



RESEARCH REVIEW

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

MAY, 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. Articles not directly relevant to the scientific study of religion were excluded, as were correspondence and reviews. From a universe of 581 articles, 81 articles have been retained from 66 journals. There are 40 pre-publication citations from 33 journals.

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PART 1: ARTICLES IN RELIGION, BRAIN, AND BEHAVIOR

1.1 SCIENTIFIC STUDY OF RELIGION: COGNITIVE NEUROSCIENCE

Engström, Maria & Birgitta Söderfeldt. 2010. Brain Activation During Compassion Meditation: A Case Study. *The Journal of Alternative and Complementary Medicine* 16(5). 597-599.
doi:[10.1089/acm.2009.0309](https://doi.org/10.1089/acm.2009.0309).

In a study of an experienced meditator (n = 1), functional magnetic resonance imaging revealed that during Tibetan Buddhist compassion meditation there was activation in the left medial prefrontal cortex extending to the anterior cingulate gyrus. Other significant loci of activation were observed in the right caudate body extending to the right insula and in the left midbrain close to the hypothalamus. The experiment confirms previous research that has shown that compassion meditation is accompanied by activation in brain areas involved with empathy, as well as with happy and pleasant feelings.

Kyizom, Tenzin, Savita Singh, K. P. Singh, O. P. Tandon & Rahul Kumar. 2010. Effect of pranayama & yoga-asana on cognitive brain functions in type 2 diabetes-P3 event related evoked potential (ERP). *The Indian Journal of Medical Research* 131. 636-640.

Sixty patients with type 2 diabetes were recruited from a diabetic clinic and divided into two groups: control group, which received only conventional medical therapy, and yoga group, which received conventional medical therapy along with pranayama and yoga-asana. Basal recordings of P300 (or P3, a component of endogenous cerebral evoked response that assesses higher functions of the brain) and blood glucose were taken at the time of recruitment, and second recordings repeated after forty-five days for both the groups. After 45 days, analysis showed statistically significant improvement in the latency (decreased) and the amplitude (increased) of P3 event-related potentials in the yoga group as compared to the control group. P3 has been identified as a late cortical neurophysiological event reflecting the activity of cognitive and mnemonic functions, information processing, and appears to be strongly associated with attention and short-term memory; it is evoked by an unexpected stimulus and reflects the updating of working memory.

Purzycki, Benjamin Grant. 2010. Cognitive Architecture, Humor and Counterintuitiveness: Retention and Recall of MCIs. *Journal of Cognition & Culture* 10(1/2). 189-204.
doi:[10.1163/156853710X497239](https://doi.org/10.1163/156853710X497239).

This study of the memorability of minimally counterintuitive ideas incorporates ontological templates and their respective inferences, and delineates two major types of violations: schema- and template-level violations. As humor is also defined by its counter-intuitiveness at the schema level, this study was designed to find the effects humor has on retention of memory. Results suggest that humorous statements with parallel violations are recalled significantly better than statements which have only template-level violations, affective statements with only schema-level violations, as well as intuitive statements, in both immediate and 1-week follow-up sessions.

1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION

Anderson, Lisa, Jennifer Mellor & Jeffrey Milyo. 2010. Did the Devil Make Them Do It? The Effects of Religion in Public Goods and Trust Games. *Kyklos* 63(2). 163-175.
doi:[10.1111/j.1467-6435.2010.00456.x](https://doi.org/10.1111/j.1467-6435.2010.00456.x).

In research on 144 undergraduate students, the authors found that the frequency of other-regarding behavior in canonical public goods and bi-lateral trust games was unrelated to religious affiliation; further, only weak evidence was found for a correlation between attendance at religious services and other-regarding behavior in those games.

Researchers conclude that, contrary to popular wisdom and several recent observational studies, religion is not strongly associated with increased cooperation and trust in the controlled experiments.

- De Silva, Hannelore, Christoph Hauert, Arne Traulsen & Karl Sigmund. 2010. Freedom, enforcement, and the social dilemma of strong altruism. *Journal of Evolutionary Economics* 20(2). 203-217.

doi:[10.1007/s00191-009-0162-8](https://doi.org/10.1007/s00191-009-0162-8).

Using deterministic and stochastic evolutionary game theory, the authors show that imitation-driven evolution can lead to the emergence of cooperation based on punishment, provided the participation in the joint enterprise is not compulsory. Even in the case of “strong altruism,” when the benefits of a player’s contribution are reaped by the other participants only, cooperation can be enforced if participation is voluntary.

- Duffy, John & Tatiana Kornienko. 2010. Does competition affect giving? *Journal of Economic Behavior & Organization* 74(1-2). 82-103.

doi:[10.1016/j.jebo.2010.02.001](https://doi.org/10.1016/j.jebo.2010.02.001).

In a controlled laboratory experiment based on a sequential “dictator game”, researchers found that subjects ($n = 15$) tend to give more when placed in a generosity tournament, and tend to give less when placed in an earnings tournament – even if there is no award whatsoever for winning the tournament. Further, they found that subjects’ experimental behavior correlates with their responses to a post-experiment questionnaire, particularly questions addressing altruistic and rivalrous behavior. The authors conclude that behavior in the experiment is driven, in part, by innate competitive motives.

- Goetz, Jennifer L., Dacher Keltner & Emiliana Simon-Thomas. 2010. Compassion: An Evolutionary Analysis and Empirical Review. *Psychological Bulletin* 136(3). 351-374.

doi:[10.1037/a0018807](https://doi.org/10.1037/a0018807).

In this literature review, the authors integrate 3 evolutionary arguments that converge on the hypothesis that compassion evolved as a distinct affective experience whose primary function is to facilitate cooperation and protection of the weak and those who suffer. The review reveals compassion to have distinct appraisal processes attuned to undeserved suffering; distinct signaling behavior related to caregiving patterns of touch, posture, and vocalization; and a phenomenological experience and physiological response that orients the individual to social approach. They conclude that as the response profile of compassion differs from those of distress, sadness, and love, compassion is a distinct emotion.

- Lachmann, Peter J. 2010. Religion--An evolutionary adaptation. *Federation of American Societies for Experimental Biology (FASEB) Journal*. 24(5). 1301-1307.

doi:[10.1096/fj.10-0502ufm](https://doi.org/10.1096/fj.10-0502ufm).

The author argues that religion can be seen as an evolutionary adaptation that has arisen to meet a peculiarly human need—to maintain those important aspects of human behavior, where variation is found among different human groups, sufficiently constant over a sufficiently large number of individuals and over a sufficiently large span of time. He concludes that free choice of religions must be possible for selection to occur; that genetic determinism of inter-group behavioral differences is not possible; and that a religion needs to defend its prescriptions and therefore cannot be totally tolerant of the prescription of other religions.

- Tracy, Jessica L., Azim F. Shariff & Joey T. Cheng. 2010. A naturalist’s view of pride. *Emotion Review* 2(2). 163-177.

doi:[10.1177/1754073909354627](https://doi.org/10.1177/1754073909354627).

In this article the authors review research literature on pride, and argue for a naturalist account of pride, which presumes that pride emerged by way of natural selection. In this view, pride is prevalent in human life because of

the functional and adaptive role it has played in the attainment, maintenance, and communication of social status throughout our evolutionary history. They conclude that pride is a psychologically important and evolutionarily adaptive emotion.

1.3 SCIENTIFIC STUDY OF RELIGION: PSYCHOLOGY AND SOCIOLOGY

Azaiza, Faisal, Prina Ron, Meyrav Shoham & Ibrahim Gigini. 2010. Death and Dying Anxiety Among Elderly Arab Muslims in Israel. *Death Studies* 34(4). 351-364.
doi:[10.1080/07481181003613941](https://doi.org/10.1080/07481181003613941).

No difference in death and dying anxiety was found based on religiosity in a study of 145 elderly Arab Muslims in Israel. Nursing home residents reported higher death anxiety than others; women and uneducated participants reported greater levels of fear of death and dying than others.

Bettendorf, L. & E. Dijkgraaf. 2010. Religion and income: Heterogeneity between countries. *Journal of Economic Behavior & Organization* 74(1-2). 12-29.
doi:[10.1016/j.jebo.2010.02.003](https://doi.org/10.1016/j.jebo.2010.02.003).

Using data from the European and World Values Survey (n = 4,262 in 25 countries, including Canada, New Zealand, the United States, and most European countries), researchers found that whereas church membership is found to have a positive effect on income for high-income countries, this effect is negative for low-income countries. This result is robust to denominational distribution, participation effects and alternative measures of religiousness.

Birnbaum, Dana, Inas Deeb, Gili Segall, Adar Ben-Ellyahu & Gil Diesendruck. 2010. The Development of Social Essentialism: The Case of Israeli Children's Inferences About Jews and Arabs. *Child Development* 81(3). 757-777.
doi:[10.1111/j.1467-8624.2010.01432.x](https://doi.org/10.1111/j.1467-8624.2010.01432.x).

Two studies examined the inductive potential of various social categories among 144 kindergarten, 2nd-, and 6th-grade Israeli children from 3 sectors: secular Jews, religious Jews, and Muslim Arabs. Study 1—wherein social categories were labeled—found that ethnic categories were the most inductively powerful, especially for religious Jewish children. Study 2—wherein no social category labels were provided—found no differences across sectors either in the inductive potential of ethnic categories or in children's capacity to visually recognize social categories. The authors conclude that the results stress the importance of labels and cultural background in children's beliefs about social categories.

Brandt, Mark J. & Christine Reyna. 2010. The role of prejudice and the need for closure in religious fundamentalism. *Personality and Social Psychology Bulletin* 36(5). 715-725.
doi:[10.1177/0146167210366306](https://doi.org/10.1177/0146167210366306).

Religious fundamentalism has been consistently linked to prejudice toward a variety of outgroups, and this article proposes that this is partially the case because fundamentalist ideology provides a sense of consistency and closure. Outgroups that challenge the epistemic certainty that fundamentalism provides are rejected in an effort to protect this certainty. Results from two studies, including one using a nationally representative sample, found that the need for closure was related to fundamentalism and partially mediated the relationship between fundamentalism and the derogation of lesbians and gays (Study 1) and value violators in general (Study 2). Furthermore, in Study 2, it was found that only some aspects of the need for closure explain the fundamentalism—prejudice relationship.

Cook, Kaye V., Steven J. Sandage, Peter C. Hill & Brad D. Strawn. 2010. Folk conceptions of virtue among Cambodian American Buddhists and Christians: A hermeneutic analysis. *Psychology of Religion and Spirituality* 2(2). 83-103.
doi:[10.1037/a0018754](https://doi.org/10.1037/a0018754).

The current study examined the folk understandings of the everyday virtues among 12 Cambodian American Buddhist immigrants, 12 Cambodian American Christian immigrants, and 12 Euro-American Christians, all of whom had been identified as virtuous exemplars by their peers. After the administration of the Bicultural Involvement Questionnaire—Revised and the Schwartz Value Scale, thick descriptions of the virtues were derived from qualitative and quantitative data analyses, and trustworthiness was established by member checking, researcher reflexivity, and concurrent triangulation. Themes emerged from the data: duty and responsibility as distinctive motivations for virtue, the interrelatedness of the virtues, and the domains of their influence (societal in collectivist perspectives, narrower in individualist perspectives), as well as possible constraints on their practice (balance and moderation). Warmth-based virtues were generally described in religious terms, whereas conscientiousness-based virtues, described in religious terms by Cambodian American Buddhists, were described as cultural by Cambodian American Christians and more highly valued by Cambodian American Buddhists than Euro-American Christians.

- van den Hurk, Paul, Fabio Giommi, Stan Gielen, Anne Speckens & Henk Barendregt. 2010. Greater efficiency in attentional processing related to mindfulness meditation. *The Quarterly Journal of Experimental Psychology* 63(6). 1168-1180.
doi:[10.1080/17470210903249365](https://doi.org/10.1080/17470210903249365).

Researchers tested 20 expert mindfulness meditators in the attention network test, and compared their performance to that of 20 age- and gender-matched controls. In addition to attentional network analyses, overall attentional processing was analyzed by means of efficiency scores (i.e., accuracy controlled for reaction time). Better orienting and executive attention (reflected by smaller differences in either reaction time or error score, respectively) were observed in the mindfulness meditation group. Furthermore, extensive mindfulness meditation appeared to be related to a reduction of the fraction of errors for responses with the same reaction time.

- Krause, Neal, Jersey Liang, Joan Bennett, Erika Kobayashi, Hiroko Akiyama & Taro Fukaya. 2010. A descriptive analysis of religious involvement among older adults in Japan. *Ageing and Society* 30(04). 671-696.
doi:[10.1017/S0144686X09990766](https://doi.org/10.1017/S0144686X09990766).

In a nationwide sample of older people in Japan, researchers found that even though the older adults are not highly involved in formal religious institutions, they engage frequently in private religious practices, and that while many older people in Japan do not endorse some religious beliefs (e.g., about the quality of the afterlife), there is strong adherence to others (e.g., beliefs about punishment by supernatural forces). It was found that older women are more deeply involved in religion than older men, and that levels of religious involvement appear to be higher in rural than in urban areas. Less pronounced differences were found with respect to age, but compared to the “young-old”, the “oldest-old” (aged 75 or more years) were more deeply involved in those aspects of religion that take place outside formal institutions.

- Lac, Andrew, Vanessa Hemovich & Igor Himelfarb. 2010. Predicting Position on Teaching Creationism (Instead of Evolution) in Public Schools. *Journal of Educational Research* 103(4). 253-261.

In a nationally representative sample of U.S. adults (n = 2,000), the authors found that the most important predictor of support for the teaching of creationism-only education in public schools was low educational attainment, which yielded a stronger magnitude of effect than did belief in God or importance of religion.

- Lehmann, Devra. 2010. Student and Teacher Responses to Prayer at a Modern Orthodox Jewish High School. *Religious Education* 105(3). 299-316.
doi:[10.1080/00344081003772063](https://doi.org/10.1080/00344081003772063).

From observation and interviews at an American Modern Orthodox Jewish high school, the author found that the high school students viewed prayer as a challenge to their autonomy, while teachers viewed prayer as an indisputable religious obligation. The author posits a generational shift in attitude toward religious authority and self-determination.

Liu, Chung-Chu. 2010. The relationship between personal religious orientation and emotional intelligence. *Social Behavior & Personality: An International Journal* 38(4). 461-468.

The researcher found that among 497 students at 3 universities in Taiwan, intrinsic religious orientation has a significant positive correlation with emotional intelligence, but extrinsic religious orientation has a negative correlation with emotional intelligence. Instruments used for measurement were the Religious Orientation Scale and the Emotional Intelligence Questionnaire.

Malhotra, D. 2010. (When) are religious people nicer? Religious salience and the "Sunday Effect" on pro-social behavior. *Judgment and Decision Making* 5(2). 138-143.

The author examined when auction participants responded to an appeal to continue bidding for secular, charitable causes. Religious individuals are more likely than non-religious individuals to respond to an appeal "for charity" only on days that they visit their place of worship; on Sundays, appeals to charity were 300% more effective on religious individuals (40% response rate) compared to non-religious individuals (12%). On other days of the week, religiosity had no effect (25% vs. 27% response rate, respectively). This "Sunday effect" disappears when the appeal "for charity" is replaced by an appeal to bid for other (i.e., competitive) reasons.

Maltby, Lauren E., M. Elizabeth L. Hall, Tamara L. Anderson & Keith Edwards. 2010. Religion and Sexism: The Moderating Role of Participant Gender. *Sex Roles* 62(9-10). 615-622.
doi:[10.1007/s11199-010-9754-x](https://doi.org/10.1007/s11199-010-9754-x).

The Ambivalent Sexism Inventory and the Christian Orthodoxy Scale tests were administered to Evangelical Christian undergraduate students from the Southwestern United States (n = 387). Results showed that gender moderated the relationship between Christian orthodoxy and Protective Paternalism. The authors conclude that participant gender moderates the relationship between religious belief and ambivalent sexism.

Mooney, Margarita. 2010. Religion, College Grades, and Satisfaction among Students at Elite Colleges and Universities. *Sociology of Religion* 71(2). 197-215.
doi:[10.1093/socrel/srq035](https://doi.org/10.1093/socrel/srq035).

Using data from the National Longitudinal Survey of Freshmen, a sample of nearly 3,924 students at 28 of the most selective college and universities in the United States, the researcher found that two measures of religiosity—attending religious services every week or more, and a 1 to 10 scale of observance of one's religious traditions and customs—increase the amount of hours students report spending on academic work and extracurricular activities, as well as reduce the hours students report going to parties. Students who attend religious services weekly and those who are more observant of their religious traditions also report being more satisfied at college.

Najafizadeh, Katayoun, Fariba Ghorbani, Sajjad Hamidinia, Mohammad Ali Emamhadi, Mohammad Ali Moinfar, Omid Ghobadi & Shervin Assari. 2010. Holy month of Ramadan and increase in organ donation willingness. *Saudi Journal of Kidney Diseases and Transplantation* 21(3). 443-446.

Using data from the database of Donation Willingness Registries, affiliated with Masih Daneshvari Hospital in Tebran, Iran, from March 2007 to March 2008, researchers found that applications for organ donation cards increased by 154% during the month of Ramadan, as compared to the previous month (11,528 during Ramadan, versus 5,323 the previous month). In addition, the proportion of registrants who were men, and who had university degrees, increased during the month of Ramadan.

Norenzayan, Ara & Albert Lee. 2010. It was meant to happen: Explaining cultural variations in fate attributions. *Journal of Personality and Social Psychology* 98(5). 702-720.
doi:[10.1037/a0019141](https://doi.org/10.1037/a0019141).

In 4 studies, the authors constructed diverse measures of such fate attributions (the belief that events are predetermined and inevitable) and examined the cultural correlates of this attributional tendency, focusing on ethnic culture and religious affiliation differences. Independently of ethnic culture, Christians were found to endorse fate attributions more than did the nonreligious; and independently of religious affiliation, East Asian Canadians attributed events to fate more than did European Canadians. East Asian Canadian Christians were the group most likely to attribute events to fate. The religious affiliation difference was mediated by belief in God, whereas the ethnic cultural difference was mediated by a measure of causal complexity, although not by a measure of acculturation. Attributing events to fate was shown to be related to, but distinguishable from, other constructs, such as external locus of control and just world beliefs, and unrelated to self-reported optimism and risk aversion.

Parkes, Rose & Charlotte Bilby. 2010. The courage to create: The role of artistic and spiritual activities in prisons. *Howard Journal of Criminal Justice* 49(2). 97-110.
doi:[10.1111/j.1468-2311.2010.00605.x](https://doi.org/10.1111/j.1468-2311.2010.00605.x).

The authors hold that artistic and spiritual activities should be considered as important elements in varied and diverse responses to offenders' needs: they value humanity and seek well-being. This article examines the role of interventions delivered to prisoners that do not fit within the categories of psychology, education or training (for example, pastimes such as visual and performance arts, meditation and yoga), and maps an alternative terrain to traditional concepts of rehabilitation and treatment. Finally, they explore the constraints of quantifying the impact of these activities.

Rivardo, Mark G. & Colleen M. Keelan. 2010. Body modifications, sexual activity, and religious practices. *Psychological Reports* 106(2). 467-474.
doi:[10.2466/PRO.106.2.467-474](https://doi.org/10.2466/PRO.106.2.467-474).

In a sample of 236 students from a small Catholic liberal arts college, the researcher found that numbers of tattoos and sexual partners were correlated statistically significantly. Other results differed by sex: men with piercings were more likely to have had premarital intercourse, and women who had had premarital intercourse had more piercings than women who had not. There were no statistically significant correlations among body modifications and religious variables.

Sallquist, Julie, Nancy Eisenberg, Doran C. French, Urip Purwono & Telie A. Suryanti. 2010. Indonesian adolescents' spiritual and religious experiences and their longitudinal relations with socioemotional functioning. *Developmental Psychology* 46(3). 699-716.
doi:[10.1037/a0018879](https://doi.org/10.1037/a0018879).

The spirituality and religiosity of Indonesian Muslim adolescents were examined longitudinally as were the relations of spirituality and religiosity with (mal)adjustment. At Time 1 (T1), 959 seventh-grade Muslim adolescents were screened for selection; at Time 2 (T2), 183 eighth-grade adolescents participated; and at Time 3 (T3), 300 ninth-grade adolescents (164 new participants) participated. Researchers found that T2 spirituality and religiosity were positively related to T3 adjustment and negatively related to T3 maladjustment, although in panel models support for prediction of outcomes from spirituality and religiosity was found only for loneliness and socially appropriate behavior. In addition, there was some evidence in the models that certain aspects of (mal)adjustment predicted spirituality and religiosity longitudinally.

Schaltegger, Christoph A. & Benno Torgler. 2010. Work ethic, Protestantism, and human capital. *Economics Letters* 107(2). 99-101.
doi:[10.1016/j.econlet.2009.12.037](https://doi.org/10.1016/j.econlet.2009.12.037).

Max Weber famously wrote that Protestants have developed a distinct work ethic as a path to salvation. The authors used data from the European Values Survey, and found that education has a statistically significant impact on work ethic if people are Protestant but not if they are Catholic; the effect of religiosity depends on the denomination; the additional effect of religiosity is only statistically significant when an individual is Protestant. They conclude that religiosity is crucial for Protestant work ethic, which is compatible with Weber's thesis; however, they also find that work ethic is influenced by education, pointing to the important role of education not only for economic success but also for a commitment to work ethic.

1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY

Baumeister, Roy F., Isabelle M. Bauer & Stuart A. Lloyd. 2010. Choice, Free Will, and Religion. *Psychology of Religion and Spirituality* 2(2). 67-82.

doi:[10.1037/a0018455](https://doi.org/10.1037/a0018455).

The authors assert that although free will has been defined in multiple, conflicting ways, they analyze it as a psychological capacity subsuming self-control, effortful choice, planning, and initiative. These capabilities are useful for making human social life and culture possible, but they depend on a limited resource and therefore often fall short of optimal levels. They find that religion may be helpful to individuals and society in part because it supports both the exercise of free will and the belief in it.

Belzen, Jacob A. 2010. Psychology of religion: perspectives from cultural psychology. *Mental Health, Religion & Culture* 13(4). 329-347.

doi:[10.1080/13674670903415212](https://doi.org/10.1080/13674670903415212).

After a brief introduction, this paper tries to establish what type of psychology the psychology of religion is. Theories applicable in research on religion are presented, and examples of cultural psychological research of religious phenomena are discussed. A special issue of "Mental Health, Religion and Culture" that includes responses by Benjamin Beit-Hallahmi, James Day, Christopher Alan Lewis, Peter C. Hill, Pradeep Chakkarath, Kate M. Loewenthal, Ralph W. Hood, Jr., Antoine Vergote, and Joke van Saane. A final response is given by the author.

Peterson, Gregory R., Michael Spezio, James Van Slyke, Kevin Reimer & Warren Brown. 2010. The Rationality of Ultimate Concern: Moral Exemplars, Theological Ethics, and the Science of Moral Cognition. *Theology and Science* 8(2). 139-161.

doi:[10.1080/14746701003675520](https://doi.org/10.1080/14746701003675520).

This paper argues that consideration of moral exemplars may provide a means for integrating insights across philosophical ethics, theological ethics, and the scientific study of moral cognition. Key to this endeavor is an understanding of the relation of cognition and emotion in ethical decision-making, a relation that is usually understood to be oppositional but which in proper circumstances may be understood to be quite the opposite. They find that a distinctive feature of moral exemplarity may consist in the ability to properly integrate the emotions into the moral life, and reference to and imitation of exemplars may involve a referencing and imitating of the emotions of the exemplar.

Shuttleworth, Judy. 2010. Faith and culture: Community life and the creation of a shared psychic reality. *Infant Observation* 13(1). 45-58.

doi:[10.1080/13698031003606618](https://doi.org/10.1080/13698031003606618).

This paper discusses the links between infant observation as a research method and ethnography within social anthropology, in relation to a study of a mosque congregation in which the nature of faith is explored through the activities of communal life. This observational research generates accounts of social interaction and religious speech within which patterns of inter-subjectivity can be traced. It is argued that the creation of shared imaginative worlds,

and the collective processes which sustain them, can be thought of as having properties in common with psychic development.

Van Slyke, James A. 2010. Challenging the By-Product Theory of Religion in the Cognitive Science of Religion. *Theology and Science* 8(2). 163-180.
doi:[10.1080/14746701003675546](https://doi.org/10.1080/14746701003675546).

The author holds that the by-product theory of religion in the cognitive science of religion is problematic on both scientific and philosophical grounds. The by-product theory of religion argues that the explanation for religious beliefs can be reduced to a by-product of the unconscious processes of evolutionary cognitive adaptations. He argues that evidence from the cognitive science of religion does not necessitate the elimination of theological explanations of religious beliefs, and that theology can act as a competing interpretative framework for the empirical findings at the levels of cognitive and evolutionary science.

PART 2. ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

2.1 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

Conboy, L. A., A. Wilson & T. Braun. 2010. Moving Beyond Health to Flourishing: The Effects of Yoga Teacher Training. *The Scientific World Journal* 10. 788-795.
doi:[10.1100/tsw.2010.87](https://doi.org/10.1100/tsw.2010.87).

In this observational study, researchers examined associations of well-being with participation in a 4-week yoga teacher training resident program. There were no significant changes in perceived social support, quality of life, or self-efficacy from baseline to the 3-month follow-up. However, optimism, a positive psychology research measure, improved from baseline to follow-up. The mindfulness subscales of observation, awareness, and nonreactivity all improved following the training.

Evans, Subhadra, Mona Moieni, Rebecca Taub, Saskia K. Subramanian, Jennie C. I. Tsao, Beth Sternlieb & Lonnie K. Zeltzer. 2010. Iyengar yoga for young adults with rheumatoid arthritis: results from a mixed-methods pilot study. *Journal of Pain and Symptom Management* 39(5). 904-913.
doi:[10.1016/j.jpainsymman.2009.09.018](https://doi.org/10.1016/j.jpainsymman.2009.09.018).

Following a six-week yoga program for 8 young adults with rheumatoid arthritis (RA), researchers measured significant improvements in pain, pain disability, depression, mental health, vitality, and self-efficacy. Interviews demonstrated improvement in RA symptoms and functioning, but uncertainty about whether the intervention affected pain.

Gillum, R. F. & Cheryl L. Holt. 2010. Religious involvement and seroprevalence of six infectious diseases in US adults. *Southern Medical Journal* 103(5). 403-408.
doi:[10.1097/SMJ.0b013e3181beac80](https://doi.org/10.1097/SMJ.0b013e3181beac80).

From data on 11,507 persons aged 17 years and older, researchers found that persons attending religious services weekly or more were less likely to be seropositive for herpes simplex type 2 (HSV-2) than those attending less frequently (23.7%) or never (25.1%). Analyses revealed the association to be partially accounted for by reduced risky sexual behavior and illegal drug use among frequent attenders. No associations were found with three enteric pathogens.

Hofstetter, C. Richard, John W. Ayers, Veronica L. Irvin, D. Eastern Kang Sim, Suzanne C. Hughes, Frederick Reighard & Melbourne F. Hovell. 2010. Does church participation facilitate tobacco control? A report on Korean immigrants. *Journal of Immigrant and Minority Health* 12(2). 187-197.
doi:[10.1007/s10903-009-9228-9](https://doi.org/10.1007/s10903-009-9228-9).

Data drawn from telephone interviews with Korean adults in California (n = 2,085) revealed that those who reported that they attend church were less likely to be current smokers and to be exposed to environmental tobacco smoke, and more likely to have quit smoking and to have a complete household smoking ban, as compared to non-attenders.

Leonaite, A. & A. Vainoras. 2010. Heart Rate Variability during two Relaxation Techniques in Post-MI Men. *Electronics and Electrical Engineering* 5(101). 107-110.

Researchers studied the short-term effect of two relaxation techniques, mindfulness-based stress reduction and progressive muscle relaxation, as opposed to just lying quietly, on heart rate variability (HRV) in 25 male patients with ischemic heart disease. ECG was recorded 5 minutes before relaxation, 20 minutes during relaxation, and 5 minutes after relaxation. Mindfulness-based stress reduction and progressive muscle relaxation

both produced reliable and similar short-term changes in HRV; results from both were significantly different than those produced by just lying quietly.

Loizzo, Joseph J., Janey C. Peterson, Mary E. Charlson, Emily J. Wolf, Margaret Altemus, William M. Briggs, Linda T. Vahdat & Thomas A. Caputo. 2010. The effect of a contemplative self-healing program on quality of life in women with breast and gynecologic cancers. *Alternative Therapies in Health and Medicine* 16(3). 30-37.

Research with 46 survivors of breast and gynecologic cancer patients, following chemotherapy and radiation, showed that participants had significant within-patient changes on quality of life measurements following 20 weeks of contemplative self-healing practice, including daily meditation. Biologic data revealed significant improvement in maximum AM cortisol and a reduction in resting heart rate at 20 weeks.

Park, James & Sharon Nachman. 2010. The link between religion and HAART adherence in pediatric HIV patients. *AIDS Care* 22(5). 556-561.
doi:[10.1080/09540120903254013](https://doi.org/10.1080/09540120903254013).

In a study examining the patterns of highly active antiretroviral therapy adherence relative to religious beliefs in 20 perinatally HIV-infected adolescents, subjects who had excellent adherence had significantly higher religious belief scores, and higher religious practice scores, than those who had poor adherence. Beck Depression Inventory scores was also lower in those with excellent adherence versus those with poor adherence.

Rogers, Carol, Colleen Keller & Linda K. Larkey. 2010. Perceived Benefits of Meditative Movement in Older Adults. *Geriatric Nursing* 31(1). 37-51.
doi:[10.1016/j.gerinurse.2009.10.002](https://doi.org/10.1016/j.gerinurse.2009.10.002).

In a review of 37 studies (n = 1,856) regarding the perceived psychosocial benefits and health outcomes of meditative movement (MM) such as Tai chi (TC) and Qigong, the authors found that older persons initiated MM because of perceived benefits to health and with a desire to exercise in a group setting for socialization. Perceived improved function and quality of life related to chronic diseases were the most common reasons for initiating the TC classes. Perceived safety was also critical to the initiation and maintenance of an exercise intervention for older adults.

Ulger, Ozlem & Naciye Vardar Yağlı. 2010. Effects of yoga on the quality of life in cancer patients. *Complementary Therapies in Clinical Practice* 16(2). 60-63.
doi:[10.1016/j.ctcp.2009.10.007](https://doi.org/10.1016/j.ctcp.2009.10.007).

Twenty patients between 30 and 50 years of age presently under treatment for breast cancer were assessed for quality of life before and after a yoga intervention. It was found that patients' quality of life scores after the yoga program were better than scores obtained before the yoga program. After sessions, there was a statistically significant decrease in measurements of reaction to and permanence of anxiety. The satisfaction score concerning the yoga program was considerably increased after the yoga program.

2.2 SPIRITUALITY & HEALTH: MENTAL HEALTH

Bondolfi, Guido, Françoise Jermann, Martial Van der Linden, Marianne Gex-Fabry, Lucio Bizzini, Béatrice Weber Rouget, Lusmila Myers-Arrazola et al. 2010. Depression relapse prophylaxis with Mindfulness-Based Cognitive Therapy: Replication and extension in the Swiss health care system. *Journal of Affective Disorders* 122(3). 224-231.
doi:[10.1016/j.jad.2009.07.007](https://doi.org/10.1016/j.jad.2009.07.007).

Sixty unmedicated patients in remission from recurrent depression (≥ 3 episodes) were randomly assigned to Mindfulness-based cognitive therapy (MBCT) and treatment as usual (TAU), or TAU alone. Over a 14 month

follow-up period, time to relapse was significantly longer with MBCT + TAU than TAU alone (median 204 and 69 days, respectively), although both groups relapsed at similar rates.

- Bränström, Richard, Pia Kvillemo, Yvonne Brandberg & Judith Tedlie Moskowitz. 2010. Self-report Mindfulness as a Mediator of Psychological Well-being in a Stress Reduction Intervention for Cancer Patients—A Randomized Study. *Annals of Behavioral Medicine* 39(2). 151-161.
doi:[10.1007/s12160-010-9168-6](https://doi.org/10.1007/s12160-010-9168-6).

Seventy women and one man with a previous cancer diagnosis were randomized into either a mindfulness training course or a wait-list control group. Following the 8-week course, participants in the mindfulness training group had significantly decreased perceived stress and posttraumatic avoidance symptoms and increased positive states of mind. They reported a significant increase in scores on the five-facet mindfulness questionnaire when compared to controls.

- Chu, Li-Chuan. 2010. The benefits of meditation vis-à-vis emotional intelligence, perceived stress and negative mental health. *Stress and Health* 26(2). 169-180.
doi:[10.1002/smi.1289](https://doi.org/10.1002/smi.1289).

First, researchers studied 351 adults and found that those with greater meditation experience exhibited higher Emotional Intelligence, and less perceived stress and negative mental health, than those who had less or no experience. Second, researchers randomly divided students into a mindfulness meditation group (n = 10) and a control group (n = 10), and found that those who completed the 8-week mindfulness meditation training demonstrated significant improvements in relation to emotional intelligence compared to the control group.

- Dezutter, J., K. Luyckx, H. Schaap-Jonker, A. Bussing, J. Corveleyn & D. Hutsebaut. 2010. God Image and Happiness in Chronic Pain Patients: The Mediating Role of Disease Interpretation. *Pain Medicine* 11(5). 765-773.

Analysis of a cross-sectional questionnaire, completed by 136 chronic pain patients, showed meaningful associations among God images, disease interpretation, and happiness. Further analysis indicated that positive God images seemed to influence happiness, both directly and indirectly through the pathway of positive interpretation of the disease. Ancillary analyses showed that the negative influence of angry God images on happiness disappeared after controlling for pain severity.

- Friedman, Mike & Vassilis Saroglou. 2010. Religiosity, Psychological Acculturation to the Host Culture, Self-Esteem and Depressive Symptoms Among Stigmatized and Nonstigmatized Religious Immigrant Groups in Western Europe. *Basic & Applied Social Psychology* 32(2). 185-195.
doi:[10.1080/01973531003738387](https://doi.org/10.1080/01973531003738387).

A study of immigrants in Belgium found that religiosity is negatively indirectly associated with psychological acculturation through the intervening mechanism of perceived distance between the home and host cultures, for both stigmatized and nonstigmatized groups. Further, religiosity was indirectly negatively related to self-esteem and indirectly positively related to depressive symptoms for stigmatized, but not nonstigmatized, groups.

- Ingersoll-Dayton, Berit, Cynthia Torges & Neal Krause. 2010. Unforgiveness, rumination, and depressive symptoms among older adults. *Aging & Mental Health* 14(4). 439-449.
doi:[10.1080/13607860903483136](https://doi.org/10.1080/13607860903483136).

Analysis of the Religion, Aging, and Health survey (n = 965, all aged 67 and older), showed that feeling unforgiven by others has a significant direct effect on depressive symptoms and an indirect effect via self-unforgiveness and rumination. However, feeling unforgiven by God operates only indirectly through self-unforgiveness and rumination. Similarly, self-unforgiveness has an indirect effect on depressive symptoms through rumination.

Mosko, Jonathan E. & M. Carole Pistole. 2010. Attachment and religiousness: Contributions to young adult marital attitudes and readiness. *The Family Journal* 18(2). 127-135.

In this study (n = 239), Christian religious affiliation, low attachment avoidance, and intrinsic religious motivation contributed uniquely to positive marital attitudes; more serious relational status, low attachment avoidance, and intrinsic religious motivation contributed uniquely to marital readiness.

Raghallaigh, Muireann Ní & Robbie Gilligan. 2010. Active survival in the lives of unaccompanied minors: coping strategies, resilience, and the relevance of religion. *Child & Family Social Work* 15(2). 226-237.

doi:[10.1111/j.1365-2206.2009.00663.x](https://doi.org/10.1111/j.1365-2206.2009.00663.x).

From a qualitative study undertaken with unaccompanied minors living and seeking asylum in Ireland (n = 32), it was found that religion played a central role in coping efforts for 31 of the minors. Six different coping strategies were identified: maintaining continuity in a changed context; adjusting by learning and changing; adopting a positive outlook; suppressing emotions and seeking distraction; acting independently; and distrusting. Religious beliefs and practices were implicated in each strategy.

Schultz, Jessica M., Benjamin A. Tallman & Elizabeth M. Altmaier. 2010. Pathways to Posttraumatic Growth: The Contributions of Forgiveness and Importance of Religion and Spirituality. *Psychology of Religion and Spirituality* 2(2). 104-114.

doi:[10.1037/a0018454](https://doi.org/10.1037/a0018454).

A study of 146 adults who experienced significant interpersonal transgression demonstrated that severity was negatively related to forgiveness: the more distressing the event, the more revenge and avoidance were endorsed in response to the offender. The positive relationship between forgiveness and posttraumatic growth was mediated by importance of religion and spirituality.

Tayeb, Mohamad A., Ersan Al-Zamel, Muhammed M. Fared & Hesham A. Abouellail. 2010. A "good death": perspectives of Muslim patients and health care providers. *Annals of Saudi Medicine* 30(3). 215-221.

doi:[10.4103/0256-4947.62836](https://doi.org/10.4103/0256-4947.62836).

A survey of 284 Muslims in Tabuk, Saudi Arabia revealed that several aspects of a "good death," as typically perceived by Western communities, are not recognized as being important by many Muslim patients and health care providers. Further, three domains were present in the survey responses that are not usually included in Western literature: the role of religious faith and beliefs at the time of death; self-esteem and body image; and concerns about family security.

Uebelacker, Lisa A, Geoffrey Tremont, Gary Epstein-Lubow, Brandon A Gaudiano, Tom Gillette, Zornitsa Kalibatseva & Ivan W Miller. 2010. Open trial of Vinyasa yoga for persistently depressed individuals: evidence of feasibility and acceptability. *Behavior Modification* 34(3). 247-264.

doi:[10.1177/0145445510368845](https://doi.org/10.1177/0145445510368845).

The authors recruited 11 depressed patients, who were not responding to antidepressant medication, for an 8-week open trial of yoga classes. Of the 10 who completed follow-up assessments, 9 were positive about their experience. Over the 2-month period, participants exhibited significant decreases in depression symptoms and significant increases in an aspect of mindfulness and in behavior activation.

Williams, Carmen Braun & Marsha I. Wiggins. 2010. Womanist Spirituality as a Response to the Racism-Sexism Double Bind in African American Women. *Counseling & Values* 54(2). 175-186.

Many African American women begin counseling stigmatized by race and gender and may be targets of additional discrimination on the basis of sexual orientation, class, age, and other social variables. In this article, the authors discuss "womanist" spirituality as a means for African American women to cope with racism, sexism, and multiple social stigmas.

2.3 SPIRITUALITY & HEALTH: METHOD AND THEORY

Abu Raiya, Hisham & Kenneth I. Pargament. 2010. Religiously integrated psychotherapy with Muslim clients: From research to practice. *Professional Psychology: Research and Practice* 41(2). 181-188.
doi:[10.1037/a0017988](https://doi.org/10.1037/a0017988).

The authors make recommendations for clinicians with Muslim patients, based on empirical findings that resulted in a Psychological Measure of Islamic Religiousness (PMIR).

Alcorn, Sara R, Michael J Balboni, Holly G Prigerson, Amy Reynolds, Andrea C Phelps, Alexi A Wright, Susan D Block, John R Peteet, Lisa A Kachnic & Tracy A Balboni. 2010. "If God wanted me yesterday, I wouldn't be here today": religious and spiritual themes in patients' experiences of advanced cancer. *Journal of Palliative Medicine* 13(5). 581-588.
doi:[10.1089/jpm.2009.0343](https://doi.org/10.1089/jpm.2009.0343).

From interviews with 68 patients with advanced cancer, the authors found that most (n = 53) stated that religion and spirituality (R/S) had been important to their cancer experience. In describing the relationship of R/S to the cancer experience, five themes emerged: coping, practices, beliefs, transformation, and community. Younger, more religious, and more spiritual patients identified R/S concerns more frequently.

Aten, Jamie D., Michael W. Mangis & Clark Campbell. 2010. Psychotherapy with rural religious fundamentalist clients. *Journal of Clinical Psychology* 66(5). 513-523.
doi:[10.1002/jclp.20677](https://doi.org/10.1002/jclp.20677).

The authors make recommendations for psychotherapists with rural fundamentalist Christian patients. The authors recommend that psychotherapists evaluate their own attitudes, collaborate with community gatekeepers, sensitively address clients' rigid beliefs, address religious differences, and take a holistic approach to treatment.

Bay, Paul S., Steven S. Ivy & Colin L. Terry. 2010. The effect of spiritual retreat on nurses' spirituality: a randomized controlled study. *Holistic Nursing Practice* 24(3). 125-133.
doi:[10.1097/HNP.0b013e3181dd47dd](https://doi.org/10.1097/HNP.0b013e3181dd47dd).

After two 1-day retreats that focused on spiritual self-care, nurses who attended (n = 87) demonstrated increased spirituality 1 month and 6 months post-retreat, compared to those who did not (n = 112). Participants were randomized to receive the retreat intervention.

Burke, Christine. 2010. Mindfulness-Based Approaches with Children and Adolescents: A Preliminary Review of Current Research in an Emergent Field. *Journal of Child & Family Studies* 19(2). 133-144.
doi:[10.1007/s10826-009-9282-x](https://doi.org/10.1007/s10826-009-9282-x).

The author provides a preliminary review of the current research base of mindfulness-based approaches with children and adolescents. The current research base provides support for the feasibility of mindfulness-based interventions with children and adolescents; however, there is no generalized empirical evidence of the efficacy of these interventions.

Connor, Ann & Monica L. Donohue. 2010. Integrating faith and health in the care of persons experiencing homelessness using the Parish Nursing Faculty Practice Model. *Family & Community Health: The Journal of Health Promotion & Maintenance* 33(2). 123-132.

This article describes the Parish Nurse Faculty Practice Model (PNFPM), which provides care to a medically underserved, high-risk homeless population at a community-based, multipartner service center. The PNFPM offers a holistic integrated approach to care of the mind, body, and spirit and encourages those who are homeless to draw on their faith to improve their health.

Gökhan, Nurper, Edward F. Meehan & Kevin Peters. 2010. The value of mindfulness-based methods in teaching at a clinical field placement. *Psychological Reports* 106(2). 455-466.
doi:[10.2466/PRO.106.2.455-466](https://doi.org/10.2466/PRO.106.2.455-466).

Researchers found that undergraduate students who received mindfulness-based training (n = 22) demonstrated significantly increased mindfulness, enhanced self-care, attention to well-being, self-awareness, active involvement acquiring skills, and empathy and compassion, compared to students who did not receive the training (n = 20).

Hodge, David R. & Gordon E. Limb. 2010. A Native American perspective on spiritual assessment: the strengths and limitations of a complementary set of assessment tools. *Health & Social Work* 35(2). 121-131.

This study used a sample of recognized experts in Native American culture (n = 50) to evaluate a complementary set of spiritual assessment instruments or tools. A brief overview of each instrument is provided, along with the results, to familiarize readers with a repertoire of spiritual assessment tools so that the most culturally appropriate method can be selected in a given clinical context.

Kellems, Ian S., Clara E. Hill, Rachel E. Crook-Lyon & Gary Freitas. 2010. Working with clients who have religious/spiritual issues: A survey of university counseling center therapists. *Journal of College Student Psychotherapy* 24(2). 139-155.
doi:[10.1080/87568220903558745](https://doi.org/10.1080/87568220903558745).

Of 220 university counseling center therapists who completed an Internet survey about religion/spirituality in therapy, 200 described therapy with a recent client whose issues involved religion/spirituality. The authors review common client religion/spirituality issues. They find that similarity of therapist and client religion/spirituality values was not related to the strength of the therapeutic relationship. Therapists with higher levels of religious commitment tended to rate religion/spirituality goals as more important and use religion/spirituality interventions more. Therapists with more religion/spirituality training had higher self-efficacy for working with religion/spirituality issues.

Michie, Marsha & Debra Skinner. 2010. Narrating Disability, Narrating Religious Practice: Reconciliation and Fragile X Syndrome. *Intellectual and Developmental Disabilities* 48(2). 99-111.
doi:[10.1352/1934-9556-48.2.99](https://doi.org/10.1352/1934-9556-48.2.99).

This article examines the place of religion in the narratives of mothers of children with fragile X syndrome. In interviews, a majority of women combined narratives of religious practice with illness narratives, interpreting their children's disabilities within a religious framework. The authors articulate a reconciliation narrative that mothers commonly used to describe their transition from viewing disability as a burden or challenge to seeing it as a blessing, or as a part of God's purpose or plan for their lives.

Wesselmann, Eric D. & William G. Grazuano. 2010. Sinful and/or possessed? Religious beliefs and mental illness stigma. *Journal of Social and Clinical Psychology* 29(4). 402-437.
doi:[10.1521/jscp.2010.29.4.402](https://doi.org/10.1521/jscp.2010.29.4.402).

From two studies, researchers find that religious beliefs about mental illness appear as two separate but related dimensions. These dimensions focused on beliefs about sin/morality and spiritually-oriented causes/treatments, and were related to negative secular beliefs about mental illness. They were also related to other individual differences that predict prejudice toward stigmatized groups. Data also suggest these religious beliefs are endorsed differently depending upon religious affiliation.

Whitley, Rob. 2010. Atheism and Mental Health. *Harvard Review of Psychiatry* 18(3). 190-194.
doi:[10.3109/10673221003747674](https://doi.org/10.3109/10673221003747674).

The author argues that atheism, especially positive atheism, should be treated as a meaningful socio-cultural variable in the study of mental health, and is an appropriate domain of study for social and cultural psychiatrists (and allied social scientists) interested in exploring socio-environmental stressors and buffers relating to mental health. Specifically, he argues that atheism needs to be accurately measured as an individual-level exposure variable, with the aim of relating that variable to psychiatric outcomes; there needs to be greater systematic investigation into the influence of atheism on psychiatry as an institution; and, the relation of atheism to mental health needs to be explored by examining atheistic theory and its practical application, especially as it relates to the human condition, suffering, and concepts of personhood.

Williams, Allison. 2010. Spiritual therapeutic landscapes and healing: A case study of St. Anne de Beaupre, Quebec, Canada. *Social Science & Medicine* 70(10). 1633-1640.
doi:[10.1016/j.socscimed.2010.01.012](https://doi.org/10.1016/j.socscimed.2010.01.012).

This paper provides a case study of a Christian pilgrimage site named St. Anne de Beaupre (Quebec, Canada), in an effort to fill the spirituality gap in the therapeutic landscapes literature. It offers a number of suggested research directions to better understand spiritual landscapes/places and their association with health.

PART 3. BOOKS

3.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

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- Shepherd, Gordon & Gary Shepherd. 2010. *Talking with the Children of God: Prophecy and Transformation in a Radical Religious Group*. Urbana: University of Illinois Press.
- Singh, Aakash, & Peter Losonczy (eds.). 2010. *From political theory to political theology : religious challenges and the prospects of democracy*. (Continuum Resources in Religion and Political Culture). London ; New York: Continuum.
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3.2 SPIRITUALITY & HEALTH RESEARCH

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- Puchalski, Christina & Betty Ferrell. 2010. *Making Health Care Whole: Integrating Spirituality into Patient Care*. West Conshohocken, Penn.: Templeton Press.

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PART 4. ARTICLES IN PRESS

4.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

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- Buhle, Jason & Tor D. Wager. Does meditation training lead to enduring changes in the anticipation and experience of pain? *Pain* In Press, Corrected Proof.
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4.2 SPIRITUALITY & HEALTH RESEARCH

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Cavar, Mile, Damir Sekulic & Zoran Culjak. 2010. Complex Interaction of Religiousness with other Factors in Relation to Substance Use and Misuse Among Female Athletes. *Journal of Religion and Health*.

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