Ron Borland, Geoffrey T Fong & Maizurah Omar. 2009. Adult smokers' perception of the role of religion and religious leadership on smoking and association with quitting: a comparison between Thai Buddhists and Malaysian Muslims. *Social Science & Medicine* 69(7). 1025-1031.

doi:10.1016/j.socscimed.2009.07.042.

Data collected from 1482 Muslim Malaysian and 1971 Buddhist Thai adult smokers showed that religious factors had a clear independent association with attempts to quit smoking in both countries; this translated to success for Malaysian Muslims but not for the Thai Buddhists. The study indicates that religion and religious authorities are both relevant and important drivers of quitting, but whether this is always enough to guarantee success is less clear.

2.3 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

Berger, Deborah L, Ellen Johnson Silver & Ruth E K Stein. 2009. Effects of yoga on inner-city children's well-being: a pilot study. *Alternative Therapies in Health and Medicine* 15(5). 36-42.

In a study of fourth- and fifth-grade students at 2 after-school programs in The Bronx, New York, children who practiced yoga 1 hour per week for 12 weeks (N = 39) had better postintervention Negative Behaviors scores and balance than the control group (N = 32). No significant differences were found in the study's primary outcomes of global self-worth and perceptions of physical well-being.

Gockel, Annemarie. 2009. Spirituality and the Process of Healing: A Narrative Study. *International Journal for the Psychology of Religion* 19(4). 217-230. doi:10.1080/10508610903143248.

This pilot study used a narrative method to examine the experience of 12 participants who self-identified as drawing on spirituality for healing. Participants described a 7-step process characterized by (a) openness, (b) shifting to a spiritual perspective, (c) going within, (d) connecting with the sacred, (e) undoing patterns, (f) setting healing intentions, and (g) following their inner guidance to transform experiences of mental and physical illness into experiences of healing.

Hassed, Craig, Steven de Lisle, Gavin Sullivan & Ciaran Pier. 2009. Enhancing the health of medical students: outcomes of an integrated mindfulness and lifestyle program. *Advances in Health Sciences Education: Theory and Practice* 14(3). 387-398. doi:10.1007/s10459-008-9125-3.

A study of the implementation of the Health Enhancement Program for 148 medical students at Monash University showed that the students who applied mindfulness practices showed statistically significant improved wellbeing for the depression and hostility subscales, but not the anxiety subscale, of the Symptom Checklist-90-R.

Jacob, J, E Jovic & MB Brinkerhoff. 2009. Personal and Planetary Well-being: Mindfulness Meditation, Pro-environmental Behavior and Personal Quality of Life in a Survey from the Social Justice and Ecological Sustainability Movement. Social Indicators Research 93(2). 275-294. doi:10.1007/s11205-008-9308-6.

Employing data from a mailed survey of a sample of ecologically and spiritually aware respondents (N=829), the study found that ecologically sustainable behavior and mindfulness meditation can explain significant amounts of variance in subjective well-being.

Kao, Tze-Wah, Pau-Chung Chen, Chia-Jung Hsieh, Hong-Wei Chiang, Lap-Yuen Tsang, Ing-Fang Yang, Tun-Jun Tsai & Wan-Yu Chen. 2009. Correlations Between Spiritual Beliefs and Health-Related Quality of Life of Chronic Hemodialysis Patients in Taiwan. *Artificial Organs* 33(7). 576-579.

doi:10.1111/j.1525-1594.2009.00739.x.

In this study of 633 hemodialysis patients in Taiwan, researchers found that patients with no or with strong spiritual beliefs had higher physical and social functioning scores than patients with weak beliefs.

McFadden, Susan H. & Melissa Lunsman. 2009. Arts Involvement and Spirituality as Sources of Well-Being in Older People. *Journal of Religion, Spirituality & Aging* 21(4). 330-343. doi:10.1080/15528030903158135.

A study of 90 adults over 40 years of age showed that involvement with the arts significantly predicted morale as measured by the Philadelphia Geriatric Center Morale Scale scores. Further, arts involvement and experiences of the transcendent in everyday life, as measured by the Daily Spiritual Experiences Scale, were also positively correlated.

Moussaieff, Arieh & Raphael Mechoulam. 2009. Boswellia resin: from religious ceremonies to medical uses; a review of in-vitro, in-vivo and clinical trials. *The Journal of Pharmacy and Pharmacology* 61(10). 1281-1293.

doi:10.1211/jpp/61.10.0003.

The authors review the pharmacology of Boswellia resin (a.k.a. "frankincense" and "olibanum") in light of its historical-religious, cultural and medical importance. They found that the resin contains different kinds of bioactive small molecules, especially incensole acetate, that have been shown to be anti-inflammatory in humans, and to result in neuroprotective, anti-depressive, and anxiolytic effects in mice.

Namini, S. & S. Murken. 2009. Self-chosen involvement in new religious movements (NRMs): well-being and mental health from a longitudinal perspective. *Mental Health, Religion & Culture* 12(6). 561-585.

doi:10.1080/13674670902897618.

A study of individuals who have been involved in Pentecostal parishes over the course of 3 years (both "stayers" [N=51] and "leavers" [N=9]) in Germany show that membership in a new religious movement is not necessarily harmful for either group. Religious sense of coherence and secure attachment to God were most often and most strongly correlated with the life satisfaction, depression and anxiety. The hypothesis of a crisis accompanying the exit from the Pentecostal parish was only partially supported.

Posadzki, Paul. 2009. Qi Gong and physiotherapy: A narrative review and conceptual synthesis. *European Journal of Integrative Medicine* 1(3). 139-144. doi:10.1016/j.eujim.2009.07.001.

This paper provides a narrative review of Qi Gong literature, deriving information from the presented data to abstract underlying core principles, and the conceptual interface, of both Qi Gong and physiotherapeutic practices. The author also explains how Qi Gong might be extrapolated and incorporated into the theoretical principles of the physiotherapy process.

Prabhakar, S. & J.S. Chopra. 2009. Ayurvedic medicine in neurology. *Journal of the Neurological Sciences* 285(Supplement 1). S51-S52. doi:10.1016/S0022-510X(09)70243-6.

The authors discuss the application of specific Ayurvedic medications as treatment of neurological disorders. The mechanisms by which these medications work, and their history, is described.

2.4 SPIRITUALITY & HEALTH: METHOD AND THEORY

Ai, Amy L. & Monika Ardelt. 2009. Contradiction in the Contemporary Study of Faith Matters: Negation and Affirmation via a Historical Perspective. *Journal of Religion, Spirituality & Aging* 21(4). 287-296.

doi:10.1080/15528030902865128.

A response to Glicksman (below). The authors propose ways to refine the process of faith research, including further cultural sensitivity, a more granular understanding of faith factors, integrating a phenomenological approach, and working with humanities scholars.

AlMarri, Tayyiba S. K., Tian P. S. Oei & Samir Al-Adawi. 2009. The development of the Short Muslim Practice and Belief Scale. *Mental Health, Religion & Culture* 12(5). 415-426. doi:10.1080/13674670802637643.

The authors developed a measure of religious practices and beliefs for Muslims, the "Short Muslim Practice and Belief Scale," and tested its validity with surveys of Arab Muslims living the United Arab Emirates and Oman (N = 611) and Asian Muslims living in Malaysia and Indonesia (N = 303). Analysis of the results indicates that the data fit the model well, with good internal consistency and validity.

Bowman, Elizabeth S., James A. Beitman, Oxana Palesh, John E. Pérez & Cheryl Koopman. 2009. The Cancer and Deity Questionnaire: A New Religion and Cancer Measure. *Journal of Psychosocial Oncology* 27(4). 435-453.

doi:10.1080/07347330903181913.

Researchers evaluated the new Cancer and Deity Questionnaire, which assesses perceived relations with God after a cancer diagnosis, with 52 participants with recent cancer diagnoses. Internal consistency was excellent for the Benevolence scale and good for the Abandonment scale. Correlations with other scales are discussed.

Cadge, Wendy. 2009. Saying Your Prayers, Constructing Your Religions: Medical Studies of Intercessory Prayer. *Journal of Religion* 89(3). 299-327.

This case study focuses on research studies done by medical researchers that examine whether intercessory prayer or the prayers of strangers influences the health of the people who are being prayed for. The author examines how the views differed by denomination over a span of 40 years. The attitudes towards intercessory prayer from medical scientists is also discussed.

Dobos, Gustav. 2009. Integrative Medicine - Medicine of the future or 'Old Wine in New Skins'? *European Journal of Integrative Medicine* 1(3). 109-115. doi:10.1016/j.eujim.2009.08.001.

The concept of Integrative Medicine (IM), combining mainstream medicine with CAM, is discussed here in detail by reviewing its scope and implications for the current practice of medicine. The authors holds that IM might represent the beginning of a paradigm shift in modern medicine.

Ellor, James W. 2009. Listening as a Symbol of Religion: A Chaplain's Response. *Journal of Religion, Spirituality & Aging* 21(4). 310-315. doi:10.1080/15528030903191649.

A response to Glicksman (below), from the perspective of a chaplain serving people of all faiths and no faith.

Espinosa, M Cristina. 2009. Ethnic spirituality, gender and health care in the Peruvian Amazon. Ethnicity & Health 14(5). 423-437.

doi:10.1080/13557850802702397.

By addressing ethnic identities of riparian people in Loreto, this article shows the relevance of spirituality, ethnic difference, and gender subordination affecting health interventions. Ethnic spirituality defines daily life behavior and attitudes revealing different meanings associated with medicine, illness, and healing. While women in the community are the principal care takers, their views on medicine and illness usually remain invisible in the literature.

Flanigan, Shawn Teresa. 2009. Staff perceptions of the benefits of religion in health and human services nonprofits: evidence from international development. *Journal of Health and Human Services Administration* 32(2). 164-194.

Interview data with staff of faith-based organizations (FBOs) in Bosnia and Herzegovina, Lebanon, and Sri Lanka indicate that staff members from most of the religious traditions included in the study believe the faith orientation of their organization brings benefits to their service provision. However, these perceived benefits differ based on country context.

Glicksman, Allen. 2009. The Contemporary Study of Religion and Spirituality Among the Elderly: A Critique. *Journal of Religion, Spirituality & Aging* 21(4). 244-258. doi:10.1080/15528030903127130.

In this essay, Glicksman argues that popular scales to measure religiosity and spirituality contain assumptions about what constitutes religiousness and spirituality that are shaped by American Protestantism. He holds that to understand the role of faith in the lives of older persons the researcher must understand the specific faith traditions of the elders under study. Multiple responses to Glicksman's article are found in this issue of the Journal of Religion, Spirituality & Aging.

Gonsiorek, JC, PS Richards, KI Pargament & MR McMinn. 2009. Ethical Challenges and Opportunities at the Edge: Incorporating Spirituality and Religion Into Psychotherapy. *Professional Psycholog-Research and Practice* 40(4). 385-395. doi:10.1037/a0016488.

This paper discusses the ethical challenges of incorporating spirituality into psychotherapy, specifically addressing competence, bias, maintaining traditions and standards of psychology, collaboration with clergy, moral complexity, and integrity in labeling services for reimbursement. It offers preliminary ideas on managing the interface of these domains.

Grassman, Eva Jeppsson & Anna Whitaker. 2009. Divergent Logics of Spiritual Care: End of Life and the Role of the Church of Sweden. *Journal of Religion, Spirituality & Aging* 21(4). 344-360. doi:10.1080/15528030903158192.

A study of parishes in two Swedish communities reveals that support for dying parishioners is surprisingly uncommon, though bereavement support is common. The authors provide a possible interpretation of this pattern, finding divergent forms of care logic motivated the different types of support offered.

de Guzman, Allan B., Naihra Jae Z. Dalay, Anthony Joe M. De Guzman, Luigi Lauren E. de Jesus, Jacqueline Barbara C. de Mesa & Jan Derick D. Flores. 2009. Spirituality in Nursing: Filipino Elderly's Concept of, Distance from, and Involvement with God. *Educational Gerontology* 35(10). 929-944.

doi:10.1080/03601270902717962.

This study aimed to establish an eidetic description of a selected group of 7 Filipino geriatrics concept of, distance from, and involvement with God. The researches created a three-part instrument to elicit the needed data and information.

Holt, Cheryl L., Theresa A. Wynn, Penny Southward, Mark S. Litaker, Sanford Jeames & Emily Schulz. 2009. Development of a Spiritually Based Educational Intervention to Increase Informed Decision Making for Prostate Cancer Screening Among Church-Attending African American Men. *Journal of Health Communication: International Perspectives* 14(6). 590. doi:10.1080/10810730903120534.

This article describes the development of a community health advisor-led intervention aimed at increasing informed decision making for prostate cancer screening among church-attending African American men.

Hunt, Katherine & Edzard Ernst. 2009. Evidence-based practice in British complementary and alternative medicine: double standards? *Journal of Health Services Research & Policy* 14(4). 219-223. doi:10.1258/jhsrp.2009.009009.

The authors obtained the codes of ethics of 14 British complementary and alternative medicine organizations, and found that only 3 oblige their members to adopt the principles of evidence-based practice.

van Leeuwen, René, Lucas J Tiesinga, Berrie Middel, Doeke Post & Henk Jochemsen. 2009. The validity and reliability of an instrument to assess nursing competencies in spiritual care. *Journal of Clinical Nursing* 18(20). 2857-2869.

doi:10.1111/j.1365-2702.2008.02594.x.

In a survey of 197 nursing students in the Netherlands, the "spiritual care competence scale" demonstrated valid and reliable scales for measuring spiritual care competencies. The scale measured six domains: assessment and implementation of spiritual care; professionalization and improving the quality of spiritual care; personal support and patient counseling; referral to professionals; attitude towards the patient's spirituality; and communication.

Löckenhoff, Corinna E., Gail H. Ironson, Conall O'Cleirigh & Paul T. Costa. 2009. Five-factor model personality traits, spirituality/religiousness, and mental health among people living with HIV. *Journal of Personality* 77(5). 1411-1436. doi:10.1111/j.1467-6494.2009.00587.x.

A study of 112 people living with HIV found that spirituality/religiousness showed stronger associations with Conscientiousness, Openness, and Agreeableness than with Neuroticism and Extraversion. Personality traits explained unique variance in mental health above spirituality and religiousness, and both were significantly linked to mental health.

Maizes, Victoria, David Rakel & Catherine Niemiec. 2009. Integrative medicine and patient-centered care. *Explore (New York, N.Y.)* 5(5). 277-289. doi:10.1016/j.explore.2009.06.008.

This paper describes the history and principles of CAM, and discusses the current state and desired future of team-based, integrative medical practice. The paper culminates with 10 recommendations directed to key actors, to facilitate the systemic changes needed for a functional healthcare delivery system.

Marcus, Donald M & Laurence McCullough. 2009. An evaluation of the evidence in "evidence-based" integrative medicine programs. *Academic Medicine: Journal of the Association of American Medical Colleges* 84(9). 1229-1234. doi:10.1097/ACM.0b013e3181b185f4.

The authors hold that while information about alternative medicine should be included in the curricula of health profession schools, current "evidence-based CAM" curricula fail to meet the generally accepted standards of evidence-based medicine. Three recommendations are offered.

Mavundla, Thandisizwe Redford, Fulufelo Godfrey Netswera, Brian Bottoman & Ferenc Toth. 2009. Rationalization of indigenous male circumcision as a sacred religious custom: health beliefs of Xhosa men in South Africa. *Journal of Transcultural Nursing: Official Journal of the Transcultural Nursing Society* 20(4). 395-404. doi:10.1177/1043659609340801.

This article presents research findings based on the meaning of indigenous circumcision to Xhosa men in South Africa (N=25), a practice which has resulted in serious health problems. A qualitative, endogenous research design that was explorative, descriptive, and contextual was undertaken using individual interviews, focus group interviews, and community meetings.

McFadden, Susan H. 2009. Universality and Particularity: Reflections on Glicksman's Critique of the Study of Religion and Spirituality Among Older Persons. *Journal of Religion, Spirituality & Aging* 21(4). 268-274.

doi:10.1080/15528030902821238.

A response to Glicksman (above). The author examines the unacknowledged tacit assumptions underlying many research tools used to study religion, spirituality, and aging, finding especially problematic efforts to measure so-called universal aspects of religiousness and spirituality without reference to the particularities of religious traditions and spiritual practices.

Moberg, David O. 2009. Predicaments in Researching Spirituality and Religion: A Response to Glicksman's "Contemporary Study of Religion and Spirituality Among the Elderly". *Journal of Religion, Spirituality & Aging* 21(4). 297-309. doi:10.1080/15528030903029997.

A response to Glicksman (above). Recognizing Glicksman's critique, the author proposes multidisciplinary research on the spirituality of people from all religions and none, global comparisons of the results, and painstaking analyses of the findings in order to come closer to comprehending the mysteries of spirituality and using them for the benefit of humanity.

Nelson-Becker, Holly. 2009. Exploring We Will Go: The Investigation of Religion and Spirituality in Older Populations (Reflections on Glicksman's "The Contemporary Study of Religion and Spirituality Among the Elderly"). *Journal of Religion, Spirituality & Aging* 21(4). 259-267. doi:10.1080/15528030902862463.

A response to Glicksman (above). Given the value, but also the risks, of researching religion and spirituality, the author advocates for holding open the possibility of intuitive insight and maintaining a goal of compassionate understanding.

Oman, Doug. 2009. Unique and Common Facets of Religion and Spirituality: Both Are Important. Journal of Religion, Spirituality & Aging 21(4). 275-286. doi:10.1080/15528030902862471.

A response to Glicksman (above). The author suggests a taxonomy of religion and spirituality dimensions on a range from coarse grained (focusing on common facets) to fine grained (documenting particular facets). Full understanding requires the scientific study of both common and particularistic facets.

Oman, Doug, Carl E. Thoresen, Crystal L. Park, Phillip R. Shaver, Ralph W. Hood & Thomas G. Plante. 2009. How does one become spiritual? The Spiritual Modeling Inventory of Life Environments (SMILE). *Mental Health, Religion & Culture* 12(5). 427-456. doi:10.1080/13674670902758257.

The authors report on the theoretical background, psychometric properties, and correlates of the Spiritual Modeling Inventory of Life Environments (SMILE), a measure of perceptions of spiritual models, defined as everyday and prominent people who have functioned for respondents as exemplars of spiritual qualities, such as compassion, self-control, or faith.

Omobowale, Emmanuel B, Peter A Singer & Abdallah S Daar. 2009. The three main monotheistic religions and GM food technology: an overview of perspectives. *BMC International Health and Human Rights* 9. 18.

doi:10.1186/1472-698X-9-18.

The authors find no overarching consensus within Judaism, Islam and Christianity on acceptance of genetically modified foods. However, it appears that mainstream theology in all three religions increasingly tends towards acceptance of GM technology per se, on performing GM research, and on consumption of GM foods.

Ostermann, Thomas, Christa K Raak, Peter F Matthiessen, Arndt Büssing & Hartmut Zillmann. 2009. Linguistic processing and classification of semi structured bibliographic data on complementary medicine. *Cancer Informatics* 7. 159-169.

The authors describe CAMbase, a free, online bibliographical database on CAM that can serve as a tool for physicians. (Found at www.cambase.de.) The technical background, architecture, algorithms, and oncology-related statistics are presented.

Puchalski, Christina, Betty Ferrell, Rose Virani, Shirley Otis-Green, Pamela Baird, Janet Bull, Harvey Chochinov et al. 2009. Improving the quality of spiritual care as a dimension of palliative care: the report of the Consensus Conference. *Journal of Palliative Medicine* 12(10). 885-904. doi:10.1089/jpm.2009.0142.

The report from the Consensus Conference of February 17-18, 2009, sponsored by the Archstone Foundation of Long Beach, California, on spiritual care as a fundamental component of quality palliative care.

Reavley, Nicola & Julie F. Pallant. 2009. Development of a scale to assess the meditation experience. *Personality and Individual Differences* 47(6). 547-552. doi:10.1016/j.paid.2009.05.007.

This paper describes a the development of a scale to assess the effects of meditation. The scale consists of two sections: Experiences During Meditation (with five subscales) and Effects of Meditation in Everyday Life (broken down into four factors). In an evaluation on 236 participants, the scale showed adequate psychometric properties and may be useful for clinicians and researchers to improve understanding of the effects of meditation practices.

Rice, Sue & Donna McAuliffe. 2009. Ethics of the Spirit: Comparing Ethical Views and Usages of Spiritually Influenced Interventions. *Australian Social Work* 62(3). 403-420. doi:10.1080/03124070902964640.

The results of two independent online survey studies, conducted one year apart, with members of the Australian Association of Social Workers, indicate a degree of acceptance, conditional acceptance, and usage for some spiritual interventions, and clear non-acceptance and non-usage of others.

Smith, Amy Rex. 2009. Nursing and spirituality: what happened to religion? *Journal of Christian Nursing: A Quarterly Publication of Nurses Christian Fellowship* 26(4). 216-222.

No abstract available.

Sorsdahl, Katherine, Jonathan C. Ipser & Dan J. Stein. 2009. Interventions for educating traditional healers about STD and HIV medicine. *Cochrane Database of Systematic Reviews (Online)*(4). CD007190.

doi:10.1002/14651858.CD007190.pub2.

Researchers reviewed studies evaluating the effectiveness of interventions for educating traditional healers in the fundamentals of sexually transmitted infection and HIV medicine. Due to the paucity of studies fitting the search criteria, the conclusions that can be drawn are limited. The two studies that were included indicated that a training workshop increased the knowledge about HIV/AIDS of traditional healers.

Tusaie, Kathleen & Kelly Edds. 2009. Understanding and Integrating Mindfulness Into Psychiatric Mental Health Nursing Practice. *Archives of Psychiatric Nursing* 23(5). 359-365. doi:10.1016/j.apnu.2008.10.006.

This article reviews the literature on mindfulness, with a focus upon a clearer definition and understanding of the processes and integration into psychiatric mental health nursing practice.

Wagle, Ann M., Victoria L. Champion, Kathleeen M. Russell & SM Rawl. 2009. Development of Wagle Health-Specific Religiousness Scale. *Cancer Nursing* 32(5). 418-425.

This article describes the development and psychometric testing of the Wagle Health-Specific Religiousness (WHSR) scale, an instrument used to measure religious beliefs and the influence of those beliefs on mammography screening for African American women. In a sample of 344 African American women, the 19-Item WHSR

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scale had a Cronbach alpha of .94; construct validity was supported via factor analysis and analysis of theoretical relationships.

Walach, Harald. 2009. The Campaign Against CAM and the Notion of "Evidence-Based". *Journal of Alternative and Complementary Medicine (New York, N.Y.)* 15(10). 1139-1142. doi:10.1089/acm.2009.0423.

The author examines the notion of "evidence" in "evidence-based medicine." He argues that the pharmaceutical industry is carrying out a campaign to discredit CAM, and advocates for a broader notion of what counts as evidence.

Yardley, S J, C E Walshe & A Parr. 2009. Improving training in spiritual care: a qualitative study exploring patient perceptions of professional educational requirements. *Palliative Medicine* 23(7). 601-607.

doi:10.1177/0269216309105726.

This article describes the findings of researchers who performed semi-structured in-depth "palliative patient" interviews (N = 20) to obtain patient suggestions for development of training to deliver spiritual care.

PART 3. BOOKS

3.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

- Belzen, J.A. (ed.). 2009. Changing the Scientific Study of Religion: Beyond Freud?: Theoretical, Empirical and Clinical Studies from Psychoanalytic Perspectives. Springer.
- Hood, Jr., Ralph W., Peter C. Hill & Bernard Spilka. 2009. *The Psychology of Religion: An Empirical Approach*. 4th ed. The Guilford Press.
- Smith, Christian. 2009. Moral, Believing Animals: Human Personhood and Culture. Oxford University Press.

Stausberg, Michael (ed.). 2009. Contemporary Theories of Religion: A Critical Companion. Routledge.

3.2 SPIRITUALITY & HEALTH RESEARCH

Dobson, Keith S. 2009. Handbook of Cognitive-Behavioral Therapies. 3rd ed. The Guilford Press.

Fink, George. 2009. Stress Consequences: Mental, Neuropsychological and Socioeconomic. Academic Press.

- Margitics, Ferenc. 2009. Handbook of New Spiritual Consciousness: Theory and Research. Nova Science Publishers.
- Wersch, Anna van, Mark Forshaw & Tina Cartwright. 2009. Complementary Medicine and Health Psychology. Open University Press.

PART 4. ARTICLES IN PRESS

4.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

- Akdede, Sacit Hadi. 2009. Do more ethnically and religiously diverse countries have lower democratization? *Economics Letters*. doi:10.1016/j.econlet.2009.10.013.
- Ayala, Francisco J. 2009. Darwin's explanation of design: From natural theology to natural selection. *Infection, Genetics and Evolution.* doi:10.1016/j.meegid.2009.09.014.
- Bærentsen, Klaus, Hans Stødkilde-Jørgensen, Bo Sommerlund, Tue Hartmann, Johannes Damsgaard-Madsen, Mark Fosnæs & Anders Green. 2009. An investigation of brain processes supporting meditation. *Cognitive Processing*. doi:10.1007/s10339-009-0342-3.
- Brown, Sam P & Peter D Taylor. 2009. Joint evolution of multiple social traits: a kin selection analysis. *Proceedings. Biological Sciences / The Royal Society*. doi:10.1098/rspb.2009.1480.
- Chasteen, Alison L, Donna C Burdzy & Jay Pratt. 2009. Thinking of God Moves Attention. Neuropsychologia. doi:10.1016/j.neuropsychologia.2009.09.029.
- Cornwallis, C K, S A West & A S Griffin. 2009. Routes to indirect fitness in cooperatively breeding vertebrates: kin discrimination and limited dispersal. *Journal of Evolutionary Biology*. doi:10.1111/j.1420-9101.2009.01853.x.
- Fingelkurts, Alexander & Andrew Fingelkurts. 2009. Is our brain hardwired to produce God, or is our brain hardwired to perceive God? A systematic review on the role of the brain in mediating religious experience. *Cognitive Processing*. doi:10.1007/s10339-009-0261-3.
- Geertz, Armin W. 2009. When cognitive scientists become religious, science is in trouble: On neurotheology from a philosophy of science perspective. *Religion*. doi:10.1016/j.religion.2009.08.001.
- Goldberg, David W. 2009. d'Aquili and Newberg's neurotheology: A hermeneutical problem with their neurological solution. *Religion*. doi:10.1016/j.religion.2009.08.002.
- Imhof, Lorens A & Martin A Nowak. 2009. Stochastic evolutionary dynamics of direct reciprocity. *Proceedings. Biological Sciences / The Royal Society*. doi:10.1098/rspb.2009.1171.
- Jansen, Bernard J., Andrea Tapia & Amanda Spink. 2009. Searching for salvation: An analysis of US religious searching on the World Wide Web. *Religion*. doi:10.1016/j.religion.2009.07.002.
- Jensen, Jeppe Sinding. 2009. Explanation and interpretation in the comparative study of religion. *Religion*. doi:10.1016/j.religion.2009.08.003.

- Juster, Robert-Paul, Bruce S. McEwen & Sonia J. Lupien. 2009. Allostatic load biomarkers of chronic stress and impact on health and cognition. *Neuroscience & Biobehavioral Reviews*. doi:10.1016/j.neubiorev.2009.10.002.
- Krams, Indrikis, Arnis Berzins, Tatjana Krama, David Wheatcroft, Kristine Igaune & Markus J Rantala. 2009. The increased risk of predation enhances cooperation. *Proceedings. Biological Sciences / The Royal Society*. doi:10.1098/rspb.2009.1614.
- Mahmud, Yusr & Viren Swami. 2009. The influence of the hijab (Islamic head-cover) on perceptions of women's attractiveness and intelligence. *Body Image*. doi:10.1016/j.bodyim.2009.09.003.
- Perc, Matjaž & Attila Szolnoki. 2009. Coevolutionary games-A mini review. *Bio Systems*. doi:10.1016/j.biosystems.2009.10.003.
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- Sanna, Lawrence J, Edward C Chang, Craig D Parks & Lindsay A Kennedy. 2009. Construing Collective Concerns: Increasing Cooperation by Broadening Construals in Social Dilemmas. *Psychological Science: A Journal of the American Psychological Society / APS*. doi:10.1111/j.1467-9280.2009.02458.x.
- Schino, Gabriele & Filippo Aureli. 2009. The relative roles of kinship and reciprocity in explaining primate altruism. *Ecology Letters*. doi:10.1111/j.1461-0248.2009.01396.x.
- Segal, Robert A. Kuhn and the science of religion. 2009. *Religion*. doi:10.1016/j.religion.2009.08.005.
- Syed, Jawad. 2009. Reconstruction of gender in Islamic thought: Iqbal's vision of equal opportunity. *Women's Studies International Forum*. doi:10.1016/j.wsif.2009.09.005.
- Travis, Fred, David Haaga, John Hagelin, Melissa Tanner, Alaric Arenander, Sanford Nidich, Carolyn Gaylord-King, Sarina Grosswald, Maxwell Rainforth & Robert Schneider. 2009. A self-referential default brain state: patterns of coherence, power, and eLORETA sources during eyes-closed rest and Transcendental Meditation practice. *Cognitive Processing*. doi:10.1007/s10339-009-0343-2.
- Upal, M. Afzal. 2009. An alternative account of the minimal counterintuitiveness effect. *Cognitive Systems Research*. doi:10.1016/j.cogsys.2009.08.003.

4.2 SPIRITUALITY & HEALTH RESEARCH

Ahrens, Courtney E, Samantha Abeling, Sarah Ahmad & Jessica Hinman. 2009. Spirituality and Well-Being: The Relationship Between Religious Coping and Recovery From Sexual Assault. *Journal of Interpersonal Violence*.

- doi:10.1177/0886260509340533.
- Ai, Amy, Paul Wink, Terrence Tice, Steven 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*. doi:10.1007/s10865-009-9228-1.
- Ando, Michiyo, Ryo Kawamura, Tatsuya Morita, Kei Hirai, Mitsunori Miyashita, Takuya Okamoto & Yasuo Shima. 2009. Value of religious care for relief of psycho-existential suffering in Japanese terminally ill cancer patients: the perspective of bereaved family members. *Psycho-Oncology*. doi:10.1002/pon.1625.
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