



RESEARCH REVIEW

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

MARCH, 2010

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 English 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, meditat*, prayer, relig*, psych*, science, spiritu*, and yoga, tailored to the database being searched. Books were located on Amazon.com and Worldcat. Articles not directly relevant to the scientific study of religion were excluded, as were correspondence and reviews. From a universe of 679 articles, 109 articles have been retained from 67 journals. There are 48 pre-publication citations from 39 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

Cavallaro, Francesca I., Immacolata Cacace, Massimiliano Del Testa, Paolo Andre, Giancarlo Carli, Vilfredo De Pascalis, Raffaele Rocchi & Enrica L. Santarcangelo. 2010. Hypnotizability-related EEG alpha and theta activities during visual and somesthetic imageries. *Neuroscience Letters* 470(1). 13-18.
doi:[10.1016/j.neulet.2009.12.044](https://doi.org/10.1016/j.neulet.2009.12.044).

Researchers found that during guided visual and somesthetic imagery tasks, subjects with high susceptibility to hypnosis (n = 10) exhibited a more widespread alpha desynchronization and slightly different EEG patterns than those with low susceptibility to hypnosis (n = 8), who showed segregated alpha- and theta-desynchronization. Subjects in both groups, when in a semi-reclined position, reported higher vividness and lower effort for visual than for somesthetic imagery, compared to standing subjects. Researchers conclude that the different EEG patterns in the two groups likely reflect different imagery strategies, and that such strategies are dependent on the specific sensory modality in both groups.

Ebstein, Richard P., Salomon Israel, Soo Hong Chew, Songfa Zhong & Ariel Knafo. 2010. Genetics of Human Social Behavior. *Neuron* 65(6). 831-844.
doi:[10.1016/j.neuron.2010.02.020](https://doi.org/10.1016/j.neuron.2010.02.020).

Twin and family studies suggest that uniquely human characteristics such as empathy, altruism, sense of equity, love, trust, music, economic behavior, and even politics are partially “hardwired”. Identification of specific genes engaging the social brain has occurred in the past decade, aided by insights about social behavior in lower mammals. The authors review studies showing that genes such as the arginine vasopressin receptor and the oxytocin receptor contribute to social behavior in a broad range of species, from voles to humans. Other polymorphic genes, such as those encoding for dopamine reward pathways, serotonergic emotional regulation, or sex hormones, further enable elaborate social behaviors. Part of a special review issue on social neuroscience.

Fitzgibbon, Bernadette M., Melita J. Giummarra, Nellie Georgiou-Karistianis, Peter G. Enticott & John L. Bradshaw. 2010. Shared pain: From empathy to synaesthesia. *Neuroscience & Biobehavioral Reviews* 34(4). 500-512.
doi:[10.1016/j.neubiorev.2009.10.007](https://doi.org/10.1016/j.neubiorev.2009.10.007).

In a review of current, conflicting literature on “empathy for pain” (the ability to understand pain observed in another person) in the context of a newly documented and abnormal form of pain empathy called “synaesthesia for pain”, the authors found that neural mechanisms potentially involved in synaesthesia for pain include, but are not limited to, “mirror systems”: a person not only empathizes with another’s pain but experiences the observed or imagined pain as if it was her own. Similar “mirror” neural systems are activated both when observing an action and when executing the same action, or when personally experiencing the same emotion or sensation. This suggests that observers may know that someone is in pain in part because the act of observation activates similar neural networks that produce a sensation as if the observer was experiencing that pain herself. The authors propose that synaesthesia for pain may be the result of prior painful or traumatic experiences, causing disinhibition in the mirror system underlying empathy for pain. Dysfunctional mirror systems may alter empathic processes by causing the mapping of motor, emotion, and perceptual states in a way that exceeds the threshold for conscious experience of those states. The authors discuss this theory in the context of a documented group of amputees who experience post-trauma synaesthesia for pain in phantom limbs.

Henry, E. A., B. D. Bartholow & J. Arndt. 2010. Death on the brain: effects of mortality salience on the neural correlates of ingroup and outgroup categorization. *Social Cognitive and Affective Neuroscience* 5(1). 77-87.

doi:[10.1093/scan/nsp041](https://doi.org/10.1093/scan/nsp041).

Prior research has shown that thoughts of one's own death (i.e., mortality salience [MS]) increase aspects of intergroup bias, and in this study researchers examined the extent to which MS influences neural activity underlying basic person-perception processes. Event-related brain potentials were used as measures of online attentional and evaluative processes, as White participants categorized ingroup (White) and outgroup (Black) faces according to expression (happy vs. angry), following either MS or a control induction. Results showed that MS affected the amplitude of the P2 and N2 components elicited by ingroup faces, but had no effect on the processing of outgroup faces. Processing of angry ingroup relative to angry outgroup faces was pronounced in the MS condition, reflected both in N2 amplitude and in longer latency of the P3 component, suggesting heightened sensitivity to threats to positive ingroup. The authors conclude that MS intensifies perception of social category features, primarily by enhancing processing of ingroup cues.

Holzel, B. K., J. Carmody, K. C. Evans, E. A. Hoge, J. A. Dusek, L. Morgan, R. K. Pitman & S. W. Lazar. 2010. Stress reduction correlates with structural changes in the amygdala. *Social Cognitive and Affective Neuroscience* 5(1). 11-17.

doi:[10.1093/scan/nsp034](https://doi.org/10.1093/scan/nsp034).

The authors conducted a longitudinal MRI study to investigate the relationship between changes in perceived stress and changes in amygdala gray matter density following a stress-reduction intervention. Stressed but otherwise healthy individuals (n = 26) participated in an 8-week mindfulness-based stress reduction intervention. Perceived stress was rated on the perceived stress scale (PSS), and anatomical MR images were acquired pre- and post-intervention. PSS change was used as the predictive regressor for changes in gray matter density within the bilateral amygdala, the brain structure crucial in stress responses. Following the intervention, participants reported significantly reduced perceived stress. Reductions in perceived stress correlated positively with decreases in right basolateral amygdala gray matter density. Whereas prior studies found gray matter modifications resulting from acquisition of abstract information, and motor and language skills, this study demonstrates that neuroplastic changes are associated with improvements in a psychological state variable.

Insel, Thomas R. 2010. The Challenge of Translation in Social Neuroscience: A Review of Oxytocin, Vasopressin, and Affiliative Behavior. *Neuron* 65(6). 768-779.

doi:[10.1016/j.neuron.2010.03.005](https://doi.org/10.1016/j.neuron.2010.03.005).

This review reviews research on oxytocin and vasopressin as an exemplar of one path for exploring the "dark matter" of social neuroscience. The author finds that studies across vertebrate species suggest that these neuropeptides are important for social cognition, with gender- and steroid-dependent effects. Comparative research in voles yields a model based on interspecies and intraspecies variation of the geography of oxytocin receptors and vasopressin V1a receptors in the forebrain. Highly affiliative species have receptors in brain circuits related to reward or reinforcement. The neuroanatomical distribution of these receptors may be guided by variations in the regulatory regions of their respective genes. This review describes the promises and problems of extrapolating these findings to human social cognition, with specific reference to the social deficits of autism. Part of a special review issue on social neuroscience.

Naish, Peter L N. 2010. Hypnosis and hemispheric asymmetry. *Consciousness and Cognition* 19(1). 230-234.

doi:[10.1016/j.concog.2009.10.003](https://doi.org/10.1016/j.concog.2009.10.003).

In this study, participants with low and high hypnotic susceptibility (n = 10 for both) were tested on a temporal order judgment task, both with and without hypnosis. Subjects made judgments of the order of presentation of light flashes appearing in first one hemi-field, and then the other. There were differences in the inter-stimulus intervals required accurately to report the order, depending upon which hemi-field led. This asymmetry was most marked in hypnotically susceptible participants, and reversed when they were hypnotized. Results imply not only that brain activity changes in hypnosis, but also that there is a difference in brain function between people of low and high hypnotic susceptibility: the latter exhibited a faster-acting left hemisphere in the waking state, but faster right hemisphere when hypnotized.

Young, Liane, Antoine Bechara, Daniel Tranel, Hanna Damasio, Marc Hauser & Antonio Damasio. 2010. Damage to Ventromedial Prefrontal Cortex Impairs Judgment of Harmful Intent. *Neuron* 65(6). 845-851.

doi:[10.1016/j.neuron.2010.03.003](https://doi.org/10.1016/j.neuron.2010.03.003).

Researchers found that patients with bilateral, adult-onset damage to the VMPC (n = 9) judged attempted harms, including attempted murder, as more morally permissible relative to a control group of neurologically normal (NC) controls (n = 8) and brain-damaged comparison (BDC) patients who had lesions that excluded structures thought to be important for emotions (n = 7). All subjects were presented with 24 scenarios, and made moral judgments of the protagonist's action on a scale of 1 (forbidden) to 7 (permissible). VMPC participants judged failed attempts to harm as significantly more permissible than controls, and judged attempted harms as significantly more permissible than accidental harms, a pattern that was significantly different from the pattern observed in the BDC participant group and the NC participant group. All 9 VMPC participants showed the same reversal of judgments of attempted and accidental harms; this pattern was significantly different from the pattern of judgments in the BDC and NC participant groups. Researchers conclude that bilateral damage to the VMPC leads to moral judgments that largely neglect harmful intent, focusing instead on the outcome of the action (e.g., the moral judgment of a failed murder attempt as permissible), and therefore suggest that the VMPC plays an integral role in processing negatively valenced intentions for moral judgment. Part of a special review issue on social neuroscience.

1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION

Berezkei, Tamas, Bela Birkas & Zsuzsanna Kerekes. 2010. Altruism towards strangers in need: costly signaling in an industrial society. *Evolution and Human Behavior* 31(2). 95-103.

doi:[10.1016/j.evolhumbehav.2009.07.004](https://doi.org/10.1016/j.evolhumbehav.2009.07.004).

Of participants in this study (n = 186; 117 female), women, but not men, were more willing to give assistance to unfamiliar persons in need if they made the charity offers in the presence of their group members than when the offers were made in secret. In accordance with costly signaling theory, the likelihood of charity service was strongly influenced by the expected cost of altruistic behavior; others' presence and attention increased the likelihood of making costly charity activities, such as giving assistance to mentally handicapped children. Publicly demonstrated altruistic intentions yielded long-term benefits: Subjects who were willing to participate in a particular charity activity gained significantly higher sociometry scores (as a sign of social recognition) than did others.

Burton-Chellew, Maxwell N., Adin Ross-Gillespie & Stuart A. West. 2010. Cooperation in humans: competition between groups and proximate emotions. *Evolution and Human Behavior* 31(2). 104-108.

doi:[10.1016/j.evolhumbehav.2009.07.005](https://doi.org/10.1016/j.evolhumbehav.2009.07.005).

In a public goods game with 48 students, experimenters found that when groups competed with other groups for financial rewards, individuals made larger contributions within their own groups, implying that participants were more likely to regard their group mates as collaborators rather than competitors. Variation in contribution among

individuals, either with or without intergroup competition, was positively correlated with individuals' propensity to regard group mates as collaborators. The presence of group competition resulted in participants contributing more, from the beginning and throughout, despite not earning more. Research also showed that the levels of both guilt and anger that individuals experienced were a function of their own contributions and those of their group mates; participants felt angrier when they had contributed relatively more than their group mates, and guiltier when they had contributed relatively less than their group mates.

Caldwell, Christine A. & Ailsa E. Millen. 2010. Conservatism in laboratory microsocieties: unpredictable payoffs accentuate group-specific traditions. *Evolution and Human Behavior* 31(2). 123-130.

doi:[10.1016/j.evolhumbehav.2009.08.002](https://doi.org/10.1016/j.evolhumbehav.2009.08.002).

In an experiment on "cumulative cultural evolution" with 200 participants (139 females; $m = 21.7$), participants in groups were required to build their own tower from spaghetti and modeling clay, the goal being to build the tower as high as possible. In one condition, each individual's towers was measured immediately on completion and, therefore, other participants were able to judge the success of their design during building. In the other condition, participants' towers were measured 5 minutes after completion, following a deliberate attempt to test the tower's stability, making it harder for participants to judge whether an innovative solution was liable to result in a good score on the final measurement. The extent to which a design could be identified as belonging to a particular chain was stronger in the delayed measure condition, indicating that participants were placing greater reliance on social learning. Furthermore, in this condition, there was only very weak evidence of successive improvement in performance over learner generations, whereas in the immediate measure condition there was a clear effect of steadily increasing scores on the goal measurement. The authors conclude that increasing the risk associated with learning for oneself may favor the development of arbitrary traditions.

Drummond, H., R. Torres, C. R. Juarez & S. Y. Kim. 2010. Is kin cooperation going on undetected in marine bird colonies? *Behavioral Ecology and Sociobiology* 64(4). 647-655.

doi:[10.1007/s00265-009-0882-7](https://doi.org/10.1007/s00265-009-0882-7).

Evidence of cooperation and competition between close adult kin in a blue-footed booby colony was sought by analyzing patterns of natal dispersal and proximity of nests. Researchers found that male and female recruits nested closer to their own natal sites than to their parents' current sites. Males (only) dispersed less far when both parents were present than when no parent or one parent was present, but not selectively close to fathers versus mothers when these were divorced. Neither parental presence nor parental proximity affected breeding success of recruits of either sex. Neither sex was affected in its dispersal distance by the presence or hatching order/dominance of a broodmate. Neither sex was affected in its breeding success by the presence versus absence of a broodmate, although female success increased with proximity of their brothers. It appears that boobies do not nest selectively close to, or far from, their parents, offspring, or broodmates. The authors find the apparent lack of cooperation and altruism between close adult relatives in booby colonies puzzling.

Fenwick, P. 2010. Altruism as a courtship display: Some effects of third-party generosity on audience perceptions. *British Journal of Psychology* 101. 123-135.

doi:[10.1348/000712609X435733](https://doi.org/10.1348/000712609X435733).

The present study sought to determine whether public generosity was a means to advertise one's good character. Results from two sets of experiments ($n = 145$ and $n = 160$) showed that there was a significantly positive main effect of altruism on targets' desirability for working partnerships, but it was qualified by a significant sex difference such that women preferred working with altruistic men whereas men had no significant preference. Altruists were found more desirable for long-term relationships than were neutral individuals. Women significantly preferred dates with altruistic targets whereas men had no significant preference for dates and a significant

preference against altruistic targets for one-night stands. Altruism did not affect perceptions of physical or sexual attractiveness.

Fetchenhauer, Detlef, Ton Groothuis & Julia Pradel. 2010. Not only states but traits — Humans can identify permanent altruistic dispositions in 20 s. *Evolution and Human Behavior* 31(2). 80-86.
doi:[10.1016/j.evolhumbehav.2009.06.009](https://doi.org/10.1016/j.evolhumbehav.2009.06.009).

In an attempt to explain why humans behave altruistically in one-shot interactions under total anonymity we tested whether individuals are able to identify altruistic traits. Judges (n = 56) watched 20-s long silent video clips of unacquainted target persons and were asked to estimate the behavior of these target persons in a money-sharing task. As the videotapes of the target persons had been recorded in a setting unrelated to altruistic behavior, the judges could not base their estimates on situational cues related to the money-sharing task but instead had to draw on stable signals of altruism. Estimates of altruism were significantly better than chance, indicating that individuals can identify permanent altruistic traits in others. This mechanism raises opportunities for selective interactions between altruists, as altruists could choose each other in order to retain benefits through mutual cooperation.

Henrich, Joseph, Jean Ensminger, Richard McElreath, Abigail Barr, Clark Barrett, Alexander Bolyanatz, Juan Camilo Cardenas et al. 2010. Markets, religion, community size, and the evolution of fairness and punishment. *Science* 327(5972). 1480-1484.
doi:[10.1126/science.1182238](https://doi.org/10.1126/science.1182238).

Using three behavioral experiments administered across 15 diverse populations (n = 2,148), researchers found that market integration (measured as the percentage of calories purchased from a market, as opposed to home-grown, hunted, or fished) positively covaries with fairness, while community size positively covaries with punishment. Participation in a world religion is associated with fairness, although not across all measures. Means of evaluation used were the Dictator Game, the Ultimatum Game, and the Third-party Punishment Game. The authors conclude that their research tentatively supports the notion that religion may have coevolved with complex societies to facilitate larger-scale interactions, and that modern prosociality is not solely the product of an innate psychology, but also reflects norms and institutions that have emerged over the course of human history.

Hoff, K. 2010. Fairness in Modern Society. *Science* 327(5972). 1467-1468.
doi:[10.1126/science.1188537](https://doi.org/10.1126/science.1188537).

The author, an economist at the World Bank, comments on Henrich, et al. (above). She concludes that the findings call into question the standard assumption in economics that preferences are innate and stable, and suggest that cultural conditioning of the expression of human selfishness is a part of the process of economic development.

Hunter, Philip. 2010. The basis of morality. *EMBO Reports* 11(3). 166-169.
doi:[10.1038/embor.2010.19](https://doi.org/10.1038/embor.2010.19).

The author reviews ongoing research regarding the evolutionary basis of morality, concentrating on mirror self-recognition (MSR), which emerged with the evolution of the more complex structural and functional components of the brain.

van IJzendoorn, Marinus, Marian Bakermans-Kranenburg, Fieke Pannebakker & Dorothee Out. 2010. In defence of situational morality: genetic, dispositional and situational determinants of children's donating to charity. *Journal of Moral Education* 39(1). 1-20.
doi:[10.1080/03057240903528535](https://doi.org/10.1080/03057240903528535).

The authors present two studies on pro-social behavior, using children's willingness to donate their money to a charity (UNICEF) as a prime example. In two samples of seven-year-old children, researchers found no evidence for a role of attachment, temperament or parenting. Using a twin design, no evidence for a genetic component was

found either. In both studies very few children were inclined to donate any money after viewing a promotional UNICEF film about children suffering from poverty; only after gentle probing by an experimenter were most children willing to donate some of their money. The situation appeared to be a much more powerful determinant of donating behavior than any other factor. The authors conclude that that moral competence may be a universal human characteristic, but that it takes a situation with specific demand-characteristics to translate this competence into actual prosocial performance; genetic make-up, neurobiological factors, attachment security and rearing experiences have only limited influence on individual differences in moral performance.

- Kronauer, Daniel J. C., Caspar Schöning, Patrizia d’Ettorre & Jacobus J. Boomsma. 2010. Colony fusion and worker reproduction after queen loss in army ants. *Proceedings. Biological Sciences / The Royal Society* 277(1682). 755-763.
doi:[10.1098/rspb.2009.1591](https://doi.org/10.1098/rspb.2009.1591).

Researchers combined experimental queen removal with population genetics and cuticular chemistry analyses to show that colonies of the African army ant frequently merge with neighboring colonies after queen loss, though the merging colonies often have no direct co-ancestry, but are on average probably distantly related because of overall population viscosity. It is unlikely that orphaned workers fuse with neighbors to gain direct fitness benefits via producing males in the adopting colony. Worker chemical recognition profiles remain similar after queen loss, but rapidly change into a mixed colony Gestalt odor after fusion, consistent with indiscriminate acceptance of alien workers that are no longer aggressive. The authors hypothesize that colony fusion after queen loss might be more widespread, especially in spatially structured populations of social insects where worker reproduction is not profitable.

- Li, Yexin Jessica, Adam B. Cohen, Jason Weeden & Douglas T. Kenrick. 2010. Mating competitors increase religious beliefs. *Journal of Experimental Social Psychology* 46(2). 428-431.
doi:[10.1016/j.jesp.2009.10.017](https://doi.org/10.1016/j.jesp.2009.10.017).

Researchers performed 2 experiments to determine whether mating behavior might influence religiosity. In Experiment 1, people (n = 269; 172 female) reported higher religiosity after looking at mating pools consisting of attractive people of their own sex, compared to attractive members of the opposite sex. The pattern was the same for women and men. Experiment 2 replicated the effect with an experimental group (n = 184; 78 female) and an added control group (n = 1,493; 795 female). The authors conclude that both men and women become more religious when seeing same-sex competitors.

- Massen, Jorg J. M., Lisette M. van den Berg, Berry M. Spruijt & Elisabeth H. M. Sterck. 2010. Generous leaders and selfish underdogs: pro-sociality in despotic macaques. *PloS One* 5(3). e9734.
doi:[10.1371/journal.pone.0009734](https://doi.org/10.1371/journal.pone.0009734).

A study of despotic long-tailed macaques (n = 20) showed that they do grant others access to food, a pro-social behavior unexpected in a species that has low social tolerance and a large dominance asymmetry. Moreover, their dominance hierarchy determined pro-social behavior in an unexpected way: high-ranking individuals granted, while low-ranking individuals withheld, their partner access to food. Pro-social behavior is not used by subordinates to obtain benefits from dominants, but by dominants to emphasize their dominant position. The pro-social tendency towards kin partners was significantly higher than the pro-social tendency towards non-kin partners.

- Mifune, Nobuhiro, Hirofumi Hashimoto & Toshio Yamagishi. 2010. Altruism toward in-group members as a reputation mechanism. *Evolution and Human Behavior* 31(2). 109-117.
doi:[10.1016/j.evolhumbehav.2009.09.004](https://doi.org/10.1016/j.evolhumbehav.2009.09.004).

To test the hypothesis that sensitivity to monitoring drives people to act altruistically toward members of their own community, 2 experiments (n = 84; n = 142) investigated whether displaying a Kabuki eye-like painting in the experimental setting promoted altruism toward in-group members, but not toward out-group members. Participants played the role of dictator in a dictator game with another participant (a recipient) who was from the minimal in-group or out-group. Participants knew whether their recipient was an in-group member or an out-group member, but were informed that their recipient did not know the group membership of the dictator. In-group favoritism occurred only when participants were facing a computer desktop which displayed a painting of the eyes, but did not occur in the absence of the eyes. The authors propose that the eye painting displayed on the participant's computer screen worked as a cue for monitoring and thus enhanced the participant's altruistic behavior.

Oda, Ryo & Shun Nakajima. 2010. Biased face recognition in the Faith Game. *Evolution and Human Behavior* 31(2). 118-122.
doi:[10.1016/j.evolhumbehav.2009.08.005](https://doi.org/10.1016/j.evolhumbehav.2009.08.005).

Participants (n = 36; 16 females) were asked to decide whether they trusted persons depicted in photographs to give them money using two sessions of the Faith Game. The participants tended not to increase their trust in the individuals, depicted in photographs, who had altruistically given money to them previously. However, participants recognized non-altruists who had not shared money and, during the second session, rescinded the trust that they had previously placed in them. The authors conclude that bias in face recognition is not restricted to the recognition level, as previous studies have suggested, but also operates at the behavioral level and functions to facilitate the avoidance of persons who have caused some disadvantage in a previous interaction, rather than to facilitate new relationships with altruists by enhancing recognition of their faces.

Pepper, Miriam, Tim Jackson & David Uzzell. 2010. A Study of Multidimensional Religion Constructs and Values in the United Kingdom. *Journal for the Scientific Study of Religion* 49(1). 127-146.
doi:[10.1111/j.1468-5906.2009.01496.x](https://doi.org/10.1111/j.1468-5906.2009.01496.x).

Using a general public sample (n = 260) and a churchgoer sample (n = 272) in the United Kingdom, this article examines the associations between Schwartz's value theory, several general religion measures, and conceptualization of God. Religiousness aligns most strongly along the conservation/openness to change value dimension, and spirituality is rotated further toward self-transcendence values. Findings suggest a shift among the religious away from an emphasis on security.

Pyysiäinen, Ilkka & Marc Hauser. 2010. The origins of religion : evolved adaptation or by-product? *Trends in Cognitive Sciences* 14(3). 104-109.
doi:[10.1016/j.tics.2009.12.007](https://doi.org/10.1016/j.tics.2009.12.007).

The authors critically evaluate the hypotheses that religion served as an adaptation for cooperation, and that religion is a by-product of evolved, non-religious, cognitive functions. In addition, they explore the link between religion and morality, and argue that recent empirical work in moral psychology provides stronger support for the by-product approach. Specifically, despite differences in religious background, individuals show no difference in the pattern of their moral judgments for unfamiliar moral scenarios. From these findings, they conclude that religion evolved from pre-existing cognitive functions, but that it may then have been subject to selection, creating an adaptively designed system for solving the problem of cooperation.

Rai, Taze S. & Keith J. Holyoak. 2010. Moral Principles or Consumer Preferences? Alternative Framings of the Trolley Problem. *Cognitive Science* 34(2). 311-321.
doi:[10.1111/j.1551-6709.2009.01088.x](https://doi.org/10.1111/j.1551-6709.2009.01088.x).

In a series of 3 experiments, using experimental ethical principles derived from work in the areas of consumer choice and risk perception, researchers found that participants (n = 124) were less likely to choose an action that sacrifices one life to save others when they were asked to provide more reasons for doing so. Second, participants' (n = 164) willingness to sacrifice lives depended not only on how many lives would be saved, but on the number of lives at risk, suggesting that moral intuitions, just like consumer preferences and risk perception, are guided by relative rather than absolute savings. The latter effect was also found in a within-subjects design with 107 participants, from which the authors conclude that participants believed that more people needed to be saved in the condition in which more lives were at risk, in line with studies of risk perception.

Sokolowski, Marla B. 2010. Social Interactions in “Simple” Model Systems. *Neuron* 65(6). 780-794.
doi:[10.1016/j.neuron.2010.03.007](https://doi.org/10.1016/j.neuron.2010.03.007).

The author compares selected examples of social behavior across species and highlighting the common themes that emerge, focusing on the nematode worm (C. elegans), the fruit fly (Drosophila), ants, and honey bees. Each display a wealth of social behaviors similar to those in more complex animals, including social dominance, group decision making, learning from experienced individuals, and foraging in groups. Part of a special review issue on social neuroscience.

Schug, Joanna, David Matsumoto, Yutaka Horita, Toshio Yamagishi & Kemberlee Bonnet. 2010. Emotional expressivity as a signal of cooperation. *Evolution and Human Behavior* 31(2). 87-94.
doi:[10.1016/j.evolhumbehav.2009.09.006](https://doi.org/10.1016/j.evolhumbehav.2009.09.006).

In this study, 20 students were defined as cooperators and non-cooperators in terms of their behavior as the proposer in an ultimatum game, and their facial expressions were video-taped as they faced unfair offers as a responder. A detailed analysis of the facial expressions displayed by participants revealed that cooperators displayed greater amounts of emotional expressions, not limited to positive emotional expression, when responding to unfair offers in the ultimatum game. Results suggest that cooperators may be more emotionally expressive than non-cooperators, and that emotional expressivity can be a more reliable signal of cooperativeness than the display of positive emotion alone.

Smith, J. E., R. C. Van Horn, K. S. Powning, A. R. Cole, K. E. Graham, S. K. Memenis & K. E. Holekamp. 2010. Evolutionary forces favoring intragroup coalitions among spotted hyenas and other animals. *Behavioral Ecology* 21(2). 284-303.
doi:[10.1093/beheco/arp181](https://doi.org/10.1093/beheco/arp181).

Researchers found that the combined evolutionary forces of kin selection, and direct benefits derived from reinforcing the status quo, drive coalitionary interventions among adult female spotted hyenas belonging to a large social group in Kenya. Hyenas made flexible decisions regarding whether or not to intervene in fights, modifying their tendency to cooperate based on multiple types of information about their immediate social and ecological environments. Donors generally minimized costs to themselves, intervening most often during low-intensity fights and when feeding opportunities were unavailable. As predicted by kin selection theory, females supported close kin most often, and the connectedness of cooperation networks increased with genetic relatedness; nevertheless, kinship failed to protect females from coalitionary attacks. Coalitionary support in agonistic interactions represents cooperation because intervening in a fight is potentially costly to the donor of support but benefits the recipient.

West, Stuart A. & Andy Gardner. 2010. Altruism, spite, and greenbeards. *Science* 327(5971). 1341-1344.
doi:[10.1126/science.1178332](https://doi.org/10.1126/science.1178332).

In this review of recent research, the authors show how recent work has resolved three key debates in the evolution of altruism and spite, helping clarify how Hamilton's theoretical overview links to real-world examples, in organisms ranging from bacteria to humans. They ask: is the evolution of extreme altruism, represented by the

sterile workers of social insects, driven by genetics or ecology? Does spite really exist in nature? And, can altruism be favored between individuals who are not close kin but share a “greenbeard” gene for altruism?

- Yamamoto, Shinya & Masayuki Tanaka. 2010. The influence of kin relationship and reciprocal context on chimpanzees' other-regarding preferences. *Animal Behaviour* 79(3). 595-602.
doi:[10.1016/j.anbehav.2009.11.034](https://doi.org/10.1016/j.anbehav.2009.11.034).

Researchers investigated the evolutionary origin of other-regarding preferences, one of the strong underlying motivations for altruism, in a chimpanzee population (n = 13). In experiment 1, chimpanzee participants involving three mother–offspring pairs were offered two options: delivering food rewards to their partner and themselves, or only to themselves. In experiment 2, a reciprocal context was designed in which the two participants alternately chose the two options. In contrast to the authors' theoretical predictions, the chimpanzees did not show any prosocial tendencies, even between mother and offspring or in a reciprocal context. They conclude that voluntary and/or strategic other-rewarding behavior arose in humans after divergence from the common ancestor of humans and chimpanzees, though the experimental set-up, which prevented direct interactions between the participants, might have influenced these results.

1.3 SCIENTIFIC STUDY OF RELIGION: PSYCHOLOGY & SOCIOLOGY

- Barro, Robert, Jason Hwang & Rachel McCleary. 2010. Religious Conversion in 40 Countries. *Journal for the Scientific Study of Religion* 49(1). 15-36.
doi:[10.1111/j.1468-5906.2009.01490.x](https://doi.org/10.1111/j.1468-5906.2009.01490.x).

Using data from the International Social Survey Program and the World Values Survey about current and former religious adherence in 40 countries, the authors found support for several hypotheses: religious-conversion rates are positively related to religious pluralism, gauged by adherence shares; negatively related to government restrictions on religious conversion; positively related to levels of education; and negatively related to a history of Communism. Conversion rates are not related to per capita GDP, the presence of state religion, and the extent of religiosity, and effects from the types of religious adherence are minor, except for the negative effect of Muslim adherence. The results provide support for a theoretical model based on rational individual choice, where the frequency of religious conversion depends on the cost of switching and the cost of having the “wrong” religion.

- Desmond, Scott A., George Kikuchi & Kristopher H. Morgan. 2010. Congregations and Crime: Is the Spatial Distribution of Congregations Associated with Neighborhood Crime Rates? *Journal for the Scientific Study of Religion* 49(1). 37-55.
doi:[10.1111/j.1468-5906.2009.01491.x](https://doi.org/10.1111/j.1468-5906.2009.01491.x).

Using data for more than 400 block groups in Indianapolis, researchers found that neighborhoods with more evangelical Protestant congregations have higher rates of both violent and property crimes. Neighborhoods with more mainline and black Protestant congregations have higher rates of property crimes, but not violent crimes. Finally, although civically engaged congregations are associated with lower neighborhood crime rates, the association may be limited to some types of property crimes.

- Djupe, Paul A. & Gregory W. Gwiasda. 2010. Evangelizing the Environment: Decision Process Effects in Political Persuasion. *Journal for the Scientific Study of Religion* 49(1). 73-86.
doi:[10.1111/j.1468-5906.2009.01493.x](https://doi.org/10.1111/j.1468-5906.2009.01493.x).

A group of 948 evangelical Christians was tested for the way each individual came to an opinion about environmentalism, an issue taken up by the National Association of Evangelicals in 2004, and compared to a control group of non-evangelicals. Researchers tested for the effects of group cues, identity, and a new cue, called the decision-making process, in which communicating the way a source went about making a decision can affect how

other cues are utilized. They found that a group cue has little effect, while the process cue alters how in- and out-group members think about environmental protection and the players involved.

- Ekelund, Robert B. & Robert F. Hébert. 2009. Interest groups, public choice and the economics of religion. *Public Choice* 142(3-4). 429-436.
doi:[10.1007/s11127-009-9543-7](https://doi.org/10.1007/s11127-009-9543-7).

In this review of Robert Tollison's contributions to the economics of religion, the authors underscore his integration of public choice and interest-group themes into the microeconomic analysis of faith-based organizational architecture, institutional decision making and doctrinal innovation. Beginning with study of the medieval Catholic Church and moving forward to the Protestant Reformation and beyond, the article supplies a timeline of developments and the major findings of each phase of his research program. Part of a special issue of essays in honor of Robert D. Tollison.

- Heaven, Patrick C. L., Joseph Ciarrochi & Peter Leeson. 2010. Parental styles and religious values among teenagers: a 3-year prospective analysis. *The Journal of Genetic Psychology* 171(1). 93-99.
doi:[10.1080/00221320903500861](https://doi.org/10.1080/00221320903500861).

After a survey of 784 seventh-graders ($m = 12.3$), and a follow-up of the same group as tenth-graders ($n = 747$), parental authoritativeness and hope in the earlier time significantly predicted religious values three years later. The authors controlled for self-esteem, trait hope, and students' levels of conscientiousness.

- Karahan, Gokhan & Michelle Matthews. 2009. A Tollisonian approach to religionomics. *Public Choice* 142(3-4). 437-440.
doi:[10.1007/s11127-009-9536-6](https://doi.org/10.1007/s11127-009-9536-6).

The authors comment on Ekelund and Hébert, above, and review the history of the economics of religion. Part of a special issue of essays in honor of Robert D. Tollison.

- Liu, Eric Y. 2010. Are Risk-Taking Persons Less Religious? Risk Preference, Religious Affiliation, and Religious Participation in Taiwan. *Journal for the Scientific Study of Religion* 49(1). 172-178.
doi:[10.1111/j.1468-5906.2009.01499.x](https://doi.org/10.1111/j.1468-5906.2009.01499.x).

This study attempts to replicate the Miller (2009) study regarding risk preference and religiosity in Taiwan society, using data from the 2007 Taiwan Social Change Survey ($n = 2,147$). Analysis shows that, for the Taiwanese surveyed, while risk preference has little estimated net effect on religious affiliation, the relationship between risk preference and frequency of religious participation is statistically significant. Important religious group differences were found.

- Luhrmann, T. M., Howard Nusbaum & Ronald Thisted. 2010. The Absorption Hypothesis: Learning to Hear God in Evangelical Christianity. *American Anthropologist* 112(1). 66-78.
doi:[10.1111/j.1548-1433.2009.01197.x](https://doi.org/10.1111/j.1548-1433.2009.01197.x).

This study uses an approach to religion that builds on, but differs from, the culture-and-cognition approach. Using a combination of ethnographic data and empirical methods, the authors identify a process termed "absorption," which may be involved in contemporary Christian evangelical prayer practice (and in the practices of other religions). People with a proclivity for absorption were more likely to report sharper mental images, greater focus, and more unusual spiritual experience. The more they prayed, the more likely they were to have these experiences and to embrace fully the local representation of God. Results emphasize learning, a social process to which individuals respond in variable ways, and suggest that interpretation, proclivity, and practice are all important in understanding religious experience.

- Maxwell, Rahsaan. 2010. Trust in Government Among British Muslims: The Importance of Migration Status. *Political Behavior* 32(1). 89-109.

doi:[10.1007/s11109-009-9093-1](https://doi.org/10.1007/s11109-009-9093-1).

In this study using data from the 2007 Home Office Citizenship Survey (n = 9,336), the author finds that British Muslims are more likely than Christians to have high levels of trust in government. The author posits that Muslims are more likely to have positive political attitudes because they are more likely than Christians to be migrants, and migrants are more likely than natives to have optimistic evaluations of British society.

Reimer, Kevin S., Alvin C. Dueck, Garth Neufeld, Sherry Steenwyk & Tracy Sidesinger. 2010. Varieties of religious cognition: a computational approach to self-understanding in three monotheist contexts. *Zygon* 45(1). 75-90.

doi:[10.1111/j.1467-9744.2010.01059.x](https://doi.org/10.1111/j.1467-9744.2010.01059.x).

This study considered representations of divine and human others in the self-understanding of monotheists from three religions. Using a computational model known as latent semantic analysis, findings indicated that representation of the divine is far removed from parents in cognitive schemas for all participants (n = 60). Self-understanding was conceptualized on the basis of semantic and episodic knowledge in narrative response data. Given the importance of social context in the formation of cognitive schemas, the project emphasized self-understanding in a comparative religious design. Part of a special section on psychology and religion.

Revell, Lynn. 2010. Religious education, conflict and diversity: an exploration of young children's perceptions of Islam. *Educational Studies* 36(2). 207-215.

doi:[10.1080/03055690903162390](https://doi.org/10.1080/03055690903162390).

Research suggests that English primary school students are aware of Islam as a world religion and of many of the images and popular discourses associated with Islam. While a minority of pupils expressed explicit racist or prejudiced views about Islam many pupils appeared to perceive Islam and Muslims as "foreign" and "alien".

Sherkat, Darren E., Kylan Mattias de Vries & Stacia Creek. 2010. Race, Religion, and Opposition to Same-Sex Marriage. *Social Science Quarterly* 91(1). 80-98.

doi:[10.1111/j.1540-6237.2010.00682.x](https://doi.org/10.1111/j.1540-6237.2010.00682.x).

Using data from the General Social Surveys, researchers examined racial differences in support for same-sex marriage, and found that the racial divide is a function of African Americans' ties to sectarian Protestant religious denominations and high rates of church attendance. In addition, data show racial differences in the influence of education and political values on opposition to same sex marriage. Secular influences play less of a role in structuring African Americans' beliefs about same-sex marriage.

Smith, Buster G. 2010. Acceptance of Other Religions in the United States: An HLM Analysis of Variability across Congregations. *Social Compass* 57(1). 127-142.

doi:[10.1177/0037768609355542](https://doi.org/10.1177/0037768609355542).

Using a sample (n = 122,404) from the 2001 United States Congregational Life Survey, the author explores the importance of religious traditions in sculpting the attitudes religious people hold toward the validity of alternative faiths. Results indicate that all religions have distinct ways of influencing the relationship between socio-demographic characteristics and pluralistic attitudes, but that more particular features of the congregation are only sporadically significant.

Stankov, Lazar, Gerard Saucier & Goran Knežević. 2010. Militant extremist mind-set: Proviolence, Vile World, and Divine Power. *Psychological Assessment* 22(1). 70-86.

doi:[10.1037/a0016925](https://doi.org/10.1037/a0016925).

In a study of 2,424 participants from 9 countries, researchers found that participants from Malaysia endorse statements about Vile World and Divine Power more strongly than participants from other countries, and participants from China, Korea, and Malaysia endorse Proviolence more strongly than countries from other parts

of the world. The authors propose those three factors for use in the development of a scale for the measurement of the militant extremist mind-set. Correlations of these factors with external variables indicate that Divine Power is a traditional religiosity scale, whereas Provivence and Vile World scales cannot be accounted for by existing psychological constructs.

Whitehead, Andrew L. 2010. Sacred Rites and Civil Rights: Religion's Effect on Attitudes Toward Same-Sex Unions and the Perceived Cause of Homosexuality. *Social Science Quarterly* 91(1). 63-79. doi:[10.1111/j.1540-6237.2010.00681.x](https://doi.org/10.1111/j.1540-6237.2010.00681.x).

Using the 2007 Baylor Religion Survey (n = 1,648), the author found that religion is strongly associated with the belief that homosexuals choose their sexual orientation. Further, religion maintains a significant association with attitudes toward same-sex unions despite inclusion of an attribution variable.

1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY

Bruce, Steve & Tony Glendinning. 2010. When was secularization? Dating the decline of the British churches and locating its cause. *British Journal of Sociology* 61(1). 107-126. doi:[10.1111/j.1468-4446.2009.01304.x](https://doi.org/10.1111/j.1468-4446.2009.01304.x).

The authors challenge recent work that claims that the causes of the decline of Christianity in Britain lie in the social and cultural changes associated with the 1960s. They note that much of the decline of the churches is explained not by adult defection but by a failure to keep children in the faith. They focus on the disruptive effects of the 1939-45 war on family formation and use survey data to argue for a staged model of decline that is compatible with the conventional gradual view of secularization.

Dawson, Lorne. 2010. The Study of New Religious Movements and the Radicalization of Home-Grown Terrorists: Opening a Dialogue. *Terrorism and Political Violence* 22(1). 1-21. doi:[10.1080/09546550903409163](https://doi.org/10.1080/09546550903409163).

This article makes the case for a dialogue between scholars studying new religious movements (NRMs), particularly those responsible for acts of mass violence, and those studying processes of radicalization in home-grown terrorist groups. It identifies the substantial parallels between established understandings of who joins NRMs, how, and why, and recent findings about who joins terrorist groups in a Western context, how, and why. Finally, it discusses the ways in which explanations of the causes of violent behavior in NRMs are pertinent to securing a more systematic and complete grasp of the process of radicalization in terrorist cells.

Day, Matthew. 2010. The Educator Must Be Educated: The Study of Religion at the End of the Humanities. *Method & Theory in the Study of Religion* 22(1). 1-8. doi:[10.1163/157006810790931841](https://doi.org/10.1163/157006810790931841).

The author holds that recent attempts to assign responsibility for the decline of the liberal arts to "postmodernism" naively ignores long-term economic trends. He argues that the humanities cannot be saved by just turning over a new leaf and making them more "scientific," and that, when it comes to the academic study of religion, the dream of an evolutionary or cognitive "science" of religion may represent a step backwards by virtue of re-introducing sui generis religion.

Fiddick, Laurence & Nicole Erlich. 2010. Giving it all away: altruism and answers to the Wason selection task. *Evolution and Human Behavior* 31(2). 131-140. doi:[10.1016/j.evolhumbehav.2009.08.003](https://doi.org/10.1016/j.evolhumbehav.2009.08.003).

Testing the hypothesis that experimental studies of cognitive adaptations for cooperation have been skewed by having the scenarios explicitly or implicitly provide the answer to the task in the scenario, researchers administered the selection tasks with and without the answer embedded in the scenario. Performance dropped significantly on the

altruism-detection tasks when the embedded answers were removed, whereas performance on cheater-detection versions was unaffected by the manipulation.

- Gironi, Fabio. 2010. Turning a Critical Eye on Science and Religion: Theological Assumptions and Soteriological Rhetoric. *Method & Theory in the Study of Religion* 22(1). 37-67.
doi:[10.1163/157006810790931869](https://doi.org/10.1163/157006810790931869).

The author offers a critical evaluation of the field of “science and religion” through a brief description of its academic evolution, the kind of scholars involved in it, and the publications belonging to it. Elements of this discourse are highlighted and criticized, namely a number of eurocentric theological assumptions, and “soteriological rhetoric” the direct product of confessional interests, which disguise the field’s theological apologetical aims with appeals to the universal welfare of an ethnocentrically limited conception of “humanity.”

- Goldman, Alan H. 2009. Is Moral Motivation Rationally Required? *The Journal of Ethics* 14(1). 1-16.
doi:[10.1007/s10892-009-9058-y](https://doi.org/10.1007/s10892-009-9058-y).

Moral motivation is not rationally required. Using the example of Huckleberry Finn, the author first holds that rational agents need not be motivated by their explicit judgments of rightness and wrongness. Second, he rejects a plausible argument to the conclusion that rational agents must have some moral concerns. Third, he clarifies the relevant concept of irrationality and argues that moral incoherence does not equate with this common relevant concept. Fourth, he questions a rational requirement for prudential concern and whether a requirement for moral concern would follow from it. Fifth, he examines the rationality of amoralists and partial amoralists, and, finally, he speculates on why there might seem to be a rational requirement to be morally motivated.

- Helminiak, Daniel A. 2010. “Theistic psychology and psychotherapy”: a theological and scientific critique. *Zygon* 45(1). 47-74.
doi:[10.1111/j.1467-9744.2010.01058.x](https://doi.org/10.1111/j.1467-9744.2010.01058.x).

The author identifies a trend towards making God an essential component in psychological theory, citing academic publications, the use of “Eastern” philosophy in Humanistic and Transpersonal Psychology, a normative appeal to the “Sacred” within the psychology of spirituality, talk of “God in the brain” within neurological research, the neologism “entheogen” referring to psychedelic drugs, and calls for new specializations such as neurotheology and theobiology. He argues that the trend undermines the achievements of evidence-based science and establishes particularistic religious beliefs as standard explanatory accounts. Part of a special section on psychology and religion.

- Northoff, Georg. 2010. Humans, Brains, and Their Environment: Marriage between Neuroscience and Anthropology? *Neuron* 65(6). 748-751.
doi:[10.1016/j.neuron.2010.02.024](https://doi.org/10.1016/j.neuron.2010.02.024).

The author asserts that rather than being incorporated into neuroscience, anthropology may be considered a complementary discipline, and a marriage of the two disciplines can provide deep insight into fundamental questions about how we define ourselves as humans and interact with our various environments. Part of a special issue on social neuroscience.

- Sidky, Hodayun. 2010. On the Antiquity of Shamanism and its Role in Human Religiosity. *Method & Theory in the Study of Religion* 22(1). 68-92.
doi:[10.1163/157006810790931832](https://doi.org/10.1163/157006810790931832).

This paper addresses the problematic nature of many of the central assumptions concerning shamanism and its place in the development of human religiosity. He questions beliefs that shamanism was the universal religion of Paleolithic hunter-gatherers, and that it represents a neurotheology, the expressions of which have been preserved in

ancient cave art and in the magico-religious beliefs and practices of extant or recently extant hunting-gathering cultures on the peripheries of the “civilized world.”

Teske, John A. 2010. Narrative and meaning in science and religion. *Zygon* 45(1). 91-104.
doi:[10.1111/j.1467-9744.2010.01060.x](https://doi.org/10.1111/j.1467-9744.2010.01060.x).

The author proposes that narratives, not paradigms, may well constitute the best scientific explanations in explaining the behavior of complex adaptive systems, and in the human sciences in particular. Causal relationships may be embedded within, and expressions of higher-order constraints provided by, complex system dynamics, best understood via the temporal organization of intentionalities that constitute narrative. Part of a special section on psychology and religion.

Tiliopoulos, Niko, Leslie J. Francis & Mary Slattery. 2010. The Internal Consistency Reliability of the Santosh-Francis Scale of Attitude toward Hinduism among Bunts in South India. *North American Journal of Psychology* 12(1). 185-190.

The Santosh-Francis Scale of Attitude toward Hinduism, originally developed and tested among Hindu affiliates living in the United Kingdom, was completed by 100 Hindu affiliates from the Bunt caste in South India (52 females). The data support the internal construct reliability of the scale in this context.

PART 2. ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

2.1 SPIRITUALITY & HEALTH: MENTAL HEALTH

Buxant, Coralie, Vassilis Saroglou & Marie Tesser. 2010. Free-lance spiritual seekers: self-growth or compensatory motives? *Mental Health, Religion & Culture* 13(2). 209-222.
doi:[10.1080/13674670903334660](https://doi.org/10.1080/13674670903334660).

People attending various spirituality and self-development conferences outside the framework of organised religious groups (n = 204), termed free-lance spiritual seekers, were compared to norms from the general population and to members of New Religious Movements (NRMs) on measures of psychological health and orientation. Results indicated that free-lance spiritual seekers and NRM members share similar cognitive (need for closure) and affective (insecure attachment in childhood) needs that seem to be addressed by spirituality, but differed in scoring higher on measures reflecting self-growth, that is, openness to experience and quest religious orientation, and lower on need for closure.

Chapman, L. Kevin & Michael F. Steger. 2010. Race and religion: differential prediction of anxiety symptoms by religious coping in African American and European American young adults. *Depression and Anxiety* 27(3). 316-322.
doi:[10.1002/da.20510](https://doi.org/10.1002/da.20510).

This study investigated the relationship between religious coping on anxiety symptoms among a nonclinical sample of African American (n = 100) and European American (n = 126) young adults. African Americans reported significantly more positive religious coping, less negative religious coping, and experienced fewer anxiety symptoms than European Americans. European Americans demonstrated a significant, positive relationship between negative religious coping and anxiety symptoms, and an opposite trend related to anxiety and positive religious coping. However, no such relationships emerged among the African American sample.

Chen, Kuei-Min, Ming-Hsien Chen, Mei-Hui Lin, Jue-Ting Fan, Huey-Shyan Lin & Chun-Huw Li. 2010. Effects of yoga on sleep quality and depression in elders in assisted living facilities. *The Journal of Nursing Research* 18(1). 53-61.
doi:[10.1097/JNR.0b013e3181ce5189](https://doi.org/10.1097/JNR.0b013e3181ce5189).

Transitional frail elders living in assisted living facilities who underwent 6 months of yoga exercise (n = 38) were found to have significantly improved overall sleep quality, and significantly decreased depression, sleep disturbances, and daytime dysfunction, compared to a control group (n = 31).

Doucet, Marilyn & Martin Rovers. 2010. Generational Trauma, Attachment, and Spiritual/Religious Interventions. *Journal of Loss & Trauma* 15(2). 93-105.
doi:[10.1080/15325020903373078](https://doi.org/10.1080/15325020903373078).

The authors found that spiritual/religious forms of interventions may be of help in mitigating the harmful consequences of severe trauma in the lives of trauma survivors and its generational effects in the lives of their offspring.

Headey, Bruce, Juergen Schupp, Ingrid Tucci & Gert G. Wagner. 2010. Authentic happiness theory supported by impact of religion on life satisfaction: A longitudinal analysis with data for Germany. *The Journal of Positive Psychology* 5(1). 73-82.
doi:[10.1080/17439760903435232](https://doi.org/10.1080/17439760903435232).

Using data from the German Socio-Economic Panel Survey, this paper assesses the relationship between life satisfaction and religious practice. It is shown that individuals who become more religious over time record long

term gains in life satisfaction, while those who become less religious record long term losses. This result holds net of the effects of personality traits, and also in fixed effects panel models.

- Lee, Boon-Ooi, Laurence J. Kirmayer & Danielle Groleau. 2010. Therapeutic Processes and Perceived Helpfulness of Dang-Ki (Chinese Shamanism) from the Symbolic Healing Perspective. *Culture, Medicine & Psychiatry* 34(1). 56-105.
doi:[10.1007/s11013-009-9161-3](https://doi.org/10.1007/s11013-009-9161-3).

In this study, ethnographic interviews were conducted with 21 patients over three stages: immediately before and after an intervention of dang-ki, a form of Chinese shamanistic healing, and approximately 1 month later. Results show that dang-kis normally applied more than one method to treat a given problem. These methods included words, talismans and physical manipulations. Overall, 11 patients perceived their consultations as helpful, 4 perceived their consultations as helpful but were unable to follow all recommendations, 5 were not sure of the outcome because they had yet to see any concrete results, and 1 patient considered his consultation unhelpful.

- Lee, Chin C., Sara J. Czaja & Richard Schulz. 2010. The moderating influence of demographic characteristics, social support, and religious coping on the effectiveness of a multicomponent psychosocial caregiver intervention in three racial ethnic groups. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences* 65B(2). 185-194.
doi:[10.1093/geronb/gbp131](https://doi.org/10.1093/geronb/gbp131).

In a multisite randomized clinical trial of a multicomponent psychosocial intervention, researchers found that the well-being of informal caregivers of persons with dementia was moderated by the caregivers age and religious coping for Hispanics and Blacks. Black caregivers with less religious coping who received the intervention reported a decrease in depressive symptoms from baseline to follow-up.

- O'Connor, Shawn & Brian Vandenberg. 2010. Differentiating psychosis and faith: the role of social norms and religious fundamentalism. *Mental Health, Religion & Culture* 13(2). 171-186.
doi:[10.1080/13674670903277984](https://doi.org/10.1080/13674670903277984).

This study, involving 255 participants, sought to determine if untrained participants' assessment of others' religious beliefs would be similar to that of trained clinicians and determine whether participants' Religious Fundamentalism (RF) influenced assessment. Results indicate that untrained participants rated religious beliefs in much the same way as did clinicians in a previous study, suggesting that social norms play an important role in the assessment of religious ideation. It was also found that High RF participants rated beliefs similar to their own as less pathological than did Low RF participants.

- Okulicz-Kozaryn, Adam. 2010. Religiosity and life satisfaction across nations. *Mental Health, Religion & Culture* 13(2). 155-169.
doi:[10.1080/13674670903273801](https://doi.org/10.1080/13674670903273801).

This study of persons in 79 nations shows that religious people tend to be either very satisfied or dissatisfied with life. Forms of religiosity that promote social capital predict high life satisfaction. On the other hand, forms of religiosity that do not promote social capital do not predict high life satisfaction. Religious people are happier in religious nations, suggesting that social setting affects the happiness associated with religiosity.

- Oman, Doug, Carl E. Thoresen & John Hedberg. 2010. Does passage meditation foster compassionate love among health professionals?: a randomised trial. *Mental Health, Religion & Culture* 13(2). 129-154.
doi:[10.1080/13674670903261954](https://doi.org/10.1080/13674670903261954).

Evaluation of the effects of an 8-week, 16-hour program of passage meditation for 30 health professionals, using nonsectarian, spiritually based, self-management tools, found that favorable treatment effects were found for

compassionate love, altruistic actions, perspective-taking, and forgiveness, compared to controls (n = 31). Stress reduction mediated treatment effects on compassionate love, perspective-taking, and forgiveness; each also mediated gains in caregiving self-efficacy.

- Ozawa-de Silva, Chikako & Brendan Ozawa-de Silva. 2010. Secularizing Religious Practices: A Study of Subjectivity and Existential Transformation in Naikan Therapy. *Journal for the Scientific Study of Religion* 49(1). 147-161.
doi:[10.1111/j.1468-5906.2010.01497.x](https://doi.org/10.1111/j.1468-5906.2010.01497.x).

Data collected in both Japan and Austria reveal that Naikan, a “secularized” practice derived from Buddhist meditation but stripped of Buddhist references, effects changes in clients’ subjectivity that are strikingly similar to those sought in Buddhist traditions. This suggests that Naikan operates therapeutically on an existential level and employs cognitive techniques that, while originating in Buddhism, remain efficacious outside a Buddhist context.

- Park, Crystal L. 2010. Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin* 136(2). 257-301.
doi:[10.1037/a0018301](https://doi.org/10.1037/a0018301).

The author reviews research regarding meaning in the context of adjustment to stressful events, and finds that theoretical work on meaning and meaning making has developed apace, but empirical research has failed to keep up with these developments, creating a significant gap between the rich, but abstract, theories and empirical tests of them. Given current empirical findings, some aspects of the meaning-making model appear to be well supported but others are not, and the quality of meaning-making efforts and meanings made may be at least as important as their quantity.

- Pitt, Richard N. 2010. “Killing the Messenger”: Religious Black Gay Men’s Neutralization of Anti-Gay Religious Messages. *Journal for the Scientific Study of Religion* 49(1). 56-72.
doi:[10.1111/j.1468-5906.2009.01492.x](https://doi.org/10.1111/j.1468-5906.2009.01492.x).

Interviews with 34 black gay Christian men revealed that they managed to reconcile their religious and sexual identities by focusing accusations of illegitimacy on the speaker rather than the doctrine, and by denigrating the speakers’ knowledge, morality, focus, and motivations. In this way, they neutralized the sting of churches’ negative messages by neutralizing the moral authority of the churches’ messengers, allowing them to maintain their identity in the face of stigmatizing rhetoric.

- Telles, Shirley, Nilkamal Singh, Meesha Joshi & Acharya Balkrishna. 2010. Post traumatic stress symptoms and heart rate variability in Bihar flood survivors following yoga: a randomized controlled study. *BMC Psychiatry* 10. 18.
doi:[10.1186/1471-244X-10-18](https://doi.org/10.1186/1471-244X-10-18).

After one week of yoga practice, a month after catastrophic flooding in north India, 11 male survivors of the flooding were found to have a significant decrease in sadness compared to the 11 control male volunteers; the control group was found to have an increase in anxiety compared to the intervention group also. No significant changes were observed in the heart rate variability and breath rate in either group.

2.2 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

- Ai, Amy Lee, Kenneth Pargament, Ziad Kronfol, Terrence N. Tice & Hoa Appel. 2010. Pathways to postoperative hostility in cardiac patients: mediation of coping, spiritual struggle and interleukin-6. *Journal of Health Psychology* 15(2). 186-195.
doi:[10.1177/1359105309345556](https://doi.org/10.1177/1359105309345556).

Researchers found that preoperative spiritual struggle mediated indirect effects of anxiety and anger coping on Interleukin-6 (IL-6) immediately before surgery. The link between spiritual struggle and IL-6 further mediated the indirect effects of anxiety and anger coping on postoperative hostility. Anger coping mediated the harmful influence of anxiety and counteracted the protection of positive religious coping on adjustment.

- Bhalotra, Sonia, Christine Valente & Arthur van Soest. 2010. The puzzle of Muslim advantage in child survival in India. *Journal of Health Economics* 29(2). 191-204.
doi:[10.1016/j.jhealeco.2009.11.002](https://doi.org/10.1016/j.jhealeco.2009.11.002).

Though the socioeconomic status of Indian Muslims is, on average, considerably lower than that of upper-caste Indian Hindus, and that the Muslim deficit in parental education predicts a Muslim disadvantage, for decades Muslims in India have exhibited substantially higher child survival rates. Researchers find indirect evidence that lower son preference among Muslims may be part of the explanation, emphasizing the role of religion or culture as encapsulating important unobservable behaviors or endowments that influence health enough to reverse the socio-economic predictors.

- Caldwell, Karen, Mandy Harrison, Marianne Adams, Rebecca H. Quin & Jeffrey Greeson. 2010. Developing Mindfulness in College Students Through Movement-Based Courses: Effects on Self-Regulatory Self-Efficacy, Mood, Stress, and Sleep Quality. *Journal of American College Health* 58(5). 433-442.
doi:[10.1080/07448480903540481](https://doi.org/10.1080/07448480903540481).

At the beginning, middle, and end of a 15-week semester, 166 students in Pilates, Taiji quan, or Gyrokinesis classes completed measures of mindfulness, self-regulatory self-efficacy, mood, perceived stress, and sleep quality. Total mindfulness scores and mindfulness subscales increased overall. Greater changes in mindfulness were directly related to better sleep quality at the end of the semester after adjusting for sleep disturbance at the beginning. Tiredness, Negative Arousal, Relaxation, and Perceived Stress mediated the effect of increased mindfulness on improved sleep.

- Cusens, B., G. B. Duggan, K. Thorne & V. Burch. 2010. Evaluation of the Breathworks Mindfulness-Based Pain Management Programme: Effects on Well-Being and Multiple Measures of Mindfulness. *Clinical Psychology and Psychotherapy* 17(1). 63-78.
doi:[10.1002/cpp.653](https://doi.org/10.1002/cpp.653).

In a pilot investigation of the impact on well-being of the Breathworks mindfulness-based pain management program on 20 subjects, significant positive change was found on self-report measures of depression, outlook, catastrophizing and pain self-efficacy in the Intervention Group, but not the Comparison Group. In a second study (n = 18), following participation in the Breathworks program scores on the Mindful Attention Awareness Scale significantly increased in the Intervention Group, but not in the Comparison Group.

- Fan, Yaxin, Yi-Yuan Tang, Yinghua Ma & Michael I. Posner. 2010. Mucosal Immunity Modulated by Integrative Meditation in a Dose-Dependent Fashion. *The Journal of Alternative and Complementary Medicine* 16(2). 151-155.
doi:[10.1089/acm.2009.0234](https://doi.org/10.1089/acm.2009.0234).

After four weeks of Integrative Body–Mind Training (IBMT), participants showed significantly increased salivary basal sIgA levels compared to participants trained for 4 weeks in relaxation. An additional IBMT practice session immediately after acute stress produced significantly higher sIgA release for the IBMT-trained group in comparison with controls at week 2 and 4.

- Howell, Andrew J., Nancy L. Digdon & Karen Buro. 2010. Mindfulness predicts sleep-related self-regulation and well-being. *Personality and Individual Differences* 48(4). 419-424.
doi:[10.1016/j.paid.2009.11.009](https://doi.org/10.1016/j.paid.2009.11.009).

On data from undergraduate students (n = 334), mindfulness predicted well-being both directly and indirectly through its association with self-regulation of sleep. Results are considered in terms of possible mechanisms underlying these associations and the nature of the self-regulation of sleep.

Karademas, Evangelos C. 2010. Illness cognitions as a pathway between religiousness and subjective health in chronic cardiac patients. *Journal of Health Psychology* 15(2). 239-247.
doi:[10.1177/1359105309347585](https://doi.org/10.1177/1359105309347585).

In a sample of 135 chronic cardiac patients, religiousness was significantly associated with subjective health. However, this relationship was indirect, with helplessness and illness acceptance serving as mediators between intrinsic religiousness and health.

Nicholson, Amanda, Richard Rose & Martin Bobak. 2010. Associations between different dimensions of religious involvement and self-rated health in diverse European populations. *Health Psychology* 29(2). 227-235.
doi:[10.1037/a0018036](https://doi.org/10.1037/a0018036).

Using cross-sectional data from 22 diverse European countries in the European Social Survey, including 18,129 men and 21,205 women, less frequent attendance at religious services was associated with poor health in men and women when analyzed separately. In models with all dimensions of religiosity considered together, the association with attendance was strengthened and prayer became significantly inversely associated with health. The frequency of attendance at religious services and private prayer had opposite associations with self-rated health, resulting in negative confounding.

Sharpnack, Patricia A., Mary T. Quinn Griffin, Alison M. Benders & Joyce J. Fitzpatrick. 2010. Spiritual and alternative healthcare practices of the Amish. *Holistic Nursing Practice* 24(2). 64-72.
doi:[10.1097/HNP.0b013e3181d39ade](https://doi.org/10.1097/HNP.0b013e3181d39ade).

This study explored the spiritual and healthcare practices of 134 Amish, their diversity and prevalence.

Tüzün, S., I. Aktas, U. Akarirmak, S. Sipahi & F. Tüzün. 2010. Yoga might be an alternative training for the quality of life and balance in postmenopausal osteoporosis. *European Journal of Physical and Rehabilitation Medicine* 46(1). 69-72.

Postmenopausal osteoporotic women over 55 years of age were administered a neuromuscular test battery and a life quality index to assess balance and life quality. After four weeks, women who had been educated about, and practiced, hatha yoga (n = 13) showed improved reports of pain, physical functions, and social functions, compared to a control group who were educated about, and practiced, traditional exercise (n = 13).

Zeidan, Fadel, Nakia S. Gordon, Junaid Merchant & Paula Goolkasian. 2010. The effects of brief mindfulness meditation training on experimentally induced pain. *The Journal of Pain* 11(3). 199-209.
doi:[10.1016/j.jpain.2009.07.015](https://doi.org/10.1016/j.jpain.2009.07.015).

Researchers found that a 3-day mindfulness meditation intervention was effective at reducing pain ratings, including sensitivity to pain, and anxiety scores when compared with baseline testing and other cognitive manipulations. The authors conclude that meditation's analgesic effects are related to reduced anxiety and the enhanced ability to focus on the present moment.

2.3 SPIRITUALITY & HEALTH: RELIGIOSITY

Campbell, James D., Dong Phil Yoon & Brick Johnstone. 2010. Determining relationships between physical health and spiritual experience, religious practices, and congregational support in a heterogeneous medical sample. *Journal of Religion and Health* 49(1). 3-17.

doi:[10.1007/s10943-008-9227-5](https://doi.org/10.1007/s10943-008-9227-5).

Participants were surveyed with the following medical disorders: Cancer (n = 25), Spinal Cord Injury (n = 25), Traumatic Brain Injury (n = 61), and Stroke (n = 32), plus a healthy sample from a primary care setting (n = 25). The results show that individuals with chronic medical conditions do not automatically turn to religious and spiritual resources following onset of their disorder. Physical health is positively related to frequency of attendance at religious services, which may be related to better health leading to increased ability to attend services. In addition, spiritual belief in a loving, higher power, and a positive worldview are associated with better health, consistent with psychoneuroimmunological models of health.

Daaleman, T. P. & D. Dobbs. 2009. Religiosity, Spirituality, and Death Attitudes in Chronically Ill Older Adults. *Research on Aging* 32(2). 224-243.

doi:[10.1177/0164027509351476](https://doi.org/10.1177/0164027509351476).

Following interviews with 257 community-dwelling elders with chronic illness, researchers found that self-reported religiosity, closeness to God, and age were significantly associated with approach acceptance of death attitudes. Fear of death attitudes were significantly associated with self-efficacy beliefs, anxiety, and physical functioning.

Gillum, R. Frank & Kevin S. Masters. 2010. Religiousness and blood donation: findings from a national survey. *Journal of Health Psychology* 15(2). 163-172.

doi:[10.1177/1359105309345171](https://doi.org/10.1177/1359105309345171).

In a national survey, researchers found that positive associations of childhood religious affiliation, current affiliation were not significantly correlated with blood donation in women (n = 7,611). In men (n = 4,282), religiousness was not associated with history of blood donation, with the exception of higher donation rates in Catholic men aged 35-44.

Gullatte, Mary Magee, Otis Brawley, Anita Kinney, Barbara Powe & Kathi Mooney. 2010. Religiosity, spirituality, and cancer fatalism beliefs on delay in breast cancer diagnosis in African American women. *Journal of Religion and Health* 49(1). 62-72.

doi:[10.1007/s10943-008-9232-8](https://doi.org/10.1007/s10943-008-9232-8).

This study examined the influence of religiosity, spirituality, and cancer fatalism on delay in diagnosis and breast cancer stage in 129 African American women with self-detected breast symptoms. Participants were found to be highly religious and spiritual but not fatalistic. Women who were less educated, unmarried, and talked to God only about their breast change were significantly more likely to delay seeking medical care. An association was found between disclosing a breast symptom to God only and delay in seeking medical care. In contrast, women who had told a person about their breast symptom were more likely to seek medical care sooner.

2.4 SPIRITUALITY & HEALTH: METHOD & THEORY

Anshel, Mark H. 2010. The disconnected values (intervention) model for promoting healthy habits in religious institutions. *Journal of Religion and Health* 49(1). 32-49.

doi:[10.1007/s10943-008-9230-x](https://doi.org/10.1007/s10943-008-9230-x).

The author provides an intervention model – the Disconnected Values Model – that can be used by religious leaders for changing health behavior among practicing members of religious communities. At the heart of this model is the acknowledgement that a person's negative habits (e.g., lack of exercise, poor nutrition) and his or her deepest values and beliefs (e.g., faith, health, family) are often misaligned, or disconnected. In addition, the unhealthy outcomes from these habits are contrary to the scriptural traditions of the world religions and thus are especially relevant to individuals who practice their religious beliefs. A case study is described in which the described intervention was used successfully with an individual of strong faith.

- Bekelman, David B., Carla Parry, Farr A. Curlin, Traci E. Yamashita, Diane L. Fairclough & Frederick S. Wamboldt. 2010. A Comparison of Two Spirituality Instruments and Their Relationship With Depression and Quality of Life in Chronic Heart Failure. *Journal of Pain and Symptom Management* 39(3). 515-526.
doi:[10.1016/j.jpainsymman.2009.08.005](https://doi.org/10.1016/j.jpainsymman.2009.08.005).

The authors compared two widely used spirituality instruments, the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being (FACIT-Sp) and the Ironson-Woods Spirituality/Religiousness Index (IW), to better understand what they measure in 60 outpatients with chronic heart failure. The FACIT-Sp measured aspects of spirituality related to feelings of peace and coping, whereas the IW measured beliefs, coping, and relational aspects of spirituality. Only the FACIT-Sp Meaning/Peace subscale consistently correlated with depression and quality of life. The authors conclude that psychological and spiritual well-being, despite some overlap, remain distinct phenomena.

- Fortney, Luke & Molly Taylor. 2010. Meditation in medical practice: a review of the evidence and practice. *Primary Care* 37(1). 81-90.
doi:[10.1016/j.pop.2009.09.004](https://doi.org/10.1016/j.pop.2009.09.004).

The authors review research on meditation as intervention for a wide range of medical conditions, and find evidence of significant benefits. They hold that further efforts are required to operationalize and apply meditation practice in clinical and medical educational settings in ways that are practical, effective, and meaningful.

- Hamilton, Jill B., Jamie L. Crandell, J. Kameron Carter & Mary R. Lynn. 2010. Reliability and validity of the perspectives of Support From God Scale. *Nursing Research* 59(2). 102-109.
doi:[10.1097/NNR.0b013e3181d1b265](https://doi.org/10.1097/NNR.0b013e3181d1b265).

To evaluate the reliability and validity of a new measure of spiritual support believed to come from God, the Perceived Support From God Scale test was administered to 317 older Christian African American cancer survivors. Subscale scores on Support From God were negatively correlated to depression. The authors found initial support for reliability and validity for the Perceived Support From God Scale, which captures a facet of spirituality not emphasized in other measures.

- Hayes, Meg & Sam Chase. 2010. Prescribing Yoga. *Primary Care* 37(1). 31-47.
doi:[10.1016/j.pop.2009.09.009](https://doi.org/10.1016/j.pop.2009.09.009).

This article outlines the history of yoga and describes several forms. Research findings related to use of yoga as a therapy for various health problems are reviewed, and guidelines for finding a yoga teacher are offered, as are a number of book and Internet sources of further information.

- Hilbers, Julieanne, Abby S. Haynes & Jennifer G. Kivikko. 2010. Spirituality and health: an exploratory study of hospital patients' perspectives. *Australian Health Review: A Publication of the Australian Hospital Association* 34(1). 3-10.
doi:[10.1071/AH09655](https://doi.org/10.1071/AH09655).

From an exploratory survey of patients and families in a public teaching hospital in Sydney, Australia (n = 228), the authors found that the majority of hospital patients surveyed: believe there are links between spirituality/religion and health; believe that rituals and customs can help people when they are sick/suffering; have valued practices associated with their beliefs; feel it is helpful for health staff to know their patients' beliefs; are willing to be asked about their beliefs; or want hospital staff to respect and support the beliefs and practices of all patients.

House, Lawrence Duane, Trisha Mueller, Belinda Reininger, Kathryn Brown & Christine M. Markham. 2010. Character as a Predictor of Reproductive Health Outcomes for Youth: A Systematic Review. *Journal of Adolescent Health* 46(3, Supplement 1). S59-S74.
doi:[10.1016/j.jadohealth.2009.11.218](https://doi.org/10.1016/j.jadohealth.2009.11.218).

After a systematic review of 131 behavioral research studies published from 1985 through 2007, researchers conclude that prosocial norms and spirituality can be protective factors for some ASRH outcomes including intention to have sex, early sex or ever having sex, contraceptive and condom use, frequency of sex, and pregnancy.

Matousek, Rose H., Patricia L. Dobkin & Jens Pruessner. 2010. Cortisol as a marker for improvement in mindfulness-based stress reduction. *Complementary Therapies in Clinical Practice* 16(1). 13-19.
doi:[10.1016/j.ctcp.2009.06.004](https://doi.org/10.1016/j.ctcp.2009.06.004).

The authors provide justification for using cortisol levels as a physiological marker of stress, in order to validate self-reported benefits attributed to Mindfulness-Based Stress Reduction programs.

Meletiadiis, M. 2010. The distortion of the image of God, the father, and its relation to psychopathology. *European Journal of Science and Theology* 6(1). 3-16.

Drawing on stories about Telemachus (the son of Odysseus), Oedipus, and Jesus, the author makes the case for revisiting the idea of the self as the space of the paternal signifier, and at the same time reinstating the paternal function of love in the community and the state.

Salmon, Becky, Cheryl Bruick-Sorge, Sarah J. Beckman & Sanna Boxley-Harges. 2010. The Evolution of Student Nurses' Concepts of Spirituality. *Holistic Nursing Practice* 24(2). 73-78.
doi:[10.1097/HNP.0b013e3181d39aba](https://doi.org/10.1097/HNP.0b013e3181d39aba).

Researchers compared the definitions of spirituality that nursing students provided on admission to their nursing program, and after completion of the program.

Stirling, B., L. D. Furman, P. W. Benson, E. R. Canda & C. Grimwood. 2010. A Comparative Survey of Aotearoa New Zealand and UK Social Workers on the Role of Religion and Spirituality in Practice. *British Journal of Social Work* 40(2). 602-621.
doi:[10.1093/bjsw/bcp008](https://doi.org/10.1093/bjsw/bcp008).

Cross-national survey research was conducted in Aotearoa, New Zealand (ANZ) and the UK as part of a larger multi-national study of social workers' attitudes about the role of spirituality in their practice.

Surbone, Antonella & Lea Baider. 2010. The spiritual dimension of cancer care. *Critical Reviews in Oncology/Hematology* 73(3). 228-235.
doi:[10.1016/j.critrevonc.2009.03.011](https://doi.org/10.1016/j.critrevonc.2009.03.011).

The authors present appropriate means of introducing spirituality into cancer care. They assert that spirituality can be a major resource for both patients and physicians, yet it can never be imposed but only shared. Those oncology professionals who are familiar with their own spirituality will be better at recognizing, understanding and attending to their patients' spiritual needs and concerns.

Weatherhead, Stephen & Anna Daiches. 2010. Muslim views on mental health and psychotherapy. *Psychology and Psychotherapy* 83(Pt 1). 75-89.
doi:[10.1348/147608309X467807](https://doi.org/10.1348/147608309X467807).

A sample of 14 Muslims was interviewed regarding their views on mental health and psychotherapy. Thematic analysis identified seven operationalizing themes that were given the labels 'causes', 'problem management', 'relevance of services', 'barriers', 'service delivery', 'therapy content', and 'therapist characteristics'.

Wüist, W. H., B. M. Sullivan, H. A. Wayment & M. Warren. 2010. A web-based survey of the relationship between Buddhist religious practices, health, and psychological characteristics: research methods and preliminary results. *Journal of Religion and Health* 49(1). 18-31.
doi:[10.1007/s10943-008-9228-4](https://doi.org/10.1007/s10943-008-9228-4).

The authors describe the development, advertisement, administration and preliminary results of a web-based survey of 1,200 Buddhist practitioners. Buddhist meditative practice was related to psychological mindfulness and general health, including healthful behaviors such as regular physical activity and not smoking.

Zingrone, Nancy L., Carlos S. Alvarado & Etzel Cardeña. 2010. Out-of-Body Experiences and Physical Body Activity and Posture. *The Journal of Nervous and Mental Disease* 198(2). 163-165.
doi:[10.1097/NMD.0b013e3181cc0d6d](https://doi.org/10.1097/NMD.0b013e3181cc0d6d).

Results from surveys of persons who have had out-of-body experiences (OBEs) indicate that OBEs were associated with low physical activity and being in a supine position. Those who had experiences under these conditions also obtained a higher number of OBE features than those who were active and standing at the time of the OBE.

PART 3. BOOKS

3.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, & BEHAVIOR

- Hecht, Richard, & Vincent Biondo (eds.). 2010. *Religion and everyday life and culture*. 3 vols. Santa Barbara, Calif.: Praeger.
- Kobrin, Nancy. 2010. *The banality of suicide terrorism : the naked truth about the psychology of Islamic suicide bombing*. Washington, D.C.: Potomac Books.
- Lewis-Williams, David. 2010. *Conceiving God : the cognitive origin and evolution of religion*. London; New York: Thames & Hudson.
- Marlowe, Frank. 2010. *The Hadza : hunter-gatherers of Tanzania*. (Origins of Human Behavior and Culture). Berkeley: University of California Press.
- Marsh, Michael. 2010. *Out-of-body and near-death experiences : brain-state phenomena or glimpses of immortality?* (Oxford Theological Monographs). Oxford: Oxford University Press.
- Miller, Lisa. 2010. *Heaven : our enduring fascination with the afterlife*. New York: Harper.
- Teehan, John. 2010. *In the Name of God: The Evolutionary Origins of Religious Ethics and Violence*. (Blackwell Public Philosophy Series). Oxford: Wiley-Blackwell.
- Tiger, Lionel & Michael McGuire. 2010. *God's brain*. Amherst N.Y.: Prometheus Books.

3.2 SPIRITUALITY & HEALTH RESEARCH

- Bobrow, Joe. 2010. *Zen and psychotherapy : partners in liberation*. New York: W. W. Norton & Co.
- Leigh, Hoyle. 2010. *Genes, memes, culture, and mental illness : toward an integrative model*. New York; London: Springer.
- McCown, Donald. 2010. *Teaching mindfulness a practical guide for clinicians and educators*. New York; London: Springer.
- Verhagen, Peter. 2010. *Religion and psychiatry*. Oxford: Wiley-Blackwell.

PART 4. ARTICLES IN PRESS

4.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, & BEHAVIOR

Abu-Rayya, Hisham Motkal & Fiona Ann White. Acculturation orientations and religious identity as predictors of Anglo-Australians' attitudes towards Australian Muslims. *International Journal of Intercultural Relations* In Press, Corrected Proof.
doi:[10.1016/j.ijintrel.2010.02.006](https://doi.org/10.1016/j.ijintrel.2010.02.006).

Becchetti, Leonardo & Giacomo Degli Antoni. The Sources of Happiness: Evidence from the Investment Game. *Journal of Economic Psychology* In Press, Accepted Manuscript.
doi:[10.1016/j.joep.2010.03.011](https://doi.org/10.1016/j.joep.2010.03.011).

Cela-Conde, Camilo J, Lucrecia Burges, Marcos Nadal & Antonio Olivera. 2010. Altruism and fairness: Unnatural selection? *Comptes Rendus Biologies* 333(2). 174-180.
doi:[10.1016/j.crvi.2009.12.005](https://doi.org/10.1016/j.crvi.2009.12.005).

Fell, Juergen, Nikolai Axmacher & Sven Haupt. 2010. From alpha to gamma: Electrophysiological correlates of meditation-related states of consciousness. *Medical Hypotheses*.
doi:[10.1016/j.mehy.2010.02.025](https://doi.org/10.1016/j.mehy.2010.02.025).

Fumagalli, M., R. Ferrucci, F. Mameli, S. Marceglia, S. Mrakic-Sposta, S. Zago, C. Lucchiari et al. 2009. Gender-related differences in moral judgments. *Cognitive Processing*.
doi:[10.1007/s10339-009-0335-2](https://doi.org/10.1007/s10339-009-0335-2).

Gayon, Jean. 2010. Sexual selection: Another Darwinian process. *Comptes Rendus Biologies* 333(2). 134-144.
doi:[10.1016/j.crvi.2009.12.001](https://doi.org/10.1016/j.crvi.2009.12.001).

Hussain, Naseem Akhter. Religion and modernity: Gender and identity politics in Bangladesh. *Women's Studies International Forum* In Press, Corrected Proof.
doi:[10.1016/j.wsif.2010.02.006](https://doi.org/10.1016/j.wsif.2010.02.006).

Kihlstrom, John F. Prospects for de-automatization. *Consciousness and Cognition* In Press, Corrected Proof.
doi:[10.1016/j.concog.2010.03.004](https://doi.org/10.1016/j.concog.2010.03.004).

Knauff, Markus & Ann G. Wolf. 2010. Complex cognition: the science of human reasoning, problem-solving, and decision-making. *Cognitive Processing*.
doi:[10.1007/s10339-010-0362-z](https://doi.org/10.1007/s10339-010-0362-z).

Manna, Antonietta, Antonino Raffone, Mauro Gianni Perrucci, Davide Nardo, Antonio Ferretti, Armando Tartaro, Alessandro Londei, Cosimo Del Gratta, Marta Olivetti Belardinelli & Gian Luca Romani. 2010. Neural correlates of focused attention and cognitive monitoring in meditation. *Brain Research Bulletin*.
doi:[10.1016/j.brainresbull.2010.03.001](https://doi.org/10.1016/j.brainresbull.2010.03.001).

Marewski, Julian N., Wolfgang Gaissmaier & Gerd Gigerenzer. 2009. Good judgments do not require complex cognition. *Cognitive Processing*.
doi:[10.1007/s10339-009-0337-0](https://doi.org/10.1007/s10339-009-0337-0).

Martínez-Contreras, Jorge. 2010. Darwin's apes and "savages". *Comptes Rendus Biologies* 333(2). 166-173.

doi:[10.1016/j.crvi.2009.12.004](https://doi.org/10.1016/j.crvi.2009.12.004).

Mathur, Vani A., Tokiko Harada, Trixie Lipke & Joan Y. Chiao. Neural basis of extraordinary empathy and altruistic motivation. *NeuroImage* In Press, Uncorrected Proof.

doi:[10.1016/j.neuroimage.2010.03.025](https://doi.org/10.1016/j.neuroimage.2010.03.025).

Mitrut, Andreea & Katarina Nordblom. Social norms and gift behavior: Theory and evidence from Romania. *European Economic Review* In Press, Corrected Proof.

doi:[10.1016/j.eurocorev.2010.03.002](https://doi.org/10.1016/j.eurocorev.2010.03.002).

Morgan, G. Scott, Linda J. Skitka & Daniel C. Wisneski. 2010. Moral and Religious Convictions and Intentions to Vote in the 2008 Presidential Election. *Analyses of Social Issues and Public Policy*.

doi:[10.1111/j.1530-2415.2010.01204.x](https://doi.org/10.1111/j.1530-2415.2010.01204.x).

Phillips, Tim, Eamonn Ferguson & Fruhling Rijdsdijk. 2010. A link between altruism and sexual selection: Genetic influence on altruistic behaviour and mate preference towards it. *British Journal of Psychology (London, England: 1953)*.

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Schjoedt, Uffe, Hans Stødtkilde-Jørgensen, Armin W Geertz, Torben E Lund & Andreas Roepstorff. 2010. The power of charisma--perceived charisma inhibits the frontal executive network of believers in intercessory prayer. *Social Cognitive and Affective Neuroscience*.

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doi:[10.1016/j.concog.2010.03.014](https://doi.org/10.1016/j.concog.2010.03.014).

4.2 SPIRITUALITY & HEALTH RESEARCH

Aten, Jamie D, Michael W Mangis & Clark Campbell. 2010. Psychotherapy with rural religious fundamentalist clients. *Journal of Clinical Psychology*.

doi:[10.1002/jclp.20677](https://doi.org/10.1002/jclp.20677).

Bell, Caryn N., Janice V. Bowie & Roland J. Thorpe. 2010. The Interrelationship Between Hypertension and Blood Pressure, Attendance at Religious Services, and Race/Ethnicity. *Journal of Religion and Health*.

doi:[10.1007/s10943-010-9346-7](https://doi.org/10.1007/s10943-010-9346-7).

Braam, Arjan W, Agnes C Schrier, Wilco C Tuinebreijer, Aartjan T F Beekman, Jack J M Dekker & Matty A S de Wit. 2010. Religious coping and depression in multicultural Amsterdam: A comparison between native Dutch citizens and Turkish, Moroccan and Surinamese/Antillean migrants. *Journal of Affective Disorders*.

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- Broom, A., K. Wijewardena, D. Sibbritt, J. Adams & K.R. Nayar. The use of traditional, complementary and alternative medicine in Sri Lankan cancer care: Results from a survey of 500 cancer patients. *Public Health* In Press, Corrected Proof.
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- Capps, Donald. 2010. A Spiritual Person. *Journal of Religion and Health*.
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