



exploring the nexus of culture, mind and religion

RESEARCH REVIEW

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

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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 630 articles, 134 articles have been retained from 52 journals. There are 34 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

Brown, K. W., R. J. Goodman & M. Inzlicht. 2012. Dispositional mindfulness and the attenuation of neural responses to emotional stimuli. *Social Cognitive and Affective Neuroscience* 8(1). 93–99. doi:10.1093/scan/nss004.

The present study examined whether individual differences in mindfulness—a receptive, non-evaluative form of attention—would modulate neural responses associated with the early processing of affective stimuli. Focus was on the late positive potential (LPP) of the event-related brain potential to visual stimuli varying in emotional valence and arousal. First, this study found that high arousal images, particularly of an unpleasant type, elicited larger LPP responses. Second, the study found that more mindful individuals showed lower LPP responses to high arousal unpleasant images, even after controlling for trait attentional control. Conversely, two traits contrasting with mindfulness—neuroticism and negative affectivity—were associated with higher LPP responses to high arousal unpleasant images. Finally, mindfulness was also associated with lower LPP responses to motivationally salient pleasant images (erotica). These findings suggest that mindfulness modulates neural responses in an early phase of affective processing, and contribute to understanding how this quality of attention may promote healthy emotional functioning.

Cahn, B Rael, Arnaud Delorme & John Polich. 2013. Event-related delta, theta, alpha and gamma correlates to auditory oddball processing during Vipassana meditation. *Social Cognitive and Affective Neuroscience* 8(1). 100–111. doi:10.1093/scan/nss060.

Long-term Vipassana meditators sat in meditation vs. a control (instructed mind wandering) states for 25 minutes, while electroencephalography (EEG) was recorded and condition order counterbalanced. For the last 4

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min, a three-stimulus auditory oddball series was presented during both meditation and control periods through headphones and no task imposed. Time-frequency analysis demonstrated that meditation relative to the control condition evinced decreased evoked delta (2-4 Hz) power to distracter stimuli concomitantly with a greater event-related reduction of late (500-900 ms) alpha-1 (8-10 Hz) activity, which indexed altered dynamics of attentional engagement to distracters. Additionally, standard stimuli were associated with increased early event-related alpha phase synchrony (inter-trial coherence) and evoked theta (4-8 Hz) phase synchrony, suggesting enhanced processing of the habituated standard background stimuli. Finally, during meditation, there was a greater differential early-evoked gamma power to the different stimulus classes. Correlation analysis indicated that this effect stemmed from a meditation state-related increase in early distracter-evoked gamma power and phase synchrony specific to longer-term expert practitioners. The findings suggest that Vipassana meditation evokes a brain state of enhanced perceptual clarity and decreased automated reactivity.

Dickenson, Janna, Elliot T Berkman, Joanna Arch & Matthew D Lieberman. 2013. Neural correlates of focused attention during a brief mindfulness induction. *Social Cognitive and Affective Neuroscience* 8(1). 40–47.
doi:10.1093/scan/nss030.

Mindfulness meditation has been shown to be beneficial in clinical populations across diverse outcomes. However, the basic neural mechanisms by which mindfulness operates and relates to everyday outcomes in novices remain unexplored. Focused attention is a common mindfulness induction where practitioners focus on specific physical sensations, typically the breath. The present study explores the neural mechanisms of this common mindfulness induction among novice practitioners. Healthy novice participants completed a brief task with both mindful attention [focused breathing (FB)] and control (unfocused attention) conditions during functional magnetic resonance imaging (fMRI). Relative to the control condition, FB recruited an attention network including parietal and prefrontal structures, and trait-level mindfulness during this comparison also correlated with parietal activation. Results suggest that the neural mechanisms of a brief mindfulness induction are related to attention processes in novices and that trait mindfulness positively moderates this activation.

Farb, Norman A S, Zindel V Segal & Adam K Anderson. 2013. Mindfulness meditation training alters cortical representations of interoceptive attention. *Social Cognitive and Affective Neuroscience* 8(1). 15–26.
doi:10.1093/scan/nss066.

One component of mindfulness training (MT) is the development of interoceptive attention (IA) to visceral bodily sensations, facilitated through daily practices such as breath monitoring. Using functional magnetic resonance imaging (fMRI), researchers in this study examined experience-dependent functional plasticity in accessing interoceptive representations by comparing graduates of a Mindfulness-Based Stress Reduction course to a waitlisted control group. IA to respiratory sensations was contrasted against two visual tasks, controlling for attentional requirements non-specific to IA, such as maintaining sensation and suppressing distraction. In anatomically partitioned analyses of insula activity, MT predicted greater IA-related activity in anterior dysgranular insula regions, consistent with greater integration of interoceptive sensation with external context. MT also predicted decreased recruitment of the dorsomedial prefrontal cortex (DMPFC) during IA, and altered functional connectivity between the DMPFC and the posterior insula, putative primary interoceptive cortex. Furthermore, meditation practice compliance predicted greater posterior insula and reduced visual pathway recruitment during IA. These findings suggest that interoceptive training modulates task-specific cortical recruitment, analogous to training-related plasticity observed in the external senses. Further, DMPFC modulation of IA networks may be an important mechanism by which MT alters information processing in the brain, increasing the contribution of interoception to perceptual experience.

- Goldin, Philippe, Michal Ziv, Hooria Jazaieri, Kevin Hahn & James J Gross. 2013. MBSR vs aerobic exercise in social anxiety: fMRI of emotion regulation of negative self-beliefs. *Social Cognitive and Affective Neuroscience* 8(1). 65–72.
doi:10.1093/scan/nss054.

Mindfulness-based stress reduction (MBSR) is thought to reduce emotional reactivity and enhance emotion regulation in patients with social anxiety disorder (SAD). The goal of this study was to examine the neural correlates of deploying attention to regulate responses to negative self-beliefs using functional magnetic resonance imaging. Participants were 56 patients with generalized SAD in a randomized controlled trial who were assigned to MBSR or a comparison aerobic exercise (AE) stress reduction program. Compared to AE, MBSR yielded greater (i) reductions in negative emotion when implementing regulation and (ii) increases in attention-related parietal cortical regions. Meditation practice was associated with decreases in negative emotion and social anxiety symptom severity, and increases in attention-related parietal cortex neural responses when implementing attention regulation of negative self-beliefs. Changes in attention regulation during MBSR may be an important psychological factor that helps to explain how mindfulness meditation training benefits patients with anxiety disorders.

- Kang, Do-Hyung, Hang Joon Jo, Wi Hoon Jung, Sun Hyung Kim, Ye-Ha Jung, Chi-Hoon Choi, Ul Soon Lee, Seung Chan An, Joon Hwan Jang & Jun Soo Kwon. 2013. The effect of meditation on brain structure: Cortical thickness mapping and diffusion tensor imaging. *Social Cognitive and Affective Neuroscience* 8(1). 27–33.
doi:10.1093/scan/nss056.

A convergent line of neuroscientific evidence suggests that meditation alters the functional and structural plasticity of distributed neural processes underlying attention and emotion. The purpose of this study was to examine the brain structural differences between a well-matched sample of long-term meditators and controls. Researchers employed whole-brain cortical thickness analysis based on magnetic resonance imaging and diffusion tensor imaging to quantify white matter integrity in the brains of 46 experienced meditators compared with 46 matched meditation-naïve volunteers. Meditators, compared with controls, showed significantly greater cortical thickness in the anterior regions of the brain, located in frontal and temporal areas, including the medial prefrontal cortex, superior frontal cortex, temporal pole and the middle and interior temporal cortices. Significantly thinner cortical thickness was found in the posterior regions of the brain, located in the parietal and occipital areas, including the postcentral cortex, inferior parietal cortex, middle occipital cortex and posterior cingulate cortex. Moreover, in the region adjacent to the medial prefrontal cortex, both higher fractional anisotropy values and greater cortical thickness were observed. Findings suggest that long-term meditators have structural differences in both gray and white matter.

- Kerr, Catherine E., Matthew D. Sacchet, Sara W. Lazar, Christopher I. Moore & Stephanie R. Jones. 2013. Mindfulness starts with the body: Somatosensory attention and top-down modulation of cortical alpha rhythms in mindfulness meditation. *Frontiers in Human Neuroscience* 7. 12.
doi:10.3389/fnhum.2013.00012.

Using a common set of mindfulness exercises, mindfulness based stress reduction (MBSR) and mindfulness based cognitive therapy (MBCT) have been shown to reduce distress in chronic pain and decrease risk of depression relapse. These standardized mindfulness (ST-Mindfulness) practices predominantly require attending to breath and body sensations. Here, researchers offer a novel view of ST-Mindfulness's somatic focus as a form of training for optimizing attentional modulation of 7-14 Hz alpha rhythms that play a key role in filtering inputs to primary sensory neocortex and organizing the flow of sensory information in the brain. In support of the framework, the authors describe previous finding that ST-Mindfulness enhanced attentional regulation of alpha in primary somatosensory cortex (SI). The framework resulted in several predictions. In chronic pain, the authors

predict somatic attention in ST-Mindfulness “de-biases” alpha in SI, freeing up pain-focused attentional resources. In depression relapse, the authors predict ST-Mindfulness’s somatic attention competes with internally focused rumination, as internally focused cognitive processes (including working memory) rely on alpha filtering of sensory input. The computational model predicts that ST-Mindfulness enhances top-down modulation of alpha by facilitating precise alterations in timing and efficacy of SI thalamocortical inputs. The paper concludes with a consideration of how the framework aligns with Buddhist teachings that mindfulness starts with “mindfulness of the body.” Translating this theory into neurophysiology, the authors hypothesize that, with its somatic focus, mindfulness’ top-down alpha rhythm modulation in SI enhances gain control which, in turn, sensitizes practitioners to better detect and regulate when the mind wanders from its somatic focus. This enhanced regulation of somatic mind-wandering may be an important early stage of mindfulness training that leads to enhanced cognitive regulation and metacognition.

Leung, Mei-Kei, Chetwyn C H Chan, Jing Yin, Chack-Fan Lee, Kwok-Fai So & Tatia M C Lee. 2013. Increased gray matter volume in the right angular and posterior parahippocampal gyri in loving-kindness meditators. *Social Cognitive and Affective Neuroscience* 8(1). 34–39. doi:10.1093/scan/nss076.

Previous voxel-based morphometry (VBM) studies have revealed that meditation is associated with structural brain changes in regions underlying cognitive processes that are required for attention or mindfulness during meditation. This VBM study examined brain changes related to the practice of an emotion-oriented meditation: loving-kindness meditation (LKM). A magnetic resonance imaging (MRI) scanner captured images of the brain structures of 25 men, 10 of whom had practiced LKM in the Theravada tradition for at least 5 years. Compared with novices, more gray matter volume was detected in the right angular and posterior parahippocampal gyri in LKM experts. The right angular gyrus has not been previously reported to have structural differences associated with meditation, and its specific role in mind and cognitive empathy theory suggests the uniqueness of this finding for LKM practice. These regions are important for affective regulation associated with empathic response, anxiety and mood. At the same time, gray matter volume in the left temporal lobe in the LKM experts appeared to be greater, an observation that has also been reported in previous MRI meditation studies on meditation styles other than LKM. Overall, the findings of the study suggest that experience in LKM may influence brain structures associated with affective regulation.

Lutz, Antoine, Daniel R. McFarlin, David M. Perlman, Tim V. Salomons & Richard J. Davidson. 2013. Altered anterior insula activation during anticipation and experience of painful stimuli in expert meditators. *NeuroImage* 64. 538–546. doi:10.1016/j.neuroimage.2012.09.030.

Little is known about the neural mechanisms of mindfulness on pain. During a meditation practice similar to mindfulness, functional magnetic resonance imaging was used in expert meditators (10,000 h of practice) to dissociate neural activation patterns associated with pain, its anticipation, and habituation. Compared to novices, expert meditators reported equal pain intensity, but less unpleasantness. This difference was associated with enhanced activity in the dorsal anterior insula (aI), and the anterior mid-cingulate (aMCC), the so-called “salience network,” for experts during pain. This enhanced activity during pain was associated with reduced baseline activity before pain in these regions and the amygdala for experts only. The reduced baseline activation in left aI correlated with lifetime meditation experience. This pattern of low baseline activity coupled with high response in aIns and aMCC was associated with enhanced neural habituation in amygdala and pain-related regions before painful stimulation and in the pain-related regions during painful stimulation. These findings suggest that cultivating experiential openness down-regulates anticipatory representation of aversive events, and increases the recruitment of attentional resources during pain, which is associated with faster neural habituation.

Malinowski, Peter. 2013. Neural mechanisms of attentional control in mindfulness meditation. *Frontiers in neuroscience* 7. 8.
doi:10.3389/fnins.2013.00008.

The scientific interest in meditation and mindfulness practice has recently seen an unprecedented surge. After an initial phase of presenting beneficial effects of mindfulness practice in various domains, research is now seeking to unravel the underlying psychological and neurophysiological mechanisms. Advances in understanding these processes are required for improving and fine-tuning mindfulness-based interventions that target specific conditions such as eating disorders or attention deficit hyperactivity disorders. This review presents a theoretical framework that emphasizes the central role of attentional control mechanisms in the development of mindfulness skills. It discusses the phenomenological level of experience during meditation, the different attentional functions that are involved, and relates these to the brain networks that subserve these functions. On the basis of currently available empirical evidence specific processes as to how attention exerts its positive influence are considered and it is concluded that meditation practice appears to positively impact attentional functions by improving resource allocation processes. As a result, attentional resources are allocated more fully during early processing phases which subsequently enhance further processing. Neural changes resulting from a pure form of mindfulness practice that is central to most mindfulness programs are considered from the perspective that they constitute a useful reference point for future research. Furthermore, possible interrelations between the improvement of attentional control and emotion regulation skills are discussed.

Mascaro, Jennifer S, James K Rilling, Lobsang Tenzin Negi & Charles L Raison. 2013. Compassion meditation enhances empathic accuracy and related neural activity. *Social Cognitive and Affective Neuroscience* 8(1). 48–55.
doi:10.1093/scan/nss095.

The ability to accurately infer others' mental states from facial expressions is important for optimal social functioning and is fundamentally impaired in social cognitive disorders such as autism. While pharmacologic interventions have shown promise for enhancing empathic accuracy, little is known about the effects of behavioral interventions on empathic accuracy and related brain activity. This study employed a randomized, controlled and longitudinal design to investigate the effect of a secularized analytical compassion meditation program, cognitive-based compassion training (CBCT), on empathic accuracy. Twenty-one healthy participants received functional MRI scans while completing an empathic accuracy task, the Reading the Mind in the Eyes Test (RMET), both prior to and after completion of either CBCT or a health discussion control group. Upon completion of the study interventions, participants randomized to CBCT were significantly more likely than control subjects to have increased scores on the RMET and increased neural activity in the inferior frontal gyrus (IFG) and dorsomedial prefrontal cortex (dmPFC). Moreover, changes in dmPFC and IFG activity from baseline to the post-intervention assessment were associated with changes in empathic accuracy. These findings suggest that CBCT may hold promise as a behavioral intervention for enhancing empathic accuracy and the neurobiology supporting it.

Shaurya Prakash, R., A. A. De Leon, M. Klatt, W. Malarkey & B. Patterson. 2012. Mindfulness disposition and default-mode network connectivity in older adults. *Social Cognitive and Affective Neuroscience* 8(1). 112–117.
doi:10.1093/scan/nss115.

An extensive body of research defines the default-mode network (DMN) to be one of the critical networks of the human brain, playing a pivotal functional role in processes of internal mentation. Alterations in the connectivity of this network as a function of aging have been found, with reductions associated with functional ramifications for the elderly population. This study examined associations between integrity of the DMN and trait levels of mindfulness disposition, defined by our ability to exert attentional and emotional control in the present moment, and thereby bring awareness to immediate experiences. Twenty-five older adults participated in the study.

Participants underwent a brief functional magnetic resonance imaging session and filled out questionnaires related to their overall health and mindfulness disposition. Mindfulness disposition was associated with greater connectivity of the DMN, specifically, in the dorsal posterior cingulate cortex and the precuneus. Mindfulness disposition therefore explains variance in the connectivity of one of the more intrinsic networks of the human brain, known to be critical for promoting self-relevant mental explorations and building cognitive and affective control.

Taylor, Véronique A, Véronique Daneault, Joshua Grant, Geneviève Scavone, Estelle Breton, Sébastien Roffe-Vidal, Jérôme Courtemanche, et al. 2013. Impact of meditation training on the default mode network during a restful state. *Social Cognitive and Affective Neuroscience* 8(1). 4–14. doi:10.1093/scan/nsr087.

Mindfulness meditation has been shown to promote emotional stability. Moreover, during the processing of aversive and self-referential stimuli, mindful awareness is associated with reduced medial prefrontal cortex (MPFC) activity, a central default mode network (DMN) component. However, it remains unclear whether mindfulness practice influences functional connectivity between DMN regions and, if so, whether such impact persists beyond a state of meditation. Consequently, this study examined the effect of extensive mindfulness training on functional connectivity within the DMN during a restful state. Resting-state data were collected from 13 experienced meditators (with over 1000 h of training) and 11 beginner meditators (with no prior experience, trained for 1 week before the study) using functional magnetic resonance imaging (fMRI). Pairwise correlations and partial correlations were computed between DMN seed regions' time courses and were compared between groups utilizing a Bayesian sampling scheme. Relative to beginners, experienced meditators had weaker functional connectivity between DMN regions involved in self-referential processing and emotional appraisal. In addition, experienced meditators had increased connectivity between certain DMN regions (e.g. dorso-medial PFC and right inferior parietal lobule), compared to beginner meditators. These findings suggest that meditation training leads to functional connectivity changes between core DMN regions possibly reflecting strengthened present-moment awareness.

Teper, R. & M. Inzlicht. 2012. Meditation, mindfulness and executive control: The importance of emotional acceptance and brain-based performance monitoring. *Social Cognitive and Affective Neuroscience* 8(1). 85–92. doi:10.1093/scan/nss045.

Previous studies have documented the positive effects of mindfulness meditation on executive control. What has been lacking, however, is an understanding of the mechanism underlying this effect. Some theorists have described mindfulness as embodying two facets: present moment awareness and emotional acceptance. Here, the authors examine how the effect of meditation practice on executive control manifests in the brain, suggesting that emotional acceptance and performance monitoring play important roles. Researchers investigated the effect of meditation practice on executive control and measured the neural correlates of performance monitoring, specifically, the error-related negativity (ERN), a neurophysiological response that occurs within 100 milliseconds of error commission. Meditators and controls completed a Stroop task, during which researchers recorded ERN amplitudes with electroencephalography. Meditators showed greater executive control (i.e., fewer errors), a higher ERN and more emotional acceptance than controls. Finally, mediation pathway models further revealed that meditation practice relates to greater executive control and that this effect can be accounted for by heightened emotional acceptance, and to a lesser extent, increased brain-based performance monitoring.

Tomasino, Barbara, Sara Fregona, Miran Skrap & Franco Fabbro. 2012. Meditation-related activations are modulated by the practices needed to obtain it and by the expertise: an ALE meta-analysis study. *Frontiers in Human Neuroscience* 6. 346. doi:10.3389/fnhum.2012.00346.

The brain network governing meditation has been studied using a variety of meditation practices and techniques, eliciting different cognitive processes (e.g., silence, attention to own body, sense of joy, mantras, etc.). It is very possible that different practices of meditation are subserved by largely, if not entirely, disparate brain networks. This assumption was tested by conducting an activation likelihood estimation (ALE) meta-analysis of meditation neuroimaging studies, which assessed 150 activation foci from 24 experiments. Different ALE meta-analyses were carried out. One involved the subsets of studies involving meditation induced through exercising focused attention (FA). The network included clusters bilaterally in the medial gyrus, the left superior parietal lobe, the left insula and the right supramarginal gyrus (SMG). A second analysis addressed the studies involving meditation states induced by chanting or by repetition of words or phrases, known as “mantra.” This type of practice elicited a cluster of activity in the right SMG, the SMA bilaterally and the left postcentral gyrus. Furthermore, the last analyses addressed the effect of meditation experience (i.e., short- vs. long-term meditators). The authors found that frontal activation was present for short-term, as compared with long-term, experience meditators, confirming that experts are better able to sustain attentional focus, recruiting the right SMG and concentrating on aspects involving disembodiment.

Westbrook, Cecilia, John David Creswell, Golnaz Tabibnia, Erica Julson, Hedy Kober & Hilary A. Tindle. 2013. Mindful attention reduces neural and self-reported cue-induced craving in smokers. *Social Cognitive and Affective Neuroscience* 8(1). 73–84.
doi:10.1093/scan/nsr076.

An emerging body of research suggests that mindfulness-based interventions may be beneficial for smoking cessation and the treatment of other addictive disorders. One way that mindfulness may facilitate smoking cessation is through the reduction of craving to smoking cues. The present work considers whether mindful attention can reduce self-reported and neural markers of cue-induced craving in treatment seeking smokers. Forty-seven (n=47) meditation-naïve treatment-seeking smokers (12-h abstinent from smoking) viewed and made ratings of smoking and neutral images while undergoing functional magnetic resonance imaging (fMRI). Participants were trained and instructed to view these images passively or with mindful attention. Results indicated that mindful attention reduced self-reported craving to smoking images, and reduced neural activity in a craving-related region of subgenual anterior cingulate cortex (sgACC). Moreover, a psychophysiological interaction analysis revealed that mindful attention reduced functional connectivity between sgACC and other craving-related regions compared to passively viewing smoking images, suggesting that mindfulness may decouple craving neurocircuitry when viewing smoking cues. These results provide an initial indication that mindful attention may describe a ‘bottom-up’ attention to one’s present moment experience in ways that can help reduce subjective and neural reactivity to smoking cues in smokers.

1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION

Alcorta, Candace S. 2013. Religious ritual and modes of knowing: Commentary on the cognitive resource depletion model of ritual. *Religion, Brain & Behavior* 3(1). 55–58.
doi:10.1080/2153599X.2012.736705.

The author critiques the article of Schjoedt, et al., below, asserting that the model of ritual they construct implicitly assumes that conscious, rational cognition is the principal form of knowledge transmitted through ritual. This focus on conscious cognition and executive function ignores evidence that much of the mental processing that drives human decisions and behaviors is neither conscious nor logical, but the result of subconscious algorithms and associational processing.

Banerjee, Konika & Paul Bloom. 2013. Would Tarzan believe in God? Conditions for the emergence of religious belief. *Trends in Cognitive Sciences* 17(1). 7–8.
doi:10.1016/j.tics.2012.11.005.

Drawing on evidence from developmental psychology, the authors argue here that someone raised without exposure to religious views would not come to believe in the existence of God, an afterlife, and the intentional creation of humans and other animals. They hold that children lack spontaneous theistic views, and that the emergence of religion is crucially dependent on culture.

Brown, Steven. 2013. Religious ritual and the loss of self. *Religion, Brain & Behavior* 3(1). 58–60.
doi:10.1080/2153599X.2012.736706.

While generally appreciative of the target article (below), the author first questions the article's assumption of a causal link between resource depletion and "the insertion of culturally shared schemas during the post-ritual consolidation phase." For example, the fact that firewalkers have poor episodic memory for their experiences does not imply that amnesia is its major function. Second, he holds that the belief systems that drive religious rituals involve semantic memory, such as ideas about group myths, heroes, ancestors, historical events, and group norms, not episodic memory. He calls for further refinement and more compelling ethnographic evidence.

Eilam, David & Joel Mort. 2013. Adding mist to the fog surrounding collective rituals: What are they, why, when and how often do they occur? *Religion, Brain & Behavior* 3(1). 60–63.
doi:10.1080/2153599X.2012.736708.

The authors hold that the target article by Schjoedt, et al. (below) does not present a satisfactory general explanatory model for rituals. Four outstanding questions regarding ritual remain: (1) What are they? (2) Why do they occur at all? (3) When do they occur? (4) How often do they occur? The article does not provide the means by which researchers can qualitatively and/or quantitatively measure cognitive resources, the controlling executive system, and the proposed depletion. Therefore, the cognitive resource depletion model doesn't clarify conceptions of collective ritual.

Hrotic, Steven. 2013. A cognitive analysis of the Palestrina Myth. *Religion, Brain & Behavior* 3(1). 16–38.
doi:10.1080/2153599X.2012.703007.

The author analyzes the "Palestrina Myth," a narrative about how the Council of Trent abstained from banning polyphonic music from the Mass only upon hearing Palestrina's Missa Papae Marcelli. The endurance of the Palestrina myth demonstrates how narratives that survive repeated horizontal and/or vertical transmissions are those that have a selection advantage, in that they are superior attractors of attention. The author holds that the resilience of the myth lies in its tacit acknowledgement that polyphony represents a violation of expectations for doctrinal rituals as described by Whitehouse's Modes of Religiosity theory.

Jaho, Eva, Merkourios Karaliopoulos & Ioannis Stavrakakis. 2013. Social Similarity Favors Cooperation: The Distributed Content Replication Case. *IEEE Transactions on Parallel & Distributed Systems* 24(3). 601–613.

In this article, researchers investigate the impact of social similarity on the effectiveness of content placement and dissemination. The study shows that when the social group is tight (high degree of similarity), the optimally altruistic behavior yields the best performance for both the entire group (by definition) and the individual nodes (contrary to typical expectations). When the group is made up of members with almost no similarity, altruism or cooperation cannot bring much benefit to either the group or the individuals and thus, selfish behavior emerges as the preferable choice due to its simplicity.

Kim, Young-Il & W. Bradford Wilcox. 2013. Bonding alone: Familism, religion, and secular civic participation. *Social Science Research* 42(1). 31–45.
doi:10.1016/j.ssresearch.2012.08.001.

This study examines the influence of familism, religion, and their interaction on participation in secular voluntary associations, and the authors develop an “insularity theory” to explain how familism and religion encourage Americans to avoid secular civic participation. Using data from the first wave of the National Survey of Families and Households, this study finds that familism reduces participation in secular organizations. Moreover, religion moderates the effect of familism: specifically, religious involvement tends to increase the negative effect of familism on secular civic participation. Although religious involvement in and of itself fosters secular civic participation, strong familism tends to dampen positive impacts of religious involvement. For familistic individuals, religious congregations appear to reinforce their insularity within their immediate social circle and family.

Legare, Cristine H. & Patricia A. Herrmann. 2013. Cognitive consequences and constraints on reasoning about ritual. *Religion, Brain & Behavior* 3(1). 63–65.
doi:10.1080/2153599X.2012.736710.

The authors critique the target article by Schjoedt, et al. (below), on the grounds that rituals, which are characterized as behaviors with high amounts of repetition, redundancy, stereotypy, and causal opacity, do more than simply open up space for authoritative interpretations of events. Rituals have cognitive consequences rooted in the human capacity for causal reasoning that contribute directly to cultural learning, such as the transmission of culturally specific behavioral patterns.

Lienard, Pierre, Matthew Martinez & Michael Moncrieff. 2013. What are we measuring? *Religion, Brain & Behavior* 3(1). 65–68.
doi:10.1080/2153599X.2012.736711.

In this response to the resource depletion model of Schjoedt, et al. (below), the authors ask three questions: (1) How much do the participants’ abstract thematic accounts tell about their memories of the ritual experience? (2) What are the contents of the religious representations whose acquisition is facilitated by religious rituals? (3) Is religious expertise special?

Matthews, Luke J., Jeffrey Edmonds, Wesley J. Wildman & Charles L. Nunn. 2013. Cultural inheritance or cultural diffusion of religious violence? A quantitative case study of the Radical Reformation. *Religion, Brain & Behavior* 3(1). 3–15.
doi:10.1080/2153599X.2012.707388.

Using phylogenetic and social network analyses, the authors investigated whether religious violence is inherited from parent congregations or is acquired from contemporaneous purveyors of violent ideologies. They examined these questions among sixteenth-century Anabaptists, who constitute a prominent historical system with both violent and pacifist congregations. It was found that ideology advocating violence was typically inherited from parent congregations, while the majority of other theological traits spread among contemporaneous groups. Violent ideology may be learned independently from most other characteristics of an overall belief system, and/or it may be determined more by congregationally inherited economic and political factors than by theology.

McCauley, Robert N. 2013. Functions, mechanisms, and contexts: comments on “Cognitive resource depletion in religious interactions”. *Religion, Brain & Behavior* 3(1). 68–71.
doi:10.1080/2153599X.2012.736712.

The author writes appreciatively of the target article by Schjoedt, et al. (below), seeing it as an example of the growing maturation of the cognitive science of religion, as evidenced by the empirical research undertaken to analyze and evaluate hypothesized models and theories. He asks three questions regarding the cognitive resource depletion (CRD) model: first, what is to be made of anthropologists’ standard observation that most informants do not possess anything like interpretations of their ritual activities and have little or no idea what they mean? Second, how do the roles that the theory plays differ in situations where no interpretations are available? Third, the author

asks how the inevitability of theological incorrectness bears on both the impact of CRD on ritual understanding and on any larger, general social-functional theory.

- McClellan, Stuart. 2013. The role of performance in enhancing the effectiveness of crystal and spiritual healing. *Medical Anthropology* 32(1). 61–74.
doi:10.1080/01459740.2012.692741.

In this article, based on in-depth ethnographic research, the author highlights some of these themes in the context of contemporary crystal and spiritual healing practice at a center in northeast England. He shows that the standardized models of measuring effectiveness are less appropriate in many healing contexts, partly due to the unrepeatability and limited standardization of each healing performance, but also due to the performative “being-in-the-moment-ness” and intuitive sensibility that frames what healers count as evidence.

- McClenon, James. 2013. Cognitive resource depletion and the ritual healing theory. *Religion, Brain & Behavior* 3(1). 71–73.
doi:10.1080/2153599X.2012.736713.

In this response to Schjoedt, et al. (below), the author describes his own ritual healing theory, and suggests empirical research to assist with the theories about religion. For example, community surveys could be used to specify spirituality’s phenotypes (traits associated with corresponding genes), leading to the ability to identify people with associated genotypes. This could facilitate locating spirituality alleles, leading to better theories regarding ritual.

- Norenzayan, Ara & Will M Gervais. 2013. The origins of religious disbelief. *Trends in Cognitive Sciences* 17(1). 20–25.
doi:10.1016/j.tics.2012.11.006.

This article investigates religious disbelief and its origin. Recent developments in the scientific study of religious beliefs and behaviors point to the conclusion that religious disbelief arises from multiple interacting pathways, traceable to cognitive, motivational, and cultural learning mechanisms. The authors identify four such pathways, leading to four distinct forms of atheism, which they term mindblind atheism, apatheism, inCREDulous atheism, and analytic atheism. Religious belief and disbelief share the same underlying pathways and can be explained within a single evolutionary framework that is grounded in both genetic and cultural evolution.

- Schjoedt, Uffe, Jesper Sørensen, Kristoffer L. Nielbo, Dimitris Xygalatas, Panagiotis Mitkidis & Joseph Bulbulia. 2013. The resource model and the principle of predictive coding: A framework for analyzing proximate effects of ritual. *Religion, Brain & Behavior* 3(1). 79–86.
doi:10.1080/2153599X.2012.745447.

A response to the commentaries on their target article (below). They divide their response into three thematic areas of dispute: (1) the model; (2) the evidence; and (3) the other important mechanisms in ritual that our target article ignores.

- Schjoedt, Uffe, Jesper Sørensen, Kristoffer Laigaard Nielbo, Dimitris Xygalatas, Panagiotis Mitkidis & Joseph Bulbulia. 2013. Cognitive resource depletion in religious interactions. *Religion, Brain & Behavior* 3(1). 39–55.
doi:10.1080/2153599X.2012.736714.

In this target article of the journal issue, the authors explore the cognitive effects of three common features of religious interactions: (1) demand for the expressive suppression of emotion; (2) exposure to goal-demoted and causally opaque actions; and (3) the presence of a charismatic authority. Using a cognitive resource model of executive function, Schjoedt et al. argue that these three features affect the executive system in ways that limit the capacity for individual processing of religious events. This analysis is framed in the context of a general assumption

that collective rituals facilitate the transmission of cultural ideas. Building on recent experiments, they suggest that these three features increase participants' susceptibility to authoritative narratives and interpretations by preventing individuals from constructing their own accounts of the ritual event. Nine responses to this target article follow.

Sousa, Paulo & Claire White. 2013. Problems for the cognitive-depletion model of religious interactions. *Religion, Brain & Behavior* 3(1). 73–76.
doi:10.1080/2153599X.2012.736715.

The authors raise questions about the model of Schjoedt, et al. (above), calling for more empirical support for their claims, especially regarding the causal chains that lead to collective religious-symbolic interpretations.

Whitehouse, Harvey. 2013. Ritual and acquiescence to authoritative discourse. *Religion, Brain & Behavior* 3(1). 76–79.
doi:10.1080/2153599X.2012.736716.

The author critiques the interpretation of his own work by Schjoedt, et al. Rather than claiming that rituals "produce rich episodic memories of important symbolic content," he holds instead that those rituals involving high levels of dysphoric arousal tend to trigger long-term processes of independent reflection on questions of meaning and symbolism. He also offers a critical appraisal of the target article's efforts to connect ritual participation with acquiescence to authoritative narratives and interpretations.

Wildman, Wesley J., Richard Sosis & Patrick McNamara. 2013. Bio-Cultural Approaches to Social Forms. *Religion, Brain & Behavior* 3(1). 1–2.
doi:10.1080/2153599X.2012.747257.

The authors introduce the current issue of the journal which, collectively illustrate the diversity of bio-cultural techniques used to shed new light on religious sociality. Bio-cultural methods have almost unlimited scope of application because they combine methods from the social, psychological, and biological sciences—the methods chosen depending on the problem to be solved. When approached with appropriate caution, bio-cultural methods avoid invidious forms of reductionism and help scientists steer a steady course between the pretensions of some to explain everything through biology, or through personality, or through socio-cultural conditioning. What emerges is a deeper and richer picture of the vast and intricate emergent system of human reality.

1.3 SCIENTIFIC STUDY OF RELIGION: PSYCHOLOGY AND CULTURE

Abdel-Khalek, Ahmed M. 2013. Personality dimensions and religiosity among Kuwaiti Muslim college students. *Personality and Individual Differences* 54(2). 149–152.
doi:10.1016/j.paid.2012.08.004.

The aim of the present study was to examine the association between Eysenck's personality dimensions and religiosity. A sample of 227 Kuwaiti Muslim undergraduates completed the Arabic versions of the Eysenck Personality Questionnaire and the Muslim Attitude towards Religiosity Scale. Men obtained significantly higher mean scores on psychoticism than did their female counterparts, and the effect size was medium. Religiosity significantly correlated with psychoticism (negative) and lie (positive) among men and women. In addition, religiosity significantly correlated with extraversion (positive) and neuroticism (negative) in women. The only predictor of religiosity was low psychoticism in men and women. The results were discussed in the light of religion of Islam. Most results of the present study reflect previous findings using participants from other religions.

Abdelsayed, Linda M., Joy M. Bustrum, Theresa Clement Tisdale, Kevin S. Reimer & Claire Allan Camp. 2013. The impact of personality on God image, religious coping, and religious motivation among Coptic Orthodox priests. *Mental Health, Religion & Culture* 16(2). 155–172.
doi:10.1080/13674676.2011.652604.

This study examines the influence of personality on the spirituality of Oriental Orthodox priests, who account for approximately 1,400 Christian leadership positions in America. The personality types of Orthodox priests are explored and evaluated in terms of their association with different aspects of spirituality as defined by the God Image Inventory, the Intrinsic/Extrinsic Revised, and the Religious Coping Activities Scale. The 16-Personality Factors scale is used to examine personality. Descriptive statistics reveal that no prototypical personality profile exists among Coptic Orthodox priests. Multiple regression analysis reveals that there are no significant relationships between personality and religious coping activities. However, the four personality constructs of anxiety, tough-mindedness, independence, and self-control do have a meaningful influence on one's God image and religious motivation. The study reveals five significant relationships between personality and spirituality.

Cassibba, Rosalinda, Pehr Granqvist & Alessandro Costantini. 2013. Mothers' attachment security predicts their children's sense of God's closeness. *Attachment & human development* 15(1). 51–64. doi:10.1080/14616734.2013.743253.

The current research reports that mothers' security of attachment predicts their children's sense of God's closeness. A total of 71 mother-child dyads participated; the children had a median age of 7.5 years. Mothers' attachment organization was studied with the Adult Attachment Interview and their religiosity and attachment to God were measured with questionnaires. Children were told stories about visually represented children in attachment-activating and attachment-neutral situations, and placed a God symbol on a felt board to represent God's closeness to the fictional children. Children of secure mothers placed the God symbol closer than children of insecure mothers across both types of situations, suggesting that children's experiences with secure-insecure mothers generalize to their sense of God's closeness. Also, girls (but not boys) placed the God symbol closer in attachment-activating than in attachment-neutral situations, giving partial support for an attachment normative God-as-safe-haven model. Finally, mothers' religiosity and attachment to God were unrelated to child outcomes.

Dueck, Al & Katie Byron. 2012. Community, spiritual traditions, and disasters in Chinese society. *Pastoral Psychology* 61(5-6). 993–1006. doi:10.1007/s11089-012-0437-0.

This article posits a deeply contextual and communal therapy as the best path to a victim's reconstruction of a sense of "home." The authors take seriously the recent call of Zhang Kan, chairperson of the Chinese Psychological Society, to consider the localities and heritage of China in the construction of psychotherapy for Chinese. The article follows Walsh's four ways by which reconstructed communities are a resource for detoxifying the effects of trauma and disaster: shared acknowledgement of the traumatic events, shared experience of loss and survivorship, reorganization of the community, and reinvestment in relationships. It is argued that spirituality can also play a positive role in the recovery of meaning and community after disaster when honored rather than instrumentalized. Examples will be drawn from the communal/religious reconstructive efforts of Ukrainian Mennonites in communist Russia and the ways in which Chinese responded to the earthquake of May 12, 2008.

Elgin, Ceyhun, Turkmen Goksel, Mehmet Y. Gurdal & Cuneyt Orman. 2013. Religion, income inequality, and the size of the government. *Economic Modelling* 30. 225–234. doi:10.1016/j.econmod.2012.08.017.

Recent empirical research has demonstrated that countries with higher levels of religiosity are characterized by greater income inequality. The authors of this paper argue that this is due to the lower level of government services demanded in more religious countries. Religion motivates individuals to engage in charitable giving and this leads them to prefer making their contributions privately and voluntarily rather than through the state. To the extent that citizen preferences are reflected in policy outcomes, religiosity results in lower levels of taxes and hence lower levels of spending on both public goods and redistribution. Since measures of income typically do not fully take into account private transfers received, this increases measured income inequality. The authors formalize these ideas in

a general equilibrium political economy model and also show that the implications of the model are supported by cross-country data.

- Ghorbani, Nima, P.J. Watson, Zhuo Chen & Hanan Dover. 2013. Varieties of openness in Tehran and Qom: psychological and religious parallels of faith and intellect-oriented Islamic religious reflection. *Mental Health, Religion & Culture* 16(2). 123–137.
doi:10.1080/13674676.2011.647809.

This study examined whether faith and intellect-oriented religious reflection would be polarized in Iranian Muslims as they appear to be in American Christians. Iranian students at a university in Tebran and at an Islamic seminary in Qom responded to Faith and Intellect-Oriented Islamic Religious Reflection measures along with scales recording various forms of religious commitment and psychological openness. Both types of religious reflection and the Intrinsic Religious Orientation predicted greater Integrative Self-Knowledge, Openness to Experience, and Need for Cognition and also interacted in ways suggesting complexity in Muslim thought. Comparisons between Tebran and Qom students supported the same conclusion. The Quest Religious Orientation had limited relevance for understanding Muslim commitments. The Extrinsic Personal Religious Orientation predicted greater and the Extrinsic Social Religious Orientation predicted lower psychological openness. These data contrasted with previous evidence of polarization in the religious reflection of American Christians. They also argued against any simple equation of Muslim commitments with cognitive and religious rigidity.

- Goeke-Morey, Marcie C.Cairns. 2013. Maternal Religiosity, Family Resources and Stressors, and Parent-Child Attachment Security in Northern Ireland. *Social Development* 22(1). 19–37.

This study explores the associations between mothers' religiosity, and families' and children's functioning in a stratified random sample of 695 Catholic and Protestant mother-child dyads in socially deprived areas in Belfast, Northern Ireland, a region which has experienced centuries of sectarian conflict between Protestant Unionists and Catholics Nationalists. Findings based on mother and child surveys indicated that even in this context of historical political violence associated with religious affiliation, mothers' religiosity played a consistently positive role, including associations with multiple indicators of better family functioning (i.e., more cohesion and behavioral control and less conflict, psychological distress, and adjustment problems) and greater parent-child attachment security. Mothers' religiosity also moderated the association between parent-child attachment security and family resources and family stressors, enhancing positive effects of cohesion and mother behavioral control on mother-child attachment security, and providing protection against risks associated with mothers' psychological distress. Findings are discussed in terms of implications for understanding the role of religiosity in serving as a protective or risk factor for children and families.

- Gyimah, Stephen Obeng, Ivy Kodzi, Jacques Emina, Nicholas Cofie & Alex Ezeh. 2013. Religion, religiosity and premarital sexual attitudes of young people in the informal settlements of Nairobi, Kenya. *Journal of biosocial science* 45(1). 13–29.
doi:10.1017/S0021932012000168.

Although attitudes to premarital sex may be influenced by several factors, the importance of religion to that discourse cannot be underestimated. By providing standards to judge and guide behavior, religion provides a social control function such that religious persons are expected to act in ways that conform to certain norms. This study investigated the interconnectedness of several dimensions of religion and premarital sexual attitudes among young people in the informal settlements of Nairobi, Kenya. Using reference group as the theoretical base, it was found that those affiliated with Pentecostal/Evangelical faiths had more conservative attitudes towards premarital sex than those of other Christian faiths. Additionally, while a high level of religiosity was found to associate with more conservative views on premarital sex, the effect was more pronounced among Pentecostal groups. The findings are discussed in relation to programs on adolescent sexuality.

Hayward, R. David & Neal Krause. 2013. Trajectories of late-life change in God-mediated control. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 68(1). 49–58.
doi:10.1093/geronb/gbs054.

A longitudinal survey representative of older White and Black adults in the United States tracked changes in individual's personal and God-mediated control in four waves over the course of 7 years. Growth curve analysis found that the pattern of change differed by race. White adults had less sense of God-mediated control at younger ages, which increased among those who were highly religious but decreased among those who were less religious. Black adults had higher God-mediated control, which increased over time among those with low personal control. These results indicate that God-mediated control generally increases during older adulthood, but that its relationships with personal control and religious commitment are complex and differ between Black and White adults.

Hoffman, Louis. 2012. Religious experience, development, and diversity. *Pastoral Psychology* 61(5-6). 1025–1035.
doi:10.1007/s11089-011-0403-2.

Religious experience is a complex construct susceptible to various forms of influence. As religious experience is a very broad construct, this paper focuses primarily on one type of religious experience: the god image, or the way an individual experiences god. This paper focuses on two important factors contributing to the richness of religious experiences: development and diversity. Research on the god image suggests that the way a person experiences god changes over time, including gradually becoming more complex. Although the research on the god image and diversity is highly limited thus far, there is consistent evidence that various forms of diversity significantly impact the way a person experiences god. Several theories have attempted to reconcile various influences on the god image into a comprehensive, unified theory. While these theories offer advancement in the way religious experience can be understood, it seems unlikely that any such theory will ultimately be successful, particularly given that important influences on one's religious experience appear to be highly influenced by culture.

Hughes, James. 2013. Using neurotechnologies to develop virtues: A Buddhist approach to cognitive enhancement. *Accountability in Research* 20(1). 27–41.
doi:10.1080/08989621.2013.749744.

This paper uses a Western Buddhist perspective, drawing on many Buddhist traditions, to explore how emerging neurotechnologies may be used to suppress vices and enhance happiness and virtue. A Buddhist approach to the authenticity of technologically-mediated spiritual progress is discussed. The potential utility and dangers of mood manipulation for a Buddhist understanding of liberation are outlined. The ten paramitas of Theravadan Buddhism are then explored to frame an exploration of the potential genes, neurochemicals and brain structures that could be targeted as part of a program of neurotechnological moral enhancement.

Liang, Liping. 2012. Multiple variations: Perspectives on the religious psychology of Buddhist and Christian converts in the People's Republic of China. *Pastoral Psychology* 61(5-6). 865–877.
doi:10.1007/s11089-012-0462-z.

Based on questionnaires and in-depth interviews, this article describes and systematically analyzes the psychology of the religiosity of contemporary Chinese Buddhist and Christian converts. People convert to a religious faith for a variety of reasons that range from seeking a means of escape to a practical way of coping with life. Religious belief contains subtle and complex factors, such as the interactions between believers and their beliefs, a sense of community among religious believers, conversion of mind and personality, and influence of the religious beliefs on religious believers' mental health and behavior. This paper seeks to provide an overview of research conducted in the People's Republic of China about the various motivations and paths to conversion.

Preston, Jesse Lee, Ryan S Ritter & Justin Hepler. 2013. Neuroscience and the soul: Competing explanations for the human experience. *Cognition* 127(1). 31–37.
doi:10.1016/j.cognition.2012.12.003.

The development of fMRI techniques has generated a boom of neuroscience research across the psychological sciences, and revealed neural correlates for many psychological phenomena seen as central to the human experience (e.g., morality, agency). Meanwhile, the rise of neuroscience has reignited old debates over mind-body dualism and the soul. While some scientists use neuroscience to bolster a material account of consciousness, others point to unexplained neural phenomena to defend dualism and a spiritual perspective on the mind. In two experiments the authors examine how exposure to neuroscience research impacts belief in the soul. They find that belief in soul decreases when neuroscience provides strong mechanistic explanations for mind. But when explanatory gaps in neuroscience research are emphasized, belief in soul is enhanced, suggesting that physical and metaphysical explanations may be used reflexively as alternative theories for mind. Implications for the future of belief in soul and neuroscience research are discussed.

Rambo, Lewis R. & Steven C. Bauman. 2012. Psychology of conversion and spiritual transformation. *Pastoral Psychology* 61(5-6). 879–894.
doi:10.1007/s11089-011-0364-5.

This article provides an overview of the four major psychological approaches used in the study of religious change. A heuristic stage model of conversion consisting of seven stages: context, crisis, quest, encounter, interaction, commitment, and consequences (Rambo 1995) serves as a framework for integrating the research of these four approaches, providing a fuller understanding of the multilayered processes involved in conversion. The authors hope that the phenomenon of spiritual transformation and conversion will continue to draw the attention of psychologists who increasingly appreciate the complexity and dynamism of religious/spiritual transformation. For the psychology of religion in general and the psychology of conversion and spiritual transformation in particular to be viable and valuable, psychologists will need to join with researchers in the human sciences and religious studies to develop methods and theories worthy of this complex subject. Additionally, through collaboration with psychologists in the People's Republic of China, the authors look forward to exploring together the fascinating and important issues that emerge as we seek to understand the nature of conversion and spiritual transformation in China.

Rambo, Lewis R., Steven Bauman & Jiazhi Fengjiang. 2012. Toward a psychology of converting in the People's Republic of China. *Pastoral Psychology* 61(5-6). 895–921.
doi:10.1007/s11089-012-0487-3.

The focus of this paper is the nature of converting processes in the People's Republic of China. This paper seeks to provide an overview of the issues to be considered in the construction of a psychology of converting in China. China is engaged in dramatic transformations. Since the reforms initiated in 1979, religion has been revitalized and is flourishing. The most dramatic and unexpected growth has taken place in Christianity. This paper seeks to provide the contours of how and why many people are becoming Christians. A preliminary case study provides rich details of the experiences of five university students in Shanghai as they cultivate beliefs and practices that eventually lead them to convert to Christianity. The paper also includes a report on recent studies of the psychology of the converting process in the United States. The work of Ullman, Kirkpatrick, and Paloutzian are highlighted. The paper concludes with an outline of important issues that should be seriously considered as psychologists of religion develop an innovative psychology of converting in China: research methods, gender issues, motivations, network theory, cultural psychology, and interdisciplinary collaboration.

Rambo, Lewis R. & Matthew S. Haar Farris. 2012. Psychology of religion: Toward a multidisciplinary paradigm. *Pastoral Psychology* 61(5-6). 711–720.
doi:10.1007/s11089-011-0372-5.

This paper provides an overview of contemporary psychology of religion and points to the urgent need for the discipline to enrich and expand its horizons through an intentional and systematic approach to interdisciplinary theory and research. The study of conversion is given as a case study of this approach.

- Samson, Judith, Catrien Notermans & Willy Jansen. 2013. Homosexuality: Representing the devil or a spiritual gift? Two opposing views in the same Marian devotion. *Journal of Homosexuality* 60(1). 31–50.
doi:10.1080/00918369.2012.712845.

This article analyzes opposing discourses on homosexuality forwarded by two different Catholic social actors. These are linked to the messages of the Lady of All Nations, a Marian apparition site in Amsterdam. These different actors are understood as competing moral communities, especially about the issue of what constitute European values. Both discourses can be seen as examples of the minoritizing yet universalizing view on homosexuality. The devotion to the Lady of All Nations serves as a site for promoting competing discourses.

- Song, Xingchuan & Linghai Fu. 2012. The study of college students' beliefs in China. *Pastoral Psychology* 61(5-6). 923–940.
doi:10.1007/s11089-012-0446-z.

The beliefs of college students is an important issue that is followed closely by the Government of China (GOC). In recent years, the GOC increasingly has encouraged the investigation of religious problems of college students. This phenomenon relates to college students' special position in Chinese social structure. In the past decade, research on college students' beliefs from the perspective of psychology has achieved initial success. These research projects include studies on the current state and characteristics of college students' beliefs, the religious beliefs of college students, the spirituality of college students, the relationship between belief and mental health, and cross-cultural research on the beliefs of college students who are of the Han and Zang nationalities. The results of these studies suggest that college students' social beliefs dominate other beliefs; the number of college students who hold religious belief is increasing; people tend to form religious belief when encountering challenging events; there is a certain relationship between belief and mental health; and there are both common and distinguishing characteristics between Han and Zang college students.

- Stavrova, Olga, Detlef Fetchenhauer & Thomas Schlösser. 2013. Why are religious people happy? The effect of the social norm of religiosity across countries. *Social Science Research* 42(1). 90–105.
doi:10.1016/j.ssresearch.2012.07.002.

Drawing on social norms theories, the authors suggest that religiosity substantially increases subjective well-being if it is considered normative in a certain national context. In Study 1, the researchers test this hypothesis using an indicator of a country's social norm of religiosity that includes both the national level of religiosity and the social desirability of religion. The results of a multilevel regression analysis suggest that religious individuals are on average happier and more satisfied with life than non-religious individuals. This effect is stronger in religious countries with dominant negative attitudes towards non-believers. In Study 2, the authors further examine whether the differences in social recognition of religious and non-religious individuals in countries where religiosity is normative account for this finding. The results of a moderated mediation analysis indicate that in religious countries, religious people report being treated with more respect, which partially explains their higher levels of happiness and life satisfaction.

1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY

- Chen, Yongsheng & Xiaojuan Chen. 2012. Methodological issues in psychology of religion research in the Chinese context. *Pastoral Psychology* 61(5-6). 671–683.
doi:10.1007/s11089-012-0441-4.

The present study investigates methodological issues in psychology of religion in Mainland China. Beginning with an overview of Western and Eastern scholars' representative views on methodological issues relative to psychology of religion, this essay then analyzes the distinctive Chinese cultural background in terms of influences exerted by mainstream ideology, opportunities provided by the goal of building a harmonious society, and the real demand for the development of psychology of religion. Finally, this study puts forward several methodological strategies for constructing a Chinese psychology of religion including advanced theoretical research to strengthen the basis of research methods in Chinese psychology of religion; understanding more precisely the basis of constructing localized methods with Chinese features; and encouraging exploration on diversification and promotion of methodological innovation for psychology of religion in China.

Chen, Yongsheng, Jiaqi Wang, Haoran Weng & Xuehua Wang. 2012. History, present situation, and problems of Chinese psychology of religion. *Pastoral Psychology* 61(5-6). 641–654.
doi:10.1007/s11089-011-0399-7.

There have been few research studies on the psychology of religion in Mainland China because of the “leftist” ideology that shaped the People’s Republic of China from its foundation until the introduction of reform and open policy. Since the 1980s, research in the field of psychology of religion in Mainland China has made remarkable progress. The main efforts include translating and introducing representative works from the former Soviet Union and the West, while theoretical studies have concentrated mainly on the origins, features, functions, and schools of psychology of religion. Researchers have developed new measurement tools based on local culture in psychology of religion. Empirical studies pay special attention to the relationship between religious belief and mental health, the features of religious thinking of the Chinese, the psychological state of professionals, and characteristic emotions of religious experiences as well as their correlation with biological processes. The problems that currently exist in the field in Mainland China include the following: lack of critical in-depth studies on the history of Western psychology of religion, absence of diversity in research methods, and disconnection of theoretical study from practical application.

Dueck, Al & Buxin Han. 2012. Psychology of religion in China. *Pastoral Psychology* 61(5-6). 605–622.
doi:10.1007/s11089-012-0488-2.

The authors introduce the special issue of the journal, which is focused on a multi-year project studying the psychology of religion in China.

Hoffman, Louis. 2012. An existential-phenomenological approach to the psychology of religion. *Pastoral Psychology* 61(5-6). 783–795.
doi:10.1007/s11089-011-0393-0.

A primary aspect of existential and phenomenological methodologies is an attempt to understand one’s experience. In particular, phenomenology attempts to understand one’s experience in as pure of a form as possible. From an existential perspective, additional emphasis is placed upon the lived aspects of one’s experience. This paper outlines an existential-phenomenological approach to the psychology of religion. First, a brief history and summary of major themes of existential psychology is introduced. Next, this is applied to the psychology of religion. Last, the existential-phenomenological approach is considered in the context of the existential givens.

Hoffman, Louis. 2012. Religious experience in a cross-cultural and interfaith context: Limitations and possibilities. *Pastoral Psychology* 61(5-6). 809–822.
doi:10.1007/s11089-011-0394-z.

Religious experience is a multifaceted aspect of an individual’s experience involving conscious and unconscious components. Individuals, for example, maintain varied ideas of God at different levels of awareness and consciousness, all of which contribute to their broader experience of God. This paper focuses primarily on complex theistic experiences of God, their relationship to psychological and spiritual health, and how these experiences can

be changed through psychological intervention. Consideration is also given to ethical issues and other implications of changing one's religious experience.

- Lin, Chyong-ling & Jin-Tsann Yeh. 2011. Modeling religious involvement: A qualitative integration based on female role visualization consumption. *Quality & Quantity* 47(1). 561–566.
doi:10.1007/s11135-011-9478-1.

The application of religious symbolism is important in the evolution of medical consumption. Chinese religious belief integrates concepts of Buddhism, Daoism, and Confucianism. People personify god and goddess' characters in religious stories which influence our ideal personality in reality. According to the Match-up Hypothesis in medical product advertising, female role portrayal in patriarchal society involves the blending of beautification ritual, utilizing the marketed product, with idealized female beauty into a package intended to provide the best possible match with the prevailing ideal. Due to the influence of traditional sex stereotypes in eastern or western societies, such female portrayals provide culturally reasonable advertisements of the value of products being displayed for visualization consumption. This ideology is part of the moral fabric of society and reveals a possible social collective consciousness. The authors adopt five dimensions of religious involvement (DRI: Ideology, Ritualistic, Experiential, Consequential, and Intellectual) to explain a process of portrayals visualization and discuss the template image orientation for presenting product information in the marketplace. This study proposes the female role visualization consumption (FRVC) model to identify different elements of female role evolution stemming from religious ideology.

- Lu, Liqing & Jinhua Ke. 2012. A concise history of Chinese psychology of religion. *Pastoral Psychology* 61(5-6). 623–639.
doi:10.1007/s11089-011-0395-y.

The history of religious thought and the history of human thought are closely interrelated, so the study of Chinese psychology of religion should pay attention to the study of Chinese history. In this paper, the authors summarize the history of Han Chinese psychology of religion in three stages: from the perspectives of the history of Chinese thought; the history of Chinese religion; and the history of Chinese psychology. In the accumulation stage during the Spring and Autumn and Warring States periods, debates about "human nature" were central to a psychology of religion.

- Nelson, James M. 2012. History of the psychology of religion, East and West: Theoretical and practical principles for new (and old) histories. *Pastoral Psychology* 61(5-6). 655–670.
doi:10.1007/s11089-011-0405-0.

History is a central part of any academic discipline, as how scholars write and think about the history of their field helps define its identity. This paper presents an overview of the key issues involved in writing histories of the psychology of religion, particularly as these issues appear in the Chinese context. Attention to these issues will help Chinese scholars write rich histories of their field that acknowledge their connection to Western research while appreciating the powerful distinctive characteristics of the Chinese situation. The paper provides a number of practical suggestions that may help Chinese researchers in this process.

- Nelson, James M. 2012. Taking community seriously: A theory and method for a community-oriented psychology of religion. *Pastoral Psychology* 61(5-6). 851–863.
doi:10.1007/s11089-012-0454-z.

In contemporary scholarship, the psychology of religion involves the scientific study of religious life. Traditionally, psychologists have pursued a strikingly individualistic approach to their study of the topic, which seems at odds with the emphasis on groups or society in most definitions of religion. What would happen if we took this relational aspect of religion seriously? The paper investigates the question by asking (1) how might the underlying philosophy of science for the field differ if we took a more relational approach to the topic, and (2) how might our

altered assumptions affect the scientific study of religion in psychology. The result is a modest proposal for a community-oriented psychology of religion that embraces a greater diversity of methods and a sharper emphasis on goals that will be directly beneficial to the people we study.

Nelson, James M. 2012. A history of psychology of religion in the West: Implications for theory and method. *Pastoral Psychology* 61(5-6). 685–710.
doi:10.1007/s11089-011-0407-y.

The study of religion in Western psychology has an interesting history that provides many lessons for future attempts to understand the spiritual aspects of human experience. In the past, psychologists have typically operated from one of three paradigms in their study of religion: (1) hermeneutic–phenomenological, (2) positivistic naturalism, and (3) religious integration. Each of these paradigms has a number of important theoretical assumptions and a preferred set of methodologies that offer significant advantages and disadvantages. The paradigm of positivistic naturalism, with its emphasis on quantitative questionnaire methodology, has been the most influential but also the least helpful in generating new ideas for the psychological understanding of religion, particularly as it is practiced in non-Western contexts. A historical survey of the other competing paradigms offers many insights and practical suggestions about how research in the psychology of religion might proceed in the twenty-first century.

Slife, Brent D. & Brent S. Melling. 2012. Method decisions: Quantitative and qualitative inquiry in the study of religious phenomena. *Pastoral Psychology* 61(5-6). 721–734.
doi:10.1007/s11089-011-0366-3.

The conceptual and procedural differences between quantitative and qualitative methods have led many researchers to realize that some methodologies are better suited for studying some phenomena over other phenomena. However, practical guidelines for making these method decisions have yet to be developed. The primary purpose of this paper is to begin to provide such guidelines, especially in the study of religious phenomena. The authors first discuss the common mistake in Western psychology of considering methods as mere procedures rather than as the outcomes of different interpretations of the world. They then compare five features of a general quantitative interpretation with five features of a general qualitative interpretation. From this comparison, the advantages and disadvantages of each method strategy are discussed. Knowledge of these advantages and disadvantages allows methods to be better matched to the religious phenomena being studied.

Slife, Brent D. & Jeffrey S. Reber. 2012. Conceptualizing religious practices in psychological research: Problems and prospects. *Pastoral Psychology* 61(5-6). 735–746.
doi:10.1007/s11089-011-0397-9.

This article addresses the problems and prospects that follow from the conceptualization of religious phenomena and practices for scientific investigation in the psychology of religion. Two Western research traditions—instrumentalism and operationalism—are described and their potential contribution to a mismatch between what researchers intend to study and what they actually study is illustrated through two exemplar studies. The exemplar studies show how researchers' concern with methodological rigor can compromise the rich and thick meanings of religious practices, resulting in the misrepresentation of the practices and misleading both the psychological and religious research consumer. Several suggestions for dealing with these problems are discussed.

Tang, Y.-Y. & M. I. Posner. 2012. Tools of the trade: theory and method in mindfulness neuroscience. *Social Cognitive and Affective Neuroscience* 8(1). 118–120.
doi:10.1093/scan/nss112.

Mindfulness neuroscience is an emerging research field that investigates the underlying mechanisms of different mindfulness practices, different stages and different states of practice as well as different effects of practice over the lifespan. Mindfulness neuroscience research integrates theory and methods from eastern contemplative traditions,

western psychology and neuroscience, and from neuroimaging techniques, physiological measures and behavioral tests. In this paper, the authors review several key theoretical and methodological challenges in the empirical study of mindfulness neuroscience and provide suggestions for overcoming these challenges.

Ting, Rachel Sing Kiat. 2012. The worldviews of healing traditions in the East and West: Implications for psychology of religion. *Pastoral Psychology* 61(5-6). 759–782.
doi:10.1007/s11089-012-0439-y.

This paper highlights the integration of spiritual and religious approaches in psychotherapy using the three major religions (Taoism, Buddhism, and Christianity) of the Chinese community in Malaysia (CIM) as an example. The authors explore the underlying therapeutic dimensions that exist among CIM. The distinctive practices of religion among CIM include: 1) the blending of religion, folklore, and superstitious practices; 2) loyalty to the religious tradition of one's family; and 3) common belief in a spiritual reality. Due to the particularity of religiosity within this population, the authors propose a tradition-sensitive approach to integrative therapy and religion. Lastly, four clinical cases are discussed to demonstrate an integrative approach in therapy sessions. The themes that emerge from the cases are viewed as a dynamic process, including 1) exploration of the client's religious beliefs and beliefs concerning the spiritual realm, 2) affirming the client's religious resources and social duties, 3) returning to the client's basic religious teachings and rituals, 4) expanding religious support from the client's family and community, and 5) personal growth and healing in the client's relationships. In the conclusion, both the benefits and potential weaknesses of this approach are discussed in order to address the complexity of such an endeavor in an Asian setting.

PART 2. ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

2.1 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

Anderson, Karen Joy & Carol H. Pullen. 2013. Physical activity with spiritual strategies intervention: A cluster randomized trial with older African American women. *Research in Gerontological Nursing* 6(1). 11–21.
doi:10.3928/19404921-20121203-01.

A cluster randomized study was conducted using a convenience sample of four Christian faith communities from which 27 African American women, 60 years of age and older, were recruited. The purpose was to determine whether African American women receiving a physical activity intervention with spiritual strategies compared to a control group would demonstrate differences over time in physical activity behaviors and biomarkers, in self-efficacy for physical activity, and in barriers to physical activity. Results with baseline and 12-week measurements included significant between-group findings at 12 weeks on muscle strength activity, favoring the intervention group. There were significant between-group findings in 6-minute walk change scores, favoring the intervention group. Barriers were significantly reduced within the intervention group. Evidence suggests a physical activity intervention with spiritual strategies increases physical activity behavior. The Health Promotion Model can be used to develop physical activity interventions with spiritual strategies for older African American women in faith communities, thus, supporting Healthy People 2020 goals.

Archer, S., H. Sowter, J. Montague & A. Bali. 2013. Yoga for Gynaecological Cancer Patients: A Randomised Controlled Trial. *Psycho-Oncology* 22. 27–28.4

A randomized clinical trial offering Yoga to patients with ovarian, cervical, vulval and endometrial cancer took place over 18 months, and 5 focus groups with a total of 16 patients were used to evaluate the intervention. Recordings of the focus groups were transcribed verbatim and analyzed using Interpretative Phenomenological Analysis. The analysis revealed a number of salient themes surrounding the benefits of taking part in the yoga intervention. These included: (1) the ability to give and receive social support outside of traditional support group settings; (2) the classes gave patients “permission” to take part in physical activity, initiating a return to a normal or previous levels of physical activity; (3) giving patients tools to use for the future, as techniques learned at yoga were used to control stressful and anxious situations.

Chien, Li-Wei, Hui-Chi Chang & Chi-Feng Liu. 2013. Effect of Yoga on Serum Homocysteine and Nitric Oxide Levels in Adolescent Women With and Without Dysmenorrhea. *Journal of Alternative and Complementary Medicine* 19(1). 20–23.
doi:10.1089/acm.2011.0113.

A participant group of 30 women with primary dysmenorrhea and 30 women as normal healthy controls were provided yoga intervention, twice a week at 30 minutes/session, consecutively for 8 weeks. Yoga intervention was found to be associated with reductions in severity of dysmenorrhea and may be effective in lowering serum homocysteine levels after an intervention period of 8 weeks. These observations suggest that yoga may have therapeutic effects in women by restoring endothelial function.

Garland, S. N., R. Tamagawa, S. C. Todd, M. Speca & L. E. Carlson. 2012. Increased Mindfulness Is Related to Improved Stress and Mood Following Participation in a Mindfulness-Based Stress Reduction Program in Individuals With Cancer. *Integrative Cancer Therapies* 12(1). 31–40.
doi:10.1177/1534735412442370.

In this study, 268 individuals with cancer completed self-report assessments of stress and mood disturbances before and after participation in an 8-week MBSR program. Of these, 177 participants completed the Mindful

Attention Awareness Scale and 91 participants completed the Five Facet Mindfulness Questionnaire, at both time points. Following intervention, levels of mindfulness on both measures increased significantly over the course of the program. These were accompanied by significant reductions in mood disturbance (55%) and symptoms of stress (29%). Increases in mindfulness accounted for a significant percentage of the reductions in mood disturbance (21%) and symptoms of stress (14%). Being aware of the present moment and refraining from judging inner experience were the 2 most important mindfulness skills for improvements of psychological functioning among cancer patients.

Gregoski, Mathew J., Alexey Vertegel, Aleksey Shaporev & Frank A. Treiber. 2013. Tension Tamer: Delivering Meditation With Objective Heart Rate Acquisition for Adherence Monitoring Using a Smart Phone Platform. *Journal of Alternative and Complementary Medicine* 19(1). 17–19.
doi:10.1089/acm.2011.0772.

This brief report demonstrates the proof of concept of the Tension Tamer (TT) smartphone application, which integrates photoplethysmograph capabilities with breathing awareness meditation (BAM), to reduce stress and measure heart rate and adherence, using a sample of three prehypertensive male teachers. Researchers found that adherence data was successfully collected by the TT application. Increased adherence to TT coincided with increased improvements in ambulatory BP over a 3-month period. The authors conclude that TT shows promise as a simple inexpensive program for administering BAM and capturing adherence data in future clinical trials.

Horwitz, Russell H, Alexander C Tsai, Samuel Maling, Francis Bajunirwe, Jessica E Haberer, Nneka Emenyonu, Conrad Muzoora, Peter W. Hunt, Jeffrey N. Martin & David R. Bangsberg. 2013. No association found between traditional healer use and delayed antiretroviral initiation in rural Uganda. *AIDS and Behavior* 17(1). 260–265.
doi:10.1007/s10461-011-0132-7.

Traditional healer and/or spiritual counselor (TH/SC) use has been associated with delays in HIV testing. Researchers examined HIV-infected individuals in southwestern Uganda to test the hypothesis that TH/SC use was also associated with lower CD4 counts at antiretroviral therapy (ART) initiation. Approximately 450 individuals initiating ART through an HIV/AIDS clinic at the Mbarara University of Science and Technology (MUST) were recruited to participate. Patients were predominantly female, ranged in age from 18 to 75, and had a median CD4 count of 130. TH/SC use was not associated with lower CD4 cell count, but age and quality-of-life physical health summary score were associated with CD4 cell count at initiation while asset index was negatively associated with CD4 count at ART initiation. These findings suggest that TH/SC use does not delay initiation of ART.

Jafari, Najmeh, Ahmadreza Zamani, Ziba Farajzadegan, Fatemeh Bahrami, Hamid Emami & Amir Loghmani. 2013. The effect of spiritual therapy for improving the quality of life of women with breast cancer: A randomized controlled trial. *Psychology, Health & Medicine* 18(1). 56–69.
doi:10.1080/13548506.2012.679738.

The aim of this study was to assess the role of spiritual therapy intervention in improving the QOL of patients with breast cancer undergoing radiation therapy. This was a randomized controlled trial study undertaken in a radiotherapy clinic, Isfahan, Iran. Between October 2010 and February 2011, 68 patients under radiation therapy were randomized to either spiritual therapy intervention group or control group who received routine management and educational programs. Before and after six weeks of spiritual therapy sessions, the QOL was evaluated using Cancer quality-of-life questionnaire (QLQ)-C30 and breast cancer-specific questionnaire. In all, 65 patients actually completed the six-week intervention and were evaluated for the outcome. The mean Global health status score/QOL increased from 44.37 to 68.63. There was a statistically significant difference in all functional scales of QLQ-C30 after intervention. The results of this trial showed that the spiritual therapy

program can improve the overall QOL of women with breast cancer and could be adopted in comprehensive care programs for women with breast cancer.

- Krentzman, Amy R., James A. Cranford & Elizabeth A. R. Robinson. 2013. Multiple dimensions of spirituality in recovery: A lagged mediational analysis of Alcoholics Anonymous' principal theoretical mechanism of behavior change. *Substance Abuse: Official Publication of the Association for Medical Education and Research in Substance Abuse* 34(1). 20–32.
doi:10.1080/08897077.2012.691449.

The authors used a longitudinal model to test 2 dimensions of Alcoholics Anonymous (AA) as focal predictors and 6 dimensions of spirituality as possible mediators of AA's association with drinking. Data from the first 18 months of a 3-year longitudinal study of 364 alcohol-dependent individuals were analyzed. AA involvement was a stronger predictor of drinking outcomes than AA attendance. AA involvement predicted increases in private religious practices, daily spiritual experiences, and forgiveness of others. However, only private religious practices mediated the relationship between AA and drinking.

- Langhorst, Jost, Petra Klose, Gustav J Dobos, Kathrin Bernardy & Winfried Häuser. 2013. Efficacy and safety of meditative movement therapies in fibromyalgia syndrome: A systematic review and meta-analysis of randomized controlled trials. *Rheumatology international* 33(1). 193–207.
doi:10.1007/s00296-012-2360-1.

A systematic review with meta-analysis of the efficacy and safety of meditative movement therapies (Qigong, Tai Chi and Yoga) in fibromyalgia syndrome (FMS) was carried out, and randomized controlled trials comparing meditative movement therapies (MMT) to controls were analyzed. A total of 7 out of 117 studies with 362 subjects and a median of 12 sessions were included. MMT reduced sleep disturbances, fatigue, depression, and limitations of health-related quality of life (HRQOL), but not pain, compared to controls at final treatment. The significant effects on sleep disturbances and HRQOL could be maintained after a median of 4.5 months. In subgroup analyses, only Yoga yielded significant effects on pain, fatigue, depression and HRQOL at final treatment. No serious adverse events were reported. MMT are safe. Yoga had short-term beneficial effects on some key domains of FMS.

- Mainguy, Barbara, Michael Valenti Pickren & Lewis Mehl-Madrona. 2013. Relationships between level of spiritual transformation and medical outcome. *Advances in Mind-Body Medicine* 27(1). 4–11.

This study explored the narratives produced through interviews and writings of people working with traditional Aboriginal healers in Canada to assess the degree of spiritual transformation and to determine whether a relationship might exist between that transformation and subsequent changes in medical outcome. One hundred fifty non-Native individuals requested help from Dr Mehl-Madrona in finding traditional Aboriginal healing and spiritual practitioners and agreed to participate in this study of the effects of their work with the healers. A 5-year follow-up revealed that 44 of the reports were assessed as showing profound levels of persistent spiritual transformation, defined as a sudden and powerful improvement in the spiritual dimension of their lives. The level of spiritual transformation achieved through interaction with healers was associated in a dose-response relationship with subsequent improvement in medical illness in 134 of 155 people

- Malarkey, William B., David Jarjoura & Maryanna Klatt. 2013. Workplace based mindfulness practice and inflammation: A randomized trial. *Brain, Behavior, and Immunity* 27. 145–154.
doi:10.1016/j.bbi.2012.10.009.

The authors developed a low dose Mindfulness-Based Intervention (MBI-ld) that reduces the time committed to meetings and formal mindfulness practice, while conducting the sessions during the workday. In a controlled randomized trial they studied university faculty and staff (n=186) who were found to have an elevated CRP level, and who either had, or were at risk for cardiovascular disease. This study was designed to evaluate if MBI-ld

could produce a greater decrease in CRP, IL-6 and cortisol than an active control group receiving a lifestyle education program when measured at the end of the 2 month interventions. It was found that MBI-ld significantly enhanced mindfulness by 2 months, and it was maintained for up to a year when compared to the education control. No significant changes were noted between interventions in cortisol, IL-6 levels or self-reported measures of perceived stress, depression and sleep quality at 2-months. A MBI-ld effect on CRP (as compared to control) occurred among participants who had a baseline BMI <30 than for those with BMI >30. The authors conclude that MBI-ld should be more fully investigated as a low-cost self-directed complementary strategy for decreasing inflammation, and it seems most promising for non-obese subjects.

Miles, Steven C, Chou Chun-Chung, Lin Hsin-Fu, Stacy D Hunter, Mandeep Dhindsa, Nantinee Nualnim & Hirofumi Tanaka. 2013. Arterial blood pressure and cardiovascular responses to yoga practice. *Alternative Therapies in Health & Medicine* 19(1). 38–45.

The study intended to determine the acute effects of one session of hatha yoga practice on blood pressure and other cardiovascular responses. To gain insight into the long-term effects of yoga practice, both novice (n = 19) and advanced (n = 18) yoga practitioners were studied. Thirty-six apparently healthy, non-obese, sedentary, or recreationally active individuals from the community participated in the study. The intervention comprised one session of yoga practice, in which participants followed a custom made instructional video providing a yoga routine that consisted of a series of 23 hatha-based yoga postures. Systolic, mean, and diastolic blood pressures increased significantly during the yoga practice. The magnitude of these increases in blood pressure was greatest with standing postures. Heart rate and cardiac output increased significantly during yoga practice, especially with standing postures. Overall, no differences existed in cardiovascular responses between the novice and advanced practitioners throughout the yoga testing session; cPWV velocity was significantly and inversely associated with lumbar flexion but not with sit-and-reach test scores.

Mizuno, Julio & Henrique Luiz Monteiro. 2013. An assessment of a sequence of yoga exercises to patients with arterial hypertension. *Journal of Bodywork and Movement Therapies* 17(1). 35–41.
doi:10.1016/j.jbmt.2012.10.007.

This study describes the effects of a yoga sequence following hemodynamic and biochemical parameters in patients with hypertension. Thirty-three volunteers participated in the study (control = 16 and yoga = 17) for four months. Blood pressure measurements, and cardiac and respiratory rates were collected monthly, while the biochemical profile was taken at the beginning and end of the program. The yoga group showed a significant reduction of systolic blood pressure, heart and respiratory rate. The yoga group showed correlation coefficients between initial values and final responses greater than the control of fasting glucose, total cholesterol, LDL-cholesterol and triglycerides. The elaborated sequence practice promoted significant cardiovascular and metabolic benefits. The yoga exercises performed in the proposed sequence constitute complementary non-pharmacological control of blood pressure in patients with hypertension.

Reddy, Sheethal D., Lobsang Tenzin Negi, Brooke Dodson-Lavelle, Brendan Ozawa-de Silva, Thaddeus W. W. Pace, Steve P. Cole, Charles L. Raison & Linda W. Craighead. 2013. Cognitive-Based Compassion Training: A Promising Prevention Strategy for At-Risk Adolescents. *Journal of Child and Family Studies* 22(2). 219–230.
doi:10.1007/s10826-012-9571-7.

The present study examined whether a 6-week Cognitively-Based Compassion Training (CBCT) intervention would improve psychosocial functioning among adolescents in foster care. Seventy adolescents were randomized to CBCT (twice weekly) or a wait-list condition. Youth were assessed at baseline and after 6 weeks. Groups did not differ on measures of psychosocial functioning following training; however practice frequency was associated with increased hopefulness and a trend for a decrease in generalized anxiety. Qualitative results indicated that participants found CBCT useful for dealing with daily life stressors. Adolescents in care were willing to engage in

CBCT, and the majority reported CBCT was very helpful and almost all reported they would recommend CBCT to a friend. Participants reported specific instances of using CBCT strategies to regulate emotion, manage stress, or to respond more compassionately towards others.

- Rosendahl, Jenny, Katharina Tigges-Limmer, Jan Gummert, Ralf Dziewas, Johannes Maximilian Albes & Bernhard Strauss. 2013. Bypass surgery with psychological and spiritual support (the BY.PASS Study): Results of a pragmatic trial based on patients' preference. *Psychotherapy and Psychosomatics* 82(1). 35–44.
doi:10.1159/000339170.

This study is a pragmatic, patient preference trial which enrolled adult patients scheduled for elective coronary bypass surgery. Patients were assigned to study conditions according to their personal preference: preference for psychological interventions, for spiritual interventions or for no intervention. Patients who were open for any kind of intervention were randomly assigned either to psychological or spiritual interventions. A total of 847 patients were enrolled. Patients of the control (n = 260) and the intervention group (n = 269) who explicitly wanted to have interventions were compared. No significant treatment effects either for morbidity, or for mortality could be found. A reduction of negative mood resulted from both interventions.

- Rosenkranz, Melissa A, Richard J Davidson, Donal G Maccoon, John F Sheridan, Ned H Kalin & Antoine Lutz. 2013. A comparison of mindfulness-based stress reduction and an active control in modulation of neurogenic inflammation. *Brain, Behavior, and Immunity* 27(1). 174–184.
doi:10.1016/j.bbi.2012.10.013.

Researchers designed the present study to rigorously compare an 8-week Mindfulness-Based Stress Reduction (MBSR) intervention to a well-matched active control intervention, the Health Enhancement Program (HEP), in their ability to reduce psychological stress and experimentally-induced inflammation. The Trier Social Stress Test (TSST) was used to induce psychological stress and inflammation was produced using topical application of capsaicin cream to forearm skin. Immune and endocrine measures of inflammation and stress were collected both before and after MBSR training. Results show those randomized to MBSR and HEP training had comparable post-training stress-evoked cortisol responses, as well as equivalent reductions in self-reported psychological distress and physical symptoms. However, MBSR training resulted in a significantly smaller post-stress inflammatory response compared to HEP, despite equivalent levels of stress hormones. These results suggest behavioral interventions designed to reduce emotional reactivity may be of therapeutic benefit in chronic inflammatory conditions.

- Sendhilkumar, Ragupathy, Anupam Gupta, Raghuram Nagarathna & Arun B. Taly. 2013. Effect of pranayama and meditation as an add-on therapy in rehabilitation of patients with Guillain-Barré syndrome—A randomized control pilot study. *Disability and Rehabilitation: An International, Multidisciplinary Journal* 35(1). 57–62.
doi:10.3109/09638288.2012.687031.

Twenty-two Guillain-Barré syndrome (GBS) patients being treated in a neurological rehabilitation unit of a university research hospital were randomly assigned to yoga and control groups. Ten patients in each group completed the study. The yoga group received 15 sessions in total over a period of 3 weeks (1 h/session), one session per day on 5 days per week that consisted of relaxation, Pranayama (breathing practices) and Guided meditation in addition to conventional rehabilitation therapeutics. The control group received usual rehabilitation care. Following intervention, quality of sleep improved significantly in the yoga group. There was reduction of pain scores, anxiety and depression in both the groups without statistical significance between groups. Overall functional status improved in both groups without significant difference.

Sooksawat, Annop, Prawit Janwantanakul, Tewin Tencomnao & Praneet Pensri. 2013. Are religious beliefs and practices of Buddhism associated with disability and salivary cortisol in office workers with chronic low back pain? *BMC musculoskeletal disorders* 14. 29.
doi:10.1186/1471-2474-14-29.

In this study, a cross-sectional survey was conducted using a self-administered questionnaire measuring disability was completed by 463 office workers with chronic low back pain (LBP), and saliva samples were collected from a randomly selected sub-sample of respondents (n=96) to assess salivary cortisol as a marker of psychological stress. Analysis revealed that only 6% of variance in psychological stress was accounted for by the religious beliefs and practices of Buddhism. Those with high religiousness experienced lower psychological stress. No association between the religious beliefs and practices of Buddhism and disability level was found. Depressive symptoms were attributed to both psychological stress and disability status in our study population. The findings suggest that, although being religious may improve the psychological condition in workers with chronic LBP, its effect is insufficient to reduce disability due to illness.

Telles, Shirley, Bhat Ramachandra Raghavendra, Kalkuni Visweswaraiiah Naveen, Nandi Krishnamurthy Manjunath, Sanjay Kumar & Pailoor Subramanya. 2013. Changes in Autonomic Variables Following Two Meditative States Described in Yoga Texts. *Journal of Alternative and Complementary Medicine* 19(1). 35–42.
doi:10.1089/acm.2011.0282.

In this study, autonomic and respiratory variables were assessed in 30 healthy male volunteers during four mental states as described in traditional yoga texts: random thinking (cancalata), nonmeditative focusing (ekagrata), meditative focusing (dharana), and effortless meditation (dhyana). Maximum changes were seen in dhyana, during which there was a significant increase in the skin resistance level and photo-plethysmogram amplitude, whereas there was a significant decrease in the heart rate and breath rate. There was a significant decrease in the low frequency (LF) power and increase in the high frequency (HF) power in the frequency domain analysis of the heart rate variability (HRV) spectrum, on which HF power is associated with parasympathetic activity. Changes in other indications of parasympathetic activity were identified as well.

Zhang, Amy Y., Faye Gary & Hui Zhu. 2013. Initial evidence of religious practice and belief in depressed African American cancer patients. *The Open Nursing Journal* 7. 1–5.
doi:10.2174/1874434601307010001.

This study examined spiritual coping (beliefs and practices) of depressed African American cancer patients through a comparison with depressed White cancer patients and non-depressed African American cancer patients. Using mixed methods, 74 breast (n=41) and prostate (n=33) cancer survivors including 34 depressed and 23 non-depressed African Americans and 17 depressed Whites were interviewed. Analysis of the interviews revealed that significantly more depressed African Americans questioned God when learning of a cancer diagnosis than the non-depressed African Americans, but they did not differ from the depressed Whites in this regard. Significantly more depressed African Americans reported having faith in God, reading the bible, and conversing with God than did the depressed Whites. They also reported praying alone more frequently than the depressed Whites who, on the other hand, reported praying with others (non-family members) together for one's own health more frequently.

2.2 SPIRITUALITY & HEALTH: MENTAL HEALTH

Bennett, Kellie, Julie Shepherd & Aleksandar Janca. 2013. Personality disorders and spirituality. *Current Opinion in Psychiatry* 26(1). 79–83.
doi:10.1097/YCO.0b013e32835b2c17.

This literature review was conducted in order to consider findings about the relationship between spirituality, religiosity and personality disorders. Researchers found that the positive link between religious and spiritual well-being and mental health has been corroborated by a number of studies. This review of recent research has identified emerging trends suggesting that the dimensions of religious and spiritual well-being remain high for individuals displaying schizotypy and borderline personality traits, and is not as reduced as general well-being in individuals diagnosed with personality disorders.

Binks, Eve & Neil Ferguson. 2013. Religion, trauma and non-pathological dissociation in Northern Ireland. *Mental Health, Religion & Culture* 16(2). 200–209.
doi:10.1080/13674676.2012.659241.

This study assessed the relationships between non-pathological dissociation, trauma and religion in 179 members of the Northern Irish diaspora in England. Analysis indicated that non-pathological dissociative experiences were not significantly predicted by intrinsic religiosity, extrinsic religiosity, direct exposure to political violence or indirect exposure to political violence, but were significantly predicted by some specific religious practices. Findings are discussed with specific reference to research on dissociation, trauma, and religion.

Chen, Biao. 2012. Coping with death and loss: Confucian perspectives and the use of rituals. *Pastoral Psychology* 61(5-6). 1037–1049.
doi:10.1007/s11089-012-0476-6.

This study describes the coping systems found in Chinese Confucianism, which has evolved a set of mourning and burial ceremonies which have common characteristics that emphasize filial piety and the use of rituals as effective methods of coping with death. These beliefs and practices have deep meaning for the psychology of religion. They provide comfort and stimulate people to reflect on and promote spirituality. Through these interactions between relatives and ritualized behavior, Chinese find effective methods of coping with death and loss in culture. The mourning and burial ceremonies of Confucianism give the participants a comprehensive religious experience and personality integration so that their spirituality can be cultivated.

Ellis, Lee, Eshah A. Wahab & Malini Ratnasingan. 2013. Religiosity and fear of death: a three nation comparison. *Mental Health, Religion & Culture* 16(2). 179–199.
doi:10.1080/13674676.2011.652606.

Researchers studied the correlation of religiosity and fear of death among college students in three countries: Malaysia, Turkey, and the United States. Overall, the patterns in all three countries were similar. When linearity was assumed, there is a substantial positive correlation between most religiosity measures and fear of death. Assuming curvilinearity added slightly to the strength of the relationships in the US data and nothing to data from Malaysia or Turkey. Other findings were that, on average, females were more religious and feared death more than did males, and Muslims expressed considerably greater fear than did members of any other major religion. Results were discussed in the context of a new theory: death apprehension theory. Among other things, it specifically predicts that death apprehension will be positively related to most religious beliefs and practices.

Gordon, William, Edo Shonin, Alex Sumich, Eva C. Sundin & Mark D. Griffiths. 2013. Meditation awareness training (MAT) for psychological well-being in a sub-clinical sample of university students: A controlled pilot study. *Mindfulness*.
doi:10.1007/s12671-012-0191-5.

The aim of this pilot study was to assess the feasibility and effectiveness of Meditation Awareness Training (MAT) for improving psychological well-being in a sub-clinical sample of higher education students with issues of stress, anxiety, and low mood. Participants (n=14) undertook an 8-week MAT program and comparisons were made with a control group (n=11) on measures of self-assessed psychological well-being and dispositional mindfulness. Participants who received MAT showed significant improvements in psychological well-being and

dispositional mindfulness over controls. It is hypothesized that MAT may increase emotion regulation ability in higher education students with issues of stress, anxiety, and low mood. Individuals receiving training in mindfulness meditation may benefit by engendering a broader, more ethically informed, and compassionate intention for their mindfulness practice.

- Hamilton, Jill B., Margarete Sandelowski, Angelo D. Moore, Mansi Agarwal & Harold G. Koenig. 2013. "You Need a Song to Bring You Through": The Use of Religious Songs to Manage Stressful Life Events. *Gerontologist* 53(1). 26–38.

In this study, sixty-five African American older adults residing in the Southeastern US participated in a qualitative descriptive study involving criterion sampling, open-ended semi-structured interviews, qualitative content analysis, and descriptive statistics. Religion expressed through song was a coping strategy for participants experiencing stressful life events who described feelings of being comforted, strengthened, able to endure, uplifted, and able to find peace by turning to the types of religious songs described here. Five types of songs were used including those evoking Thanksgiving and Praise, Instructive, Memory of Forefathers, Communication with God, and Life after Death.

- King, Michael, Louise Marston, Sally McManus, Terry Brugha, Howard Meltzer & Paul Bebbington. 2013. Religion, spirituality and mental health: Results from a national study of English households. *The British Journal of Psychiatry: The Journal of Mental Science* 202(1). 68–73.
doi:10.1192/bjp.bp.112.112003.

Researchers analyzed data collected from interviews with 7,403 people who participated in the third National Psychiatric Morbidity Study in England. Of the participants 35% had a religious understanding of life, 19% were spiritual but not religious and 46% were neither religious nor spiritual. Religious people were similar to those who were neither religious nor spiritual with regard to the prevalence of mental disorders, except that the former were less likely to have ever used drugs or be a hazardous drinker. Spiritual people were more likely than those who were neither religious nor spiritual to have ever used or be dependent on drugs, and to have abnormal eating attitudes, generalized anxiety disorder, any phobia or any neurotic disorder. They were also more likely to be taking psychotropic medication. The authors conclude that people who have a spiritual understanding of life in the absence of a religious framework are vulnerable to mental disorder.

- Lavretsky, H., E.S. Epel, P. Siddarth, N. Nazarian, N. St. Cyr, D.S. Khalsa, J. Lin, E. Blackburn & M.R. Irwin. 2013. A pilot study of yogic meditation for family dementia caregivers with depressive symptoms: Effects on mental health, cognition, and telomerase activity. *International Journal of Geriatric Psychiatry* 28(1). 57–65.
doi:10.1002/gps.3790.

This study examined the effects of brief daily yogic meditation on mental health, cognitive functioning, and immune cell telomerase activity in 39 family dementia caregivers with mild depressive symptoms who were randomized to practicing Kirtan Kriya or listening to relaxation music for 12 min per day for 8 weeks. The severity of depressive symptoms, mental and cognitive functioning were assessed at baseline and follow-up. Telomerase activity in peripheral blood mononuclear cells (PMBC) was examined in peripheral PBMC pre-intervention and post-intervention. Following intervention, the meditation group showed significantly lower levels of depressive symptoms and greater improvement in mental health and cognitive functioning compared with the relaxation group. In the meditation group, 65.2% showed 50% improvement on the Hamilton Depression Rating scale and 52% of the participants showed 50% improvement on the Mental Health Composite Summary score of the Short Form-36 scale compared with 31.2% and 19%, respectively, in the relaxation group. The meditation group showed 43% improvement in telomerase activity compared with 3.7% in the relaxation group.

- Merritt, Marcellus M. & T.J. McCallum. 2013. Too Much of a Good Thing?: Positive Religious Coping Predicts Worse Diurnal Salivary Cortisol Patterns for Overwhelmed African American Female Dementia Family Caregivers. *The American Journal of Geriatric Psychiatry* 21(1). 46–56. doi:10.1016/j.jagp.2012.10.006.

In this study of 30 African American (AA) female dementia caregivers and 48 AA noncaregivers, researchers found that higher combined and positive (but not negative) religious coping scores were associated with increasingly flatter or worse cortisol slope scores for caregivers (but not noncaregivers). The authors conclude that being AA, a caregiver, and high in positive religious coping may predict increased daily stress responses, mainly for those with higher patient behavioral problems.

- Moreno, Oswaldo & Esteban Cardemil. 2013. Religiosity and mental health services: An exploratory study of help seeking among Latinos. *Journal of Latina/o Psychology* 1(1). 53–67. doi:10.1037/a0031376.

Researchers examined religiosity, coping with adversity, and facilitators of seeking different types of mental health services in a sample of 17 religious Latino men and women. Thematic analysis revealed that participants tended to cope with methods that were consistent with their religious practices. Most participants, especially those older in age, identified organized and informal religious and spiritual practices as important and preferred religious and spiritual coping methods when handling adversity. Additionally, many participants indicated a preference for religious counseling services that were consistent with their religious beliefs and complemented their extant ways of coping with adversity. Finally, the study found that there were several commonly held ideas about circumstances under which participants would seek formal mental health services, including feeling understood, experiencing serious mental health problems, and encountering problems that were thought to be biological in origin.

- Park, Jisung & Soonhee Roh. 2013. Daily spiritual experiences, social support, and depression among elderly Korean immigrants. *Ageing & Mental Health* 17(1). 102–108. doi:10.1080/13607863.2012.715138.

In this study, researchers found that elderly Korean immigrants living in New York City (n=200) were found to be moderately engaged in daily spiritual experiences (DSE) but not experiencing a fair level of social support. Respondents reported no depression on the average but 30% of them were experiencing mild to severe depression. Both DSE and social support were inversely related with depression, and the relationship between DSE and depression was mediated by social support.

- Perera, Sulani & Patricia A. Frazier. 2013. Changes in religiosity and spirituality following potentially traumatic events. *Counselling Psychology Quarterly* 26(1). 26–38. doi:10.1080/09515070.2012.728883.

Researchers compared university students (n=122) who had recently experienced a potentially traumatic event (PTE) and a matched comparison group (n=122) who had not experienced a recent PTE, in terms of: (1) the amount of actual and self-perceived positive and negative change in religiosity and spirituality; (2) the relations between perceived and actual positive and negative spiritual change; and (3) the relation between change in religiosity and spirituality and change in distress. Although there were small actual and perceived changes in religiosity and spirituality within each group, there were no between-group differences in terms of religious and spiritual change. Thus, changes over time in these life domains are not unique to PTE exposure. As expected, the relations between actual and perceived changes were small, highlighting that perceived and actual change are different constructs. Finally, differences between the two groups in the relations between religious and spiritual change and distress suggested that changes in these life domains may reflect coping efforts in the PTE group.

Randall, G. K. & Alex J. Bishop. 2013. Direct and Indirect Effects of Religiosity on Valuation of Life Through Forgiveness and Social Provisions Among Older Incarcerated Males. *Gerontologist* 53(1). 51–59.

This article reports on the testing of a model linking religiosity (REL) to valuation of life (VOL) in a sample of 261 male prison inmates, aged 45-82, utilizing 3 subscales of the Heartland Forgiveness Scale (Self, Others, and Situations) and social provisions (SPS). Analysis of results indicated that significant indirect effects of REL on VOL were present through Forgiveness of Others and SPS, and of REL on SPS through Forgiveness of Others.

Rote, Sunshine, Terrence D. Hill & Christopher G. Ellison. 2013. Religious Attendance and Loneliness in Later Life. *Gerontologist* 53(1). 39–50.

After analyzing data from the National Social Life Health and Aging Project (2005/2006), the authors found that religious attendance is associated with higher levels of social integration and social support, and that social integration and social support are associated with lower levels of loneliness.

Sansone, Randy A. & Michael W. Wiederman. 2013. Distancing oneself from God: Relationships with borderline personality symptomatology. *Mental Health, Religion & Culture* 16(2). 210–214. doi:10.1080/13674676.2012.666518.

Using data from four previous samples of primary care outpatients (n=1,511), researchers examined the relationship between borderline personality symptomatology and intentionally distancing oneself from God as self-punishment, based on the assumption that such self-punishment may represent a form of self-harm behavior. Analysis of data supported the hypothesis that distancing oneself from God as punishment may be a form of self-harm behavior associated with borderline personality symptomatology.

Tiliopoulos, Niko & Annemieke Bikker. 2013. A thematic comparison of religiosity profiles between Christians with low and high schizotypy. *Mental Health, Religion & Culture* 16(2). 173–178. doi:10.1080/13674676.2011.652605.

This exploratory qualitative study aimed to identify themes relevant to the elements constituting a religiosity profile that, at least among Christians, appears to enhance both aspects of mental health and fundamental components of psychological well-being. Semi-structured interviews were conducted with eight participants, who were classified as having either high or low levels of schizotypy. Following an inductive thematic analysis approach, the results identified four interrelated, superordinate themes, which revealed a clear difference between the two groups. The main bottom-up elements of a well-being-enhancing religiosity appear to involve (a) a personal relationship with a loving God; (b) religious beliefs that act as guidance, providing meaningful purpose to life; (c) a conviction that religious beliefs are a result of choice or revelation; and (d) a relative absence of religious doubt.

Tsaousis, Ioannis, Evangelos Karademas & Dimitra Kalatzi. 2013. The role of core self-evaluations in the relationship between religious involvement and subjective well-being: A moderated mediation model. *Mental Health, Religion & Culture* 16(2). 138–154. doi:10.1080/13674676.2011.651716.

Researchers examined 300 elderly adults, and 294 members of an adult community, and found that core self-evaluations mediates the relationship between religious involvement (i.e., religious attendance and intrinsic religiosity) and both aspects of subjective well-being. However, the moderated mediation models revealed that this mechanism exists only for elderly.

Wang, Xumei, Ting Wang & Buxin Han. 2012. The mental health of older Buddhists after the Wenchuan earthquake. *Pastoral Psychology* 61(5-6). 841–850. doi:10.1007/s11089-011-0402-3.

This study investigated changes in measures of mental health among elderly Buddhists after the Wenchuan earthquake in China, comparing mental health status with that of a non-religious group matched for age which was also severely affected by the disaster. The results indicated that religious faith helped Buddhists recover from trauma, but only in areas severely damaged by earthquakes. The lower level of mental health scores was interpreted to mean that those with religious sensitivities were more deeply affected by but had resilience facing the trauma of the earthquake.

- Wasserman, Stephanie, Amy Weisman & Giulia Suro. 2013. Nonreligious coping and religious coping as predictors of expressed emotion in relatives of patients with schizophrenia. *Mental Health, Religion & Culture* 16(1). 16–30.
doi:10.1080/13674676.2011.642347.

The authors discuss expressed emotion (EE), which is a measure of the amount of criticism and emotional over involvement expressed by a key relative towards a relative with a disorder or illness. The current study tested whether religious and nonreligious coping serve as predictors of EE. A sample of 72 family members of patients with schizophrenia completed an EE interview, along with questionnaires assessing situational nonreligious coping and religious coping. In line with hypotheses, results indicated that nonreligious coping predicted EE. Specifically, less use of adaptive emotion-focused coping predicted high EE. Also consistent with predictions, maladaptive religious coping predicted high EE above and beyond nonreligious coping.

2.3 SPIRITUALITY & HEALTH: METHOD AND THEORY

- Batthey, Bonnie Weaver. 2012. Perspectives of spiritual care for nurse managers. *Journal of Nursing Management* 20(8). 1012–1020.
doi:10.1111/j.1365-2834.2012.01360.x.

In this article, the author explores the current status, perspectives and attitudes of nurse managers, nurses and others toward spiritual care. It is found that, while the spiritual dimension of holistic care is considered essential to healing, its practice has yet to be achieved. The author concludes that if nurse managers implement agency-wide programs of spiritual care then clear direction can be provided for the nursing staff.

- Beshai, Shadi, Cameron M. Clark & Keith S. Dobson. 2013. Conceptual and Pragmatic Considerations in the Use of Cognitive-Behavioral Therapy with Muslim Clients. *Cognitive Therapy and Research* 37(1). 197–206.
doi:10.1007/s10608-012-9450-y.

In this paper, some of the philosophical and theoretical tenets of both Islam and Cognitive-behavioral therapy are first discussed. Secondly, and as to heighten clinical awareness, several points of concordance and dissonance between these systems are discussed and highlighted through an illustrative case study. Finally, the authors conclude by offering a number of suggestions for future research.

- Biro, Anne L. 2012. Creating conditions for good nursing by attending to the spiritual. *Journal of Nursing Management* 20(8). 1002–1011.
doi:10.1111/j.1365-2834.2012.01444.x.

The author notes the similarities, differences, and gaps in the literature on good nursing and spiritual care. Nursing research, reports and discussion articles from a variety of countries were reviewed on the topics of good nursing, spiritual care and spirituality. The author concludes that there are many commonalities between good nursing and spiritual care. Personal attributes of the nurse are described in similar terms in research on spiritual care and good nursing. Professional attributes common to good nursing and spiritual care are the nurse-patient relationship, assessment skills and communication skills.

Blanchard, Judith H, Douglas A Dunlap & George Fitchett. 2012. Screening for spiritual distress in the oncology inpatient: A quality improvement pilot project between nurses and chaplains. *Journal of Nursing Management* 20(8). 1076–1084.
doi:10.1111/jonm.12035.

In this paper, the author describes a quality improvement initiative of nursing/chaplain collaboration on the early identification and referral of oncology patients at risk of spiritual distress. Ten nurses on the oncology unit were recruited and trained in a two-question screening tool to be utilized upon admission. Six nurses made referrals; a total of 14 patients. Four (28%) were at risk of spiritual distress and were assessed by the chaplains. The author concludes that nurses appreciate terminology/procedures by which they can assess more productively the spiritual needs of their patients and make appropriate chaplain referrals.

Caldeira, Sílvia & Jenny Hall. 2012. Spiritual leadership and spiritual care in neonatology. *Journal of Nursing Management* 20(8). 1069–1075.
doi:10.1111/jonm.12034.

This article explores spiritual care in the neonatal care environment and highlights the importance of spiritual leadership of a health team in that context.

Carneiro, Renata. 2013. The Impact of Christianity on Therapy with Latino Families. *Contemporary Family Therapy: An International Journal* 35(1). 137–146.

The purpose of this paper is to explore, through a feminist perspective, the role of Christianity and the feminist movement in Latin America and the impact of Christianity on therapists' work with Latino families. Unquestioned patriarchal beliefs prescribed by religion often place women and racial and sexual minorities in positions of victimization. In the therapeutic framework, 'God' represents unquestioned values that must be challenged and evaluated in order to have a transformative effect. As a result of the increase in the number of Latino immigrants to the United States, it is inevitable for therapists to work with Latino families, a highly religious population.

Cockell, Nell & Wilfred McSherry. 2012. Spiritual care in nursing: An overview of published international research. *Journal of Nursing Management* 20(8). 958–969.
doi:10.1111/j.1365-2834.2012.01450.x.

This paper provides an overview of 80 papers on research into spiritual care in nursing between 2006 and 2010, to enable nurses and nurse managers to make use of evidence available to them to improve quality of care and implement best practice.

Daaleman, Timothy P. 2012. A health services framework of spiritual care. *Journal of Nursing Management* 20(8). 1021–1028.
doi:10.1111/j.1365-2834.2012.01482.x.

In this article, the author introduces a health services framework of spiritual care that addresses the empirical and applied issues surrounding spirituality and nursing practice. Three studies using a health services framework are reviewed: (1) a survey study of dying patients and family that describes the providers, types and outcomes of spiritual care; (2) an exploratory study of the process of spiritual care; and (3) a multi-level study of the structure and outcomes of spiritual care in long-term care facilities. Spiritual care recipients identify family or friends (41%), clergy (17%) and health care providers (29%) as spiritual care providers. The most frequently reported type of spiritual care was help in coping with illness (87%). Just over half (55%) were satisfied with the care that they received. The processes of spiritual care involved: (1) presence, (2) opening eyes, and; (3) co-creating, which was a mutual and fluid activity between patients, family members and care providers. In long term care facilities, decedents who received spiritual care were perceived as receiving better overall care in the last month of life, when compared with those decedents who did not receive spiritual care.

Draper, Peter. 2012. An integrative review of spiritual assessment: Implications for nursing management. *Journal of Nursing Management* 20(8). 970–980.
doi:10.1111/jonm.12005.

The paper integrates aspects of a recent systematic review of quantitative approaches to measuring spirituality and a recent meta-synthesis of qualitative research into client perspectives of spiritual needs in health and the principles of generic assessment, before drawing on the wider literature to discuss a number of professional implications and making recommendations to nurse managers.

Fouka, Georgia, Sotirios Plakas, Ann Taket, Markella Boudioni & Michael Dandoulakis. 2012. Health-related religious rituals of the Greek Orthodox Church: Their uptake and meanings. *Journal of Nursing Management* 20(8). 1058–1068.
doi:10.1111/jonm.12024.

This article examines the uptake of religious rituals of the Greek Orthodox Church by relatives of patients in critical condition in Greece and to explore their symbolic representations and spiritual meanings. This study was part of a large study encompassing 19 interviews with 25 informants, relatives of patients in intensive care units of three large hospitals in Athens, Greece, between 2000 and 2005. In this paper data were derived from personal accounts of religious rituals given by six participants. Through the rituals, relatives experience a sense of connectedness with the divine and use the sacred powers to promote healing of their patients.

Giske, Tove. 2012. How undergraduate nursing students learn to care for patients spiritually in clinical studies--a review of literature. *Journal of Nursing Management* 20(8). 1049–1057.
doi:10.1111/jonm.12019.

A literature search was undertaken using international databases from 1980 to 2012 to gain knowledge about what is known about how undergraduate nursing students learn to care for patients spiritually in their clinical studies. Four main areas emerged as essential for learning spiritual care in clinical studies: (1) the importance of learning in real-life situations with repeated exposure to patients in diverse placements; (2) use of pedagogical methods that assist students to understand, work with and reflect on patients' spirituality; (3) to be aware of and overcome conditions prohibiting spiritual care learning; and (4) to see spiritual care learning in connection with how students are prepared and how they are followed up after clinical studies.

Kazemipour, Farahnaz & Salmiah Mohd Amin. 2012. The impact of workplace spirituality dimensions on organisational citizenship behaviour among nurses with the mediating effect of affective organisational commitment. *Journal of Nursing Management* 20(8). 1039–1048.
doi:10.1111/jonm.12025.

Analysis of questionnaires completed by 305 nurses employed in four public and general Iranian hospitals indicates that workplace spirituality dimensions including meaningful work, a sense of community and an alignment with organizational values have a significant positive relationship with organizational citizenship behavior (OCB). Affective organizational commitment mediated the impact of workplace spirituality on OCB.

Kevern, Peter. 2012. Who can give “spiritual care”? The management of spiritually sensitive interactions between nurses and patients. *Journal of Nursing Management* 20(8). 981–989.
doi:10.1111/j.1365-2834.2012.01428.x.

This article considers the purpose of contemporary ‘spiritual care’ in order to help nursing managers make informed decisions about its appropriate delivery in a clinical context. The author concludes that effective spiritual care requires a consideration of both the patient’s and the nurse’s implicit and explicit religious commitments.

- Lazenby, Mark, Jamal Khatib, Feda' Al-Khair & Majdoleen Neamat. 2013. Psychometric properties of the Functional Assessment of Chronic Illness Therapy--Spiritual Well-being (FACIT-Sp) in an Arabic-speaking, predominantly Muslim population. *Psycho-oncology* 22(1). 220–227. doi:10.1002/pon.2062.

This first study of Arabic-speaking, predominantly Muslim Jordanian cancer patients (n=205) using the Arabic Functional Assessment of Chronic Illness Therapy-Spiritual Well-being (FACIT-Sp) Version 4 indicates that it is a psychometrically sound instrument for detailed assessment of the spiritual well-being of Arabic-speaking cancer patients. The three-factor model appears to allow for discrimination among factors that are most highly associated with different aspects of HrQoL.

- Liu, Eric Yang & Harold G. Koenig. 2013. Measuring Intrinsic Religiosity: scales for use in mental health studies in China – a research report. *Mental Health, Religion & Culture* 16(2). 215–224. doi:10.1080/13674676.2012.672404.

This study provides evidence to support the use of the Chinese versions of Hoge Intrinsic Religiosity Scale and the Duke University Religion Index. The data were from a community-based sample of 1039 Chinese women, 18–34 years old, in rural China. Reliability tests were performed on the two religiosity scales. Internal consistency analysis showed excellent correlation coefficients for most of the items. In addition, factor analysis produced two factors for the Hoge Intrinsic Religiosity Scale, a result consistent with previous findings in the Western, predominantly Christian cultures and societies. Moreover, findings showed statistically significant correlations between the two religiosity scales and mental health outcomes, even though the strength of correlation between the Hoge Intrinsic Religiosity Scale and mental health outcomes appeared to be stronger. In sum, this study suggests that both the Hoge Intrinsic Religiosity Scale and the Duke University Religion Index should be appropriate instruments for detecting and measuring religiosity in the Chinese context.

- Meehan, Therese Connell. 2012. Spirituality and spiritual care from a Careful Nursing perspective. *Journal of Nursing Management* 20(8). 990–1001. doi:10.1111/j.1365-2834.2012.01462.x.

This paper provides a brief historical background of spirituality in nursing, and describes spiritual care from the perspective of the Careful Nursing philosophy and professional practice model. Careful Nursing suggests a spiritual values model that could be useful in assisting nurses to reach a shared understanding of spirituality and a spiritual approach to nursing practice.

- Park, Crystal. 2013. Mind-body CAM interventions: Current status and considerations for integration into clinical health psychology. *Journal of Clinical Psychology* 69(1). 45–63. doi:10.1002/jclp.21910.

The author describes characteristic of users of complementary and alternative medicine (CAM), and then reviews evidence regarding the efficacy of mind-body treatments (biofeedback, meditation, guided imagery, progressive muscle relaxation, deep breathing, hypnosis, yoga, tai chi, and qi gong).

- Reimer-Kirkham, Sheryl, Barbara Pesut, Richard Sawatzky, Marie Cochrane & Anne Redmond. 2012. Discourses of spirituality and leadership in nursing: A mixed methods analysis. *Journal of Nursing Management* 20(8). 1029–1038. doi:10.1111/j.1365-2834.2012.01480.x.

The authors employed a mixed methods approach, including a literature review, qualitative research and philosophic analysis, to examine discourses of spirituality in contexts of nursing leadership. After a literature synthesis protocol, 38 nursing literature sources were reviewed. Integrated analysis revealed a heterogeneous discourse in the nursing literature. Nurse leaders in the qualitative study evidenced awareness of the influence of spirituality and concern for inclusive health services, yet were cautious in integrating spirituality into leadership

practices because of organizational and social influences. Assumptions regarding the role of leaders' spiritual values and the integration of spirituality into the workplace were revealed.

- Ren, Zhengjia. 2012. Spirituality and community in times of crisis: Encountering spirituality in indigenous trauma therapy. *Pastoral Psychology* 61(5-6). 975–991.
doi:10.1007/s11089-012-0440-5.

This case report focuses on survivors of the 2008 earthquake in Southwest China, in order to understand how Chinese spirituality may be involved in the process of psychological rehabilitation.

- Shi, Lin & Chenguang Zhang. 2012. Spirituality in traditional Chinese medicine. *Pastoral Psychology* 61(5-6). 959–974.
doi:10.1007/s11089-012-0480-x.

This article examines six aspects of traditional Chinese medicine (TCM): the history of TCM; fundamental beliefs of TCM; spirituality in traditional Chinese healing rituals; spirituality in the traditional Chinese pharmacy; spirituality in health maintenance theories; and the spirituality of master doctors of TCM.

- Silton, Nava R., Kevin J. Flannelly, Kathleen Galek & David Fleenor. 2013. Pray Tell: The Who, What, Why, and How of Prayer Across Multiple Faiths. *Pastoral Psychology* 62(1). 41–52.
doi:10.1007/s11089-012-0481-9.

Although prayer is one of the most common chaplain interventions, there is a dearth of information pertaining to prayer in the chaplaincy literature. This study was conducted to obtain basic information from professional chaplains about their use of prayer with patients. Eight professional chaplains participated in a 90-min focus group to discuss, among other things, the nature of chaplain prayers, the context in which they prayed, and who should initiate prayer. They also discussed differing religious perspectives about prayer, the strengths and limitations of different types of prayers, and praying with patients from concordant or discordant faiths.

- Ting, Rachel Sing-Kiat & Alvin Lai Oon Ng. 2012. Use of religious resources in psychotherapy from a tradition-sensitive approach: Cases from Chinese in Malaysia. *Pastoral Psychology* 61(5-6). 941–957.
doi:10.1007/s11089-011-0365-4.

The authors review several key theoretical and methodological challenges in the empirical study of mindfulness neuroscience, and provide suggestions for overcoming these challenges.

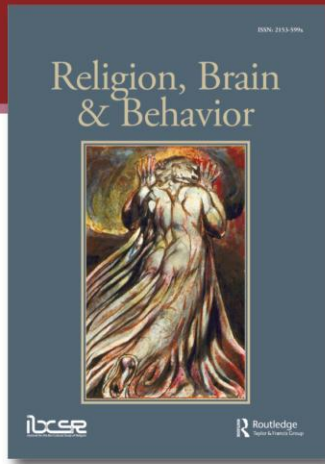
- Vonarx, Nicolas & Shelley-Rose Hyppolite. 2013. Religion, Spirituality, and Cancer: The Question of Individual Empowerment. *Integrative Cancer Therapies* 12(1). 69–80.
doi:10.1177/1534735411433835.

The authors conducted qualitative research on the role of religious and spiritual practices and knowledge through interviews with 10 cancer patients in Québec, Canada. The article describes how they use and participate in religious and spiritual content, demonstrating the contribution of this content to an individual empowerment process. The use of religion and spirituality constitutes a quest for self-mastery, an acquiring of power and control.

- Wang, Xuefu. 2012. On becoming a religious therapist in Chinese culture. *Pastoral Psychology* 61(5-6). 1007–1024.
doi:10.1007/s11089-012-0430-7.

This essay presents an approach to psychotherapy in China that emerges out of Chinese literature and theology, and is referred to as Zhi Mian (i.e., facing life directly) therapy. It combines Lu Xun's challenge to become warriors of the spirit, to avoid escapism, to take responsibility, and to create a new culture, with the theological writings of Bishop K. H. Ting, a leader of the Three-Self Protestant Church in China. His emphases on the

nature of finiteness, growth, love, struggle, suffering, non-coercion, and following Jesus inform the Zhi Mian approach to therapy.



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PART 3. BOOKS

3.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

- Capps, Donald. 2013. *At Home in the World: A Study in Psychoanalysis, Religion, and Art*. Cascade Books.
- Hjelm, Titus & Phil Zuckerman (eds.). 2013. *Studying Religion and Society: Sociological Self-Portraits*. Routledge.
- Luhmann, Niklas. 2013. *A Systems Theory of Religion*. David Brenner & Adrian Hermann (trans.). (Cultural Memory in the Present). Stanford University Press.
- Otto, Bernd-Christian. 2013. *Defining Magic: A Reader*. Acumen Publishing.
- Pargament, Kenneth I. (ed.) 2013. *APA Handbook of Psychology, Religion, and Spirituality*. American Psychological Association (APA).
- Sabates, Angela M. 2013. *Social Psychology in Christian Perspective: Exploring the Human Condition*. IVP Academic.
- Witzel, E. J. Michael. 2013. *The Origins of the World's Mythologies*. Oxford University Press.

3.2 SPIRITUALITY & HEALTH RESEARCH

- Cadge, Wendy. 2013. *Paging God: Religion in the Halls of Medicine*. University Of Chicago Press.
- Hinrichs, T. J. & Linda L. Barnes (eds.). 2013. *Chinese Medicine and Healing: An Illustrated History*. Belknap Press.

PART 4. ARTICLES IN PRESS

4.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

- Baucal, Aleksandar & Tania Zittoun. 2013. Religion as Dialogical Resource: A Socio-cultural Approach. *Integrative psychological & behavioral science*.
doi:10.1007/s12124-013-9229-z.
- Endelstein, Lucine & Louise Ryan. 2013. Dressing Religious Bodies in Public Spaces: Gender, Clothing and Negotiations of Stigma Among Jews in Paris and Muslims in London. *Integrative psychological & behavioral science*.
doi:10.1007/s12124-012-9228-5.
- McClure, Barbara J. 2013. Divining the sacred in the modern world: Ritual and the relational embodiment of spirit. *Pastoral Psychology*.
doi:10.1007/s11089-013-0515-y.
- Paglieri, Fabio, Anna M. Borghi, Lorenza S. Colzato, Bernhard Hommel & Claudia Scorolli. 2013. Heaven can wait. How religion modulates temporal discounting. *Psychological Research/ Psychologische Forschung*.
doi:10.1007/s00426-012-0473-5.
- Rockenbach, Alyssa Bryant & Matthew J. Mayhew. 2013. How the collegiate religious and spiritual climate shapes students' ecumenical orientation. *Research in Higher Education*.
doi:10.1007/s11162-013-9282-y.

4.2 SPIRITUALITY & HEALTH RESEARCH

- Asgeirsdottir, Gudlaug Helga, Einar Sigurbjörnsson, Rannveig Traustadottir, Valgerdur Sigurdardottir, Sigridur Gunnarsdottir & Ewan Kelly. 2013. "To Cherish Each Day as it Comes": A qualitative study of spirituality among persons receiving palliative care. *Supportive Care in Cancer: Official Journal of the Multinational Association of Supportive Care in Cancer*.
doi:10.1007/s00520-012-1690-6.
- Awasthi, Bhuvanesh. 2013. Issues and Perspectives in Meditation Research: In Search for a Definition. *Frontiers in Psychology* 3.
doi:10.3389/fpsyg.2012.00613.
- Bonner, Laura M, Andy B Lanto, Cory Bolkan, G Stennis Watson, Duncan G Campbell, Edmund F Chaney, Kara Zivin & Lisa V Rubenstein. 2013. Help-Seeking from Clergy and Spiritual Counselors Among Veterans with Depression and PTSD in Primary Care. *Journal of religion and health*.
doi:10.1007/s10943-012-9671-0.
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