



# RESEARCH REVIEW

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

AUGUST, 2013

## 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, ATLA Religion Database, General Science, PubMed, EBSCO Psychology and Behavioral Sciences Collection, PsycARTICLES, PsycINFO, ScienceDirect, and Web of Science. The search terms were altruism, god, goddess, meditat\*, prayer, relig\*, ritual, 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 648 articles, 67 articles have been retained from 46 journals. There are 36 pre-publication citations from 25 journals.

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## PART 1: ARTICLES IN RELIGION, BRAIN, AND BEHAVIOR

### 1.1 SCIENTIFIC STUDY OF RELIGION: COGNITIVE NEUROSCIENCE

Cahn, B. Rael & John Polich. 2013. Meditation states and traits: EEG, ERP, and neuroimaging studies. *Psychology of Consciousness: Theory, Research, and Practice* 1(S). 48–96.  
doi:10.1037/2326-5523.1.S.48.

*In this article, neuroelectric and imaging studies of meditation are reviewed. Electroencephalographic measures indicate an overall slowing subsequent to meditation, with theta and alpha activation related to proficiency of practice. Sensory evoked potential assessment of concentrative meditation yields amplitude and latency changes for some components and practices. Cognitive event-related potential evaluation of meditation implies that practice changes attentional allocation. Neuroimaging studies indicate increased regional cerebral blood flow measures during meditation. Taken together, meditation appears to reflect changes in anterior cingulate cortex and dorsolateral prefrontal areas. Neurophysiological meditative state and trait effects are variable but are beginning to demonstrate consistent outcomes for research and clinical applications. Psychological and clinical effects of meditation are summarized, integrated, and discussed with respect to neuroimaging data.*

Ferrarelli, Fabio, Richard Smith, Daniela Dentico, Brady A Riedner, Corinna Zennig, Ruth M. Benca, Antoine Lutz, Richard J Davidson & Giulio Tononi. 2013. Experienced Mindfulness Meditators Exhibit Higher Parietal-Occipital EEG Gamma Activity during NREM Sleep. *PLoS one* 8(8). e73417.  
doi:10.1371/journal.pone.0073417.

*Over the past several years meditation practice has gained increasing attention as a non-pharmacological intervention to provide health related benefits, from promoting general wellness to alleviating the symptoms of a variety of medical conditions. However, the effects of meditation training on brain activity still need to be fully*

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*characterized. Sleep provides a unique approach to explore the meditation-related plastic changes in brain function. In this study, researchers performed sleep high-density electroencephalographic (hdEEG) recordings in long-term meditators (LTM) of Buddhist meditation practices (approximately 8,700 mean hours of life practice) and meditation naive individuals. It was found that LTM had increased parietal-occipital EEG gamma power during NREM sleep. This increase was specific for the gamma range (25-40 Hz), was not related to the level of spontaneous arousal during NREM, and was positively correlated with the length of lifetime daily meditation practice. The authors conclude that, taken in aggregate, these findings indicate that meditation practice produces measurable changes in spontaneous brain activity, and suggest that EEG gamma activity during sleep represents a sensitive measure of the long-lasting, plastic effects of meditative training on brain function.*

Garrison, Kathleen A., Juan F. Santoyo, Jake H. Davis, Thomas A. Thornhill, Catherine E. Kerr & Judson A. Brewer. 2013. Effortless awareness: Using real time neurofeedback to investigate correlates of posterior cingulate cortex activity in meditators' self-report. *Frontiers in Human Neuroscience* 7. 440.  
doi:10.3389/fnhum.2013.00440.

*Neurophenomenological studies seek to utilize first-person self-report to elucidate cognitive processes related to physiological data. Grounded theory offers an approach to the qualitative analysis of self-report, whereby theoretical constructs are derived from empirical data. Researchers used grounded theory methodology (GTM) to assess how the first-person experience of meditation relates to neural activity in a core region of the default mode network—the posterior cingulate cortex (PCC). The authors analyzed first-person data consisting of meditators' accounts of their subjective experience during runs of a real time fMRI neurofeedback study of meditation, and third-person data consisting of corresponding feedback graphs of PCC activity during the same runs. It was found that, for meditators, the subjective experiences of undistracted awareness such as concentration and observing sensory experience, and effortless doing such as observing sensory experience, not efforting, and contentment, correspond with PCC deactivation. Further, the subjective experiences of distracted awareness such as distraction and interpreting, and controlling such as efforting and discontentment, correspond with PCC activation. Moreover, the authors derived several novel hypotheses about how specific qualities of cognitive processes during meditation relate to PCC activity, such as the difference between meditation and trying to meditate. These findings offer insights into the relationship between meditation and mind wandering or self-related thinking and neural activity in the default mode network, driven by first-person reports.*

Hoge, Elizabeth A., Maxine M. Chen, Esther Orr, Christina A. Metcalf, Laura E. Fischer, Mark H. Pollack, Immaculata DeVivo & Naomi M. Simon. 2013. Loving-Kindness Meditation practice associated with longer telomeres in women. *Brain, Behavior, and Immunity* 32. 159–163.  
doi:10.1016/j.bbi.2013.04.005.

*Relatively short telomere length may serve as a marker of accelerated aging, and shorter telomeres have been linked to chronic stress. Specific lifestyle behaviors that can mitigate the effects of stress might be associated with longer telomere lengths. Previous research suggests a link between behaviors that focus on the well-being of others, such as volunteering and caregiving, and overall health and longevity. Researchers examined relative telomere length in a group of individuals experienced in Loving-Kindness Meditation (LKM), a practice derived from the Buddhist tradition which utilizes a focus on unselfish kindness and warmth towards all people, and control participants who had done no meditation. Blood was collected by venipuncture, and Genomic DNA was extracted from peripheral blood leukocytes. Quantitative real time PCR was used to measure relative telomere length (RTL) in fifteen LKM practitioners and 22 control participants. There were no significant differences in age, gender, race, education, or exposure to trauma, but the control group had a higher mean body mass index (BMI) and lower rates of past depression. The LKM practitioners had longer RTL than controls at the trend level; among women, the LKM practitioners had significantly longer RTL than controls, which remained significant even after*

*controlling for BMI and past depression. Although limited by small sample size, these results offer the intriguing possibility that LKM practice, especially in women, might alter RTL, a biomarker associated with longevity.*

## **1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION**

Jegindø, Else-Marie Elmholdt, Lene Vase, Joshua Charles Skewes, Astrid Juhl Terkelsen, John Hansen, Armin W. Geertz, Andreas Roepstorff & Troels Staehelin Jensen. 2013. Expectations contribute to reduced pain levels during prayer in highly religious participants. *Journal of Behavioral Medicine* 36(4). 413–426.  
doi:10.1007/s10865-012-9438-9.

*Although the use of prayer as a religious coping strategy is widespread and often claimed to have positive effects on physical disorders including pain, it has never been tested in a controlled experimental setting whether prayer has a pain relieving effect. Religious beliefs and practices are complex phenomena and the use of prayer may be mediated by general psychological factors known to be related to the pain experience, such as expectations, desire for pain relief, and anxiety. Twenty religious and twenty non-religious healthy volunteers were exposed to painful electrical stimulation during internal prayer to God, a secular contrast condition, and a pain-only control condition. Subjects rated expected pain intensity levels, desire for pain relief, and anxiety before each trial and pain intensity and pain unpleasantness immediately after on mechanical visual analogue scales. Autonomic and cardiovascular measures provided continuous non-invasive objective means for assessing the potential analgesic effects of prayer. Prayer reduced pain intensity by 34% and pain unpleasantness by 38% for religious participants, but not for non-religious participants. For religious participants, expectancy and desire predicted 56-64% of the variance in pain intensity scores, but for non-religious participants, only expectancy was significantly predictive of pain intensity (65-73%). Conversely, prayer-induced reduction in pain intensity and pain unpleasantness were not followed by autonomic and cardiovascular changes.*

Lewis, Gary J. & Timothy C. Bates. 2013. Common genetic influences underpin religiosity, community integration, and existential uncertainty. *Journal of Research in Personality* 47(4). 398–405.  
doi:10.1016/j.jrp.2013.03.009.

*Although genetic factors underpin individual differences in religiosity, the psychological mechanisms through which such influences are manifested are presently unknown. Religiosity is associated with concerns for community integration and existential certainty, suggesting that heritable influences underlying such sentiments may overlap with heritable influences underpinning religiosity. Here the authors tested this hypothesis within a genetically informative design, using a large, nationally-representative twin sample. As predicted, heritable effects underlying community integration and existential uncertainty were strongly overlapping with the heritable influences on religiosity. These findings are consistent with the position that individual differences in religiosity are mediated through biological systems involved in meeting both social and existential needs, although further work is required to determine directions of causal action.*

Ludeke, Steven, Wendy Johnson & Thomas J. Bouchard Jr. 2013. “Obedience to traditional authority:” A heritable factor underlying authoritarianism, conservatism and religiousness. *Personality and Individual Differences* 55(4). 375–380.  
doi:10.1016/j.paid.2013.03.018.

*Social attitudes, political attitudes and religiousness are highly inter-correlated. Furthermore, each is substantially influenced by genetic factors. Koenig and Bouchard (2006) hypothesized that these three areas (which they termed the Traditional Moral Values Triad) each derive from an underlying latent trait concerning the tendency to obey traditional authorities. Researchers tested this hypothesis with data from a sample of twins raised in different homes. Social attitudes were assessed with Altemeyer’s (1988) Right-Wing Authoritarianism scale, political attitudes with Wilson and Patterson’s (1968) Conservatism scale, and religiousness with Wiggins’ (1966)*

*Religious Fundamentalism scale. The best-fitting model identified the three TMVT domains as different manifestations of a single latent and significantly heritable factor. Further, the genetic and environmental bases for this factor overlapped heavily with those for the Multidimensional Personality Questionnaire Traditionalism scale, supporting the conception of traditionalism as the latent factor represented by the three scales in contemporary Western societies.*

Reddish, Paul, Ronald Fischer & Joseph Bulbulia. 2013. Let's Dance Together: Synchrony, Shared Intentionality and Cooperation. *PLoS one* 8(8). e71182.  
doi:10.1371/journal.pone.0071182.

*Previous research has shown that the matching of rhythmic behavior between individuals (synchrony) increases cooperation. Such synchrony is most noticeable in music, dance and collective rituals. As well as the matching of behavior, such collective performances typically involve shared intentionality: performers actively collaborate to produce joint actions. Over three experiments researchers examined the importance of shared intentionality in promoting cooperation from group synchrony. Experiment 1 compared a condition in which group synchrony was produced through shared intentionality to conditions in which synchrony or asynchrony were created as a by-product of hearing the same or different rhythmic beats. It was found that synchrony combined with shared intentionality produced the greatest level of cooperation. To examine the importance of synchrony when shared intentionality is present, Experiment 2 compared a condition in which participants deliberately worked together to produce synchrony with a condition in which participants deliberately worked together to produce asynchrony. It was found that synchrony combined with shared intentionality produced the greatest level of cooperation. Experiment 3 manipulated both the presence of synchrony and shared intentionality and found significantly greater cooperation with synchrony and shared intentionality combined. Path analysis supported a reinforcement of cooperation model according to which perceiving synchrony when there is a shared goal to produce synchrony provides immediate feedback for successful cooperation so reinforcing the group's cooperative tendencies. The reinforcement of cooperation model helps to explain the evolutionary conservation of traditional music and dance performances, and furthermore suggests that the collectivist values of such cultures may be an essential part of the mechanisms by which synchrony galvanizes cooperative behaviors.*

Varvatsoulas, George. 2013. Kin Selection and Inclusive Fitness in Evolutionary Biology and Psychology, Part I. Could They Be Related to New Testament Explanations. *European Journal of Science and Theology* 9(4). 139–154.

*This paper examines the theories of inclusive fitness and kin selection and their relationship to New Testament considerations of cooperation and altruism. It discusses how these theories have been developed and what they represent in Evolutionary biology and Psychology. In Part I, the central concept in these theories is the idea of altruism or, in most cases, cooperation and reciprocity. In Evolutionary biology, these terms refer to favors bestowed upon individuals belonging to the same kin (e.g. kin selection). In evolutionary psychology, they refer to a caring disposition demonstrated to members of non-kin as well (e.g. reciprocity). In Evolutionary biology, altruism occurs so that the altruist's genes may be passed on to the progeny of relatives.*

Willard, Aiyana K & Ara Norenzayan. 2013. Cognitive biases explain religious belief, paranormal belief, and belief in life's purpose. *Cognition* 129(2). 379–391.  
doi:10.1016/j.cognition.2013.07.016.

*Cognitive theories of religion have postulated several cognitive biases that predispose human minds towards religious belief. However, to date, these hypotheses have not been tested simultaneously and in relation to each other, using an individual difference approach. A path model was used to assess the extent to which several interacting cognitive tendencies, namely mentalizing, mind-body dualism, teleological thinking, and anthropomorphism, as well as cultural exposure to religion, predict belief in God, paranormal beliefs and belief in life's purpose. Our model, based on two independent samples (n=492 and n=920) found that the previously*

*known relationship between mentalizing and belief is mediated by individual differences in dualism, and to a lesser extent by teleological thinking. Anthropomorphism was unrelated to religious belief, but was related to paranormal belief. Cultural exposure to religion (mostly Christianity) was negatively related to anthropomorphism, and was unrelated to any of the other cognitive tendencies. These patterns were robust for both men and women, and across at least two ethnic identifications. The data were most consistent with a path model suggesting that mentalizing comes first, which leads to dualism and teleology, which in turn lead to religious, paranormal, and life's-purpose beliefs. Alternative theoretical models were tested but did not find empirical support.*

### **1.3 SCIENTIFIC STUDY OF RELIGION: PSYCHOLOGY AND CULTURE**

Brelsford, Gina M. 2013. Sanctification and spiritual disclosure in parent-child relationships: Implications for family relationship quality. *Journal of Family Psychology* 27(4). 639–649. doi:10.1037/a0033424.

*Social scientific research on family life, religion, and spirituality tends to focus on global religiousness and spirituality with few studies seeking to understand interpersonal religious and spiritual contributors, namely sanctification and spiritual disclosure, from multiple family members' perspectives. This study explored 91 mother-college student and 64 father-college student dyads who rated their use of spiritual disclosure and theistic and nontheistic sanctification of the parent-child dyad in relation to parent-child relationship quality (e.g., parent-child relationship satisfaction and open communication). Results indicate significant positive links between higher levels of spiritual disclosure and greater theistic and nontheistic sanctification, for mothers, fathers, and their children. However, only greater nontheistic sanctification and higher levels spiritual disclosure were significantly related to increased parent-child relationship quality. Through use of Actor-Partner Interdependence Models (APIMs) results indicated unique contributions of spiritual disclosure to parent-child relationship quality above nontheistic sanctification for open communication in the family. However, full models, which included nontheistic sanctification and spiritual disclosure, predict college students' relationship satisfaction with their mothers and fathers. Implications for interpersonal religiousness and spirituality as contributors to familial relationship quality in research and practice are discussed.*

Daubenmier, Jennifer, Jocelyn Sze, Catherine E Kerr, Margaret E Kemeny & Wolf Mehling. 2013. Follow your breath: Respiratory interoceptive accuracy in experienced meditators. *Psychophysiology* 50(8). 777–789. doi:10.1111/psyp.12057.

*Attention to internal bodily sensations is a core feature of mindfulness meditation. Previous studies have not detected differences in interoceptive accuracy between meditators and nonmeditators on heartbeat detection and perception tasks. Researchers compared differences in respiratory interoceptive accuracy between meditators and nonmeditators in the ability to detect and discriminate respiratory resistive loads and sustain accurate perception of respiratory tidal volume during nondistracted and distracted conditions. Groups did not differ in overall performance on the detection and discrimination tasks; however, meditators were more accurate in discriminating the resistive load with the lowest ceiling effect. Meditators were also more accurate during the nondistracted tracking task at a lag time of 1 s following the breath. Results provide initial support for the notion that meditators have greater respiratory interoceptive accuracy compared to nonmeditators.*

Edwards, Korie L., Brad Christerson & Michael O. Emerson. 2013. Race, Religious Organizations, and Integration. *Annual Review of Sociology* 39(1). 211–228. doi:10.1146/annurev-soc-071312-145636.

*The authors of this article reviewed literature on multiracial religious organizations. Although scholars have paid attention to racial integration in congregations since the 1940s, only recently has there been a concerted focus on*

*this topic. This article, having reviewed the state of the field, argues that research on this topic must engage in three vital labors: explore more theory building or theory extension; interact with the broader field of sociology; and, explicate how religious racial diversity contributes to or dismantles systems of social stratification.*

- Grubbs, Joshua B., Julie J. Exline & W. Keith Campbell. 2013. I deserve better and God knows it! Psychological entitlement as a robust predictor of anger at God. *Psychology of Religion and Spirituality* 5(3). 192–200.  
doi:10.1037/a0032119.

*Anger at God has begun to receive empirical attention as a psychological construct. Studies have shown that anger at God is common, and is often associated with various indicators of psychological distress. Past research has demonstrated that multiple aspects of personality, including psychological entitlement, are related to anger at God. The goal of the present study was to evaluate whether psychological entitlement is robustly associated with anger at God, even when diverse aspects of personality are statistically controlled. The authors of this study tested this hypothesis in two groups: an undergraduate sample (n=413) and an adult web sample (n=148). Results provided strong, consistent support for our hypothesis: psychological entitlement consistently emerged as a unique predictor of anger at God, even when controlling for the Big Five factors of personality and narcissistic entitlement. These findings strongly demonstrate that psychological entitlement is a robust predictor of anger toward God, beyond previously established predictors.*

- Heiphetz, Larisa, Elizabeth S Spelke & Mahzarin R Banaji. 2013. Patterns of implicit and explicit attitudes in children and adults: Tests in the domain of religion. *Journal of Experimental Psychology: General* 142(3). 864–879.  
doi:10.1037/a0029714.

*Among the most replicated results in social cognition is the split between explicit and implicit attitudes; adults demonstrate weaker group-based preferences on explicit rather than implicit measures. However, the developmental origins of this pattern remain unclear. If implicit attitudes develop over a protracted period of time, children should not demonstrate the implicit preferences observed among adults. Additionally, unlike adults, children may report group-based preferences due to their lesser concern with social desirability. In Study 1, Christian adults showed the expected pattern of robust implicit preference but no explicit preference. In four additional experiments, 6- to 8-year-old children whose parents identified them as Christian viewed characters described as belonging to 2 starkly different religious groups (“strong religious difference”) or 2 relatively similar religious groups (“weak religious difference”). Participants then completed explicit and implicit (LAT) measures of attitude toward Christians and either Hindus (Study 2) or Jews (Studies 3-5). Three main results emerged. First, like adults, children showed significant implicit pro-Christian preferences across all studies. Second, unlike adults, children in the “strong religious difference” case reported preferences of approximately the same magnitude as their implicit attitudes (i.e., no dissociation). Third, even in the “weak religious difference” case, children showed implicit pro-Christian preferences (although, like adults, their explicit attitudes were not sensitive to intergroup difference). These data suggest that the seeds of implicit religious preferences are sown early and that children’s explicit preferences are influenced by the social distance between groups.*

- Jazaieri, Hooria, Geshe Thupten Jinpa, Kelly McGonigal, Erika L. Rosenberg, Joel Finkelstein, Emiliana Simon-Thomas, Margaret Cullen, James R. Doty, James J. Gross & Philippe R. Goldin. 2012. Enhancing Compassion: A Randomized Controlled Trial of a Compassion Cultivation Training Program. *Journal of Happiness Studies* 14(4). 1113–1126.  
doi:10.1007/s10902-012-9373-z.

*Psychosocial interventions often aim to alleviate negative emotional states. However, there is growing interest in cultivating positive emotional states and qualities. One particular target is compassion, but it is not yet clear whether compassion can be trained. A community sample of 100 adults was randomly assigned to a 9-week*

*compassion cultivation training (CCT) program (n=60) or a waitlist control condition (n=40). Before and after this 9-week period, participants completed self-report inventories that measured compassion for others, receiving compassion from others, and self-compassion. Compared to the waitlist control condition, CCT resulted in significant improvements in all three domains of compassion: compassion for others; receiving compassion from others; and, self-compassion. The amount of formal meditation practiced during CCT was associated with increased compassion for others. Specific domains of compassion can be intentionally cultivated in a training program.*

Pennycook, Gordon, James Allan Cheyne, Derek J. Koehler & Jonathan A. Fugelsang. 2013. Belief bias during reasoning among religious believers and skeptics. *Psychonomic Bulletin & Review* 20(4). 806–811.  
doi:10.3758/s13423-013-0394-3.

*This article describes evidence to show that religious skeptics, as compared to believers, are both more reflective and effective in logical reasoning tasks. While recent studies have reported a negative association between an analytic cognitive style and religiosity, they focused exclusively on accuracy, making it difficult to specify potential underlying cognitive mechanisms. The present study extends the previous research by assessing both performance and response times on quintessential logical reasoning problems (syllogisms). Those reporting more religious skepticism made fewer reasoning errors than did believers. This finding remained significant after controlling for general cognitive ability, time spent on the problems, and various demographic variables. Crucial for the purpose of exploring underlying mechanisms, response times indicated that skeptics also spent more time reasoning than did believers. This novel finding suggests a possible role of response slowing during analytic problem solving as a component of cognitive style that promotes overriding intuitive first impressions.*

Saslow, Laura R., Oliver P. John, Paul K. Piff, Robb Willer, Esther Wong, Emily A. Impett, Aleksandr Kogan, et al. 2013. The social significance of spirituality: New perspectives on the compassion–altruism relationship. *Psychology of Religion and Spirituality* 5(3). 201–218.  
doi:10.1037/a0031870.

*Researchers report on tests of a comprehensive model of spirituality, religiosity, compassion, and altruism, investigating the independent effects of spirituality and religiosity on compassion and altruism. They hypothesized that, even though spirituality and religiosity are closely related, spirituality and religiosity would have different and unique associations with compassion and altruism. In Study 1 and 2, the authors documented that more spiritual individuals experience and show greater compassion. The link between religiosity and compassion was no longer significant after controlling for the impact of spirituality. Compassion has the capacity to motivate people to transcend selfish motives and act altruistically toward strangers. Therefore, the authors reasoned that spirituality (but not religiosity) would predict altruistic behavior and that compassion would help explain this link. Indeed, in Studies 3, 4, and 5, it was found that more spiritual individuals behaved more altruistically in economic choice and decision-making tasks, and that the tendency of spiritual individuals to feel greater compassion mediated the spirituality-to-altruism relationship. In contrast, more religious participants did not consistently feel more compassion nor behave more altruistically. Moreover, in Studies 3 and 4 it was found that the broader traits of Agreeableness, Openness, and Extraversion did not help explain why more spiritual individuals behaved more altruistically. These findings argue that spirituality, separate from religiosity, is uniquely associated with greater compassion and enhanced altruism toward strangers.*

Schwab, Joseph R. 2013. Religious meaning making: Positioning identities through stories. *Psychology of Religion and Spirituality* 5(3). 219–226.  
doi:10.1037/a0031557.

*Religion and spirituality have often been areas of exploration in which individuals tell stories to others to explain their belief systems and religious practices. In order to better understand this meaning-making process, life story*



*narrative interviews were conducted in which individuals told stories about past experiences with religion and spirituality, constructing in the present interview context an identity in relation to these topics. Analysis of the discursive construction of identity shows that participants used specific linguistic devices to position between three contradictory qualities of identity: (a) continuity/change; (b) sameness/difference; and (c) agency/nonagency. The differing positions that individuals construct in relation to other individuals, institutions, and dominant discourses are presented, highlighting the different religious meaning-making strategies used in story constructions. The utility and value of microanalytic discursive investigations in the study of religion and spirituality are explained.*

Tongerren, Daryl R. Van, Joshua N. Hook & Don E. Davis. 2013. Defensive religion as a source of meaning in life: A dual mediational model. *Psychology of Religion and Spirituality* 5(3). 227–232. doi:10.1037/a0032695.

*Religion is a prominent source of meaning in life. However, the content of religious belief systems varies considerably. Previous research suggests that defensive religion serves an existential function but has yet to empirically substantiate its relation to existential outcomes. The present research extends previous work by (a) examining whether defensive religion serves as a source of meaning in life, and (b) identifying mediators of that relationship. The authors propose a dual mediation model of the meaning-serving function of defensive religiousness. Path analysis revealed that defensive religion was related to meaning in life, and this relationship was mediated by belief in literal immortality and religious commitment. These results suggest that defensive religious beliefs are a source of meaning in life.*

Vasilenko, Sara A., Christina I. Duntzee, Yao Zheng & Eva S. Lefkowitz. 2013. Testing two process models of religiosity and sexual behavior. *Journal of Adolescence* 36(4). 667–673. doi:10.1016/j.adolescence.2013.04.002.

*Adolescents who are more religious are less likely to have sex, but the process by which religiosity impacts sexual behavior is not well established. Researchers tested two potential processes, involving: (1) whether religiosity suppressed individuals' motivations to have sex for physical pleasure, and (2) whether individuals internalized their religions' teachings about sex for pleasure. College students (n=610) completed web surveys during their first three semesters. Religiosity did not moderate the association between students' motivations for sex for pleasure and sexual behavior. Motivations mediated the association between religiosity and sexual behavior, suggesting that religion does not override adolescents' existing motivations, but instead, religious adolescents internalize norms about sexual behavior.*

#### **1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY**

Gorski, Philip S. & Gülay Türkmen-Derivoğlu. 2013. Religion, Nationalism, and Violence: An Integrated Approach. *Annual Review of Sociology* 39(1). 193–210. doi:10.1146/annurev-soc-071312-145641.

*Scholarly work on the nexus of religion, nationalism, and violence is currently fragmented along disciplinary and theoretical lines. In sociology, history, and anthropology, a macro-culturalist approach reigns; in political science, economics, and international relations, a micro-rationalist approach is dominant. Recent attempts at a synthesis ignore religion or fold it into ethnicity. A coherent synthesis capable of adequately accounting for religious-nationalist violence must not only integrate micro and macro, cultural and strategic approaches; it must also include a meso-level of elite conflict and boundary maintenance and treat the religious field as potentially autonomous from the cultural field.*

Lee, Sherman A., Chelsea A. Reid, Stephen D. Short, Jeffrey A. Gibbons, Ruth Yeh & Matthew L. Campbell. 2013. Fear of Muslims: Psychometric evaluation of the Islamophobia Scale. *Psychology of Religion and Spirituality* 5(3). 157–171.

doi:10.1037/a0032117.

*The Islamophobia Scale (IS) is a self-report measure of an individual's fear-related attitudes toward Muslims and the religion of Islam. In order to further validate the psychometric properties of the IS, the current study conducted a confirmatory factor analysis and a test–retest reliability analysis (Study 1), a multitrait/multimethod (MTMM) study (Study 2), and an incremental validation study (Study 3). In addition, construct validity was examined across all of the studies using correlations with other instruments. The results demonstrated that the IS is reliable across time, is more factorially sound as a two-factor model, and is correlated with expected instruments. The MTMM demonstrated convergent and discriminant validity, rivaling forgiveness and right-wing authoritarianism (RWA) measures for the cognitive component, but not for the affective–behavioral component. However, the affective–behavioral component explained variance over and above RWA and Arab prejudice measures for sympathetic reactions to a suffering Muslim.*

Pyne, Derek. 2013. An afterlife capital model of religious choice. *Journal of Economic Behavior & Organization* 92. 32–44.

doi:10.1016/j.jebo.2013.05.002.

*This paper uses a modified version of the afterlife capital model to study religious choice. It compares a religious monopoly with various duopolies. The duopolies involve both exclusivist and non-exclusivist religions. Contrary to the supply side literature, it finds that religious choice does not necessarily increase religiosity and in some cases decreases it. It also finds that adopting exclusivist doctrines is a dominant strategy for a religion. Possible extensions of the framework to other issues in the economics of religion are also discussed.*

## PART 2. ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

### 2.1 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

Bodenlos, Jamie S., Marleah Noonan & Stephanie Y. Wells. 2013. Mindfulness and Alcohol Problems in College Students: The Mediating Effects of Stress. *Journal of American College Health* 61(6). 371–378.  
doi:10.1080/07448481.2013.805714.

*Using data from 310 American college students, researchers found that mindfulness-based stress reduction or other mindfulness programs may be useful in decreasing alcohol problems on college campuses via the effects on stress. Mindfulness was negatively correlated with alcohol problems and stress, whereas stress positively correlated with alcohol problems. Results implicated stress as fully mediating the relationship between mindfulness and alcohol problems. Alcohol problems were negatively correlated with the Acting With Awareness and Describing Experience facets of mindfulness.*

Hayward, R David & Neal Krause. 2013. Trajectories of disability in older adulthood and social support from a religious congregation: A growth curve analysis. *Journal of Behavioral Medicine* 36(4). 354–360.  
doi:10.1007/s10865-012-9430-4.

*This study examined the role of congregational support as a mechanism by which religious involvement may slow the decline of functional ability during late life. Disability was tracked longitudinally over a 4-year period in a national sample of 805 Black and White older adults from the religion, aging, and health survey. Individuals with more extensive disability reported receiving greater amounts of tangible support from their congregations. However, receiving higher levels of tangible support was also associated with a slower trajectory of increase in disability over time. The relationship between congregational support and disability did not differ significantly between Blacks and Whites. Results support the hypothesis that social support networks based in the religious group are responsible for some of the association between religious involvement and reduced risk of late life disability.*

Jankowski, Peter J, Sam A Hardy, Byron L Zamboanga & Lindsay S Ham. 2013. Religiousness and hazardous alcohol use: A conditional indirect effects model. *Journal of Adolescence* 36(4). 747–758.  
doi:10.1016/j.adolescence.2013.06.001.

*The current study examined a conditional indirect effects model of the association between religiousness and adolescents' hazardous alcohol use. In doing so, the authors responded to the need to include both mediators and moderators, and the need for theoretically informed models when examining religiousness and adolescents' alcohol use. The sample consisted of 383 adolescents, aged 15-18, who completed an online questionnaire. Results of structural equation modeling supported the proposed model. Religiousness was indirectly associated with hazardous alcohol use through both positive alcohol expectancy outcomes and negative alcohol expectancy valuations. Significant moderating effects for alcohol expectancy valuations on the association between alcohol expectancies and alcohol use were also found. The effects for alcohol expectancy valuations confirm valuations as a distinct construct to that of alcohol expectancy outcomes, and offer support for the protective role of internalized religiousness on adolescents' hazardous alcohol use as a function of expectancy valuations.*

Liu, Xinghua, Sisi Wang, Shaochen Chang, Wenjun Chen & Mei Si. 2013. Effect of Brief Mindfulness Intervention on Tolerance and Distress of Pain Induced by Cold-Pressor Task. *Stress and Health* 29(3). 199–204.  
doi:10.1002/smi.2446.

*The present research explored the effect of brief mindfulness intervention using pre-recorded instruction on pain experimentally induced by the cold-pressor task. The effects of the mindfulness strategy, the distraction strategy and spontaneous strategy, all through the instructions of pre-recorded voices, were compared. The subjects were drawn from healthy college students and randomly assigned to the aforementioned three groups. Results showed that, compared with using spontaneous strategies, the mindfulness intervention significantly improved the participants' pain tolerance and reduced their immersion distress. The distraction strategy also significantly improved the participants' pain tolerance. However, it did not have a significant effect on the participants' level of distress during the immersion period.*

Nkansah-Amankra, Stephen. 2013. Adolescent Suicidal Trajectories through Young Adulthood: Prospective Assessment of Religiosity and Psychosocial Factors among a Population-Based Sample in the United States. *Suicide & life-threatening behavior* 43(4). 439–459. doi:10.1111/sltb.12029.

*The main objective of the reported study was to identify distinct patterns of suicidal behaviors over the life course from adolescence to young adulthood and to determine influences of religiosity and other contextual factors on subgroup membership. Semi-parametric growth mixture models were used to identify distinct clusters of suicide ideation and suicide attempt trajectories, and generalized estimating equations were used to assess individual and contextual characteristics predicting suicidal behaviors in adolescence and in young adulthood. Distinct trajectories of suicide ideation and suicide attempt were identified for the total sample and for the gender groups. Results showed marked gender differences in the trajectory of suicide ideation and attempt patterns. Religiosity effects on suicidality were prominent in adolescence but not in young adulthood. Analysis showed that an important window of opportunity for preventing the escalation of suicidality exists during the early adolescent period, an opportunity that should be emphasized in interventions on adolescence suicide prevention.*

Préau, Marie, Anne Deborah Bouhnik & Anne Gaëlle Le Coroller Soriano. 2013. Two years after cancer diagnosis, what is the relationship between health-related quality of life, coping strategies and spirituality? *Psychology, Health & Medicine* 18(4). 375–386. doi:10.1080/13548506.2012.736622.

*This study aimed to analyze the relationship between spirituality, coping strategies and health-related quality of life (HRQL) among a large representative sample of patients two years after cancer diagnosis, in order to understand the dynamics of religious beliefs among cancer patients over the disease duration and to understand how these beliefs could be considered and utilized by patients as a source of comfort and support. Using a cross-sectional design, medical and self-reported data were collected by physicians and a patient telephone interview, respectively. Among 4,270 participants, 54.6% reported that spirituality was not a source of comfort at all during the disease, 23.4% stated that it was a source of moderate comfort and 22.5% a source of great comfort. After adjustment for age, gender, educational level and living in a couple, a multivariate analysis showed that a lower mental HRQL score was independently associated with finding moderate comfort in spirituality when compared with finding no comfort at all. After multiple adjustment, a lower score of physical HRQL and a higher score of fighting spirit were independently associated with having found great comfort in spirituality when compared with those who found no comfort at all. The results highlight not only the role spirituality may play in disease management and the extent to which it may be a valuable source of comfort during the follow-up of cancer patients, but also its role in the evaluation of the different dimensions of HRQL.*

Rakel, David, Marlon Mundt, Tola Ewers, Luke Fortney, Aleksandra Zgierska, Michele Gassman & Bruce Barrett. 2013. Value associated with mindfulness meditation and moderate exercise intervention in acute respiratory infection: The MEPARI Study. *Family Practice* 30(4). 390–397. doi:10.1093/fampra/cmt008.

*The purpose of this study was to assess costs related to acute respiratory infection (ARI), and to determine if mindfulness meditation or exercise can add value. One hundred and fifty-four adults were randomized to (i) wait-list control (ii) meditation or (iii) moderate intensity exercise. ARI-related costs were assessed through self-reported medication use, number of missed work days and medical visits. The total cost per subject for the control group was \$214, exercise \$136, and meditation \$65. The majority of cost savings was through a reduction in missed days of work. Exercise had the highest medication costs at \$16.60 compared with \$5.90 for meditation and \$7.20 for control. Combining these cost benefits with the improved outcomes in incidence, duration and severity seen with the Meditation or Exercise for Preventing Acute Respiratory Infection study, meditation and exercise add value for ARI. Compared with control, meditation had the greatest cost benefit. This savings is offset by the cost of the intervention (\$450/subject) that would negate the short-term but perhaps not long-term savings. Meditation and exercise add value to ARI-associated health-related costs with improved outcomes.*

Rosa, Maria Inês da, Fabio Rosa Silva, Bruno Rosa Silva, Luciana Carvalho Costa, Angela Mendes Bergamo, Napoleão Chiaramonte Silva, Lidia Rosi de Freitas Medeiros, Iara Denise Endruweit Battisti & Rafael Azevedo. 2013. A randomized clinical trial on the effects of remote intercessory prayer in the adverse outcomes of pregnancies. *Ciência & saúde coletiva* 18(8). 2379–2384.

*This article investigated whether intercessory prayer (IP) influences the adverse outcomes of pregnancies. A double-blind, randomized clinical trial was conducted with 564 pregnant women attending a prenatal public health care service. The women were randomly assigned to an IP group or to a control group (n=289 per group). They were simultaneously and randomly assigned to practice prayer off-site or not. The following parameters were evaluated: Apgar scores, type of delivery and birth weight. The mean age of the women was 25.1 years of age, and the average gestational age was 23.4 weeks. The average number of years of schooling for the women was 8.1 years. The women in the IP and control groups presented a similar number of adverse medical events with non-significant p values. No significant differences were detected in the frequency of adverse outcomes in pregnant women who practiced IP and those in the control group.*

Ross, Alyson, Erika Friedmann, Margaret Bevans & Sue Thomas. 2013. National survey of yoga practitioners: Mental and physical health benefits. *Complementary Therapies in Medicine* 21(4). 313–323.  
doi:10.1016/j.ctim.2013.04.001.

*Completed online surveys (n=1,045) from individuals who practice yoga were analyzed to describe the participants' yoga practice and health characteristics, and to explore their beliefs regarding the effects of their yoga practice on their health. The researchers found that, while individuals who practice yoga are not free of health concerns, most believe that their health improved because of yoga. The more the participants practiced yoga, whether in years or in amount of class or home practice, the higher their odds of believing yoga improved their health.*

Tang, Yi-Yuan, Rongxiang Tang & Michael I Posner. 2013. Brief meditation training induces smoking reduction. *Proceedings of the National Academy of Sciences of the United States of America* 110(34). 13971–13975.  
doi:10.1073/pnas.1311887110.

*The authors recruited participants interested in general stress reduction and randomly assigned them to meditation training or a relaxation training control. Among smokers, 2 weeks of meditation training (5 h in total) produced a significant reduction in smoking of 60%; no reduction was found in the relaxation control. Resting-state brain scans showed increased activity for the meditation group in the anterior cingulate and prefrontal cortex, brain areas related to self-control. The authors conclude that the results suggest that brief meditation training improves self-control capacity and reduces smoking.*

## 2.2 SPIRITUALITY & HEALTH: MENTAL HEALTH

Angelova, Rosa Angelova & Virginia Utermohlen. 2013. Culture-specific influences on body image and eating distress in a sample of urban Bulgarian women: The roles of faith and traditional fasting. *Eating Behaviors* 14(3). 386–389.  
doi:10.1016/j.eatbeh.2013.05.005.

*The purpose of this study was to examine the influence of local culture on body image and eating distress in a sample of urban Bulgarian women. Specifically, the authors focused on two affiliated factors unique to the Bulgarian context: faith and traditional fasting. Findings revealed that women could be divided into two groups who behaved differently based on the severity of their eating disorder symptomatology. For women with higher EAT-40 scores (i.e., vulnerable women), faith seemed to have harmful effects, perhaps by virtue of motivating or reinforcing asceticism and dietary restraint. For these women fasting was likely but one strategy for weight management and the achievement of a desired thin figure consistent with the socio-cultural models. In contrast, among women with lower EAT-40 scores, faith seemed to have a protective effect against excessive dieting. These women were more likely to use fasting in the way intended by religious scripture, for faith-related reasons that have nothing to do with body image. This study contributes to the literature by emphasizing the importance of culturally unique factors that may be implicated in the relationship between body dissatisfaction and overt eating distress in the trans-cultural context.*

Benzo, Roberto P. 2013. Mindfulness and motivational interviewing: Two candidate methods for promoting self-management. *Chronic Respiratory Disease* 10(3). 175–182.  
doi:10.1177/1479972313497372.

*This manuscript describes two pilot qualitative studies carried out in patients with severe chronic obstructive pulmonary disease (COPD) aimed to engage the patient inner experience and promote self-management: a trial testing motivational interviewing (MI) as one style of helping patients with severe COPD make changes in their behavior and, second, a trial testing a mindfulness-based intervention. The MI study consisted of a 3-month program of weekly coaching phone calls after one face-to-face visit. The following themes were outstanding: patients value the supportive communication with coach and believe the MI-based coaching created increased level of awareness and accountability. They perceived an increase in physical activity and reported “feeling better” or other benefits not directly related to exercise. The Mindfulness for Health Program was a mandatory 8-week program that consisted on 2-hour classes aimed to cultivate nonjudgmental attention in the moment (through different meditative practices and sharing) plus monthly face-to-face encounters aimed to sustain practice and sharing of life experiences for 1 year. The following themes (at 1 year) were outstanding: appreciating life by seeing hardships as opportunities, valuing the self through compassion and awareness, cultivating connectedness with others, acquiring joy, and adopting healthy behaviors.*

Delgado-Guay, Marvin Omar, Henrique A. Parsons, David Hui, Maxine G. De la Cruz, Steven Thorney & Eduardo Bruera. 2013. Spirituality, religiosity, and spiritual pain among caregivers of patients with advanced cancer. *The American Journal of Hospice & Palliative Care* 30(5). 455–461.  
doi:10.1177/1049909112458030.

*Researchers interviewed 43 caregivers of patients with advanced cancer in a palliative care outpatient clinic. The majority of caregivers of patients with advanced cancer considered themselves spiritual (100%) and religious (98%). Despite this, there is high prevalence of spiritual pain in this population (58%). Caregivers with spiritual pain experienced worse psychological distress and worse QOL than those who did not have spiritual pain.*

Farias, Miguel, Raphael Underwood & Gordon Claridge. 2013. Unusual but sound minds: Mental health indicators in spiritual individuals. *British Journal of Psychology (London, England: 1953)* 104(3). 364–381.

doi:10.1111/j.2044-8295.2012.02128.x.

*Previous research has linked certain types of modern spirituality, including New Age and Pagan, with either benign schizotypy or insecure attachment. While the first view emphasizes a positive aspect of spiritual believers' mental health (benign schizotypy), the second view emphasizes a negative aspect, namely the unhealthy emotional compensation associated with an insecure attachment style. This study addresses these two conflicting views by comparing a sample of modern spiritual individuals (n=114) with a contrast group of traditional religious believers (n=86). Measures of schizotypy and attachment style were combined with mental health scales of anxiety and depression. Death anxiety was also assessed to determine whether modern spiritual beliefs fulfilled a similar function as traditional religious beliefs in the reduction of existential threat. Results support a psychological contiguity between traditional and modern spiritual believers and reinforce the need to de-stigmatize spiritual ideas and experiences. Further analysis shows that unusual experiences and ideas are the major predictor of engagement in modern spiritual practices. Anxiety, depression variables, and insecure attachment were not significant predictors of spirituality or correlated with them; on the other hand, the results show that spiritual believers report high social support satisfaction and this variable predicts involvement in modern spirituality. Further, spiritual practices were negatively correlated with and negatively predicted by death anxiety scores. Overall, the results strengthen the association between modern spirituality, good mental health, and general well-being.*

Grozdan, Ana Minodora, Rodica Ghiuru, Cristina-Maria Gavrilescu, George Ioan Pandelescu, Roxana Chirita, Florina Georgeta Popescu & Costinela Georgescu. 2013. Correlation Between the Metabolic Syndrome and Depression in Regard of Polypathology and Spiritual View. *European Journal of Science and Theology* 9(4). 183–192.

*Any disease can be regarded as a result of the influence of external factors, but also as a spiritual imbalance of the human being. The link between the metabolic syndrome and depression on the basis of this presumption was studied, considering the fact that the imbalance of the so called "matter" may have the origin in a spiritual imbalance and vice versa. In order to study the correlation between metabolic syndrome and depression, 66 patients with metabolic syndrome were chosen, to whom there were applied questionnaires for depression. The preliminary data showed that depression (of different degrees) was associated to the 56 out of the 66 patients with metabolic syndrome (84.84%). The obese patients were the most affected suggesting the important part of the negative feelings (of unacceptance and self-rejection) played in their case. Helping patients with these associated pathologies requires a very complex approach, based on a interdisciplinary thinking and acting. The authors conclude that different medical specialists are needed, as well as a psychologist and confessor, because cultivating Christian virtues will help patients fight stress, increase faith and love. Continuous prayer will balance their inner world, recreating it in health, peace and harmony.*

Himle, Joseph A., Linda M. Chatters, Robert Joseph Taylor & Ann Nguyen. 2013. The relationship between obsessive-compulsive disorder and religious faith: Clinical characteristics and implications for treatment. *Spirituality in Clinical Practice* 1(S). 53–70.  
doi:10.1037/2326-4500.1.S.53.

*This paper explores the relationship between religion and obsessive-compulsive disorder (OCD), with particular interest in religion's possible influence in the development of OCD and its impact on treatment outcome. The paper begins with a review of theoretical and research literatures concerning religious involvement, research evidence linking religious involvement and physical and mental health, and theoretical linkages supporting both positive and negative religious effects on health. Following this, a general overview and description of OCD and information concerning the prevalence and incidence of religiously based OCD is provided. Next, extant research linking religion and OCD is presented. Information relevant to the clinical treatment of OCD with religious content is discussed. Finally, practice implications for clinicians and clergy are provided.*

Hinton, Devon E., Rebecca A. Ojserkis, Baland Jalal, Sonith Peou & Stefan G Hofmann. 2013. Loving-kindness in the treatment of traumatized refugees and minority groups: A typology of mindfulness and the nodal network model of affect and affect regulation. *Journal of Clinical Psychology* 69(8). 817–828.  
doi:10.1002/jclp.22017.

*This article discusses how loving-kindness can be used to treat traumatized refugees and minority groups, focusing on examples from our treatment, culturally adapted cognitive-behavioral therapy (CA-CBT). To show how loving-kindness can be integrated with other mindfulness interventions, and why loving-kindness should be an effective therapeutic technique, the authors present a typology of mindfulness states and the Nodal Network Model (NNM) of Affect and Affect Regulation. They argue that mindfulness techniques such as loving-kindness are therapeutic for refugees and minority populations because of their potential for increasing emotional flexibility, decreasing rumination, serving as emotional regulation techniques, and forming part of a new adaptive processing mode centered on psychological flexibility. A case study is presented to illustrate the clinical use of loving-kindness within the context of CA-CBT.*

Hoge, Elizabeth A., Eric Bui, Luana Marques, Christina A. Metcalf, Laura K. Morris, Donald J. Robinaugh, John J. Worthington, Mark H. Pollack & Naomi M. Simon. 2013. Randomized controlled trial of mindfulness meditation for generalized anxiety disorder: effects on anxiety and stress reactivity. *The Journal of Clinical Psychiatry* 74(8). 786–792.  
doi:10.4088/JCP.12m08083.

*This article reports on the first randomized, controlled trial comparing the Mindfulness-Based Stress Reduction (MBSR) program with an active control for generalized anxiety disorder (GAD), a disorder characterized by chronic worry and physiologic hyper-arousal symptoms. Ninety-three individuals with DSM-IV-diagnosed GAD were randomly assigned to an 8-week group intervention with MBSR or to an attention control. A modified intent-to-treat analysis including participants who completed at least 1 session of MBSR (n=48) or Stress Management Education (SME; n=41) showed that both interventions led to significant reductions in anxiety scores at endpoint, but did not significantly differ. MBSR, however, was associated with a significantly greater reduction in anxiety. MBSR was also associated with greater reductions than SME in anxiety and distress ratings and a greater increase in positive self-statements.*

Kearney, David J., Carol A. Malte, Carolyn McManus, Michelle E. Martinez, Ben Felleman & Tracy L. Simpson. 2013. Loving-kindness meditation for posttraumatic stress disorder: A pilot study. *Journal of Traumatic Stress* 26(4). 426–434.  
doi:10.1002/jts.21832.

*Researchers undertook an open pilot trial of loving-kindness meditation for veterans with posttraumatic stress disorder (PTSD). Measures of PTSD, depression, self-compassion, and mindfulness were obtained at baseline, after a 12-week loving-kindness meditation course, and 3 months later. Following intervention, self-compassion increased with large effect sizes and mindfulness increased with medium to large effect sizes. A large effect size was found for PTSD symptoms at 3-month follow-up, and a medium effect size was found for depression at 3-month follow-up. There was evidence of mediation of reductions in PTSD symptoms and depression by enhanced self-compassion. Overall, loving-kindness meditation appeared safe and acceptable and was associated with reduced symptoms of PTSD and depression. Additional study of loving-kindness meditation for PTSD is warranted to determine whether the changes seen are due to the loving-kindness meditation intervention versus other influences, including concurrent receipt of other treatments.*

Khoury, Bassam, Tania Lecomte, Guillaume Fortin, Marjolaine Masse, Phillip Therien, Vanessa Bouchard, Marie-Andrée Chapleau, Karine Paquin & Stefan G. Hofmann. 2013. Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review* 33(6). 763–771.



doi:10.1016/j.cpr.2013.05.005.

*Researchers conducted a comprehensive effect-size analysis to evaluate the efficacy of mindfulness-based therapy (MBT), given that the existing reviews report inconsistent findings. A literature review of 209 studies (n=12,145) found that MBT is an effective treatment for a variety of psychological problems, and is especially effective for reducing anxiety, depression, and stress.*

Kim, Yeon Hee, Hwa Jung Kim, Seung Do Ahn, Yun Jeong Seo & So Hee Kim. 2013. Effects of meditation on anxiety, depression, fatigue, and quality of life of women undergoing radiation therapy for breast cancer. *Complementary Therapies in Medicine* 21(4). 379–387.

doi:10.1016/j.ctim.2013.06.005.

*Researchers undertook a study to investigate the effects of meditation on anxiety, depression, fatigue, and quality of life in 102 women who are receiving radiation therapy for breast cancer. Patients were randomized into equally assigned meditation control groups, with each group consisting of 51 patients. The test group received a total of 12 meditation therapy sessions during their 6-week radiation therapy period, and the control group underwent only a conventional radiation therapy. Following intervention, the breast cancer patients who received meditation therapy compared with the nonintervention group saw improvements in reduction of anxiety, fatigue, and improvement in global quality of life.*

Lechner, Clemens M., Martin J. Tomasik, Rainer K. Silbereisen & Jacek Wasilewski. 2013. Exploring the stress-buffering effects of religiousness in relation to social and economic change: Evidence from Poland. *Psychology of Religion and Spirituality* 5(3). 145–156.

doi:10.1037/a0030738.

*Religiousness has been found to act as a protective factor against the adverse effects of stressors originating from a variety of sources. Despite ample precedent in sociological theories of religion, however, the potential stress-buffering role of religiousness in relation to stressors arising from macrolevel societal trends has not received empirical scrutiny. Recent psychological conceptualizations of social and economic change (SEC) suggest that such change manifests itself in people's lives in the form of perceived demands that act as individual-level stressors and impinge on subjective well-being (SWB). Researchers thus examined whether religious attendance and subjective religiosity buffered the negative association between perceived work-related demands of SEC and depressive symptoms, life satisfaction, and work satisfaction in a sample of 1,581 Polish adolescents and adults aged 16 to 46 years. Analyses revealed that both dimensions of religiousness were positively related to SWB and buffered the impact of work-related demands on depressive symptoms. No buffering effect of religiousness on either life or work satisfaction was found. Taken together, results partly confirm religiousness as a protective factor for SWB in relation to SEC, but underscore the importance of taking the multifaceted nature of the construct into account in evaluating the interplay of stressors and religiousness.*

Lo, Herman H. M., Siu Man Ng, Cecilia L. W. Chan, K. F. Lam & Bobo H. P. Lau. 2013. The Chinese medicine construct “stagnation” in mind-body connection mediates the effects of mindfulness training on depression and anxiety. *Complementary therapies in medicine* 21(4). 348–357.

doi:10.1016/j.ctim.2013.05.008.

*For this study, individuals with depressive and anxiety symptoms (n=82) were randomized to either a Compassion-Mindfulness Therapy (C-MT) program or a waitlist control condition. The effect of stagnation, a concept from Chinese medicine, as a mediator was investigated for dependent variables including depression, anxiety, and other physical and mental health variables. Compared with the participants in the control group, those who completed C-MT demonstrated significant decreases in depression, anxiety, stagnation, and other body-mind-spirit well-being measures. After entering the change in stagnation as the mediator, the effect of treatment reduced: depression, anxiety, and same patterns in other three secondary measures.*

- Morris, Bronwyn A, Donald W Hadley & Laura M Koehly. 2013. The role of religious and existential well-being in families with Lynch syndrome: prevention, family communication, and psychosocial adjustment. *Journal of Genetic Counseling* 22(4). 482–491.  
doi:10.1007/s10897-013-9571-9.

*This study explored the role of religious (RWB) and existential well-being (EWB) on psychosocial factors, support network characteristics, and screening practices in families with Lynch syndrome, also referred to as hereditary nonpolyposis colon cancer (HNPCC). Participants were individuals with Lynch syndrome associated cancers and their first-degree relatives at risk of inheriting an identified deleterious mutation. Analyses considered both family RWB and EWB norms and individual deviations from that norm. Higher family RWB was associated with increased depressive symptoms and avoidant cognitions. Higher family EWB was related to decreased depression symptoms. Higher family EWB was associated with fecal occult blood testing, and family communication about genetic counselling and testing. Analyses pointed to individual effects of EWB above and beyond family-level effects. Individuals with lower EWB than their family had lower perceived risk for colorectal cancer, communicated disease risk information to less family members, and were less likely to undergo recent colonoscopies. Participants with lower EWB than their family also had higher cancer worry and increased depressive symptoms. Findings indicate the importance of assessing individuals within the context of their family network and being aware of family characteristics which may impact individual adjustment to disease risk.*

- Rieben, Isabelle, Sylvia Mohr, Laurence Borrás, Christiane Gillieron, Pierre-Yves Brandt, Nader Perroud & Philippe Huguelet. 2013. A thematic analysis of delusion with religious contents in schizophrenia: Open, closed, and mixed dynamics. *The Journal of Nervous and Mental Disease* 201(8). 665–673.  
doi:10.1097/NMD.0b013e31829c5073.

*The aim of the present study was to elicit how patients with delusions with religious contents conceptualized or experienced their spirituality and religiousness. Sixty-two patients with present or past religious delusions went through semi-structured interviews, which were analyzed using the three coding steps described in the grounded theory. Three major themes were found in religious delusions: “spiritual identity,” “meaning of illness,” and “spiritual figures.” One higher-order concept was found: “structure of beliefs.” The authors identified dynamics that put these personal beliefs into a constant reconstruction through interaction with the world and others (i.e., open dynamics) and conversely structural dynamics that created a complete rupture with the surrounding world and others (i.e., closed structural dynamics); those dynamics may coexist. These analyses may help to identify psychological functions of delusions with religious content and, therefore, to better conceptualize interventions when dealing with it in psychotherapy.*

- Shannon, Donna K., K. Elizabeth Oakes, N. J. Scheers, Frank J. Richardson & Aaron B. Stills. 2013. Religious beliefs as moderator of exposure to violence in African American adolescents. *Psychology of Religion and Spirituality* 5(3). 172–181.  
doi:10.1037/a0030879.

*This study examined how spiritual beliefs and experiences moderate the effect of exposure to violence in the community on psychological well-being for urban African-American adolescents. Participants consisted of 214 African-American adolescents attending an inner city parochial high school in the Mid-Atlantic region of the United States. In this study, the effects of exposure to violence in the community were moderated by daily spiritual experiences for satisfaction with life. Additionally, daily spiritual experiences and positive religious coping contributed incremental significant variance to satisfaction with life and positive affect over and above demographic factors and the perception of family support. The religious variables in this study did not contribute significantly to negative psychological outcomes. These overall findings suggest a significant relationship between spirituality and positive psychological outcomes for urban African-American adolescents exposed to violence in the community.*

- Vujanovic, Anka A., Barbara Niles, Ashley Pietrefesa, Stefan K. Schmertz & Carrie M. Potter. 2013. Mindfulness in the treatment of posttraumatic stress disorder among military veterans. *Spirituality in Clinical Practice* 1(S). 15–25.  
doi:10.1037/2326-4500.1.S.15.

*How might a practice that has its roots in contemplative traditions, seeking heightened awareness through meditation, apply to trauma-related mental health struggles among military veterans? In recent years, clinicians and researchers have observed the increasing presence of mindfulness in Western mental health treatment programs. Mindfulness is about bringing an attitude of curiosity and compassion to present experience. This review addresses the above question in a detailed manner with an emphasis on the treatment of military veterans suffering from posttraumatic stress disorder (PTSD) and related psychopathology. In addition, the integration of mindfulness with current empirically supported treatments for PTSD is discussed with specific attention to directions for future research in this area.*

- Wahl, Karina, Jan O. Huelle, Bartosz Zurowski & Andreas Kordon. 2012. Managing Obsessive Thoughts During Brief Exposure: An Experimental Study Comparing Mindfulness-Based Strategies and Distraction in Obsessive–Compulsive Disorder. *Cognitive Therapy and Research* 37(4). 752–761.  
doi:10.1007/s10608-012-9503-2.

*In mindful meditation, negative thoughts such as obsessive thoughts are observed simply as mental events that come and go, rather than as accurate reflections of reality. This experimental study tested the efficacy of a mindfulness-based instruction compared to distraction during brief exposure to obsessive thoughts in obsessive-compulsive patients. Thirty patients diagnosed with obsessive-compulsive disorder were asked to listen to their own obsessive thoughts through headphones during three time phases: at baseline, during an experimental condition and during a return to baseline. During the experimental condition, they were instructed to deal with their obsessive thoughts using either a mindfulness-based strategy or a distraction strategy (random allocation). Results showed that a mindfulness-based strategy reduced anxiety and urge to neutralize from first to second baseline, whereas a distraction strategy did not. Data offer initial evidence that using mindfulness-based metaphors during brief exposure with obsessive thoughts may be a useful alternative to distraction.*

- Weyand, Chelsea, Liz O’Laughlin & Patrick Bennett. 2013. Dimensions of religiousness that influence parenting. *Psychology of Religion and Spirituality* 5(3). 182–191.  
doi:10.1037/a0030627.

*Parental religiosity has generally been associated with greater child and parent functioning; however, it has been suggested that when parenting a child with behavior problems, some aspects of parental religiousness (e.g., negative religious coping, biblical conservatism) might decrease functioning. The influence of religious variables (sanctification of parenting, negative and positive religious coping, biblical conservatism) on the relationship between child behavior problems and parental stress was examined, as was the sense of competence among parents (n=139) of children ages 3–12 years. Parents high in sanctification showed little change in parental stress as severity of behavior problems increased. Similarly, positive religious coping was found to play a protective role in the relationship between behavior problems and parental sense of competence. However, positive religious coping was related to increased stress in parents of children with few behavior problems and was not associated with any decrease in stress for parents of children with more difficult behavior. Parents of children with greater perceived behavior problems reported significantly higher sanctification of parenting and parental stress, as well as lesser use of positive religious coping and lower sense of competence. This study provides evidence to suggest that parental religiousness can have either a positive or negative influence on parental functioning, depending on parenting circumstances and personal perceptions of God and religion.*

## 2.3 SPIRITUALITY & HEALTH: METHOD AND THEORY

Ben-Arye, Eran, Dov Steinmetz & Jeanette Ezzo. 2013. Two women and cancer: The need for addressing spiritual well-being in cancer care. *Spirituality in Clinical Practice* 1(S). 71–77.  
doi:10.1037/2326-4500.1.S.71.

*Spiritual well-being is a concept derived from the holistic approach to healing, in which a person is viewed as a multifaceted totality of body, mind, and spirit. Two stories are presented of women diagnosed with cancer who attended a clinic that integrates complementary and family medicine. Both patients' stories reflect their intention and desire for improved spiritual well-being as part of coping with cancer, and through their stories, the need for addressing spiritual well-being in cancer care is well illustrated. An integrative biopsychosocial-spiritual approach is presented.*

Birx, Ellen. 2013. A comparative concept analysis of centring vs. opening meditation processes in health care. *Journal of Advanced Nursing* 69(8). 1895–1904.  
doi:10.1111/jan.12032.

*This literature review aimed to report an analysis and comparison of the concepts centering and opening meditation processes in health care. These two concepts are included in nursing theories and frequently recommended in health care for stress management. These meditation processes are integrated into emerging psychotherapy approaches and there is a rapidly expanding body of neuroscience research distinguishing brain activity associated with different types of meditation. Analysis of data sources shows that centering and opening are similar in that they both involve awareness in the present moment; both use a gentle, effortless approach; and both have a calming effect. Key differences include centering's focus on the individual's inner experience compared with the non-dual, spacious awareness of opening.*

Delaney, Harold D., William R. Miller & Ana M. Bisonó. 2013. Religiosity and spirituality among psychologists: A survey of clinician members of the American Psychological Association. *Spirituality in Clinical Practice* 1(S). 95–106.  
doi:10.1037/2326.4500.1.S.95.

*Has the disparity in religiosity between clinicians and the general public decreased in recent years? Clinician members of the American Psychological Association (APA) were surveyed regarding their religion and spirituality. The survey was sent to 489 randomly selected members of APA, of whom 258 (53%) replied. Items were drawn from prior surveys to allow this APA sample to be compared with the general U.S. population and with an earlier survey of psychotherapists by A. E. Bergin and J. P. Jensen (1990). Although no less religious than the previous sample, psychologists remained far less religious than the clients they serve. The vast majority, however, regarded religion as beneficial (82%) rather than harmful (7%) to mental health.*

Ezenkwele, Ugo A. & Gholamreza S. Roodsari. 2013. Cultural Competencies in Emergency Medicine: Caring for Muslim-American Patients from the Middle East. *The Journal of Emergency Medicine* 45(2). 168–174.  
doi:10.1016/j.jemermed.2012.11.077.

*The authors present a succinct guideline that can be used by Emergency Care providers to overcome cultural barriers to providing care for Muslim-American patients from the Middle East. The important cultural factors that affect Emergency care delivery to this population include norms of modesty; gender role; the concept of God's will and its role in health, family structure, prohibition of premarital and extramarital sex; Islamic rituals of praying and fasting; Islamic dietary codes; and rules related to religious cleanliness.*

Holt, Cheryl L, Mark S Litaker, Isabel C Scarinci, Katrina J Debnam, Chastity McDavid, Sandre F McNeal, Mohamad A Eloubeidi, Martha Crowther, John Bolland & Michelle Y Martin. 2013.

Spiritually based intervention to increase colorectal cancer screening among African Americans: Screening and theory-based outcomes from a randomized trial. *Health Education & Behavior* 40(4). 458–468.

doi:10.1177/1090198112459651.

*This study consisted of a theory-driven (health belief model), spiritually-based intervention aimed at increasing screening for colorectal cancer among African Americans through a community health advisor-led educational series in 16 churches. Using a randomized design, churches were assigned to receive either the spiritually based intervention or a nonspiritual comparison, which was the same in every way except that it did not contain spiritual/religious content and themes. Trained and certified peer community health advisors in each church led a series of two group educational sessions on colorectal cancer and screening. Study enrollees completed a baseline, 1-month, and 12-month follow-up survey at their churches. The interventions had significant pre-post impact on awareness of all four screening modalities, and self-report receipt of fecal occult blood test, flexible sigmoidoscopy, and colonoscopy. There were no significant study group differences in study outcomes, with the exception of fecal occult blood test utilization, whereas those in the nonspiritual intervention reported significantly greater pre-post change. Both of these community-engaged, theory-driven, culturally relevant approaches to increasing colorectal cancer awareness and screening appeared to have an impact on study outcomes. Although adding spiritual/religious themes to the intervention was appealing to the audience, it may not result in increased intervention efficacy.*

Hudlicka, Eva. 2013. Virtual training and coaching of health behavior: Example from mindfulness meditation training. *Patient Education and Counseling* 92(2). 160–166.

doi:10.1016/j.pec.2013.05.007.

*The author implemented a computer-based virtual coach to provide mindfulness training and coaching via mixed initiative, text-based, natural language dialog with the student, and emphasizing affect-adaptive interaction. Findings from a pilot evaluation study indicate that the coach-based training is more effective in helping students establish a regular practice than self-administered training using written and audio materials. The coached group also appeared to be in more advanced stages of change in terms of the transtheoretical model, and have a higher sense of self-efficacy regarding establishment of a regular mindfulness practice.*

Magaldi-Dopman, Danielle & Jennie Park-Taylor. 2013. Sacred adolescence: Practical suggestions for psychologists working with adolescents' religious and spiritual identity. *Spirituality in Clinical Practice* 1(S). 40–52.

doi:10.1037/2326-4500.1.S.40.

*This article explores the relevance of adolescents' spiritual, religious, atheist, and agnostic identity development in the therapy process and the potential difficulties that psychologists face in effectively working with adolescents around spiritual/religious issues. Psychologists' limited personal and professional opportunities for increasing their self-awareness around their spirituality and religion may impact their ability to adequately address issues related to the spiritual/religious identity development of their adolescent clients. Psychologists' limited knowledge, awareness, and skills in reference to the process of adolescents' spiritual/religious/nonreligious identity may result in their neglect of spiritual/religious issues in psychotherapy. In such cases, adolescent clients may feel unsure if therapy is a safe place to discuss spiritual, religious, atheist, agnostic questions or issues that arise for them. The article concludes with practical suggestions that are framed around six critical concerns that are relevant for adolescents: (a) the relationship between spirituality/religion and health and coping, (b) negotiating multiple social identities, (c) religious cults, (d) religious conversion experiences, (e) anti-religious sentiment or religious discrimination, and (f) ethical considerations.*

Smolak, A., R. E. Gearing, D. Alonzo, S. Baldwin, S. Harmon & K. McHugh. 2013. Social support and religion: Mental health service use and treatment of schizophrenia. *Community Mental Health Journal* 49(4). 444–450.

doi:10.1007/s10597-012-9536-8.

*To better identify and understand the influence of families, professionals and community members on individual's treatment for schizophrenia, this review paper examines: (1) the religious perceptions of families, professionals, and the public towards schizophrenia; (2) religious perceptions of the etiology of schizophrenia; (3) how others perceive religion as a coping mechanism; and (4) how religion influences treatment engagement and help-seeking behaviors. Forty-three original research studies met the inclusion criteria. This study found that religious beliefs influence the treatment of schizophrenia in the following ways: Religious themes were positively associated with coping, treatment engagement and help-seeking behavior. Evidence of religious underpinnings was found in perceptions of etiology. The findings also indicate that there is often both a preference among family members and caregivers to utilize religious-based professionals and caution toward mental health professionals. Researchers and professionals may find avenues for improving treatment through examining the interaction of religious and schizophrenia at the social support level.*

Sperry, Len. 2013. Psychotherapy sensitive to spiritual issues: A postmaterialist psychology perspective and developmental approach. *Spirituality in Clinical Practice* 1(S). 4–14.

doi:10.1037/2326-4500.1.S.4.

*Like many psychological topics, psychotherapy that is sensitive to spiritual issues can be viewed from both materialist and post-materialist perspectives. After a brief discussion of some scientific and philosophical considerations distinguishing materialist and post-materialist views, a 4-level model of consciousness and its theoretical and practice implications for spirituality sensitive psychotherapy is described. Well-being therapy, which reflects a post-materialist perspective, is described and illustrated with case material.*

Steffen, Vibeke. 2013. Crisis as deferred closure: Clairvoyant counselling in contemporary Danish society. *Anthropology & Medicine* 20(2). 190–202.

doi:10.1080/13648470.2013.800806.

*Clairvoyance, spiritualism and healing are popular ways of seeking guidance and personal development in contemporary Danish society. Although few Danes are self-declared spiritualists, many believe in the existence of ghosts and the ability of clairvoyants to communicate with the departed, and the market of alternative therapies offers a number of mediumistic activities. In anthropological writings, such activities are often associated with crisis and the re-establishment of order. The concept of crisis refers to a time of great difficulty or danger or when an important decision must be made. Looking at the people who seek guidance from the spiritual world, however, both the implication of a limited time span, the idea of great difficulty, and the indication of decision-making may be challenged. In some cases, spirit consultations initiate processes of new definitions and classifications of problems, but in others they just seem to confirm old problems in an ongoing effort to cope with the difficulties of everyday situations. The aim of this paper is to explore the diversity of outcomes from clairvoyance and spiritualist consultations. Focusing on the particularity of specific cases, the author wants to demonstrate the analytical implications of seeing these activities through the lens of crisis. Instead of pushing the framework of crisis, meaning and order, the author suggests a rethinking of spiritual healing as an integrated rather than extraordinary way of dealing with the challenges of everyday life, and of crisis as a context for the deferred closure of insecurity.*

Steiner, Naomi J., Tahnee K. Sidhu, Patricia G. Pop, Elizabeth C. Frenette & Ellen C. Perrin. 2013. Yoga in an Urban School for Children with Emotional and Behavioral Disorders: A Feasibility Study. *Journal of Child and Family Studies* 22(6). 815–826.

doi:10.1007/s10826-012-9636-7.

*For this study, 37 children with emotional and behavioral disorder (EBD) in an urban school completed a yoga intervention in small groups (7-10 students) twice per week for 3½ months. Average attendance for the yoga sessions was 90%. Eighty percent of responders described being very satisfied with the intervention. Teachers reported improved attention in class and adaptive skills, and reduced depressive symptoms, behavioral symptoms, and internalizing symptoms. No significant changes were found in the parent data and no discernable trend was found in student reports. These data suggest that yoga administered in small groups in an urban school setting is a feasible school intervention for children with emotional and behavioral disorders and may be effective in reducing symptoms.*

Turns, Brie Ann, Sarah J. Morris & Nicole Ann Lentz. 2013. The Self of the Christian Therapist Doing Sex Therapy: A Model for Training Christian Sex Therapists. *Sexual and Relationship Therapy* 28(3). 186–200.

doi:10.1080/14681994.2013.765557.

*In this article, the authors present a model for sex therapy administered by Christian therapists. The model includes various worksheets for self-reflection, and different considerations for the Christian therapist to review. The model is rooted in the theoretical tenets of Narrative and Bowen Family Systems theories. The authors use the ideas of understanding the individual's dominant story and lenses from Narrative theory and differentiation and taking an I-position from Bowen Family Systems theory.*

Vermandere, Mieke, Jan De Lepeleire, Wouter Van Mechelen, Franca Warmenhoven, Bregje Thoonsen & Bert Aertgeerts. 2013. Outcome measures of spiritual care in palliative home care: A qualitative study. *The American Journal of Hospice & Palliative Care* 30(5). 437–444.

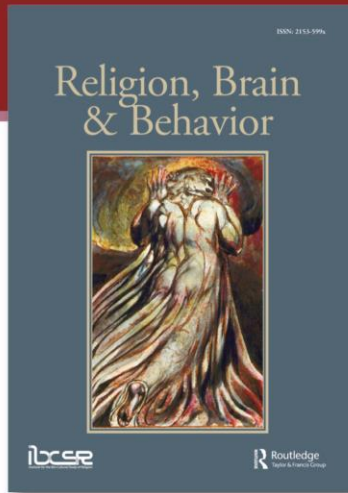
doi:10.1177/1049909112454563.

*The purpose of this study was to identify key outcome measures of spiritual care in palliative home care. A qualitative study was conducted with experts from 3 stakeholder groups (physicians, professional spiritual caregivers, and researchers) representing 2 countries (Belgium and The Netherlands). Three key outcome measures were identified: the extent to which the patient feels that he or she is being heard and taken seriously, the extent to which the patient experiences that there is a place for that which is insoluble, and the extent to which the patient experiences that there is a place for that which cannot be said.*

Vieten, Cassandra, Shelley Scammell, Ron Pilato, Ingrid Ammondson, Kenneth I. Pargament & David Lukoff. 2013. Spiritual and religious competencies for psychologists. *Psychology of Religion and Spirituality* 5(3). 129–144.

doi:10.1037/a0032699.

*The authors of this paper have developed a proposed set of spiritual and religious competencies for psychologists based on (1) a comprehensive literature review, (2) a focus group with scholars and clinicians, and (3) an online survey of 184 scholars and clinicians experienced in the integration of spiritual and religious beliefs and practices and psychology. Survey participants offered suggestions on wording for each item, and a subset of 105 licensed psychotherapists proficient in the intersection of spirituality/religion and psychology rated clarity and relative importance of each item as a basic spiritual and religious competency. The result is a set of 16 basic spiritual and religious competencies (attitudes, knowledge, and skills) that the authors suggest all licensed psychologists should have.*



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### ***3.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR***

- Benda-Beckmann, Franz von, Keebet von Benda-Beckmann, Martin Ramstedt & Bertram Turner (eds.). 2013. *Religion in Disputes: Pervasiveness of Religious Normativity in Disputing Processes*. Palgrave Macmillan.
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### ***3.2 SPIRITUALITY & HEALTH RESEARCH***

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