



RESEARCH REVIEW

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

SEPTEMBER, 2014

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 religion using biocultural techniques. *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: H. W. Wilson Applied Science and Technology, ATLA Religion Database, H. W. Wilson 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 580 articles, 82 articles have been retained from 64 journals. There are 39 pre-publication citations from 24 journals.

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CONTENTS

Part 1: Articles in Religion, Brain, and Behavior	2
1.1 Scientific Study of Religion: Cognitive Neuroscience.....	2
1.2 Scientific Study of Religion: Evolution.....	4
1.3 Scientific Study of Religion: Psychology and Culture.....	6
1.4 Scientific Study of Religion: Method & Theory.....	13
Part 2: Articles in Spirituality & Health Research	15
2.1 Spirituality & Health: General Health & Well-Being.....	15
2.2 Spirituality & Health: Mental Health.....	19
2.3 Spirituality & Health: Method and Theory.....	23
Part 3: Books.....	28
3.1 Scientific Study of Religion, Brain, and Behavior.....	28
3.2 Spirituality & Health Research	28
Part 4: Articles in Press.....	29
4.1 Scientific Study of Religion, Brain, and Behavior.....	29
4.2 Spirituality & Health Research	30

PART 1: ARTICLES IN RELIGION, BRAIN, AND BEHAVIOR

1.1 SCIENTIFIC STUDY OF RELIGION: COGNITIVE NEUROSCIENCE

Fiori, Francesca, Nicole David & Salvatore M. Aglioti. 2014. Processing of proprioceptive and vestibular body signals and self-transcendence in Ashtanga yoga practitioners. *Frontiers in Human Neuroscience* 8. 734.
doi:10.3389/fnhum.2014.00734.

In the rod and frame test (RFT), participants are asked to set a tilted visual linear marker (i.e., a rod), embedded in a square, to the subjective vertical, irrespective of the surrounding frame. People not influenced by the frame tilt are defined as field-independent, while people biased in their rod verticality perception are field-dependent. Performing RFT requires the integration of proprioceptive, vestibular and visual signals with the latter accounting for field-dependency. Studies indicate that motor experts in body-related, balance-improving disciplines tend to be field-independent, i.e., better at verticality perception, suggesting that proprioceptive and vestibular expertise acquired by such exercise may weaken the influence of irrelevant visual signals. What remains unknown is whether the effect of body-related expertise in weighting perceptual information might also be mediated by personality traits, in particular those indexing self-focusing abilities. To explore this issue, researchers tested field-dependency in a class of body experts, namely yoga practitioners and in non-expert participants. Moreover they explored any link between performance on RFT and self-transcendence (ST), a complex personality construct, which refers to tendency to experience spiritual feelings and ideas. As expected, yoga practitioners (i) were more accurate in assessing the rod's verticality on the RFT, and (ii) expressed significantly higher ST. Interestingly, the performance in these two tests was negatively correlated. More specifically, when asked to provide verticality judgments, highly self-transcendent yoga practitioners were significantly less influenced by a misleading visual context. These results suggest that being highly self-transcendent may enable yoga practitioners to optimize verticality judgment tasks by relying more on internal (vestibular and proprioceptive) signals coming from their own body, rather than on exteroceptive, visual cues.

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Gard, Tim, Jessica J. Noggle, Crystal L. Park, David R. Vago & Angela Wilson. 2014. Potential self-regulatory mechanisms of yoga for psychological health. *Frontiers in Human Neuroscience* 8. 770. doi:10.3389/fnhum.2014.00770.

Research suggesting the beneficial effects of yoga on myriad aspects of psychological health has proliferated in recent years, yet there is currently no overarching framework by which to understand yoga's potential beneficial effects. Here researchers provide a theoretical framework and systems-based network model of yoga that focuses on integration of top-down and bottom-up forms of self-regulation. The authors begin by contextualizing yoga in historical and contemporary settings, and then detail how specific components of yoga practice may affect cognitive, emotional, behavioral, and autonomic output under stress through an emphasis on interoception and bottom-up input, resulting in physical and psychological health. The model describes yoga practice as a comprehensive skillset of synergistic process tools that facilitate bidirectional feedback and integration between high- and low-level brain networks, and afferent and re-afferent input from interoceptive processes (somatosensory, viscerosensory, chemosensory). From a predictive coding perspective, the researchers propose a shift to perceptual inference for stress modulation and optimal self-regulation. They describe how the processes that sub-serve self-regulation become more automatized and efficient over time and practice, requiring less effort to initiate when necessary and terminate more rapidly when no longer needed. To support this proposed model, the researchers present the available evidence for yoga affecting self-regulatory pathways, integrating existing constructs from behavior theory and cognitive neuroscience with emerging yoga and meditation research.

McCrae, Niall & Rob Whitley. 2014. Exaltation in Temporal Lobe Epilepsy: Neuropsychiatric Symptom or Portal to the Divine? *Journal of Medical Humanities* 35(3). 241–255. doi:10.1007/s10912-014-9294-4.

Religiosity is a prominent feature of the Geschwind syndrome, a behavioral pattern found in some cases of temporal lobe epilepsy. Since the 1950s, when Wilder Penfield induced spiritual feelings by experimental manipulation of the temporal lobes, development of brain imaging technology has revealed neural correlates of intense emotional states, spurring the growth of neurotheology. In their secular empiricism, psychiatry, neurology and psychology are inclined to pathologize deviant religious expression, thereby reinforcing the dualism of objective and phenomenal worlds. Considering theological perspectives and the idea of cosmic consciousness, the authors urge a holistic approach to the spiritual events of epileptic aura, potentially leading to a deeper understanding of the mind and its transcendent potential.

Tanaka, Guaraci Ken, Caroline Peressutti, Silmar Teixeira, Mauricio Cagy, Roberto Piedade, Antonio Egidio Nardi, Pedro Ribeiro & Bruna Velasques. 2014. Lower trait frontal theta activity in mindfulness meditators. *Arquivos De Neuro-Psiquiatria* 72(9). 687–693. doi:10.1590/0004-282X20140133.

Acute and long-term effects of mindfulness meditation on theta-band activity are not clear. The aim of this study was to investigate frontal theta differences between long-and short-term mindfulness practitioners before, during, and after mindfulness meditation. Twenty participants were recruited, of which 10 were experienced Buddhist meditators. Despite an acute increase in the theta activity during meditation in both the groups, the meditators showed lower trait frontal theta activity. Therefore, the authors suggest that this finding is a neural correlate of the expert practitioners' ability to limit the processing of unnecessary information (e.g., discursive thought) and increase the awareness of the essential content of the present experience. In conclusion, acute changes in the theta band throughout meditation did not appear to be a specific correlate of mindfulness but were rather related to the concentration properties of the meditation. Notwithstanding, lower frontal theta activity appeared to be a trait of mindfulness practices.

1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION

Aghapour, Andrew Ali. 2014. Defining “Religion” as Natural: A Critical Invitation to Robert Mccauley. *Zygon* 49(3). 708–715.
doi:10.1111/zygo.12114.

Previous critics have argued that Robert McCauley defines religion and science selectively and arbitrarily, cutting them to fit his model in his book “Why Religion Is Natural and Science Is Not.” McCauley has responded that final definitions are “overrated” and that artificial distinctions can serve an important role in naturalistic investigation. The author of the present article agrees with this position but argues that a genealogy of the category of religion is crucial to the methodology that McCauley describes. Since the inherent ambiguity of religion will undermine any essential claims about its cognitive naturalness, Aghapour invites McCauley to consider how his research might investigate scientific and religious cognition in new terms.

Collier, Mark. 2014. The natural foundations of religion. *Philosophical Psychology* 27(5). 665–680.
doi:10.1080/09515089.2012.740004.

In “The Natural History of Religion” Hume attempts to understand the origin of folk belief in gods and spirits. These investigations are not, however, purely descriptive. Hume demonstrates that ontological commitment to supernatural agents depends on motivated reasoning and illusions of control. These beliefs cannot, then, be reflectively endorsed. This proposal must be taken seriously because it receives support from recent work on psychological responses to uncertainty. It also compares quite favorably with its main competitors in the cognitive science of religion.

Fergus, Thomas A. & Wade C. Rowatt. 2014. Uncertainty, god, and scrupulosity: Uncertainty salience and priming god concepts interact to cause greater fears of sin. *Journal of Behavior Therapy and Experimental Psychiatry* 46C. 93–98.
doi:10.1016/j.jbtep.2014.09.003.

Difficulties tolerating uncertainty are considered central to scrupulosity, a moral/religious presentation of obsessive-compulsive disorder (OCD). Researchers examined whether uncertainty salience (i.e., exposure to a state of uncertainty) caused fears of sin and fears of God, as well as whether priming God concepts affected the impact of uncertainty salience on those fears. An internet sample of community adults (n=120) who endorsed holding a belief in God or a higher power were randomly assigned to an experimental manipulation of (1) salience (uncertainty or insecurity) and (2) prime (God concepts or neutral). As predicted, participants who received the uncertainty salience and God concept priming reported the greatest fears of sin. There were no mean-level differences in the other conditions. The effect was not attributable to religiosity and the manipulations did not cause negative affect. These results support cognitive-behavioral models suggesting that religious uncertainty is important to scrupulosity.

Ferretti, Francesco & Ines Adornetti. 2014. Biology, Culture and Coevolution: Religion and Language as Case Studies. *Journal of Cognition and Culture* 14(3-4). 305–330.
doi:10.1163/15685373-12342127.

The main intent of this paper is to give an account of the relationship between biocognition and culture in terms of coevolution, analyzing religious beliefs and language evolution as case studies. The established view in cognitive studies is that bio-cognitive systems constitute a constraint for the shaping and the transmission of religious beliefs and linguistic structures. From this point of view, religion and language are by-products or exaptations of processing systems originally selected for other cognitive functions. The present authors criticize such a point of view, showing that it paves the way for the idea that cultural evolution follows a path entirely autonomous and independent from that of biological evolution. Against the by-product and exaptation approaches, the authors propose that it is possible to interpret religion and language in terms of coevolution. The concept of coevolution

involves a dual path of constitution: one for which biology (cognition) has adaptive effects on culture; the other for which, in turn, forms of culture have adaptive effects on biology (cognition). This dual path of constitution implies that religion and language are (at least in some aspects) forms of biological adaptations.

- Munson, Jessica, Viviana Amati, Mark Collard & Martha J. Macri. 2014. Classic maya bloodletting and the cultural evolution of religious rituals: Quantifying patterns of variation in hieroglyphic texts. *PLoS One* 9(9). e107982.
doi:10.1371/journal.pone.0107982.

Religious rituals that are painful or highly stressful are hypothesized to be costly signs of commitment essential for the evolution of complex society. Yet few studies have investigated how such extreme ritual practices were culturally transmitted in past societies. Here, researchers report the first study to analyze temporal and spatial variation in bloodletting rituals recorded in Classic Maya (ca. 250-900 CE) hieroglyphic texts. The authors of the article also identify the sociopolitical contexts most closely associated with these ancient recorded rituals. Sampling an extensive record of 2,480 hieroglyphic texts, this study identifies every recorded instance of the logographic sign for the word ch'abb' that is associated with ritual bloodletting. The researchers show that documented rituals exhibit low frequency whose occurrence cannot be predicted by spatial location. Conversely, network ties better capture the distribution of bloodletting rituals across the southern Maya region. These results indicate that bloodletting rituals by Maya nobles were not uniformly recorded, but were typically documented in association with antagonistic statements and may have signaled royal commitments among connected polities.

- Närhi, Jani. 2014. Counterintuitiveness of Hell and Paradise in the Apocalypses of Paul and Peter. *Literature and Theology* 28(3). 270–283.
doi:10.1093/litthe/fru020.

Counterintuitiveness has been found to be a crucially important property of successful religious concepts. Several studies confirm that it enhances memorability of concepts as well as whole narratives such as folktales. In this article, the role of counterintuitiveness in the Apocalypse of Paul and the Apocalypse of Peter, both of which have strongly influenced Christian views of hell and paradise, will be analyzed. The results suggest that minimal counterintuitiveness plays a key role in making these apocalypses culturally successful.

- Nicholson, Hugh. 2014. Social Identity Processes in the Development of Maximally Counterintuitive Theological Concepts: Consubstantiality and No-Self. *Journal of the American Academy of Religion* 82(3). 736–770.
doi:10.1093/jaarel/lfu029.

This article argues that the historical development of both the Christian doctrine of the consubstantiality of the Son with the Father and the Buddhist doctrine of “no-self” can be understood in terms of the principle of “metacontrast,” developed in the context of social identity theory. That is, each of these doctrines reflects an effort to establish intra-religious hegemony by maximizing the contrast with the dominant outgroup, Judaism for the one, Brahmanism for the other. Moreover, both doctrines exemplify an important consequence of the metacontrast principle, namely, that the drive to maximize intergroup difference tends to produce extreme, maximally counterintuitive concepts. Recognizing the social identity processes behind the emergence of such counterintuitive theological concepts adds to our understanding of the phenomenon of “theological correctness” as discussed in the cognitive science of religion: that is, the notion that the religious concepts implicit in everyday thought and action often do not coincide with the official concepts of theological doctrine.

- Peterson, Gregory R. 2014. On McCauley’s *Why Religion Is Natural and Science Is Not*: Some Further Observations. *Zygon* 49(3). 716–727.
doi:10.1111/zygo.12115.

Robert McCauley's Why Religion Is Natural and Science Is Not provides a summary interpretive statement of the standard model in cognitive science of religion. Peterson has previously called this the HADD + ToM + Cultural Epidemiology model. The book also includes a more general argument comparing religious cognition to scientific thinking and a novel framework for understanding both in terms of the concept of the maturationally natural. In this article, Peterson follow ups on some observations made in a previous paper, developing them in light of McCauley's own response to the previous arguments.

Pyysiäinen, Ilkka. 2014. Religion, Theology, and Cognition: On Reading Paul Tillich. *Literature and Theology* 28(3). 258–269.
doi:10.1093/litthe/fru019.

The author uses the cognitive scientific perspective in trying to show how abstract theology is dependent on literacy, gradually elaborates folk-religious intuitions, and may ultimately come into conflict with them. He then analyzes Paul Tillich's writings as an example of how theology elaborates folk intuitions and also reacts to advances in science, which creates further tension between folk religion and theology.

Shariff, Azim F., Jared Piazza & Stephanie R. Kramer. 2014. Morality and the religious mind: Why theists and nontheists differ. *Trends in Cognitive Sciences* 18(9). 439–441.
doi:10.1016/j.tics.2014.05.003.

Religions have come to be intimately tied to morality, and much recent research has shown that theists and nontheists differ in their moral behavior and decision making along several dimensions. Here researchers discuss how these empirical trends can be explained by fundamental differences in group commitment, motivations for prosociality, cognitive styles, and meta-ethics. They conclude by elucidating key areas of moral congruence.

Slyke, James A. Van. 2014. Religion Is Easy, but Science Is Hard ... Understanding McCauley's Thesis. *Zygon* 49(3). 696–707.
doi:10.1111/zygo.12113.

Robert N. McCauley's new book Why Religion Is Natural and Science Is Not (2011) presents a new paradigm for investigating the relationship between science and religion by exploring the cognitive foundations of religious belief and scientific knowledge. McCauley's contention is that many of the differences and disagreements regarding religion and science are the product of distinct features of human cognition that process these two domains of knowledge very differently. McCauley's thesis provides valuable insights into this relationship while not necessarily leading to a dismissive view of theology or religious belief. His paradigm allows the research lens to focus on cognitive differences in processing scientific versus religious information and the important role of automatic, unconscious, and intuitive cognitive processes in understanding both the natural and supernatural worlds.

1.3 SCIENTIFIC STUDY OF RELIGION: PSYCHOLOGY AND CULTURE

Abulof, Uriel. 2014. The Roles of Religion in National Legitimation: Judaism and Zionism's Elusive Quest for Legitimacy. *Journal for the Scientific Study of Religion* 53(3). 515–533.
doi:10.1111/jssr.12132.

Why and how do nations turn to religion to justify claims for statehood? This article addresses this question in both theory and practice, showing that religion plays multiple legitimating roles that shift dynamically according to the success they yield for national movements. The author posits four legitimating models: (1) nationalism instead of religion ("secular nationalism"), (2) nationalism as a religion ("civil religion"), (3) religion as a resource for nationalism ("auxiliary religion"), and (4) religion as a source of nationalism ("chosen people"). Empirically, he analyzes the roles of religion in Zionist efforts to legitimate a Jewish state in Palestine. It is argued that Zionism has responded to persistent delegitimation by expanding the role of religion in its political legitimation. The right of self-determination, which stands at the core of the "secular Zionism" legitimation, has given way to leveraging

Judaism, which in turn has been eclipsed by constructing a Zionist civil religion and a “chosen people” justification.

- Aghababaei, Naser, Somayeh Mohammadtabar & Majid Saffarinia. 2014. Dirty Dozen vs. the H factor: Comparison of the Dark Triad and Honesty–Humility in prosociality, religiosity, and happiness. *Personality and Individual Differences* 67. 6–10.

doi:10.1016/j.paid.2014.03.026.

Past research has shown that prosocial behavior is related to higher religiosity and Honesty–Humility and lower levels of the Dark Triad (i.e. narcissism, psychopathy, and Machiavellianism). Honesty–Humility and the Dark Triad are theoretically linked traits (related to an exploitive behavioral style) that tend to be studied in isolation. This study showed that religion-prosociality link is not an artifact of gender, happiness, and personality. Researchers examined Honesty–Humility and the Dark Triad in the same sample to better understand how these traits converge and diverge in their associations with self-reported prosociality, religiosity, and happiness. Results suggested that Honesty–Humility and the Dark Triad traits uniquely relate to prosociality, religious orientation and happiness with Honesty–Humility evidencing stronger relations than the Dark Triad as measured by the Dirty Dozen. Data also supported this conclusion that Dirty Dozen Machiavellianism is the “darker” side of the Dark Triad.

- Arli, Denni & Fandy Tjiptono. 2014. The End of Religion? Examining the Role of Religiousness, Materialism, and Long-Term Orientation on Consumer Ethics in Indonesia. *Journal of Business Ethics* 123(3). 385–400.

doi:10.1007/s10551-013-1846-4.

Various studies on the impact of religiousness on consumer ethics have produced mixed results and suggested the need for further clarification on the issue. Therefore, this article examines the effect of religiousness, materialism, and long-term orientation on consumer ethics in Indonesia. The results from 356 respondents in Indonesia, the largest Muslim population in the world, showed that intrinsic religiousness positively affected consumer ethics, while extrinsic social religiousness negatively affected consumer ethics. However, extrinsic personal religiousness did not affect consumer ethical beliefs dimensions. Unlike other studies in developed countries, materialism and long-term orientation influenced only a few of the consumer ethical beliefs dimensions in this study.

- Axt, Jordan R., Charles R. Ebersole & Brian A. Nosek. 2014. The rules of implicit evaluation by race, religion, and age. *Psychological Science* 25(9). 1804–1815.

doi:10.1177/0956797614543801.

The social world is stratified. Social hierarchies are known but often disavowed as anachronisms or unjust. Nonetheless, hierarchies may persist in social memory. In three studies (total N > 200,000), researchers found evidence of social hierarchies in implicit evaluation by race, religion, and age. Participants implicitly evaluated their own racial group most positively and the remaining racial groups in accordance with the following hierarchy: Whites > Asians > Blacks > Hispanics. Similarly, participants implicitly evaluated their own religion most positively and the remaining religions in accordance with the following hierarchy: Christianity > Judaism > Hinduism or Buddhism > Islam. In a final study, participants of all ages implicitly evaluated age groups following this rule: children > young adults > middle-age adults > older adults. These results suggest that the rules of social evaluation are pervasively embedded in culture and mind.

- Bartkowski, John P. 2014. Finding the Sacred in Unexpected Places: Religious Evanescence and Evocation. *Review of Religious Research* 56(3). 357–371.

doi:10.1007/s13644-014-0178-x.

This article examines the complex processes whereby cultural understandings of the sacred and, consequently, religious identity, are negotiated in the contemporary social world. Two key processes of negotiation are delineated,

namely, religious evanescence and religious evocation. Religious evanescence reflects efforts to deemphasize or sever connections to the sacred. By contrast, religious evocation consists of activities that emphasize or enhance linkages to sacred things. Groups actively manage their relationship to the sacred, and thus their religious identities, by engaging in evanescent or evocative practices. Moreover, the rejection of sacred things (evanescence) and the affirmation of them (evocation) are not mutually exclusive processes. They can be enlisted strategically, selectively, and even in combination with one another to suit a wide variety of social contexts and normative expectations. Boundaries in relation to the sacred are, therefore, sites for contradictory and innovative social processes. The contested and fluid boundaries that define the musical genre of “Christian rock” serve to illustrate these processes.

Francis, Yuju M. 2014. A psycho-social perspective on religious violence. *Indian Journal of Community Psychology* 10(2). 278–284.

The article gives a psycho-social perspective on and delineates the reasons for religious violence. It brings out reasons such as experience of shame, mimesis, ethnocentrism, threat to one’s social identity and the role of religion in perpetrating violence.

Friese, Malte, Lea Schweizer, Anaïs Arnoux, Fabienne Sutter & Michaela Wänke. 2014. Personal prayer counteracts self-control depletion. *Consciousness and Cognition* 29C. 90–95.
doi:10.1016/j.concog.2014.08.016.

Praying over longer time spans can foster self-control. Less is known about the immediate, short-term consequences of praying. Here researchers investigated the possibility that praying may counteract self-control depletion. Participants suppressed or did not suppress thoughts about a white bear before engaging in a brief period of either personal prayer or free thought. Then, all participants completed a Stroop task. As expected, thought suppression led to poorer Stroop performance in the free thought, but not in the prayer condition. This effect emerged on a dependent variable devoid of any religious or moral associations (Stroop task). Possible mediating mechanisms and directions for future research are discussed.

Hill, Jonathan P. 2014. Rejecting Evolution: The Role of Religion, Education, and Social Networks. *Journal for the Scientific Study of Religion* 53(3). 575–594.
doi:10.1111/jssr.12127.

Large segments of the American public are skeptical of human evolution. Surveys consistently find that sizable minorities of the population, frequently near half, deny that an evolutionary process describes how human life developed. Using data from the National Study of Youth and Religion, the author examines the role of religion and education in predicting who changes their beliefs about evolution between late adolescence and early emerging adulthood. He concludes that religion is far more important than educational attainment in predicting changing beliefs about evolution. Perhaps more importantly, it is found that social networks play an important moderating role in this process. High personal religiousness is only associated with the maintenance of creationist beliefs over time when the respondent is embedded in a social network of co-religionists. This finding suggests that researchers should pay far more attention to the social context of belief formation and change.

Hoffmann, John P. 2014. Religiousness, Social Networks, Moral Schemas, and Marijuana Use: A Dynamic Dual-Process Model of Culture and Behavior. *Social Forces* 93(1). 181–208.

Drawing on insights from a dual-process model of culture, social networks, and behavior, this study develops a model that specifies the associations among religiousness and marijuana use during adolescence and young adulthood. In particular, the model highlights potential reciprocal associations among religiousness, marijuana use, drug-using peer networks, religious peer networks, and moral schemas. Analyses of longitudinal data from the National Survey of Youth and Religion (NSYR; n=2,276) provide some support for the model. In particular, religious and drug-using peer networks play a key role in understanding how marijuana use and religiousness are mutually related during adolescence and young adulthood.

Jung, Jong Hyun. 2014. Religious Attendance, Stress, and Happiness in South Korea: Do Gender and Religious Affiliation Matter? *Social Indicators Research* 118(3). 1125–1145.
doi:10.1007/s11205-013-0459-8.

Is religious attendance positively associated with happiness in South Korea? If yes, can religious attendance buffer against the harmful effect of stress on happiness? Moreover, do gender and religious affiliation modify these associations? This study addresses these questions with data from 2009 Korean General Social Survey which is a nationally representative survey (n=1,599). Ordinal least square regression analyses reveal that although the effect size is relatively small, religious attendance is associated with a higher level of happiness in South Korea. However, this positive effect holds only for women and only for Protestants. In addition, an interaction effect between religious attendance and stress is observed for women only; the negative association between stress and happiness is weakened among those women who report more frequent church attendance. In this regard, a high level of church attendance buffers against the deleterious effects of stress on happiness for women.

Kim, Jichan J. & Robert D. Enright. 2014. Differing views on forgiveness within Christianity: Do graduate-level theology students perceive divine and human forgiveness differently? *Spirituality in Clinical Practice* 1(3). 191–202.
doi:10.1037/scp0000027.

Whether reconciliation is a necessary component of forgiveness has been debated among scholars. Although psychologists tend to separate forgiveness and reconciliation, theologians tend to emphasize complex connections between the two. One possible reason for this might be the difference between divine and human forgiveness: Whereas divine forgiveness of sins leads to reconciliation, human forgiveness of offenses does not necessarily do so. Would respondents in theological training continue to say that forgiveness and reconciliation are linked if they were specifically asked to think about when God forgives versus when people forgive? There were 276 graduate-level theology students across several denominations in the United States who filled out an online survey that examined their views on forgiveness. The first section of the survey asked 5 questions regarding respondents' view of divine forgiveness, and the second section of the survey used the same set of question but in the context of interpersonal forgiveness. The third and final section collected qualitative data of respondents' thoughts on how divine and interpersonal forgiveness might differ. The statistical analyses showed that significant differences were present for every aspect examined across divine and person-to-person forgiveness. An analysis of the qualitative data and implications for clinical practice also are discussed. The approach taken here suggests that theology students, like psychologists, distinguish forgiving and reconciling when they are asked to focus specifically on person-to-person forgiveness.

Kraus, Rachel. 2014. Transforming Spirituality in Artistic Leisure: How the Spiritual Meaning of Belly Dance Changes Over Time. *Journal for the Scientific Study of Religion* 53(3). 459–478.
doi:10.1111/jssr.12136.

Studies show that different dimensions of religiosity change throughout the life course. Yet, researchers have little information about how the spirituality that some people experience outside of formal religious organizations may change. The purpose of this study is to examine how spirituality associated with artistic leisure may emerge or decline over time. Drawing from two waves of semi-structured qualitative interviews conducted five years apart, the author examines how the spirituality dancers associate with belly dance changes over time and factors associated with those transformations. Rather than emerging, findings show that whether dancers instill belly dance with spirituality remains stable or decreases. Furthermore, much of the decrease in the spiritual meaning that dancers link to belly dance can be understood in the context of their changing involvement in the dance, different meanings they attach to belly dance, revisiting their personal beliefs about spirituality, and expanding their spiritual outlets.

Lippelt, Dominique P., Bernhard Hommel & Lorenza S. Colzato. 2014. Focused attention, open monitoring and loving kindness meditation: Effects on attention, conflict monitoring, and creativity – A review. *Frontiers in Psychology* 5. 1083.
doi:10.3389/fpsyg.2014.01083.

Meditation is becoming increasingly popular as a topic for scientific research and theories on meditation are becoming ever more specific. Researchers distinguish between what is called Focused Attention meditation, Open Monitoring meditation, and Loving Kindness (or Compassion) meditation. Research suggests that these meditations have differential, dissociable effects on a wide range of cognitive (control) processes, such as attentional selection, conflict monitoring, divergent, and convergent thinking. Although research on exactly how the various meditations operate on these processes is still missing, different kinds of meditations are associated with different neural structures and different patterns of electroencephalographic activity. In this review researchers discuss recent findings on meditation and suggest how the different meditations may affect cognitive processes, and researchers give suggestions for directions of future research.

Merino, Stephen M. 2014. Social Support and the Religious Dimensions of Close Ties. *Journal for the Scientific Study of Religion* 53(3). 595–612.
doi:10.1111/jssr.12134.

Despite the influence of social support on physical and mental health, few studies have examined why some close ties are more supportive than others. Though religion provides a rich context for social interaction and a meaningful social identity, it has received little attention in the social support literature. A growing literature on religion and health offers insight into how religion affects social support processes. Using dyadic network data derived from the nationally representative 2006 Portraits of American Life Study, the author examines how the religious dimensions of close, non-household ties relate to provision of social support. Results from logistic regression analyses indicate that (controlling for a range of other social tie characteristics) same-faith ties are significantly more likely to be sources of help “in times of need,” while religious discussion is a strong predictor of receiving both help and advice. The effect of religious homophily is strongest for evangelical Protestants and African-American Protestants.

Ogland, Curtis P. & Ana Paula Verona. 2014. Religion and the rainbow struggle: Does religion factor into attitudes toward homosexuality and same-sex civil unions in Brazil? *Journal of Homosexuality* 61(9). 1334–1349.
doi:10.1080/00918369.2014.926767.

The provision of civil liberties to LGBT persons has become part of a global movement in societies across the world. In Brazil, a recent judicial ruling for the first time established the right for homosexual couples to enter into civil unions, despite the presence of widespread disapproval of homosexuality among the population and opposition from prominent religious groups. Picking up on this issue, the following study examines whether religion may factor into the attitudes Brazilians hold toward homosexuality and same-sex civil unions. Using data from the Brazilian Social Research Survey, researchers find that the most restrictive views toward homosexuality and the strongest opposition to same-sex civil unions are most prevalent among devoted followers of historical Protestant, Pentecostal, and Catholic faith traditions, whereas adherents of Afro-Brazilian and spiritist religions, as well as those with no religious commitment, are inclined to assume a more tolerant moral posture toward such issues. The findings point to religion as a potential influence in future public policy initiatives and social movements involving LGBT issues in Brazil.

Pereira, M. Graça, Ebru Taysi, Fatih Orcan & Frank Fincham. 2014. Attachment, Infidelity, and Loneliness in College Students Involved in a Romantic Relationship: The Role of Relationship Satisfaction, Morbidity, and Prayer for Partner. *Contemporary Family Therapy* 36(3). 333–350.
doi:10.1007/s10591-013-9289-8.

This study examined the mediating effects of relationship satisfaction, prayer for a partner, and morbidity in the relationship between attachment and loneliness, infidelity and loneliness, and psychological morbidity and loneliness, in college students involved in a romantic relationship. Participants were 345 students in an introductory course on family development who were also involved in a romantic relationship. Results showed that relationship satisfaction mediated the relationship between avoidance attachment and loneliness and between infidelity and loneliness. Physical morbidity mediated the relationship between anxious attachment and psychological morbidity. Psychological morbidity mediated the relationship between anxious attachment and physical morbidity. The present results expand the literature on attachment by presenting evidence that anxious and avoidant partners experience loneliness differently. Implications for couple's therapy are addressed. Future research should replicate these results with older samples and married couples.

Ritchie, Stuart J., Alan J. Gow & Ian J. Deary. 2014. Religiosity is negatively associated with later-life intelligence, but not with age-related cognitive decline. *Intelligence* 46. 9–17.
doi:10.1016/j.intell.2014.04.005.

A well-replicated finding in the psychological literature is the negative correlation between religiosity and intelligence. However, several studies also conclude that one form of religiosity, church attendance, is protective against later-life cognitive decline. No effects of religious belief per se on cognitive decline have been found, potentially due to the restricted measures of belief used in previous studies. Here, researchers examined the associations between religiosity, intelligence, and cognitive change in a cohort of individuals (initial n=550) with high-quality measures of religious belief taken at age 83 and multiple cognitive measures taken in childhood and at four waves between age 79 and 90. researchers found that religious belief, but not attendance, was negatively related to intelligence. The effect size was smaller than in previous studies of younger participants. Longitudinal analyses showed no effect of either religious belief or attendance on cognitive change either from childhood to old age, or across the ninth decade of life. researchers discuss differences between our cohort and those in previous studies—including in age and location—that may have led to non-replication of the association between religious attendance and cognitive decline.

Schumann, Karina, Ian McGregor, Kyle A. Nash & Michael Ross. 2014. Religious magnanimity: Reminding people of their religious belief system reduces hostility after threat. *Journal of Personality and Social Psychology* 107(3). 432–453.
doi:10.1037/a0036739.

The present research tested the hypothesis that many people's ambient religious beliefs are non-hostile and magnanimous by assessing whether reminding people of their religious belief systems would reduce hostility after threat. Across religious affiliations, participants reported that their religious belief systems encourage magnanimous behavior. In addition, priming their religious belief systems caused them to act more magnanimously, but only when motivated to adhere to salient ideals. Specifically, in Studies 1-5, researchers found that a general religious belief system prime ("Which religious belief system do you identify with?") reduced the hostility of people's thoughts, behaviors, and judgments following threat. In Studies 6 and 7, researchers found that the religious belief system prime only reduced hostile reactions to threat among participants who held religious beliefs that oriented them toward magnanimous ideals (Study 6) and who were dispositionally inclined to adhere to their ideals (Study 7). In Study 8, researchers found support for the role of magnanimous ideals by demonstrating that directly priming these ideals yielded effects similar to those produced by a religious belief system prime. These studies provide consistent evidence that, by invoking magnanimous ideals, a religious belief system prime promotes less hostile responses to threat.

Voas, David. 2014. Does Education Develop or Diminish Spirituality in Taiwan? *Journal for the Scientific Study of Religion* 53(3). 556–574.
doi:10.1111/jssr.12128.

There has been little research on the effects of education on religion and spirituality in Chinese societies. This gap is addressed through quantitative analysis of a new dataset, the Religious Experience Survey in Taiwan, in conjunction with the repeated cross-sectional Taiwan Social Change Survey. In Taiwan, people with higher education are less likely than others to say that they have a religion, to worship or pray frequently, and to regard those activities as important. They are more likely, however, to express an interest in mystical or supernatural things, and to report a variety of religious experiences. This paradox arises not because the educated Taiwanese are spiritual but not religious, but rather because they are somewhat polarized: those who have no religion and those reporting religious experiences are not the same individuals. Although education is highly correlated with both birth cohort and income, the findings strongly suggest that education is the key explanatory variable. The official promotion of Confucian thought and its adoption by the educated elite helps to explain the surprising conjunction of declining religious affiliation and increased engagement with spirituality.

Webb, Jon R. 2014. Incorporating spirituality into the psychology of temptation: Conceptualization, measurement, and clinical implications. *Spirituality in Clinical Practice* 1(3). 231–241. doi:10.1037/scp0000028.

The psychological construct of temptation is understood largely to be the undesirable conflict between short-term urges and long-term ideals. Likewise, the resolution of temptation is thought primarily to be a function of self-control. The common cultural understanding of temptation necessarily involves the notion of evil, including its connotations on a transcendent level. However, the psychological study of temptation largely has excluded religious and spiritual factors, whether examined by social psychology, addiction psychology, or the psychology of religion and spirituality. A more comprehensive conceptualization of temptation is needed to better understand its influence on the human condition. Indeed, temptation necessarily includes not only undesirable, but illicit and transcendent levels of experience. Including the transcendent in the psychological conceptualization and study of temptation would lead to more effective measurement, which would allow a broadened approach to the basic science of temptation and thereby a more inclusive application of temptation in clinical settings. As such, issues related to context and measurement are discussed and a more adequate definition of temptation is proposed. Consequent clinical implications include understanding the nuanced expression of temptation and the nuanced effect of temptation (on health and prospection). Implications of patients' experiencing transcendent-level temptations are discussed and a case example addressing the dysfunctional effect of transcendent-level temptation in couples therapy is provided.

Whitehead, Andrew L. 2014. Male and Female He Created Them: Gender Traditionalism, Masculine Images of God, and Attitudes Toward Same-Sex Unions. *Journal for the Scientific Study of Religion* 53(3). 479–496. doi:10.1111/jssr.12130.

Prior research demonstrates that religion and gender traditionalism are associated with less favorable attitudes toward same-sex unions because of its deviation from customary religious doctrine and traditional patterns of gender behavior. This study examines the link between religion, gender traditionalism, and attitudes toward same-sex unions by utilizing a novel measure of gender traditionalism that is distinctly religious as well. Recent work on images of God reveals that individuals' views of the divine provide a glimpse of their underlying view of reality. The results suggest that individuals who view God as a "he" are much less favorable toward same-sex unions than those who do not view God as masculine, even while controlling for gender traditionalist beliefs and other images of God. Individuals who view God as masculine are signaling a belief in an underlying gendered reality that influences their perceptions of the proper ordering of that reality, which extends to marriage patterns.

Williamson, W. Paul, Jasmine Bishop & Ralph W. Hood Jr. 2014. Religious fundamentalism and racial prejudice: a comparison of implicit and explicit approaches. *Mental Health, Religion & Culture* 17(8). 847–859.

doi:10.1080/13674676.2014.935729.

Researchers examined religious fundamentalism (RF) and racial prejudice (RP) using the implicit Affect Misattribution Procedure (AMP) and explicit Feeling Thermometer (FT). Ninety undergraduates (38 Blacks and 52 Whites) from a small southern USA university participated. The researchers experimentally manipulated aggression/love Bible texts to study any influence on RP, but found that it had no effect on reducing pretest/posttest AMP scores. Analysis of AMP posttest data found that Black participants favored Black over White Primes, but White participants did not discriminate between Race Primes. High RF did not discriminate between Race Primes, although low RF did, in preferring Black Primes. Analysis of explicit FT Warmness towards Whites/Blacks found an in-group preference for both White and Black participants. In this analysis, RF was not a discriminator among White participants in overall Warmness towards Whites/Blacks, although it was among Black participants. Most consistent across implicit/explicit data analyses was that high RF was generally unrelated to RP.

1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY

Bader, Christopher D. & Roger Finke. 2014. Toward Assessing and Improving Survey Questions on Religion: The ARDA's Measurement Wizard. *Journal for the Scientific Study of Religion* 53(3). 652–661.

doi:10.1111/jssr.12131.

Developing survey measures of religion is deceptively difficult. As religion in America becomes more diverse and research projects become more global, finding a shared vocabulary that taps into concepts of interest and selecting response categories that capture the full range of choices becomes ever more challenging. This research project introduces new tools and techniques for exploring and evaluating past survey measures of religion, including a new software tool that draws on the ARDA's massive collection of survey measures. The authors offer two examples to demonstrate how these resources can serve to evaluate past survey measures of religion and improve future measures.

Cole-Turner, Ron. 2014. Entheogens, Mysticism, and Neuroscience. *Zygon* 49(3). 642–651.

doi:10.1111/zygo.12110.

Entheogens or psychedelic drugs such as lysergic acid diethylamide (LSD) and psilocybin are associated with mystical states of experience. Drug laws currently limit research, but important new work is under way at major biomedical research facilities showing that entheogens reliably occasion mystical experiences and thereby allow research into brain states during these experiences. Are drug-occasioned mystical experiences neurologically the same as more traditional mystical states? Are there phenomenological and theological differences? As this research goes forward and the public becomes more widely aware of its achievements, religious scholars and experts in science and religion will be called upon to interpret the philosophical and theological presuppositions that underpin this research and the significance of the findings that flow from it.

Leeuwen, Neil Van. 2014. Religious credence is not factual belief. *Cognition* 133(3). 698–715.

doi:10.1016/j.cognition.2014.08.015.

The author argues that psychology and epistemology should posit distinct cognitive attitudes of religious credence and factual belief, which have different etiologies and different cognitive and behavioral effects. He supports this claim by presenting a range of empirical evidence that religious cognitive attitudes tend to lack properties characteristic of factual belief, just as attitudes like hypothesis, fictional imagining, and assumption for the sake of argument generally lack such properties. Furthermore, religious credences have distinctive properties of their own. To summarize: factual beliefs (i) are practical setting independent, (ii) cognitively govern other attitudes, and (iii) are evidentially vulnerable. By way of contrast, religious credences (a) have perceived normative orientation, (b) are

susceptible to free elaboration, and (c) are vulnerable to special authority. This theory provides a framework for future research in the epistemology and psychology of religious credence.

PART 2: ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

2.1 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

Arroll, Megan A., Elizabeth A. Attree, Clare L. Marshall & Christine P. Dancy. 2014. Pilot study investigating the utility of a specialized online symptom management program for individuals with myalgic encephalomyelitis/chronic fatigue syndrome as compared to an online meditation program. *Psychology Research and Behavior Management* 7. 213–221.
doi:10.2147/prbm.s63193.

Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) is a long-term, debilitating condition that impacts numerous areas of individuals' lives. This pilot study aimed to evaluate the utility of a specialized online symptom management program for ME/CFS in comparison to an online meditation program in an effort to ascertain whether this tool could be a further option for those with ME/CFS. Experimental design consisted of two interventions: a specialized online symptoms management program (n=19) and a control intervention based on an online meditation website (n=9). Following intervention, significant differences were found in the areas of chance and powerful others' locus of control, and sleeping difficulties, but not in ME/CFS symptomatology overall.

Berrill, James W., Mike Sadlier, Kerenza Hood & John T. Green. 2014. Mindfulness-based therapy for inflammatory bowel disease patients with functional abdominal symptoms or high perceived stress levels. *Journal of Crohn's and Colitis* 8(9). 945–955.
doi:10.1016/j.crohns.2014.01.018.

Psychological interventions are used in patients with inflammatory bowel disease (IBD) but there is uncertainty about who the optimal target population is. Multi-convergent therapy (MCT) is a form of psychotherapy that combines mindfulness meditation with aspects of cognitive behavioral therapy and has been used in the management of irritable bowel syndrome (IBS). This study aimed to assess the feasibility and efficacy of MCT in the management of IBD patients with either functional abdominal symptoms or high perceived stress levels. Sixty-six IBD patients in clinical remission with either IBS-type symptoms or high perceived stress levels were randomly allocated to a 16-week MCT course or waiting list control group. Patients were followed-up for one year with the Inflammatory Bowel Disease Questionnaire (IBDQ) as the primary outcome measurement. A higher mean IBDQ score was observed in the active group compared to controls at the 4-month assessment, but this was not statistically significant nor did it reach the predefined clinically significant difference of 20. In patients with IBS-type symptoms at baseline there was a significantly higher mean IBDQ score in the active group compared to controls. There was no difference between groups in relapse rate based on faecal calprotectin measurement.

Brown, Qiana L., Sabriya L. Linton, Paul T. Harrell, Brent Edward Mancha, Pierre K. Alexandre, Kuan-Fu Chen & William W. Eaton. 2014. The influence of religious attendance on smoking. *Substance Use & Misuse* 49(11). 1392–1399.
doi:10.3109/10826084.2014.912224.

Generalized linear models were used to assess the relationship between religious attendance and lifetime smoking status among middle-aged adults (n=666) sampled from waves three (1993 to 1996) and four (2004 to 2005) of the Baltimore Epidemiologic Catchment Area (ECA) study. Religious attendance once per week or greater as compared to never was inversely associated with smoking status.

Charlson, Mary E., Joseph Loizzo, Alyson Moadel, Miles Neale, Chayim Newman, Erin Olivo, Emily Wolf & Janey C. Peterson. 2014. Contemplative self healing in women breast cancer

survivors: A pilot study in underserved minority women shows improvement in quality of life and reduced stress. *BMC Complementary and Alternative Medicine* 14. 349.

doi:10.1186/1472-6882-14-349.

This pilot project was designed to evaluate the quality of life outcomes of a 20 week Contemplative Self-Healing Program among underserved, largely minority women who were breast cancer survivors. They participated in a 20-week intervention involving guided meditation and cognitive-affective-behavioral learning. Following intervention, the participants receiving a 20-session contemplative self-healing intervention showed improved quality of life, with a clinically and statistically significant increase in the FACT-G. In addition, this population showed a significant reduction in post-traumatic stress symptoms assessed by the Impact of Events Scale.

Davis, James M., Alison R. Manley, Simon B. Goldberg, Stevens S. Smith & Douglas E. Jorenby. 2014. Randomized trial comparing mindfulness training for smokers to a matched control. *Journal of Substance Abuse Treatment* 47(3). 213–221.

doi:10.1016/j.jsat.2014.04.005.

Researchers report results of a randomized controlled trial comparing a novel smoking cessation treatment using mindfulness training to a matched control based on the American Lung Association's Freedom From Smoking program. Data were collected on 175 low socioeconomic status smokers in 2011-2012 in a medium sized midwestern city. A significant difference was not found in the primary outcome; intent-to-treat biochemically confirmed 6-month smoking abstinence rates were mindfulness=25.0%, control=17.9%. Differences favoring the mindfulness condition were found on measures of urges and changes in mindfulness, perceived stress, and experiential avoidance. While no significant differences were found in quit rates, the mindfulness intervention resulted in positive outcomes.

Delgado-Guay, Marvin O. 2014. Spirituality and religiosity in supportive and palliative care. *Current Opinion in Supportive and Palliative Care* 8(3). 308–313.

doi:10.1097/spc.0000000000000079.

In this article the author provides an updated overview about the role of spirituality and religiosity in the way patients with life-threatening illnesses cope, and the importance of providing a comprehensive spiritual assessment and spiritual care in an interdisciplinary team work setting, such as supportive and palliative care. The interdisciplinary supportive and palliative care model of spiritual care proposes inclusion of the spiritual domain in the overall screening and history-taking process and spiritual care by all members of the team, including a full spiritual assessment by a professional chaplain. Research in this extremely important field needs to continue growing.

Gothe, Neha P., Arthur F. Kramer & Edward McAuley. 2014. The effects of an 8-week Hatha yoga intervention on executive function in older adults. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences* 69(9). 1109–1116.

doi:10.1093/gerona/glu095.

The purpose of this randomized controlled trial was to examine the effects of an 8-week Hatha yoga intervention on executive function measures of task switching and working memory capacity. Community-dwelling older adults (n=118) were randomized to one of two groups: a Hatha yoga intervention or a stretching-strengthening control. Both groups participated in hour-long exercise classes 3 times per week over the 8-week study period. All participants completed established tests of executive function including the task switching paradigm, n-back and running memory span at baseline and follow-up. Following 8 weeks of yoga practice, participants in the yoga intervention group showed significantly improved performance on the executive function measures of working memory capacity and efficiency of mental set shifting and flexibility compared with their stretching-strengthening counterparts.

Koren, Mary Elaine & Sonal Purohit. 2014. Interventional studies to support the spiritual self-care of health care practitioners: an integrative review of the literature. *Holistic Nursing Practice* 28(5). 291–300.
doi:10.1097/hnp.0000000000000044.

The impact of spiritual practices on job satisfaction remains unclear. This integrative literature review assessed the effectiveness of various spiritual interventions and found that mindfulness was the intervention most widely used. The most promising outcome measures were stress, burnout, mindfulness, and self-compassion.

Manchanda, S. C. & Kushal Madan. 2014. Yoga and meditation in cardiovascular disease. *Clinical Research in Cardiology* 103(9). 675–680.
doi:10.1007/s00392-014-0663-9.

Yoga is a holistic mind-body intervention aimed at physical, mental, emotional and spiritual well-being. Several studies have shown that yoga and/or meditation can control risk factors for cardiovascular disease like hypertension, type II diabetes and insulin resistance, obesity, lipid profile, psychosocial stress and smoking. Some randomized studies suggest that yoga/meditation could retard or even regress early and advanced coronary atherosclerosis. A recent study suggests that transcendental meditation may be extremely useful in secondary prevention of coronary heart disease and may reduce cardiovascular events by 48% over a 5-year period. Another small study suggests that yoga may be helpful in prevention of atrial fibrillation. However, most studies have several limitations like lack of adequate controls, small sample size, inconsistencies in baseline and different methodologies, etc. and therefore large trials with improved methodologies are required to confirm these findings. However, in view of the existing knowledge and yoga being a cost-effective technique without side effects, it appears appropriate to incorporate yoga/meditation for primary and secondary prevention of cardiovascular disease.

Ni, Meng, Kiersten Mooney, Luca Richards, Anoop Balachandran, Mingwei Sun, Kysha Harriell, Melanie Potiaumpai & Joseph F. Signorile. 2014. Comparative impacts of Tai Chi, balance training, and a specially-designed yoga program on balance in older fallers. *Archives of Physical Medicine and Rehabilitation* 95(9). 1620–1628.e30.
doi:10.1016/j.apmr.2014.04.022.

In this randomized controlled trial, researchers aimed to compare the effect of a custom-designed yoga program with 2 other balance training programs. Participants were a group of older adults (n=39) with a history of falling. Three different exercise interventions (Tai Chi, standard balance training, yoga) were given for 12 weeks. Following intervention, results indicated that Yoga was as effective as Tai Chi and standard balance training for improving postural stability and may offer an alternative to more traditional programs.

Oh, Pok-Ja & Soo Hyun Kim. 2014. The Effects of Spiritual Interventions in Patients With Cancer: A Meta-Analysis. *Oncology Nursing Forum* 41(5). E290–E301.
doi:10.1188/14.onf.e290-e301.

The authors of this meta-analysis evaluated the effects of a spiritual intervention in patients with cancer. Data were from 15 studies involving 14 controlled trials (7 randomized and 7 nonrandomized) with 889 patients with cancer. Spiritual interventions were compared with a usual care control group or other psychosocial interventions. The findings showed that spiritual interventions had significant but moderate effects on spiritual well-being, meaning of life, and depression. However, the evidence remains weak because of the mixed study design and substantial heterogeneity.

Ong, Jason C., Rachel Manber, Zindel Segal, Yinglin Xia, Shauna Shapiro & James K. Wyatt. 2014. A randomized controlled trial of mindfulness meditation for chronic insomnia. *Sleep* 37(9). 1553–1563.
doi:10.5665/sleep.4010.

Researchers evaluated the efficacy of mindfulness meditation for the treatment of chronic insomnia in a randomized controlled trial. Participants were 54 adults with chronic insomnia, randomized to either mindfulness-based stress reduction (MBSR), mindfulness-based therapy for insomnia (MBTI), or an eight-week self-monitoring (SM) condition. Following intervention, those receiving a meditation-based intervention (MBSR or MBTI) had significantly greater reductions on total wake time (TWT) minutes, and Insomnia Severity Index (ISI). Each intervention was superior to SM on each of the patient-reported measures, but no significant differences were found when comparing MBSR to MBTI from baseline-to-post. From baseline to 6-month follow-up, MBTI had greater reductions in ISI scores than MBSR, with the largest difference occurring at the 3-month follow-up. Remission and response rates in MBTI and MBSR were sustained from post-treatment through follow-up, with MBTI showing the highest rates of treatment remission (50%) and response (78.6%) at the 6-month follow-up.

Reynolds, Nina, Sylvie Mrug, LaCrecia Britton, Kimberly Guion, Kelly Wolfe & Hector Gutierrez. 2014. Spiritual coping predicts 5-year health outcomes in adolescents with cystic fibrosis. *Journal of Cystic Fibrosis* 13(5). 593–600.
doi:10.1016/j.jcf.2014.01.013.

Positive spiritual coping in adolescent patients with cystic fibrosis (CF) is associated with better emotional functioning, but its role in health outcomes is unknown. Adolescents diagnosed with CF (n=46) reported on their use of positive and negative spiritual coping. Positive spiritual coping was associated with slower decline in pulmonary function, stable vs. declining nutritional status, and fewer days hospitalized over the five-year period. Negative spiritual coping was associated with higher BMI percentile at baseline, but not with health outcomes over time.

Sterba, Katherine Regan, Jessica L. Burris, Sue P. Heiney, Megan Baker Ruppel, Marvella E. Ford & Jane Zapka. 2014. “We both just trusted and leaned on the Lord”: a qualitative study of religiousness and spirituality among African American breast cancer survivors and their caregivers. *Quality of Life Research* 23(7). 1909–1920.
doi:10.1007/s11136-014-0654-3.

This qualitative study explored African American breast cancer (BC) survivors’ and caregivers’ quality-of-life in the post-treatment period with a focus on social and spiritual well-being. Participants included a convenience sample of African American women with stage I-III BC (n=23) who completed treatment 6–24 months before enrollment. Primary caregivers (n=22) included friends, spouses and other family members (21 complete dyads). After treatment, religiousness and spirituality played a major role in both survivors’ and caregivers’ lives by: (1) providing global guidance, (2) guiding illness management efforts and (3) facilitating recovery. Participants described a spiritual connectedness with God and others in their social networks. Dyad members shared the goal of keeping a positive attitude and described positive growth from cancer. Few future concerns were expressed due to the belief that survivors were healed and “done” with cancer. Beyond practical and emotional support, provision of spiritual assistance was common. Results highlight the principal, positive role of religiousness and spirituality for African American BC survivors and caregivers after treatment.

Taso, Chao-Jung, Huey-Shyan Lin, Wen-Li Lin, Shu-Ming Chen, Wen-Tsung Huang & Shang-Wen Chen. 2014. The Effect of Yoga Exercise on Improving Depression, Anxiety, and Fatigue in Women With Breast Cancer: A Randomized Controlled Trial. *Journal of Nursing Research* 22(3). 155–164.
doi:10.1097/jnr.0000000000000044.

This study examines the effectiveness of an 8-week yoga exercise program in promoting the psychological and physical health of women with breast cancer undergoing adjuvant chemotherapy in terms of depression, anxiety, and fatigue. A sample of 60 women with non-metastatic breast cancer was recruited. Participants were randomly assigned into either the experimental group (n=30) or the control group (n=30). A 60-minute, twice-per-week

yoga exercise was implemented for 8 weeks as the intervention for the participants in the experimental group. The control group received standard care only. Results: Analysis found that the yoga exercise reduced overall fatigue and the interference of fatigue in everyday life for the experimental group participants. Significant reductions were obtained after 4 weeks of intervention participation for those experimental group patients with relatively low starting baseline values and after 8 weeks for most patients with moderate starting baseline values. The 8-week intervention did not significantly improve the levels of depression or anxiety.

Verrastro, Genevieve. 2014. Yoga as therapy: When is it helpful? *Journal of Family Practice* 63(9). E1–E6.

The article presents good evidence for yoga as treatment for chronic back pain, depression, and anxiety, and fair evidence for treating asthma, symptoms of menopause, hypertension, and mobility issues in the elderly. The rising popularity of yoga as therapy and the usefulness of its research are addressed. The common forms of yoga, which include Hatha, Bikram and Iyengar, are described.

2.2 SPIRITUALITY & HEALTH: MENTAL HEALTH

Aghababaei, Naser & Agata Blachnio. 2014. Purpose in life mediates the relationship between religiosity and happiness: Evidence from Poland. *Mental Health, Religion & Culture* 17(8). 827–831.
doi:10.1080/13674676.2014.928850.

Past research has found positive links between happiness and various aspects of religiousness, yet it remains unclear how religion contributes to happiness and other well-being outcomes. One possible route is through purpose in life. Among a sample of 208 Christian Polish university students, researchers investigated the mediating role of purpose in life between religion and subjective well-being. Intrinsic religiosity, as expected, was related to higher levels of purpose in life, happiness and life satisfaction, and positively predicted happiness and life satisfaction through purpose in life. The findings support the notion that eudaimonia and eudaimonic constructs like purpose in life may be the links between religion and well-being outcomes.

Curtiss, Joshua & David H. Klemanski. 2014. Teasing apart low mindfulness: Differentiating deficits in mindfulness and in psychological flexibility in predicting symptoms of generalized anxiety disorder and depression. *Journal of Affective Disorders* 166. 41–47.
doi:10.1016/j.jad.2014.04.062.

This research investigated the differential ability of three components of low mindfulness to uniquely predict symptoms of generalized anxiety disorder (GAD) and depression, while controlling for psychological inflexibility, a construct conceptually related to low mindfulness. Also examined was the meditational role of several mindfulness facets in the relationship between psychological inflexibility and symptoms of each disorder. Using a clinical sample (n=153) containing mostly patients with GAD or depression diagnoses, researchers conducted hierarchical multiple regression analyses and mediation analyses to determine unique relationships. Whereas deficits in adopting a non-reactive perspective exhibited incremental validity beyond psychological inflexibility in predicting symptoms of GAD, deficits in acting with awareness did so in predicting symptoms of depression. Results of mediation analyses corroborated this pattern, as the relationships psychological inflexibility exhibited with symptoms of GAD and of depression were mediated by non-reactivity and acting with awareness, respectively.

Gonzalez, Patricia, Sheila F. Castañeda, Jennifer Dale, Elizabeth A. Medeiros, Christina Buelna, Alicia Nuñez, Rebeca Espinoza & Gregory A. Talavera. 2014. Spiritual well-being and depressive symptoms among cancer survivors. *Supportive Care in Cancer* 22(9). 2393–2400.
doi:10.1007/s00520-014-2207-2.

This study examined the association between spiritual well-being and depressive symptoms utilizing self-report data from 102 diverse cancer survivors recruited from peer-based cancer support groups in San Diego County. Analysis of responses indicated that Meaning/Peace significantly predicted depressive symptoms after adjusting for socio-demographics, cancer stage, time since diagnosis, and Faith. Findings suggest that Spiritual Well-Being is a valuable coping mechanism and that Meaning/Peace has a unique advantage over Faith in protecting cancer survivors from the effects of depression symptoms; therefore, turning to Faith as source of strength may improve psychological well-being during survivorship.

- Granqvist, Pehr. 2014. Mental health and religion from an attachment viewpoint: Overview with implications for future research. *Mental Health, Religion & Culture* 17(8). 777–793.
doi:10.1080/13674676.2014.908513.

In this article the author argues that attachment theoretical considerations provide insights into why certain moderators underlie the links observed between religion and mental health. Three sets of moderators are discussed. First, contextual factors associated with heightened attachment activation (e.g., stress, unavailability of one's secular attachment figures, low social welfare) increase the strength of the links observed between religion and mental health. Second, aspects of mental health that are most notably affected by having a safe haven to turn to and a secure base to depart from are particularly reliably linked to religion. Other attachment-related aspects of mental health that religion may promote concerns attenuation of grief and reparation of internal working models following loss of and/or experiences of having been insensitively cared for by other attachment figures. Finally, aspects of religion that are most consistently linked to mental health are partially those that express attachment-components, including belief in a personal, loving God with whom one experiences a close and secure relationship.

- Kim, Suk-Sun, R. David Hayward & Pamela G. Reed. 2014. Self-transcendence, spiritual perspective, and sense of purpose in family caregiving relationships: a mediated model of depression symptoms in Korean older adults. *Aging & Mental Health* 18(7). 905–913.
doi:10.1080/13607863.2014.899968.

This study used structural equation modeling to test the mediated model of late-life depression to understand the mechanisms that account for the direct and indirect effects of spiritual variables and purpose in life on depression within the context of Korean family caregiving relationships. A secondary analysis study design used data from a study that tested a theory of family interdependence of 157 Korean elder-family caregiver dyads in Seoul, Korea. Both caregivers' and elders' self-transcendence was positively related to their own sense of purpose in life. However, only elders' spiritual perspective was related to purpose in life. Also, elders' purpose in life was positively associated with caregivers' purpose in life. Furthermore, there was a strong negative relationship between elders' purpose in life and their depressive symptoms, but there was not a significant negative relationship between caregivers' purpose in life and elders' depressive symptoms. Last, elders' purpose in life mediated the negative effects of elders' self-transcendence and spiritual perspective and of caregivers' self-transcendence and purpose in life on elders' depression. The findings suggest that purpose in life for both the caregiver and elder played an important role in elders' depression.

- Ramaswamy, Aparna. 2014. Natya yoga therapy: Using movement and music to create meditative relief in schizophrenia (based on ashta anga yoga). *Action Research* 12(3). 237–253.
doi:10.1177/1476750314534454.

Natya yoga therapy is an integrative approach that combines yoga with movement, music, and conventional psychotherapy. The word natya refers to movement and music while yoga refers to practice of the eight guiding principles of yoga (ashta anga yoga) that lead to meditation. Individual psychotherapy includes cognitive restructuring of self-concept strengthened by behavioral discipline that builds self-competence. Concurrent group therapy offers meditative relief and intuitive reiteration of a strong self. This study is dedicated to developing a group meditation model that includes natya and yoga practices, specifically for patients with schizophrenia. Action

research methodology is used to include the voices of administrators, staff, therapists, researcher, and patients as co-creators of an effective meditation model that feels comfortable and safe. Data analysis and knowledge creation reflect a reiterative cycle of practical, experiential, and presentational epistemology. Study validated that for this population, practices of natya and yoga did create inner meditative calm, free from agitation and anxiety.

- Rieben, Isabelle, Philippe Huguelet, Francesco Lopes, Sylvia Mohr & Pierre-Yves Brandt. 2014. Attachment and spiritual coping in patients with chronic schizophrenia. *Mental Health, Religion & Culture* 17(8). 812–826.
doi:10.1080/13674676.2014.908045.

Many studies on spirituality in psychosis have shown that, compared to a nonclinical population, patients make more use of spiritual beliefs/religious practices to deal with their problems. The present research question was to test whether attachment to spiritual figures could be a good explanation for religious coping strategies in patients with psychosis. Adult attachment was investigated in 28 patients with chronic psychosis and 18 controls, using the Adult Attachment Interview. Results also show a high prevalence of insecure avoidant attachment in patients, and suggest that a significant part of religious coping might be explained by the theory of attachment (64% of the patients, 78% of controls). The implications of these results are interpreted in light of correspondence and compensation hypotheses.

- Sowe, Babucarr J., Jac Brown & Alan J. Taylor. 2014. Sex and the sinner: Comparing religious and nonreligious same-sex attracted adults on internalized homonegativity and distress. *American Journal of Orthopsychiatry* 84(5). 530–544.
doi:10.1037/ort0000021.

Homonegative prejudice has long been connected with poor psychological outcomes. These have often been purported to include internalized homonegativity (IH), an outcome regarded as especially detrimental given its association with a large number of adverse mental health correlates. Given the evidence that homonegative prejudice often prevails most strongly within many mainstream religious contexts, the current study examined whether religious lesbian, gay, and bisexual (LGB) individuals would possess higher levels of internalized homonegativity than their nonreligious, and formerly religious, LGB counterparts. To test this hypothesis, Christian, formerly Christian, and nonreligious Australian LGB respondents (n=579), recruited through social media platforms and a diverse range of community groups, completed an online survey. Analysis revealed that Christian LGB respondents possessed significantly more IH than nonreligious respondents. Furthermore, perceiving greater homonegativity in one's religious and familial environments predicted higher levels of distress and IH among Christians specifically. Despite having apostatized, former Christians still reported greater religion-sexuality distress than nonreligious individuals, suggesting that the psychological effects of homonegative religious environments are potentially enduring. Across all respondents, IH was also greater for males, those who were less "out," and those who possessed a weaker sense of self. Findings generally support the premise that religious homonegativity places LGB Christians at additional psychological risk, with particular regard to IH and religion-sexuality identity conflict, and that both personal and interpersonal characteristics may exacerbate this risk.

- Uebelacker, Lisa A., Lauren M. Weinstock & Morganne A. Kraines. 2014. Self-Reported Benefits and Risks of Yoga in Individuals with Bipolar Disorder. *Journal of Psychiatric Practice* 20(5). 345–352.
doi:10.1097/01.pra.0000454779.59859.f8.

The goal of this study was to assess the risks and benefits of yoga in individuals with bipolar disorder (BD). Researchers recruited 109 self-identified yoga practitioners with BD to complete an Internet survey that included measures of demographic and clinical information and open-ended questions about yoga practice and the impact of yoga. Of the participants, 86 respondents provided sufficient information for analysis, 70 of whom met positive screening criteria for a lifetime history of mania or hypomania. The most common styles of yoga preferred were

batha and vinyasa. When asked what impact yoga had on their life, participants responded most commonly with positive emotional effects, particularly reduced anxiety, positive cognitive effects (e. g., acceptance, focus, or “a break from my thoughts”), or positive physical effects (e. g., weight loss, increased energy). Some respondents considered yoga to be significantly life changing. The most common negative effect of yoga was physical injury or pain. Five respondents gave examples of specific instances or a yoga practice that they believed increased agitation or manic symptoms; five respondents gave examples of times that yoga increased depression or lethargy.

Warfield, Heather A., Stanley B. Baker & Sejal B. Parikh Foxx. 2014. The therapeutic value of pilgrimage: A grounded theory study. *Mental Health, Religion & Culture* 17(8). 860–875.
doi:10.1080/13674676.2014.936845.

The purpose of this constructivist grounded theory study was to explore the therapeutic value of pilgrimage journeys. Ten participants representing diverse pilgrimage experiences were interviewed about their particular journeys. The interview protocol was based on previous pilgrimage scholarship, psychological theory, and extrapolated data from the participants. The interview transcripts were coded and analyzed by three independent coders. After the establishment and validation of the initial, focused, axial, and theoretical codes, the investigators posited an emerging grounded theory that pilgrimage is therapeutic in biological, psychological, social, and spiritual ways.

Weber, Samuel R. & Kenneth I. Pargament. 2014. The role of religion and spirituality in mental health. *Current Opinion in Psychiatry* 27(5). 358–363.
doi:10.1097/yco.0000000000000080.

This article reviews recent research into the capacity of religion and spirituality to benefit or harm the mental health of believers. Researchers also examine the implications this may have for assessment and treatment in psychiatric settings. Studies indicate that religion and spirituality can promote mental health through positive religious coping, community and support, and positive beliefs. Research also shows that religion and spirituality can be damaging to mental health by means of negative religious coping, misunderstanding and miscommunication, and negative beliefs. Tools for the assessment of patients’ spiritual needs have been studied, and incorporation of spiritual themes into treatment has shown some promise.

Wheeler, Alexis, Linley Denson, Chris Neil, Graeme Tucker, Maura Kenny, John F. Beltrame, Geoffrey Schrader & Michael Proeve. 2014. Investigating the Effect of Mindfulness Training on Heart Rate Variability in Mental Health Outpatients: A Pilot Study. *Behaviour Change* 31(3). 175–188.
doi:10.1017/bec.2014.14.

Depression is associated with increased cardiac morbidity and mortality in people with and without cardiac risk factors, and this relationship is, in part, mediated by heart rate variability (HRV). Increased heart rate and reduced HRV are common in depressed patients, which may explain their higher cardiac risk. This pilot study investigated whether mindfulness-based cognitive therapy (MBCT) promoted objective changes in (1) HRV, and (2) depressive symptoms and quality of life, in mental health outpatients. Twenty-seven adults meeting criteria for DSM-IV Axis I disorders completed an 8-week MBCT program. Data were collected on three occasions, 8 weeks apart; twice before and once after MBCT. At baseline, 78% of participants met criteria for depression. Multivariate analyses revealed a significant treatment effect for SF-36 physical summary score and depression (as a dichotomous variable), but not for HRV. This pilot study highlights the immediate psychological and health benefits of MBCT. Low power may have influenced the lack of a finding of an association between HRV and MBCT. However, the feasibility of the study design has been established, and supports the need for larger and longer-term studies of the potential physiological benefits of MBCT for cardiac health.

2.3 SPIRITUALITY & HEALTH: METHOD AND THEORY

Alosaimi, Fahad D., Youssef Alshehri, Ibrahim Alfraih, Ayedh Alghamdi, Saleh Aldahash, Haifa Alkhuzayem & Haneen Albeeeshi. 2014. The prevalence of psychiatric disorders among visitors to faith healers in Saudi Arabia. *Pakistan Journal of Medical Sciences* 30(5). 1077–1082. doi:10.12669/pjms.305.5434.

Researchers investigated the prevalence of psychiatric disorders among 321 visitors to Faith Healers (FHs) in Riyadh, Saudi Arabia. Most of the participants were young adults, and males with intermediate and secondary levels of education who had not sought medical help prior to their visits. A high proportion of the FH visitors have diagnosable mental illnesses. Depressive and anxiety disorders were the most prevalent among the study participants; few visitors were affected by psychotic or bipolar disorders. The study highlights the tendency of psychiatric patients in Saudi Arabia to visit FHs, which could reflect the importance of further studies to clarify the impact of FHs on the management of those patients.

Balboni, Michael J., Adam Sullivan, Andrea C. Enzinger, Zachary D. Epstein-Peterson, Yolanda D. Tseng, Christine Mitchell, Joshua Niska, Angelika Zollfrank, Tyler J. VanderWeele & Tracy A. Balboni. 2014. Nurse and physician barriers to spiritual care provision at the end of life. *Journal of Pain and Symptom Management* 48(3). 400–410. doi:10.1016/j.jpainsymman.2013.09.020.

The study aimed to describe nurses' and physicians' (n=339) desire to provide spiritual care (SC) to terminally ill patients and assess 11 potential SC barriers. Survey data from these participants revealed that most nurses and physicians desire to provide SC within the setting of terminal illness. However, 40% of nurses/physicians provide SC less often than they desire. The most highly endorsed barriers were "lack of private space" for nurses and "lack of time" for physicians, but neither was associated with actual SC provision.

Cramer, Holger, Romy Lauche & Gustav Dobos. 2014. Characteristics of randomized controlled trials of yoga: A bibliometric analysis. *BMC Complementary and Alternative Medicine* 14. 328. doi:10.1186/1472-6882-14-328.

A growing number of randomized controlled trials (RCTs) have investigated the therapeutic value of yoga interventions. This bibliometric analysis aimed to provide a comprehensive review of the characteristics of the totality of available randomized yoga trials. A total of 366 papers, published between 1975 and 2014, were included, reporting 312 RCTs from 23 different countries with 22,548 participants. The median study sample size was 59. Two hundred sixty-four RCTs (84.6%) were conducted with adults, 105 (33.7%) with older adults and 31 (9.9%) with children. Eighty-four RCTs (26.9%) were conducted with healthy participants. While 119 RCTs (38.1%) did not define the style of yoga used, 35 RCTs (11.2%) used Hatha yoga and 30 RCTs (9.6%) yoga breathing. The remaining 128 RCTs (41.0%) used 46 varied yoga styles. One hundred and seventy-four RCTs (55.6%) compared yoga with no specific treatment; 21 varied control interventions were used in the remaining RCTs.

Egan, Richard, Rod MacLeod, Chrystal Jaye, Rob McGee, Joanne Baxter & Peter Herbison. 2014. The spiritual environment in New Zealand hospice care: Identifying organisational commitment to spiritual care. *BMJ supportive & palliative care* 4(3). 299–302. doi:10.1136/bmjspcare-2013-000632.

Researchers aimed to ascertain the structural and operational capacity of New Zealand's hospices to attend to the spiritual needs and concerns of patients, families and staff. As part of a larger study, a mail out cross-sectional survey was distributed to 25 New Zealand hospices and asked details from staff about facilities, practices and organizational aspects of spiritual care. Data were collated by creating a 'hospice setting spiritual score' based on an aggregate of eight items from the survey. There was a 66% response rate. Summary scores ranged from 2 to 7

indicating that while sites delivered a range of spiritual services, all could improve the level of spiritual care they provide. The two most common items missing were ‘spiritual professional development’ and ‘formal spiritual assessment.’

Hashemian, Masoumeh, Farkhonde Aminshokravi, Alireza Hidarnia, Minoor Lamyian, Kazem Hassanpour, Arash Akaberi & Mahdi Moshki. 2014. Farsi version of the Multidimensional Health Locus of Control and God Locus of Health Control Scales: validity and reliability study among Iranian women with a family history of breast cancer. *Journal of the Pakistan Medical Association* 64(9). 1057–1062.

Researchers aimed to determine the reliability and validity of the Persian version of the Multidimensional Health Locus of Control and God Health Locus of Control scales among women with family history of breast cancer. The cross-sectional study was conducted in Sabzevar, Iran, in 2012. It randomly selected women with family members affected by breast cancer. Predesigned questionnaires were completed through interviews. Content and face validity was evaluated using the opinions of a panel of experts, and construct validity was confirmed by applying confirmatory factor analysis. There were 200 women in the study with their age ranging between 18 and 69 years. The Persian version of the subscales supported the main version.

Hirayama, Marcio Sussumu, Daniela Milani, Roberta Cunha Matheus Rodrigues, Nelson Filice de Barros & Neusa Maria Costa Alexandre. 2014. The perception of behavior related to mindfulness and the Brazilian version of the Freiburg Mindfulness Inventory. *Ciencia & Saude Coletiva* 19(9). 3899–3914.
doi:10.1590/1413-81232014199.12272013.

This study presents mindfulness, describes and discusses the process of cultural adaptation of The Freiburg Mindfulness Inventory (FMI) to Brazilian Portuguese. From the original version of this pioneering instrument for assessing mindfulness two translations and two back-translations were made. These were evaluated by a committee of 14 experts (Buddhists, linguists, health professionals), who helped to create two versions for the first pre-test, based on which suggestions were made by a sample of 41 people of the population through interviews. Considering the difficulties in understanding the concepts that are unfamiliar to the Brazilian culture, a new version was prepared with additional explanations, which underwent a further evaluation of the experts and a second pre-test with 72 people. This process aimed at addressing the limitations and challenges of evaluating mindfulness in a country of western culture through a self-report instrument based on Buddhist psychology. With appropriate levels of clarity and equivalence with the original instrument, the Freiburg Mindfulness Inventory adapted for Brazil is presented.

Johnson, Jeffrey R., Ruth A. Engelberg, Elizabeth L. Nielsen, Erin K. Kross, Nicholas L. Smith, Julie C. Hanada, Sean K. Doll O’Mahoney & J. Randall Curtis. 2014. The association of spiritual care providers’ activities with family members’ satisfaction with care after a death in the ICU. *Critical Care Medicine* 42(9). 1991–2000.
doi:10.1097/CCM.0000000000000412.

In this article, the authors aimed to evaluate the activities spiritual care providers’ conduct to support patients and families and whether those activities are associated with family satisfaction with ICU care. Participants were spiritual care providers, and family members of patients who died in the ICU or within 30 hours of transfer from the ICU. Spiritual care providers completed surveys reporting their activities. Family members completed validated measures of satisfaction with care and satisfaction with spiritual care. Clustered regression was used to assess the association between activities completed by spiritual care providers and family ratings of care. Of 494 eligible patients, 275 family members completed surveys (response rate, 56%). Fifty-seven spiritual care providers received surveys relating to 268 patients, completing 285 surveys for 244 patients. Spiritual care providers commonly reported activities related to supporting religious and spiritual needs (≥ 90%) and providing support for family

feelings (90%). Discussions about the patient's wishes for end-of-life care and a greater number of spiritual care activities performed were both associated with increased overall family satisfaction with ICU care ($p < 0.05$). Discussions about a patient's end-of-life wishes, preparation for a family conference, and total number of activities performed were associated with improved family satisfaction with decision-making in the ICU ($p < 0.05$).

- Mark, Glenis & Antonia Lyons. 2014. Conceptualizing Mind, Body, Spirit Interconnections Through, and Beyond, Spiritual Healing Practices. *EXPLORE: The Journal of Science and Healing* 10(5). 294–299.
doi:10.1016/j.explore.2014.06.003.

Although research is increasingly exploring the concept of the mind, body, spirit (MBS) and its relevance to health and well-being, it remains difficult to precisely define it. This research aims to explore indigenous and non-indigenous spiritual healers' conceptualizations of MBS and consider implications for theory and practice. Participants were a total of 12 spiritual healers from Aotearoa/New Zealand. Transcripts of the interviews were analyzed using interpretative phenomenological analysis, which led to the identification of three major themes: MBS interconnections of healing, impacts on the mind and the body, and spiritual aspects of healing. These results are discussed in terms of their implications for concepts of healing and conceptualizations of MBS.

- Prentis, Sharon, Melanie Rogers, John Wattis, Janice Jones & John Stephenson. 2014. Healthcare lecturers' perceptions of spirituality in education. *Nursing Standard* 29(3). 44–52.
doi:10.7748/ns.29.3.44.e8584.

The aim of this research was to identify healthcare teaching staff's understanding of spirituality, how their understanding may shape teaching practice and how this may contribute to the documented issues around incorporating spirituality into patient assessment and care. A mixed-method, small-scale explorative online survey was used. Several perceptions and practices were identified that led to a better understanding of the obstacles to teaching in this area. Suggestions were made about how to shape teaching spirituality to improve patients' experience and ensure spirituality is integrated more fully into assessment and care. This study brought a better understanding of obstacles to integrating spirituality into teaching for healthcare lecturers and offered some ideas on how to best address these obstacles.

- Read, Suzanne C., Marie-Eve Carrier, Rob Whitley, Ian Gold, Togas Tulandi & Phyllis Zelkowitz. 2014. Complementary and Alternative Medicine Use in Infertility: Cultural and Religious Influences in a Multicultural Canadian Setting. *Journal of Alternative and Complementary Medicine* 20(9). 686–692.
doi:10.1089/acm.2013.0329.

Researchers aimed to explore the use of complementary and alternative medicine (CAM) for infertility in a multicultural healthcare setting, and to compare Western and non-Western infertility patients' reasons for using CAM and the meanings they attribute to CAM use. Qualitative semi-structured interviews using thematic analysis were carried out in two infertility clinics in Montreal, Quebec, Canada. Participants were an ethnoculturally varied sample of 32 heterosexual infertile couples. CAM used included lifestyle changes (e. g., changing diet, exercise), alternative medicine (e. g., acupuncture, herbal medicines), and religious methods (e. g., prayers, religious talismans). Patients expressed three attitudes toward CAM: desperate hope, casual optimism, and amused skepticism. Participants' CAM use was consistent with cultural traditions of health and fertility: Westerners relied primarily on biomedicine and used CAM mainly for relaxation, whereas non-Westerners' CAM use was often influenced by culture-specific knowledge of health, illness and fertility.

- Sperry, Len. 2014. Effective spiritually oriented psychotherapy practice is ethically sensitive practice. *Spirituality in Clinical Practice* 1(3). 167–168.
doi:10.1037/scp0000032.

Practicing effective psychotherapy that is sensitive to spiritual issues involves both recognition and responsiveness to relevant ethical considerations. This means that effective spiritually-oriented psychotherapy practice is not possible without ethical sensitivity. It also means that competent psychotherapists are not only knowledgeable about ethical principles and guidelines, but are also sensitive to situations and circumstances that can affect the welfare and well-being of their clients. This brief essay suggests that effective spiritually oriented psychotherapy practice is ethically sensitive practice. Conversely, ineffective spiritually oriented psychotherapy practice tends to be ethically insensitive practice. A clinical example of this clinical–ethical connection is provided after the case for this connection is made.

Tornøe, Kirsten A., Lars J. Danbolt, Kari Kvigne & Venke Sørli. 2014. The power of consoling presence – hospice nurses’ lived experience with spiritual and existential care for the dying. *BMC nursing* 13. 25.
doi:10.1186/1472-6955-13-25.

The aim of this study is to describe the meaning of hospice nurses’ lived experience with alleviating dying patients’ spiritual and existential suffering. Nurses were interviewed individually and asked to narrate about their experiences with giving spiritual and existential care to terminally ill hospice patients. The key spiritual and existential care themes identified were: sensing existential and spiritual distress; tuning in and opening up; sensing the atmosphere in the room; being moved and touched; and consoling through silence, conversation and religious consolation.

Webb, Judith & Lauren E. Stouffer. 2014. Religious and Spiritual Differences Within Families: Influences on End-of-life Decision Making. *Journal for Nurse Practitioners* 10(8). 588–593.
doi:10.1016/j.nurpra.2014.05.018.

Religious and spiritual diversity are increasing in the United States. This can present unique challenges at the end of life, especially when individuals within the same family have differing beliefs. There are wide variations in individual interpretations of religious teachings. There is also a lack of homogeneity within religions. Health care providers may find it challenging to understand the nuances of individual religious traditions. Clinicians should approach patients and families with humility. A case is presented of a family with diverse traditions in Buddhism, Catholicism, and a nonreligious spirituality.

Zenkert, Rebecca L., Virginia Brabender & Courtney Slater. 2014. Therapists’ responses to religious/spiritual discussions with trauma versus non-trauma clients. *Journal of Contemporary Psychotherapy* 44(3). 213–221.
doi:10.1007/s10879-014-9264-1.

This research explores therapists’ reactions to discussions of religion and spirituality in secular psychotherapy. Researchers used a mixed method design including qualitative and quantitative components to examine data from 14 mental health professionals. Therapists acknowledged the importance of, and outlined reasons for, engaging in religious/spiritual discussions. They provided examples of the diverse ways in which their own views on religion/spirituality have an effect on their therapeutic work. Therapists view attention to religion/spirituality in trauma therapy as necessary. They see an emphasis on religion/spirituality within the treatment of traumatized clients as possessing distinctive qualities in comparison to their treatment of other populations.

PART 3: BOOKS

3.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

Cox, James. 2014. *The Invention of God in Indigenous Societies*. Durham: Routledge.

Harding, Christopher, Iwata Fumiaki & Yoshinaga Shin'ichi (eds.). 2014. *Religion and Psychotherapy in Modern Japan*. New York: Routledge.

Seligman, Rebecca. 2014. *Possessing Spirits and Healing Selves: Embodiment and Transformation in an Afro-Brazilian Religion*. New York: Palgrave Macmillan.

Talmon-Kaminski, Konrad. 2014. *Religion as Magical Ideology: How the Supernatural Reflects Rationality*. (Religion, Cognition and Culture). Durham: Routledge.

3.2 SPIRITUALITY & HEALTH RESEARCH

Germer, Christopher & Ronald Siegel (eds.). 2014. *Wisdom and Compassion in Psychotherapy: Deepening Mindfulness in Clinical Practice*. Guilford Press.

Hickman, Steven & Michael Krasner (eds.). 2014. *Mindfulness and Health: Foundations, Practice and Research in Integrative Medicine*. Oxford: Wiley.

Moes, Paul. 2014. *Exploring psychology and Christian faith: An introductory guide*. Grand Rapids, Mich.: Baker Academic.

Stavros, George S. & Steven J. Sandage (eds.). 2014. *The Skillful Soul of the Psychotherapist: The Link between Spirituality and Clinical Excellence*. Lanham: Rowman & Littlefield Publishers.

PART 4: ARTICLES IN PRESS

4.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

- Acosta, Lealani Mae Y., John B. Williamson & Kenneth M. Heilman. 2014. Which Cheek did the Resurrected Jesus Turn? *Journal of Religion and Health*.
doi:10.1007/s10943-014-9945-9.
- Anderson, Joel & Radka Antalíková. 2014. Framing (implicitly) matters: The role of religion in attitudes toward immigrants and Muslims in Denmark. *Scandinavian Journal of Psychology*.
doi:10.1111/sjop.12161.
- Azagba, Sunday, Mark Asbridge & Donald B. Langille. 2014. Is Religiosity Positively Associated With School Connectedness: Evidence From High School Students in Atlantic Canada? *The Journal of Primary Prevention*.
doi:10.1007/s10935-014-0367-y.
- Brophy, Matthew. 2014. Spirituality incorporated: Including convergent spiritual values in business. *Journal of Business Ethics*.
doi:10.1007/s10551-014-2337-y.
- Cutright, Keisha M., Tülin Erdem, Gavan J. Fitzsimons & Ron Shachar. 2014. Finding Brands and Losing Your Religion? *Journal of Experimental Psychology. General*.
doi:10.1037/a0037876.
- Denke, Claudia, Michael Rotte, Hans-Jochen Heinze & Michael Schaefer. 2014. Lying and the Subsequent Desire for Toothpaste: Activity in the Somatosensory Cortex Predicts Embodiment of the Moral-Purity Metaphor. *Cerebral Cortex*.
doi:10.1093/cercor/bhu170.
- Fan, Yaxin, Yi-Yuan Tang, Rongxiang Tang & Michael I. Posner. 2014. Short Term Integrative Meditation Improves Resting Alpha Activity and Stroop Performance. *Applied Psychophysiology and Biofeedback*.
doi:10.1007/s10484-014-9258-5.
- Ghorbani, Nima, P. J. Watson, Naser Aghababaei & Zhuo Chen. 2014. Transliminality and Mystical Experience: Common Thread Hypothesis, Religious Commitment, and Psychological Adjustment in Iran. *Psychology of Religion and Spirituality*.
doi:10.1037/a0037432.
- Hone, Liana S. E. & Michael E. McCullough. Does religious cognition really down-regulate hand grip endurance in men? A failure to replicate. *Evolution and Human Behavior*.
doi:10.1016/j.evolhumbehav.2014.08.007.
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doi:10.1080/00918369.2014.969071.
- Neubert, Mitchell J. & Katie Halbesleben. 2014. Called to commitment: An examination of relationships between spiritual calling, job satisfaction, and organizational commitment. *Journal of Business Ethics*.
doi:10.1007/s10551-014-2336-z.

- Oh, Whachul. 2014. Transforming Han: A Correlational Method for Psychology and Religion. *Journal of Religion and Health*.
doi:10.1007/s10943-014-9944-x.
- Ray, Shanna D., Jennifer D. Lockman, Emily J. Jones & Melanie H. Kelly. 2014. Attributions to God and Satan About Life-Altering Events. *Psychology of Religion and Spirituality*.
doi:10.1037/a0037884.
- Sinneve, Elisabeth, Michael A. Kortt & Brian Dollery. 2014. Religion and life satisfaction: Evidence from germany. *Social Indicators Research*.
doi:10.1007/s11205-014-0763-y.
- Taylor, Ketan, Caroline Piotrowski, Roberta Woodgate & Nicole Letourneau. 2014. Child Sexual Abuse and Adult Religious Life: Challenges of Theory and Method. *Journal of Child Sexual Abuse*.
doi:10.1080/10538712.2014.960633.

4.2 SPIRITUALITY & HEALTH RESEARCH

- Ai, Amy L., Andreas Kastenmüller, Terrence N. Tice, Paul Wink, Michele Dillon & Dieter Frey. 2014. The Connection of Soul (COS) Scale: An Assessment Tool for Afterlife Perspectives in Different Worldviews. *Psychology of Religion and Spirituality*.
doi:10.1037/a0037455.
- Buzdar, Muhammad Ayub, Akhtar Ali, Masood Nadeem & Muhammad Nadeem. 2014. Relationship Between Religiosity and Psychological Symptoms in Female University Students. *Journal of Religion and Health*.
doi:10.1007/s10943-014-9941-0.
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doi:10.1080/10410236.2014.913222.
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doi:10.1080/00918369.2014.969611.
- Friedson, Meredith L. 2014. Psychotherapy and the Fundamentalist Client: The Aims and Challenges of Treating Jehovah's Witnesses. *Journal of Religion and Health*.
doi:10.1007/s10943-014-9946-8.
- Garschagen, Alexander, Monique A. H. Steegers, Alfonsus H. M. M. van Bergen, Johannes A. M. Jochijms, Titus L. M. Skrabanja, Hubertus J. M. Vrijhoef, Rob J. E. M. Smeets & Kris C. P. Vissers. 2014. Is There a Need for Including Spiritual Care in Interdisciplinary Rehabilitation of Chronic Pain Patients? Investigating an Innovative Strategy. *Pain Practice: The Official Journal of World Institute of Pain*.
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- Gebauer, Jochen E., Wiebke Bleidorn, Samuel D. Gosling, Peter J. Rentfrow, Michael E. Lamb & Jeff Potter. 2014. Cross-Cultural Variations in Big Five Relationships With Religiosity: A Sociocultural Motives Perspective. *Journal of Personality and Social Psychology*. doi:10.1037/a0037683.
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