



RESEARCH REVIEW

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

APRIL, 2012

INTRODUCTION

IBCSR Research Review (IRR) is published by the Institute for the Biocultural Study of Religion, a non-profit research institute dedicated to the scientific study of the biocultural aspects of religion. *IRR* briefly annotates and furnishes online information about scientific research articles related to brain, behavior, culture, and religion published in English in leading journals. It also lists relevant books. Articles in press are listed without annotation. Annotations for articles aim to supply a preliminary understanding of the methods and results of a research study, or the argument of a paper. Annotations typically furnish more detail for articles in the scientific study of religion related to religion, brain, and behavior, than for articles in the area of spirituality and health, in accordance with IBCSR research priorities.

Articles for this issue were located by searching the following databases: Applied Science and Technology, ATLA Religion Database, General Science, PubMed, EBSCO Psychology and Behavioral Sciences Collection, PsycARTICLES, PsycINFO, ScienceDirect, and Web of Science. The search terms were altruism, god, goddess, meditat*, prayer, relig*, ritual, spiritu*, and yoga, tailored to the database being searched. Books were located on Amazon.com. Articles not directly relevant to the scientific study of religion were excluded, as were correspondence and reviews. From a universe of 421 articles, 81 articles have been retained from 55 journals. There are 38 pre-publication citations from 31 journals.

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PART 1: ARTICLES IN RELIGION, BRAIN, AND BEHAVIOR

1.1 SCIENTIFIC STUDY OF RELIGION: COGNITIVE NEUROSCIENCE

Berkovich-Ohana, Aviva, Joseph Glicksohn & Abraham Goldstein. 2012. Mindfulness-induced changes in gamma band activity - implications for the default mode network, self-reference and attention. *Clinical Neurophysiology: Official Journal of the International Federation of Clinical Neurophysiology* 123(4). 700–710.
doi:10.1016/j.clinph.2011.07.048.

Researchers used EEG to investigate the association of mindfulness meditation (MM) and self-referential processing. They identified default mode network (DMN) deactivation during the transition from resting state to a time production task, as lower gamma power over frontal and midline regions. MM practitioners exhibited a trait lower frontal gamma activity, related to narrative self-reference and DMN activity, as well as producing longer durations, these being negatively correlated with frontal gamma activity. Additionally, there were state increases in posterior gamma power, suggesting increased attention and sensory awareness. MM proficiency did not affect the results. The authors conclude that gamma power over frontal midline areas reflects DMN activity. MM practitioners exhibit lower trait frontal gamma activity, as well as a state and trait increases in posterior gamma power, irrespective of practice proficiency.

Froeliger, Brett, Eric L Garland, Rachel V Kozink, Leslie A Modlin, Nan-Kuei Chen, F Joseph McClernon, Jeffrey M Greeson & Paul Sobin. 2012. Meditation-State Functional Connectivity (msFC): Strengthening of the Dorsal Attention Network and Beyond. *Evidence-based Complementary And Alternative Medicine: eCAM* 2012. 680407.
doi:10.1155/2012/680407.

This study investigated the effects of meditation experience and meditation-state functional connectivity (msFC) on

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multiple resting state networks (RSNs). Meditation practitioners (MPs) performed two 5-minute scans, one during rest, one while meditating. A meditation naïve control group (CG) underwent one resting-state scan. During resting-state, MP as compared to CG exhibited greater rsFC within the Dorsal Attention Network (DAN). Among MP, meditation, as compared to rest, strengthened FC between the DAN and DMN and Salience network whereas it decreased FC between the DAN, dorsal medial PFC, and insula. Regression analyses revealed positive correlations between the number of years of meditation experience and msFC between DAN, thalamus, and anterior parietal sulcus, whereas negative correlations between DAN, lateral and superior parietal, and insula. These findings suggest that the practice of meditation strengthens FC within the DAN as well as strengthens the coupling between distributed networks that are involved in attention, self-referential processes, and affective response.

van Leeuwen, Sara, Wolf Singer & Lucia Melloni. 2012. Meditation increases the depth of information processing and improves the allocation of attention in space. *Frontiers In Human Neuroscience* 6. 133.
doi:10.3389/fnhum.2012.00133.

Researchers tested the hypothesis that the result of meditators' learning to respond to the dual demand of engaging attention on specific objects, and disengaging quickly from distracters, is an enhancement of the efficiency by which meditation practitioners can allocate attention, using a group of eight highly trained Buddhist monks and nuns and a group of eight age and education matched controls with no previous meditation experience. As predicted, analysis of response times indicated a reduced global precedence effect in meditation practitioners but not in controls, reflecting that meditators can more quickly disengage their attention from the dominant global level. Meditators showed an enhanced ability to select the respective target level, as reflected by enhanced processing of target level information. In contrast with control group, which showed a local target selection effect only in the P1 and a global target selection effect in the P3 component, meditators showed effects of local information processing in the P1, N2, and P3 and of global processing for the N1, N2, and P3. Thus, meditators seem to display enhanced depth of processing. In addition, meditation altered the uptake of information such that meditators selected target level information earlier in the processing sequence than controls. In a further longitudinal experiment, the behavioral effects were replicated, suggesting that meditation modulates attention already after a 4-day meditation retreat. The authors conclude that practicing meditation enhances the speed with which attention can be allocated and relocated, thus increasing the depth of information processing and reducing response latency.

Lehmann, Dietrich, Pascal L Faber, Shisei Tei, Roberto D Pascual-Marqui, Patricia Milz & Kieko Kochi. 2012. Reduced functional connectivity between cortical sources in five meditation traditions detected with lagged coherence using EEG tomography. *NeuroImage* 60(2). 1574–1586.
doi:10.1016/j.neuroimage.2012.01.042.

EEG measurements were recorded before, during and after 71 meditators engaged in meditation exercises specific to their traditions. All significant differences (corrected for multiple testing) between meditation compared to no-task rest before and after meditation showed lower coherence during meditation, in all five traditions and eight (inhibitory as well as excitatory) frequency bands. Conventional coherence between the original head surface EEG time series very predominantly also showed reduced coherence during meditation. The topography of the functional connectivities was examined via PCA-based computation of principal connectivities. When going into and out of meditation, significantly different connectivities revealed clearly different topographies in the delta frequency band and minor differences in the beta-2 band. The globally reduced functional interdependence between brain regions in meditation suggests that interaction between the self-process functions is minimized, and that constraints on the self-process by other processes are minimized, thereby leading to the subjective experience of non-involvement, detachment and letting go, as well as of all-oneness and dissolution of ego borders during meditation.

Pagnoni, Giuseppe. 2012. Dynamical properties of BOLD activity from the ventral posteromedial cortex associated with meditation and attentional skills. *The Journal of Neuroscience: The Official Journal of the Society for Neuroscience* 32(15). 5242–5249.
doi:10.1523/jneurosci.4135-11.2012.

Researchers collected functional MRI (fMRI) data from a cohort of experienced Zen meditators and meditation-naïve controls engaging in a basic attention-to-breathing protocol. A significant group difference in the skewness of the fMRI BOLD signal from the ventral posteromedial cortex (vPMC) was observed, suggesting that the relative incidence of states of elevated vPMC activity was lower in meditators; furthermore, the same parameter was significantly correlated with performance on a rapid visual information processing (RVIP) test for sustained attention conducted outside the scanner. Finally, a functional connectivity analysis with the vPMC seed revealed a significant association of RVIP performance with the degree of temporal correlation between vPMC and the right temporoparietal junction (TPJ), a region strongly implicated in stimulus-triggered reorienting of attention. Together, these findings suggest that the vPMC BOLD signal skewness and the temporal relationship of vPMC and TPJ activities reflect the dynamic tension between mind-wandering, meta-awareness, and directed attention, and may represent a useful endophenotype for studying individual differences in attentional abilities and the impairment of the latter in specific clinical conditions.

1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION

Atran, Scott. 2012. Parasite stress is not so critical to the history of religions or major modern group formations. *Behavioral and Brain Sciences* 35(2). 79–80.
doi:10.1017/S0140525X11001361.

The author questions Fincher & Thornhill's hypothesis—that strong in-group norms were formed in part to foster parochial social alliances so as to enable cultural groups to adaptively respond to parasite stress—when applied to modern social formations. A response to Fincher & Thornhill, “Parasite-stress promotes in-group assortative sociality,” below.

de Barra, Mícheál & Val Curtis. 2012. Are the pathogens of out-groups really more dangerous? *Behavioral and Brain Sciences* 35(2). 85–86.
doi:10.1017/S0140525X11000975.

The authors question the plausibility of Fincher & Thornhill's argument that localized pathogen-host coevolution leads to out-groups having pathogens more damaging than those infecting one's own family or religious group. A response to Fincher & Thornhill, “Parasite-stress promotes in-group assortative sociality,” below.

Beit-Hallahmi, Benjamin. 2012. Connecting biological concepts and religious behavior. *Behavioral and Brain Sciences* 35(2). 80–81.
doi:10.1017/S0140525X11000938.

This commentary proposes experiments to examine connections between the presence of out-group members, neurovisceral reactions, religiosity, and ethnocentrism, to clarify the meaning of the correlational findings presented in the target article. It also suggests different ways of describing religious socialization and of viewing assertions about religion and health or about the human ability to detect pathogens. A response to Fincher & Thornhill, “Parasite-stress promotes in-group assortative sociality,” below.

Cashdan, Elizabeth. 2012. In-group loyalty or out-group avoidance? Isolating the links between pathogens and in-group assortative sociality. *Behavioral and Brain Sciences* 35(2). 82.
doi:10.1017/S0140525X11001373.

The author asserts that preliminary data from traditional societies provide some support for Fincher & Thornhill's explanation of the correlation between pathogens, family ties, and religiosity as having to do with the benefits of xenophobic attitudes for reducing pathogen exposure. She doesn't find evidence for the explanation regarding the benefits of ethnic loyalty for mitigating the costs when a person falls ill. A response to Fincher & Thornhill, "Parasite-stress promotes in-group assortative sociality," below.

Chang, Lei, Hui Jing Lu & Bao Pei Wu. 2012. Pathogens promote matrilineal family ties and the copying of foreign religions. *Behavioral and Brain Sciences* 35(2). 82–83.
doi:10.1017/S0140525X11000951.

Within the same pathogen-stress framework as proposed by Fincher & Thornhill, the authors argue further that pathogen stress promotes matrilineal rather than patrilineal family ties which, in turn, slow down the process of modernity; and that pathogen stress promotes social learning or copying, including the adoption of foreign religions. A response to Fincher & Thornhill, "Parasite-stress promotes in-group assortative sociality," below.

Fincher, Corey L & Randy Thornhill. 2012. Parasite-stress promotes in-group assortative sociality: the cases of strong family ties and heightened religiosity. *Behavioral and Brain Sciences* 35(2). 61–79.
doi:10.1017/S0140525X11000021.

Throughout the world people differ in the magnitude with which they value strong family ties or heightened religiosity. The authors propose that this cross-cultural variation is a result of a contingent psychological adaptation that facilitates in-group assortative sociality in the face of high levels of parasite-stress while devaluing in-group assortative sociality in areas with low levels of parasite-stress. This is because in-group assortative sociality is more important for the avoidance of infection from novel parasites and for the management of infection in regions with high levels of parasite-stress compared with regions of low infectious disease stress. The authors examined this hypothesis by testing the predictions that there would be a positive association between parasite-stress and strength of family ties or religiosity, comparing data among nations and among states in the United States of America. It was found for both the international and the interstate analyses that in-group assortative sociality was positively associated with parasite-stress. This was true when controlling for potentially confounding factors such as human freedom and economic development. The findings support the parasite-stress theory of sociality, that is, the proposal that parasite-stress is central to the evolution of social life in humans and other animals. The target article in this issue of Behavioral and Brain Sciences.

Fincher, Corey L & Randy Thornhill. 2012. The parasite-stress theory may be a general theory of culture and sociality. *Behavioral and Brain Sciences* 35(2). 99–119.

The authors of the target article answer their respondents, attempting to clarify and expand the parasite-stress theory of sociality used to fuel the research presented in the target article.

Gebauer, Jochen E & Gregory R Maio. 2012. The need to belong can motivate belief in God. *Journal of Personality* 80(2). 465–501.
doi:10.1111/j.1467-6494.2011.00730.x.

In two studies, researchers confirm the hypothesis that the need to belong can motivate belief in God. In Study 1, 40 undergraduates read bogus astrophysics articles "proving" God's existence or not offering proof. Participants in the proof-for-God condition reported higher belief in God (compared to control) when they chronically imagined God as accepting but lower belief in God when they imagined God as rejecting. Additionally, in Study 2 (72 undergraduates), these effects did not occur when participants' belongingness need was satisfied by priming close others. Study 3 manipulated 79 Internet participants' image of God. Chronic believers in the God-is-rejecting condition reported lower religious behavioral intentions than chronic believers in the God-is-accepting condition, and this effect was mediated by lower desires for closeness with God. In Study 4 (106 Internet participants),

chronic believers with an accepting image of God reported that their belief in God is motivated by belongingness needs.

- Grotuss, Jason. 2012. The evolution and development of human social systems requires more than parasite-stress avoidance explanation. *Behavioral and Brain Sciences* 35(2). 88–89.
doi:10.1017/S0140525X11001002.

Responding to Fincher & Thornhill (above), the author raises the question of mutualistic associations with parasites that are beneficial to humans, as well as how some religious practices increase parasite risk.

- Huber, John Thomas II & Douglas A. MacDonald. 2012. An investigation of the relations between altruism, empathy, and spirituality. *Journal of Humanistic Psychology* 52(2). 206–221.
doi:10.1177/0022167811399442.

This study investigated the relations between altruism, empathy, and spirituality in a sample of 186 university students. Zero-order and partial correlations controlling for age, sex, and social desirability indicated that, although altruism and empathy are related to each other in a manner consistent with previous research, the association of both of these to spirituality is complex and multidirectional. In particular, empathy was found to be significantly positively related to nonreligious spiritual cognitions, religiousness, and spiritual experiences and negatively associated with existential well-being. Altruism, on the other hand, was most strongly linked to spiritual experiences, followed by spiritual cognitions. Regression analyses revealed that nonreligious spiritual cognitions and spiritual experiences are the most potent predictors of both empathy and altruism, respectively. Based on the findings and literature suggesting that spirituality may have an impact on empathy and altruism, a path model was developed wherein spiritual experiences had a direct effect on altruism and spiritual cognitions had an indirect effect on altruism through empathy. A test of the model indicated that it demonstrates satisfactory goodness of fit.

- Koleva, Spassena P., Jesse Graham, Ravi Iyer, Peter H. Ditto & Jonathan Haidt. 2012. Tracing the threads: How five moral concerns (especially Purity) help explain culture war attitudes. *Journal of Research in Personality* 46(2). 184–194.
doi:10.1016/j.jrp.2012.01.006.

The authors sought to understand the psychological underpinnings of the American culture war attitudes using Moral Foundations Theory. In two studies involving 24,739 participants and 20 such issues (e.g. abortion, immigration, same-sex marriage), they found that endorsement of five moral foundations predicted judgments about these issues over and above ideology, age, gender, religious attendance, and interest in politics. Results suggest that dispositional tendencies, particularly a person's moral intuitions, may underlie, motivate, and unite ideological positions across a variety of issues and offer new insights into the multiple "moral threads" connecting disparate political positions.

- Paul, Gregory S. 2012. High illness loads (physical and social) do not always force high levels of mass religiosity. *Behavioral and Brain Sciences* 35(2). 90.
doi:10.1017/S0140525X11001014.

The hypothesis of Fincher & Thornhill, that high levels of religiosity are partly caused by high disease loads, is in accord with studies showing that societal dysfunction promotes mass supernaturalism. However, some cultures suffering from high rates of disease and other socioeconomic dysfunction exhibit low levels of popular religiosity. At this point, it appears that religion is hard pressed to thrive in healthy societies, but poor conditions do not always make religion popular, either. A response to Fincher & Thornhill, "Parasite-stress promotes in-group assortative sociality," above.

- Swartwout, Paul, Benjamin Grant Purzycki & Richard Sosis. 2012. Form and function in religious signaling under pathogen stress. *Behavioral and Brain Sciences* 35(2). 92–93.

doi:10.1017/S0140525X1100104X.

The evolution of religious traditions may be partially explained by out-group avoidance due to pathogen stress. However, many religious rituals may increase rather than decrease performers' susceptibility to infection. Moreover, religions often spread through proselytizing, which requires out-group interaction; and in other cases, the benefits of economic exchange increase religious pluralism and social interactions with out-groups. A response to Fincher & Thornhill, "Parasite-stress promotes in-group assortative sociality," above.

Vigil, Jacob M & Patrick Coulombe. 2012. Intra-regional assortative sociality may be better explained by social network dynamics rather than pathogen risk avoidance. *Behavioral and Brain Sciences* 35(2). 96–97.

doi:10.1017/S0140525X11001087.

The authors hold that Fincher & Thornhill's model is not entirely supported by common patterns of affect behaviors among people who live under varying climatic conditions and among people who endorse varying levels of (Western) religiosity and conservative political ideals. Fincher & Thornhill's model is also unable to account for intra-regional heterogeneity in assortative sociality, which can be better explained by a framework that emphasizes the differential expression of fundamental social cues for maintaining distinct social network structures. A response to Fincher & Thornhill, "Parasite-stress promotes in-group assortative sociality," above.

Wall, Jaimie N & Todd K Shackelford. 2012. Immigration, parasitic infection, and United States religiosity. *Behavioral and Brain Sciences* 35(2). 97–98.

doi:10.1017/S0140525X11001099.

Fincher & Thornhill present a powerful case for the relationship between parasite-stress and religiosity. The authors argue, however, that the United States may be more religious than can be accounted for by parasite-stress. This greater religiosity might be attributable to greater sensitivity to immigration, which may hyperactivate evolved mechanisms that motivate avoidance of potential carriers of novel parasites. A response to Fincher & Thornhill, "Parasite-stress promotes in-group assortative sociality," above.

Waynforth, David. 2012. Time allocation, religious observance, and illness in Mayan horticulturalists. *Behavioral and Brain Sciences* 35(2). 98–99.

doi:10.1017/S0140525X11001105.

Analysis of individual differences in religious observance in a Belizean community showed that the most religious (pastors and church workers) reported more illnesses, and that there was no tendency for the religiously observant to restrict their interactions to family or extended family. Instead, the most religiously observant tended to have community roles that widened their social contact: religion did not aid isolation—thus violating a key assumption of the parasite-stress theory of sociality. A response to Fincher & Thornhill, "Parasite-stress promotes in-group assortative sociality," above.

1.3 SCIENTIFIC STUDY OF RELIGION: PSYCHOLOGY AND CULTURE

Attar-Schwartz, Shalhevet & Asher Ben-Arieh. 2012. Political knowledge, attitudes and values among Palestinian and Jewish youth in Israel: The role of nationality, gender and religiosity. *Children and Youth Services Review* 34(4). 704–712.

doi:10.1016/j.childyouth.2011.12.017.

This study explored political attitudes, awareness and values among 1,753 Israeli-Jewish and Israeli-Palestinian adolescents aged 15 to 17 from different localities. The findings show that Palestinian adolescents reported more trust in the political system, were more aware and had a more formulated opinion of the political system than their Jewish colleagues. In addition, it was found that more religious adolescents showed more political awareness and

involvement. In general, gender gaps in political participation measures were larger among Arab adolescents compared with Jewish adolescents. The researchers suggest that some of the findings can be explained by the potential role of participation in political activities by minority adolescents in the development of adolescents' political perception and attitudes.

- Brown, Timothy Tyler. 2012. A monetary valuation of individual religious behaviour: the case of prayer. *Applied Economics* 45(15). 2031–2037.
doi:10.1080/00036846.2011.648318.

In this article, the value of a fundamental religious behavior, prayer, is determined using the well-being valuation method. Theoretically appropriate Instrumental Variables (IV) are used to avoid bias in estimating the effects of household income and the frequency of prayer on well-being. The marginal value of an additional weekly prayer session for individuals already at the national mean is estimated to be \$6,550 per annum (2004 dollars). Praying at the frequency of the national mean of 8.1 prayer sessions weekly is valued at \$53,055 (2004 dollars) per annum. This is larger than the median household income in the US in 2004: \$44,684. This suggests that the perception of communion with God is highly valued by religious individuals.

- Butler-Barnes, Sheretta T, Terrinieka T Williams & Tabbye M Chavous. 2012. Racial pride and religiosity among African American Boys: implications for academic motivation and achievement. *Journal Of Youth And Adolescence* 41(4). 486–498.
doi:10.1007/s10964-011-9675-1.

This study conceptualized culturally-based factors (racial pride and religiosity) as adolescent assets that would promote African American boys' achievement and also enhance positive effects of other youth assets (positive educational utility beliefs) on achievement. Our sample included 158 adolescent boys from a large, socioeconomically diverse suburban community context. Accounting for demographic background variables, educational utility beliefs were positively associated with academic grade performance. A significant educational utility beliefs and racial pride interaction indicated a stronger, positive association of educational utility beliefs with grade performance among boys with higher racial pride relative to those with lower racial pride. Also, there was a stronger positive association between educational utility beliefs and grades for boys reporting lower religious importance, but boys endorsing both lower educational utility beliefs and religious importance were at highest risk for low grade performance.

- Colzato, Lorenza S, Ayca Ozturk & Bernhard Hommel. 2012. Meditate to create: the impact of focused-attention and open-monitoring training on convergent and divergent thinking. *Frontiers in Psychology* 3. 116.
doi:10.3389/fpsyg.2012.00116.

This study investigates the possible impact of meditation based on focused-attention (FA) and meditation based on open-monitoring (OM) on creativity tasks tapping into convergent and divergent thinking. First, OM meditation induces a control state that promotes divergent thinking, a style of thinking that allows many new ideas of being generated. Second, FA meditation does not sustain convergent thinking, the process of generating one possible solution to a particular problem. The authors suggest that the enhancement of positive mood induced by meditating has boosted the effect in the first case and counteracted in the second case.

- Croucher, Stephen M., Kyle Holody, Samara Anarbaeva, Ramune Braziunaite, Veronica Garcia-Michael, Ki-sung Yoon, Deepa Oommen & Anthony Spencer. 2012. Religion and the Relationship Between Verbal Aggressiveness and Argumentativeness. *Atlantic Journal of Communication* 20(2). 116–129.
doi:10.1080/15456870.2012.665347.

This study analyzes the influence of sex, education, religion, and religiosity on the relationship between argumentativeness and verbal aggressiveness. Verbal aggressiveness is a less acceptable way to approach disagreement than argumentativeness. Argumentativeness and verbal aggressiveness were not significantly related. Further analysis revealed that male participants were significantly more verbally aggressive, individuals with higher education were less verbally aggressive, and religiosity decreased verbal aggressiveness. Moreover, Mainline Protestants were generally more verbally aggressive than other religious groups.

Gervais, Will M & Ara Norenzayan. 2012. Analytic thinking promotes religious disbelief. *Science* 336(6080). 493–496.
doi:10.1126/science.1215647.

Scientific interest in the cognitive underpinnings of religious belief has grown in recent years. However, to date, little experimental research has focused on the cognitive processes that may promote religious disbelief. The present studies apply a dual-process model of cognitive processing to this problem, testing the hypothesis that analytic processing promotes religious disbelief. Individual differences in the tendency to analytically override initially flawed intuitions in reasoning were associated with increased religious disbelief. Four additional experiments provided evidence of causation, as subtle manipulations known to trigger analytic processing also encouraged religious disbelief. Combined, these studies indicate that analytic processing is one factor (presumably among several) that promotes religious disbelief. Although these findings do not speak directly to conversations about the inherent rationality, value, or truth of religious beliefs, they illuminate one cognitive factor that may influence such discussions.

Greenberg, Jonathan, Keren Reiner & Nachshon Meiran. 2012. “Mind the trap”: mindfulness practice reduces cognitive rigidity. *PloS one* 7(5). e36206.
doi:10.1371/journal.pone.0036206.

Two experiments examined the relation between mindfulness practice and cognitive rigidity by using a variation of the Einstellung water jar task. Participants were required to use three hypothetical jars to obtain a specific amount of water. Initial problems were solvable by the same complex formula, but in later problems (“critical” or “trap” problems) solving was possible by an additional much simpler formula. A rigidity score was compiled through perseverance of the complex formula. In Experiment 1, experienced mindfulness meditators received significantly lower rigidity scores than non-meditators who had registered for their first meditation retreat. Similar results were obtained in randomized controlled Experiment 2 comparing non-meditators who underwent an eight meeting mindfulness program with a waiting list group. The authors conclude that mindfulness meditation reduces cognitive rigidity via the tendency to be “blinded” by experience. Results are discussed in light of the benefits of mindfulness practice regarding a reduced tendency to overlook novel and adaptive ways of responding due to past experience, both in and out of the clinical setting.

Hardy, Sam A., Lawrence J. Walker, David D. Rackham & Joseph A. Olsen. 2012. Religiosity and Adolescent Empathy and Aggression: The Mediating Role of Moral Identity. *Psychology of Religion and Spirituality*.
doi:10.1037/a0027566.

This study examined moral identity as a mediator between adolescent religiosity and adolescent empathy and aggression. Participants were 502 adolescents (10-18 years) who completed an online survey. The study found indirect relationships between religious commitment and aggression and empathy by way of moral identity. Religious commitment was also directly related to empathy. Additionally, religious commitment and involvement interacted in predicting moral identity. Findings suggest that moral identity may be one mechanism by which religiosity leads to positive social interactions. Further, it may be that religious commitment and religious involvement interact in a way that together more synergistically promote positive development.

Miller, Eric D. 2012. Apocalypse now? The relevance of religion for beliefs about the end of the world. *Journal of Beliefs & Values* 33(1). 111–115.
doi:10.1080/13617672.2012.650038.

This study considers how religious individuals may be more likely to entertain doomsday scenarios, such as the December 21, 2012 Mayan prophecy, particularly when juxtaposed with the occurrence of several recent adverse and cataclysmic events. One hundred forty two undergraduates were asked to assess their belief as to whether they believed that December 21, 2012 represents an Apocalypse or the “End of the World” before and after writing and thinking about four troubling seminal events from the past several years (9/11, the economic crisis, Hurricane Katrina, and Middle East tensions). Self-identified religious subjects were significantly more likely than non-religious subjects to believe that they would personally witness the end of the world. Moreover, of the four events described above, Middle East tensions were deemed to be the event that could potentially signify or bring about the “end of the world.”

Peloso, Jeanne M. 2012. The theological anthropology of young adult Catholics in postmodern America. *Pastoral Psychology* 61(2). 233–243.
doi:10.1007/s11089-011-0412-1.

The author interviewed young adult Roman Catholics for this study, guided by the following question: What metaphors and images do individuals hold for God, and how do these metaphors and images contribute to an understanding of theological anthropology? The metaphors and images that the individual holds for God have been neglected in theological anthropology, even though they offer important insights into how the individual builds a foundation of faith, engages in the world spiritually, and participates in religious institutions.

Reinert, Duane F. & Carla E. Edwards. 2012. Sex differences in religiosity: The role of attachment to parents and social learning. *Pastoral Psychology* 61(2). 259–268.
doi:10.1007/s11089-011-0376-1.

Researchers found that attachment to God is more likely to be associated with attachment to the same-sex parent than to the opposite-sex parent. This is also true for concepts of God as loving, controlling, and distant in female, but not male participants in our study. For both males and females, mother’s level of religious involvement when they were growing up was associated with participants’ later attendance at religious services, but for males, attachment to father was an additional influence. In neither males nor females was attachment to either parent or their parent’s past religious involvement a significant predictor of strength of religious faith.

ap Siôn, Tania & Owen Edwards. 2012. Praying “online”: The ordinary theology of prayer intentions posted on the internet. *Journal of Beliefs & Values* 33(1). 95–109.
doi:10.1080/13617672.2012.650037.

The current study analyses 290 prayer requests posted on the Church of England’s ‘Say one for Me’ website using ap Siôn’s ‘general’ framework for analyzing intercessory prayer requests. The main findings show that, in terms of prayer reference, the majority of prayer requests were for other people known to the prayer author (57%), although a significant proportion were for the prayer authors themselves (34%); in terms of prayer intention, most prayer requests were concerned with illness (26%), relationships (24%), work (19%), and growth (18%); and in terms of prayer objective, most prayer requests employed primary control (84%) rather than secondary control (16%). When the online prayer results were compared with previous prayer card results, using the same analytical framework, online prayer authors were found to be distinctive in terms of prayer reference, prayer intention, and prayer objective. The reasons for these differences are discussed and applied to the Church’s provision for intercessory prayer.

van der Straten Waillet, Nastasya & Isabelle Roskam. 2012. Developmental and Social Determinants of Religious Social Categorization. *The Journal of Genetic Psychology* 173(2). 208–220.

doi:10.1080/00221325.2011.600356.

The purpose of this study was to assess developmental and social determinants of the age at which children become aware that the social environment can be marked by categorization into religious groups and that those groups are associated with different religious beliefs. The results show that middle childhood is a critical period for this religious social categorization. Moreover, social factors play a role in the development. Religious categorization is likely to appear sooner in children attending heterogeneous schools than in those at homogeneous schools, and children from the minority religious group in the country understand religious categorization earlier than children from the majority group. However, no relation was found between the age at which religious categorization was understood and parents' religious socialization practices.

Trevino, Kelly M, Kavita Desai, Shauna Lauricella, Kenneth I Pargament & Annette Mahoney. 2012. Perceptions of lesbian and gay (LG) individuals as desecrators of Christianity as predictors of anti-LG attitudes. *Journal of Homosexuality* 59(4). 535–563.
doi:10.1080/00918369.2012.665672.

This study applied religious coping theory to examine the relationship between participants' perceptions that lesbian and gay (LG) individuals desecrate Christian values (the stressor) and anti-LG attitudes (the response) and whether religious coping influences the relationship between these variables. Greater agreement with desecration messages was associated with higher levels of anti-LG attitudes. Positive religious coping was associated with lower levels of anti-LG attitudes while negative religious coping was associated with higher levels. Greater exposure to messages that LG individuals desecrate Christian values was associated with greater agreement with those messages.

VanDeursen, Molly J., Anna R. D. Pope & Ruth H. Warner. 2012. Just world maintenance patterns among intrinsically and extrinsically religious individuals. *Personality and Individual Differences* 52(6). 755–758.
doi:10.1016/j.paid.2011.12.028.

The present study investigated the influence of religiosity on just world maintenance strategies, with the expectation that extrinsic religiosity would relate to general endorsement of just world strategies while intrinsic religiosity would correlate positively to the "benevolent" strategies and negatively to negative strategies. Following a vignette that manipulated just world threat, participants completed measures of victim blaming, victim derogation, benefit finding, restitution and perpetrator demonizing. While extrinsic religiosity was positively correlated to overall strategy use, intrinsic religiosity was positively correlated with benefit finding and restitution but negatively correlated with perpetrator demonization. The results suggest that intrinsic and extrinsic religiosity influence just world beliefs differently, providing an explanation for the discrepancies among past findings in just world and religiosity research.

Walker, Alan G., James W. Smither & Jason DeBode. 2012. The effects of religiosity on ethical judgments. *Journal of Business Ethics* 106(4). 437–452.
doi:10.1007/s10551-011-1009-4.

The authors examined the effects of religious attitudes on participants' judgments of 29 ethically questionable vignettes. Consistent with symbolic interactionism theory, intrinsic religious motivation orientation (RMO) and having a loving view of God were both negatively related to endorsing ethically questionable vignettes, whereas extrinsic RMO was positively related to endorsing the vignettes. Unexpectedly, job sanctification was positively related to endorsing the vignettes. However, both intrinsic and extrinsic RMO moderated this relationship such that sanctifying one's job was related to ethical judgments only for those who were: (a) low in intrinsic RMO or (b) high in extrinsic RMO. We reasoned based on symbolic interactionism theory that intrinsically motivated

participants, in contrast to extrinsically motivated participants, may have utilized their religious beliefs as a guiding framework in making ethical judgments.

- Yonker, Julie E, Chelsea A Schnabelrauch & Laura G Dehaan. 2012. The relationship between spirituality and religiosity on psychological outcomes in adolescents and emerging adults: A meta-analytic review. *Journal of Adolescence* 35(2). 299–314.
doi:10.1016/j.adolescence.2011.08.010.

The present study used meta-analytic techniques to examine the association between spirituality and religiosity (S/R) and psychological outcomes in adolescents and emerging adults. The outcome measures of risk behavior, depression, well-being, self-esteem, and personality were examined with respect to the influence of S/R across 75 independent studies encompassing 66,273 adolescents and emerging adults extracted from electronic databases between 1990 and 2010. Results showed significant main effect sizes of S/R with several outcomes: decreases in risk behavior, depression; and increases in well-being, self-esteem, and the personality measures of conscientiousness, agreeableness, and openness. Moderating effects were found for age, race, and type of S/R measure. Results show that S/R has a positive effect on psychological outcomes in adolescents and emerging adults.

1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY

- Baesler, E. James. 2012. Prayer Research: Foundations, Review, and Agenda. *Review of Communication* 12(2). 143–158.
doi:10.1080/15358593.2011.653506.

Prayer, defined as spiritual communication with God, is framed by religious/spiritual assumptions that serve as a foundation for prayer research. Prayer publication rates, exemplars of prayer research, and programs of prayer research are reviewed for the academic disciplines of communication, medicine, psychology, and sociology. Ideas for the future of integral prayer research are explored, including the development of a prayer inventory and an encyclopedia of prayer.

- Bradford, David. 2012. A critique of “Neurotheology” and an examination of spatial perception in mystical experience. *Acta Neuropsychologica* 10(1). 109–123.

The “neurotheology” developed by d’Aquili and Newberg is critiqued, beginning with its modular conception of mental process and its understanding of the contribution of language, deafferentation, and autonomic and limbic arousal in mystical experience. Neurotheology makes claims about ultimate reality and the neuropsychological means of its realization. A spatial perception that conveys the sense of “unified undifferentiated oneness” reveals Absolute Unitary Being (AUB). The neurotheology of AUB is analyzed and compared with texts from the Buddhist and Vedantic traditions, leading to the phenomenological description and neuropsychological interpretation of a distinctly mystical form of spatial perception represented in three religious traditions. The conclusion illustrates neurotheology’s overinclusiveness in equating all mystical experiences with AUB.

- Furey, Constance M. 2012. Body, society, and subjectivity in religious studies. *Journal of the American Academy of Religion* 80(1). 7–33.

Attention to bodies has transformed the study of religion in the past thirty years, aiding the effort to overcome the discipline’s Protestant biases by shifting interest from beliefs to practices, yet much of this work has unwittingly perpetuated an individualist notion of the religious subject. Although religionists are now well aware that bodies cannot be studied apart from the social forces that shape them, all too often the religious subject stands alone in a crowd, participating in communal rituals, subject to religious authorities and disciplinary practices, but oddly detached from intimate relationships. In this article, the author first argues that the turn to the body was motivated by what it appeared to reject: theoretical questions about subjectivity. She then challenges prevailing trends by

arguing that these same theoretical insights should now prod us to attend to the import of intimacy and personal relationships.

McKinnon, Andrew M. 2012. Metaphors in and for the Sociology of Religion: Towards a Theory after Nietzsche. *Journal of Contemporary Religion* 27(2). 203–216.
doi:10.1080/13537903.2012.675688.

Metaphors are indispensable for sociological thinking about religion, but they have received much less consideration than they deserve. This article argues the importance of systematic theoretical reflection on metaphors, both in the sociological analysis of religion and in the religious discourse of society. The article provides an outline of Nietzsche's early sociological theory of metaphor, situating it as a neglected classic for sociologists of religion in the context of other work on metaphor in the discipline.

Walker, David. 2012. Measuring the New Indices of Religious Orientation at the cathedral carol service: Internal consistency and reliability among a distinctively wide ranging sample. *Journal of Beliefs & Values* 33(1). 117–122.
doi:10.1080/13617672.2012.650039.

The present study takes a sample of 393 individuals who attended Christmas Carol Services in Worcester in 2009. Using the New Indices of Religious Orientation (NIRO), the sample was found to contain both a majority with quite low levels of churchgoing frequency and a much higher proportion of younger adults than in other studies of churchgoers. The author concludes that the NIRO indices are likely to be a useful tool for analyzing religious orientation and motivation among samples with relatively low or wide-ranging levels of religious practice and with a wide age range.

PART 2. ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

2.1 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

Debnam, Katrina, Cheryl L Holt, Eddie M Clark, David L Roth & Penny Southward. 2012. Relationship between religious social support and general social support with health behaviors in a national sample of African Americans. *Journal of Behavioral Medicine* 35(2). 179–189.
doi:10.1007/s10865-011-9338-4.

The present study examined the relative contributions of general and religious social support to a variety of health behaviors in a national probability sample of African American men and women (n=2,370). A telephone interview assessing fruit and vegetable consumption, physical activity, alcohol consumption, and current cigarette use was completed by participants. Results showed that several dimensions of religious social support predicted fruit and vegetable consumption, moderate physical activity, and alcohol use over and above the role of general social support. Findings highlight the unique role of religious support in this population in the context of health behaviors.

Dodor, Bernice. 2012. The Impact of Religiosity on Health Behaviors and Obesity among African Americans. *Journal of Human Behavior in the Social Environment* 22(4). 451–462.
doi:10.1080/10911359.2012.664977.

This study explored dimensions of religiosity associated with health behaviors—eating habits and physical activity—and obesity in the African American population using data from 3,620 African American adults ages 28 to 34. Analysis revealed that high levels of church attendance combined with religious practice encouraged healthy eating habits. However, increasing time spent in prayer while making religion more important in life was associated with poor eating habits. More frequent church attendance and prayer were implicated in heightened levels of obesity, suggesting that various dimensions of religiosity were constructed differently with health behaviors and obesity.

Field, Tiffany, Miguel Diego, Maria Hernandez-Reif, Lissette Medina, Jeannette Delgado & Andrea Hernandez. 2012. Yoga and massage therapy reduce prenatal depression and prematurity. *Journal of Bodywork and Movement Therapies* 16(2). 204–209.
doi:10.1016/j.jbmt.2011.08.002.

Eighty-four prenatally depressed women were randomly assigned to yoga, massage therapy or standard prenatal care control groups to determine the relative effects of yoga and massage therapy on prenatal depression and neonatal outcomes. Following 12 weeks of twice weekly yoga or massage therapy sessions (20 min each) both therapy groups versus the control group had a greater decrease on depression, anxiety and back and leg pain scales and a greater increase on a relationship scale. In addition, the yoga and massage therapy groups did not differ on neonatal outcomes including gestational age and birth weight, and those groups, in turn, had greater gestational age and birth weight than the control group.

Galanter, Marc, Helen Dermatis & Courtney Santucci. 2012. Young People in Alcoholics Anonymous: The Role of Spiritual Orientation and AA Member Affiliation. *Journal of Addictive Diseases* 31(2). 173–182.
doi:10.1080/10550887.2012.665693.

The authors studied a sample of 266 highly committed attendees to Alcoholics Anonymous (AA) with a mean age of 27 years, whose first encounter with AA was 6 years previously. Most (72%) had abused drugs and alcohol, and 36% had never received substance abuse treatment. They now reported a mean duration of abstinence of 44 months and had attended an average of 233 AA meetings in the previous year; 66% had served as AA

sponsors, and 92% reported experiencing an AA “spiritual awakening,” itself associated with a decreased likelihood of alcohol craving. Scores on AA beliefs, affiliation to other members, and the experience of spiritual awakening were associated with lower depression scores.

- Hatzenbuehler, Mark L, John E Pachankis & Joshua Wolff. 2012. Religious climate and health risk behaviors in sexual minority youths: a population-based study. *American Journal Of Public Health* 102(4). 657–663.
doi:10.2105/AJPH.2011.300517.

Using data from 31,852 high school students, including 1413 lesbian, gay or bisexual (LGB) students, who participated in the Oregon Healthy Teens survey in 2006 through 2008, researchers found that living in a county with a religious climate that was supportive of homosexuality was associated with significantly fewer alcohol abuse symptoms and fewer sexual partners. The effect of religious climate on health behaviors was stronger among LGB than heterosexual youths.

- Kang, Jina, Dong Wook Shin, Jin Young Choi, Chang Hae Park, Young Ji Baek, Ha Na Mo, Mi Ok Song, Shin Ae Park, Do Ho Moon & Ki Young Son. 2012. Addressing the religious and spiritual needs of dying patients by healthcare staff in Korea: patient perspectives in a multi-religious Asian country. *Psycho-oncology* 21(4). 374–381.
doi:10.1002/pon.1901.

Researchers performed a survey of terminal cancer patients in inpatient palliative care centers in Korea, and found that approximately half (50.5%) of the patients reported that their spiritual and religious needs were addressed by healthcare staff. Patients whose needs were addressed reported better quality of life (QoL) than patients whose needs were not addressed, although these groups did not differ when measured using the Comprehensive QoL Scale. Patients with a religious affiliation, those who were admitted to a religious palliative care center, and those whose religious affiliation was the same as that of the palliative care center tended to have their spiritual and religious needs addressed, although not statistically significant.

- Lutnick, Alexandra, Jennifer Lorvick, Helen Cheng, Lynn Wenger & Alex H. Kral. 2012. What’s Faith Got to Do with It? Religiosity Among Women Who Use Methamphetamine. *Journal of Social Work Practice in the Addictions* 12(2). 189–204.
doi:10.1080/1533256X.2012.674861.

This study examines the association among religiosity, mental health, and drug use among a community-recruited sample of women who use methamphetamine. The majority of the sample (74%) had high scores of religious faith. In multivariate analysis, those with high scores had higher odds of self-reporting a mental health diagnosis and of being psychologically dependent on methamphetamine, and they were less likely to report injection risk.

- Manocha, Ramesh, Deborah Black & Leigh Wilson. 2012. Quality of life and functional health status of long-term meditators. *Evidence-based Complementary And Alternative Medicine: eCAM* 2012. 350674.
doi:10.1155/2012/350674.

Researchers sampled 343 long-term Australian Sabaja Yoga meditation practitioners and found that they experience better functional health, especially mental health, compared to the general population. Evaluations of bodily pain, general health, mental health, role limitation-emotional, social functioning, and vitality were significantly better in meditators compared to the national norms whereas two of the subscales (role limitation-physical, physical functioning) were not significantly different. A substantial correlation between frequency of mental silence experience and the vitality, general health, and especially mental health subscales was found.

McClellan, Stuart, Leslie Bunt & Norma Daykin. 2012. The healing and spiritual properties of music therapy at a cancer care center. *Journal of Alternative And Complementary Medicine (New York, N.Y.)* 18(4). 402–407.

doi:10.1089/acm.2010.0715.

Twenty-three in-depth tape-recorded telephone interviews were conducted with people who had taken part in the music therapy sessions established as part of a residential 5-day retreat program at a cancer care center. Results focus on those findings relevant to notions of spirituality and healing, drawing on four overarching spirituality themes of transcendence, connectedness, search for meaning, and faith and hope.

Nagendra, Ravindra P, Nirmala Maruthai & Bindu M Kuty. 2012. Meditation and its regulatory role on sleep. *Frontiers in Neurology* 3. 54.

doi:10.3389/fneur.2012.00054.

This brief review focuses on the effect of meditation as a self-regulatory phenomenon on sleep. Potential mechanisms are investigated, with the understanding that meditation practices influence brain functions, induce various intrinsic neural plasticity events, modulate autonomic, metabolic, endocrine, and immune functions and thus mediate global regulatory changes in various behavioral states including sleep.

Nguyen, Anh B., Kristina B. Hood & Faye Z. Belgrave. 2012. The relationship between religiosity and cancer screening among Vietnamese women in the United States: The moderating role of acculturation. *Women & Health* 52(3). 292–313.

doi:10.1080/03630242.2012.666225.

Data from 111 Vietnamese women in the United States who participated in a cancer screening intervention indicate that high levels of acculturation were associated with increased self-efficacy for Pap tests and having received a Pap test. Acculturation moderated the relationships between religiosity and self-efficacy for breast and cervical cancer screening. Higher levels of social extrinsic religiosity were associated with increased efficacy for cancer screening among less acculturated women. Acculturation also moderated the relationship between religiosity and breast cancer screening. Specifically, for less acculturated women, increasing levels of intrinsic religiosity and personal extrinsic religiosity were associated with lower likelihood probability of Pap testing. For highly acculturated women, increasing levels of intrinsic religiosity and personal extrinsic religiosity were associated with higher likelihood probability of Pap testing.

2.2 SPIRITUALITY & HEALTH: MENTAL HEALTH

Bhatia, Triptish, Akhilesh Agarwal, Gyandeepak Shah, Joel Wood, Jan Richard, Raquel E. Gur, Ruben C. Gur, Vishwajit L. Nimgaonkar, Sati Mazumdar & Smita N. Deshpande. 2012. Adjunctive cognitive remediation for schizophrenia using yoga: An open, non-randomised trial. *Acta Neuropsychiatrica* 24(2). 91–100.

doi:10.1111/j.1601-5215.2011.00587.x.

Researchers sought to evaluate the effect of yoga therapy (YT) for persons with schizophrenia (SZ). Patients received either YT (n=65) or treatment as usual (n=23). In comparison with the SZ/TAU group, the SZ/YT group showed significantly greater improvement with regard to measures of attention following corrections for multiple comparisons; the changes were more prominent among the men. In the other diagnostic groups, differing patterns of improvements were noted with small-to-medium effect sizes.

Fukui, Sadaaki, Vincent R Starnino & Holly B Nelson-Becker. 2012. Spiritual well-being of people with psychiatric disabilities: the role of religious attendance, social network size and sense of control. *Community Mental Health Journal* 48(2). 202–211.

doi:10.1007/s10597-011-9375-z.

In this cross-sectional study using the Spirituality Index of Well-being, 47 participants with psychiatric disabilities participated. A factor analysis result revealed two domains of spiritual well-being for people with psychiatric disabilities: self-perceptions regarding making sense of life (developing life purpose) and self-efficacy in obtaining life goals. Based on regression analyses, religious attendance, expanding social network size, and having a sense of control over important areas of life may enhance spiritual well-being in spite of severity of psychiatric symptoms.

Jasperse, Marieke, Colleen Ward & Paul E. Jose. 2012. Identity, perceived religious discrimination, and psychological well-being in Muslim immigrant women. *Applied Psychology: An International Review* 61(2). 250–271.

doi:10.1111/j.1464-0597.2011.00467.x.

The study investigated perceived religious discrimination and three facets of Muslim identity (psychological, behavioral, and visible) as predictors of psychological well-being (life satisfaction and psychological symptoms) of 153 Muslim women in New Zealand. The results indicated that although visibility (wearing hijab) was associated with greater perceived discrimination, it predicted positive psychological outcomes. Analysis further revealed that the psychological (pride, belongingness, and centrality) and behavioral (engaging in Islamic practices) facets of Muslim identity moderated the relationship between perceived religious discrimination and well-being. A strong psychological affiliation with Islam exacerbated the negative relationship between perceived religious discrimination and well-being. Conversely, engaging in Islamic practices buffered the negative impact of discrimination.

Kemeny, Margaret E, Carol Foltz, James F Cavanagh, Margaret Cullen, Janine Giese-Davis, Patricia Jennings, Erika L Rosenberg, et al. 2012. Contemplative/emotion training reduces negative emotional behavior and promotes prosocial responses. *Emotion (Washington, D.C.)* 12(2). 338–350.

doi:10.1037/a0026118.

An 8-week intensive (42 hr) meditation/emotion regulation training intervention was designed by experts in contemplative traditions and emotion science to reduce “destructive enactment of emotions” and enhance prosocial responses. Participants were 82 healthy female schoolteachers who were randomly assigned to a training group or a wait-list control group. The training group reported reduced trait negative affect, rumination, depression, and anxiety, and increased trait positive affect and mindfulness compared to the control group. The training increased recognition of emotions in others, protected trainees from some of the psychophysiological effects of an experimental threat to self, appeared to activate cognitive networks associated with compassion, and affected hostile behavior in the Marital Interaction Task. Most effects at post-assessment that were examined at follow-up were maintained (excluding positive affect, TSST rumination, and respiratory sinus arrhythmia recovery).

Krause, Neal. 2012. Religious doubt, financial strain, and depressive symptoms among older Mexican Americans. *Mental Health, Religion & Culture* 15(4). 335–348.

doi:10.1080/13674676.2011.574272.

The purpose of this study was to see if one negative aspect of religion (i.e., religious doubt) exacerbates the effects of financial strain on depressive symptoms among older Mexican Americans (n=1,005). The findings suggest that the effects of financial strain on depressive symptoms are stronger for older Mexican Americans who have more doubts about religion.

Layton, Emily, Sam A. Hardy & David C. Dollahite. 2012. Religious Exploration Among Highly Religious American Adolescents. *Identity* 12(2). 157–184.

doi:10.1080/15283488.2012.668728.

A qualitative investigation of adolescent religious exploration was conducted with 78 religious adolescents. Interviews were analyzed using a grounded theory approach to identify common themes underlying their experiences of religious exploration. Three key themes emerged. First, various circumstances, contexts, and relationships in adolescents' lives serve as catalysts for initiating religious exploration. Second, adolescents used many different strategies of exploration. Often exploration is fostered or hindered by social relationships. At other times it is fostered or hindered by salient life experiences, or through other learning processes. Third, in terms of patterns of exploration, adolescents tended to use present identity commitments as a secure base from which to explore other areas of their identity or other aspects of their religiosity. These findings challenge overly simplistic notions of religious exploration as simply doubt, highlight the importance of relational contexts, and point to a more sophisticated understanding of the dynamics of commitment and exploration.

Lester, David. 2012. Spirituality and religiosity as predictors of depression and suicidal ideation: an exploratory study. *Psychological Reports* 110(1). 247–250.

In a sample of 149 undergraduate students, measures of religiosity and spirituality were positively associated with measures of depression, mania, and past suicidal ideation.

Mihalache, Gabriela. 2012. The Transformational Dynamics of Becoming Forgiving of the Seemingly Unforgivable: A Qualitative Heuristic Study. *Journal of Spirituality in Mental Health* 14(2). 111–128.
doi:10.1080/19349637.2012.671049.

This study was concerned with the investigation of the self-transforming nature of becoming forgiving following victimizing situations, initially felt to be beyond one's ability to forgive. How did some individuals forgive that which was seemingly unforgivable? What facilitated, what inhibited, and what was the impact of this form of forgiveness (labeled in this study as "transformative forgiveness")? These research questions were explored in a qualitative heuristic design, mainly at the individual, intrapsychic level. The final sample consisted of 13 participants from various ethnic and spiritual backgrounds, who had forgiven seemingly unforgivable offenses and experienced significant transformation in the process.

Noggle, Jessica J., Naomi J. Steiner, Takuya Minami & Sat Bir S. Khalsa. 2012. Benefits of yoga for psychosocial well-being in a US high school curriculum: A preliminary randomized controlled trial. *Journal of Developmental And Behavioral Pediatrics* 33(3). 193–201.
doi:10.1097/DBP.0b013e31824afdc4.

Grade 11 or 12 students (n=51) who registered for physical education (PE) were randomized by class 2:1 to either yoga or PE-as-usual. A Kripalu-based yoga program of physical postures, breathing exercises, relaxation, and meditation was taught 2 to 3 times a week for 10 weeks. Self-report questionnaires were administered to students 1 week before and after. Although PE-as-usual students showed decreases in primary psychosocial outcomes, yoga students maintained or improved. Total mood disturbance improved in yoga students and worsened in controls. Although positive affect remained unchanged in both, negative affect significantly worsened in controls while improving in yoga students. Students rated yoga fairly high, despite moderate attendance.

Paholpak, Suchat, Nawanant Piyavhatkul, Poonsri Rangseekajee, Thawatchai Krisanaprakornkit, Suwanna Arunpongpaisal, Niramol Pajanasoontorn, Surapol Virasiri, et al. 2012. Breathing meditation by medical students at Khon Kaen University: Effect on psychiatric symptoms, memory, intelligence and academic achievement. *Journal of the Medical Association of Thailand = Chotmaibet thangphaet* 95(3). 461–469.

To examine the short-term effects on fifth-year medical students of a 4-week, breathing meditation-based, stress reduction intervention on psychiatric symptoms, memory function, intelligence, and academic achievement, volunteer medical students during their psychiatry rotation were randomized into either in the meditation (n=30) or the

control (non-meditation) (n=28) group. Following intervention, no significant differences were found in any of the measurements, including psychiatric symptoms.

- Patel, Shivani P. & Christopher J. L. Cunningham. 2012. Religion, resources, and work-family balance. *Mental Health, Religion & Culture* 15(4). 389–401.
doi:10.1080/13674676.2011.577765.

The present study presents and tests a model of work-life balance that incorporates involvement in a third role: organized religion. Religious involvement among Hindus living in the United States (n=105) was examined as a predictor of resource gain and loss, and its effect on perceptions of work-family balance. Working within a Conversation of Resources framework, it was then expected that this resource gain/loss would influence coping strategies and perceptions of bi-directional work-family conflict and facilitation (indicators of work-family balance).

- Perelman, Abigail M., Sarah L. Miller, Carl B. Clements, Amy Rodriguez, Kathryn Allen & Ron Cavanaugh. 2012. Meditation in a deep South prison: A longitudinal study of the effects of Vipassana. *Journal of Offender Rehabilitation* 51(3). 176–198.
doi:10.1080/10509674.2011.632814.

The current study examined the psychological and behavioral effects of intensive ten-day Vipassana Meditation (VM) retreats in a maximum security prison. Long-term offenders were followed over a one-year period. These included three retreat cohorts (n=60) as well as an alternative treatment comparison group (n=67). VM participants achieved enhanced levels of mindfulness and emotional intelligence and had decreased mood disturbance relative to a comparison group. Both groups' rates of behavioral infractions were reduced at one-year follow-up.

- Petts, Richard J. 2012. Single mothers' religious participation and early childhood behavior. *Journal of Marriage and Family* 74(2). 251–268.
doi:10.1111/j.1741-3737.2011.00953.x.

Using data on 1,134 single mothers, researchers found that single mothers experienced diverse patterns of religious participation throughout their child's early life: some mothers maintained a consistent pattern of religious participation (or nonparticipation), and other mothers increased their participation. The results also suggested that religious participation was associated with greater involvement with children, reduced parenting stress, and a lower likelihood of engaging in corporal punishment. Young children raised by mothers who frequently attended religious services were less likely to display problem behaviors, and this relationship was partially mediated by increased child involvement, lower stress, and less frequent corporal punishment. Overall, religious participation may provide resources for single mothers that encourage them to engage in parenting practices that promote positive child development.

- Taylor, Greg & Craig Murray. 2012. A qualitative investigation into non-clinical voice hearing: What factors may protect against distress? *Mental Health, Religion & Culture* 15(4). 373–388.
doi:10.1080/13674676.2011.577411.

A total of six individuals who identified themselves as "mediums" (people who perceive themselves as able to "communicate" with "spirit" or the deceased) and who reported hearing the voice of spirit (or "Clairaudience") as a routine part of their work as mediums were interviewed about their experiences. The resulting three themes suggest that the experience of "Clairaudience" is broadly akin to the "voice hearing" experience. Participants' explanations of these experiences in terms of "communicating with spirit" appeared to reduce anxiety and distress, added meaning and purpose to their lives and conferred ways to "discipline" or "control" their experiences to avoid intrusiveness, being overwhelmed or to manage negative experiences.

2.3 SPIRITUALITY & HEALTH: METHOD AND THEORY

Adams, Jennifer R. 2012. Spiritual issues in counseling: What do students perceive they are being taught? *Counseling and Values* 57(1). 66–80.
doi:10.1002/j.2161-007X.2012.00009.x.

This exploratory study focused on the perceptions of counselors-in-training regarding what messages they received about these issues during their training programs, as well as their potential behaviors when working with clients. Results indicated that potential behaviors are not always consistent with what they are taught.

Dobmeier, Robert A. & Summer M. Reiner. 2012. Spirituality in the counselor education curriculum: A national survey of student perceptions. *Counseling and Values* 57(1). 47–65.
doi:10.1002/j.2161-007X.2012.00008.x.

Interns (n=335) from 36 programs accredited by the Council for Accreditation of Counseling and Related Educational Programs completed a survey about their preparation to integrate the 9 Association for Spiritual, Ethical, and Religious Issues in Counseling Spiritual Competencies into their counseling practice. Most respondents felt prepared to integrate all but 1 of the competencies. Spiritual topics of wellness, meaning, hope, and faith were addressed most frequently in course work and were associated with feeling prepared to integrate 8 of the competencies. Classroom discussion, experiential activities, and reading were the modalities most useful for learning about spirituality.

Helminiak, Daniel A., Louis Hoffman & Eric Dodson. 2012. A Critique of the “Theistic Psychology” Movement as Exemplified in Bartz’s (2009) “Theistic Existential Psychotherapy.” *The Humanistic Psychologist* 40(2). 179–196.
doi:10.1080/08873267.2012.672351.

From the perspectives of existential philosophy, existential psychotherapy, philosophy of science, and theology, the authors critique Bartz’s “Theistic Existential Psychotherapy” as another example of the argumentation of the “theistic psychology” movement. Twenty-one points highlight troubling inadequacies. Introductory and concluding paragraphs provide the broader context of this movement and focus the chief concern: amidst current epistemological and philosophy-of-science uncertainty, the concerted effort to validate other-worldly religious beliefs as scientific principles within the empirical field of psychology of religion.

King, Stephen D W. 2012. Facing Fears and Counting Blessings: A Case Study of a Chaplain’s Faithful Companionship of a Cancer Patient. *Journal of Health Care Chaplaincy* 18(1-2). 3–22.
doi:10.1080/08854726.2012.667315.

This article offers a case study of a long-term chaplaincy care relationship between a woman with recurrent leukemia and an experienced oncology chaplain at a comprehensive cancer center. The case includes an extensive description of the encounters between the patient and the chaplain; a spiritual/religious assessment that includes a spiritual/religious profile and a portrait of the needs, interventions, and outcomes within the case; and a discussion of some key issues in the case, including what aspects regarding the overall care was healing. Although a number of issues were addressed, the author argues that the essence of the care and healing occurred through the faithful companionship of the chaplain. The author articulates an understanding of faithful companionship.

Leavey, Gerard, Gloria Dura-Vila & Michael King. 2012. Finding common ground: The boundaries and interconnections between faith-based organizations and mental health services. *Mental Health, Religion & Culture* 15(4). 349–362.
doi:10.1080/13674676.2011.575755.

A perennial theme in the literature of religion and mental health is the need for dialogue between psychiatry and faith-based organizations in the care of people with mental health problems. These worlds are often depicted as

oppositional and antagonistic; at times the boundaries are so tightly drawn that it is hard to see where they might share values and concerns. This paper examines the interface areas of religion and mental health care in order to consider where consensus and from where collaboration might emerge. While there is a need for dialogue and mutual understanding, there is also a need for psychiatry and faith groups to explore the nature and boundaries of proposed relationships.

- Lyndes, Kathryn A., George Fitchett, Nancy Berlinger, Wendy Cadge, Jennifer Misasi & Erin Flanagan. 2012. A survey of chaplains' roles in pediatric palliative care: integral members of the team. *Journal of Health Care Chaplaincy* 18(1-2). 74–93.
doi:10.1080/08854726.2012.667332.

To date, the field of health care chaplaincy has had little information about how pediatric palliative care (PPC) programs meet the spiritual needs of patients and families. A qualitative study consisting of surveys of 28 well-established PPC programs in the United States was conducted, followed by interviews with medical directors and professional chaplains in 8 randomly selected programs among those surveyed. The authors describe the PPC chaplain activities, evidence regarding chaplain integration with the PPC team, and physician and chaplain perspectives on the chaplains' contributions. Chaplains described their work in terms of processes such as presence, while physicians emphasized outcomes of chaplains' care such as improved communication. Learning to translate what they do into the language of outcomes will help chaplains improve health care colleagues' understanding of chaplains' contributions to care for PPC patients and their families.

- Maddox, Richard T. 2012. The Chaplain as Faithful Companion: A Response to King's Case Study. *Journal Of Health Care Chaplaincy* 18(1-2). 33–42.
doi:10.1080/08854726.2012.672279.

This article is a response to a case study describing the spiritual care provided over an 18-month period by an experienced professional chaplain at a prominent cancer center to a woman undergoing stem cell transplantation following therapy for relapsed leukemia. The author, a professional chaplain at another cancer center, reviews the spiritual assessment, interventions, and outcomes presented by the attending chaplain. The author's comments are organized about the chaplain's characterization of the seven parts of the patient's spiritual profile: courage, meaning, psychological issues, courage and growth in facing spiritual/religious struggle, rituals, community, and authority. The purpose of the response is to engage those inside and outside the discipline of health care chaplaincy in a conversation about the specific aspects of providing spiritual care in health care settings.

- Mandhouj, Olfa, Jean-Francois Etter, Delphine Courvoisier & Henri-Jean Aubin. 2012. French-language version of the World Health Organization quality of life spirituality, religiousness and personal beliefs instrument. *Health And Quality Of Life Outcomes* 10(1). 39.
doi:10.1186/1477-7525-10-39.

The authors developed and assessed the validity of a French-language version of the World Health Organization Quality of Life Spirituality, Religiousness and Personal Beliefs Instrument (WHOQOL-SRPB). An Internet survey was conducted in 561 people in 2010, with follow-up 2 weeks later (n=231, 41%), to assess reliability, factor structure, social desirability bias and construct validity of this scale. The French language version of the SRPB retained many properties of the original version. The authors hold that the SRPB could be improved by trimming redundant items.

- Miccinesi, Guido, Tullio Proserpio, Maria Adelaide Pessi, Alice Maruelli, Andrea Bonacchi, Claudia Borreani & Carla Ripamonti. 2012. Is the spiritual life of cancer patients a resource to be taken into account by professional caregivers from the time of diagnosis? *Tumori* 98(1). 158–161.
doi:10.1700/1053.11515.

In a survey of 252 patients undergoing cancer treatment in Italy, 49% declared to be believers and churchgoers, 43% believers but not churchgoers, and 8% non-believers. Of the 20 cancer patients who declared not to have a religious faith, 7 patients agreed with the statement that they felt certain that God exists in some form, and 4 had experienced peace of mind through prayer and meditation. Almost all of the patients who declared to have a religious faith and to be churchgoers explicitly affirmed to have been helped by prayer and meditation in coping with their illness. Among believer churchgoers, only 30% declared to seek out the religious or spiritual community when they needed help.

- O'Connor, Thomas St. James, Mike Chow, Elizabeth Meakes, Janet Young, Gary Payne, Myrta Rivera, Laura Macgregor & Janet Howitt. 2012. Three doors to spiritual reflection: ethnographic research on the role of emotion, images, and sacred texts in spiritual reflection done by non-chaplaincy health care professionals. *Journal of Health Care Chaplaincy* 18(1-2). 43–56.
doi:10.1080/08854726.2011.616171.

Purposeful sampling of 20 health care professionals was employed to explore the role of emotion, images, and sacred texts in the spiritual reflection of non-chaplaincy health care professionals who offer spiritual care to their patients. Findings indicate that emotion and images are the main doors that these professionals use to reflect spiritually on their practice of spiritual care. Sacred texts are the third door. Outcomes of the use of feelings and emotions in spiritual reflection are a deeper sense of peace, grounding and letting go, that is, transformation.

- Peteet, John R. 2012. Spiritually integrated treatment of depression: A conceptual framework. *Depression Research and Treatment* 2012. 124370.
doi:10.1155/2012/124370.

The author suggests a framework for approaching obstacles that impeded spiritually integrated treatment of depressed individuals, constructed from a unified view of human experience (having emotional, existential, and spiritual dimensions); spirituality seen as a response to existential concerns (in domains such as identity, hope, meaning/purpose, morality, and autonomy in relation to authority, which are frequently distorted and amplified in depression); a rationale for locating spiritually oriented approaches within a clinician's assessment, formulation, and treatment plan; and recognition of the challenges and potential pitfalls of integrated treatment.

- Selman, Lucy, Richard J Siegert, Irene J Higginson, Godfrey Agupio, Natalya Dinat, Julia Downing, Liz Gwyther, et al. 2012. The “Spirit 8” successfully captured spiritual well-being in African palliative care: Factor and Rasch analysis. *Journal of Clinical Epidemiology* 65(4). 434–443.
doi:10.1016/j.jclinepi.2011.09.014.

Researchers surveyed 285 patients, diagnosed with HIV or cancer, using the Missoula Vitas Quality of Life Index, and utilized factor analysis and Rasch analysis to examine the dimensionality of eight items from the Well-being and Transcendent subscales. The resulting measure (the “Spirit 8”) was used to determine levels of spiritual well-being. The authors conclude that the Spirit 8 is a brief, psychometrically robust, unidimensional measure of SWB for use in South African and Ugandan PC research.

- Webb, Jon R, Loren Toussaint & Elizabeth Conway-Williams. 2012. Forgiveness and Health: Psycho-spiritual Integration and the Promotion of Better Healthcare. *Journal of Health Care Chaplaincy* 18(1-2). 57–73.
doi:10.1080/08854726.2012.667317.

Psychology and religiousness/spirituality continue to be perceived as incongruent and incompatible, often resulting in a disconnection and suboptimal level of collaboration between the two fields to the detriment of healthcare. Nevertheless, forgiveness, or an absence of ill will, is a construct central to both mainstream world religion/spirituality and the field of psychology. Understanding and recognizing the construct of forgiveness and its mutually central application can foster increased collaboration between the fields. As a result, individually and

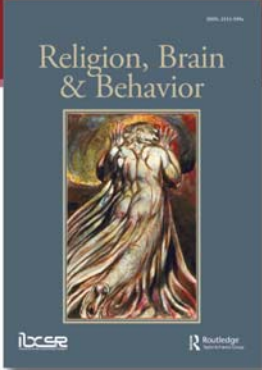
collectively, the two fields will be better able to expand and further develop their many shared principles in the service of better healthcare.

Whitley, Rob. 2012. Religious competence as cultural competence. *Transcultural Psychiatry* 49(2). 245–260.

doi:10.1177/1363461512439088.

The author uses the case of mental health of African Americans as an extended example to support the argument that psychiatric services must become more closely attuned to religious matters, and suggests ways in which this can be achieved. Attention to religion can aid in the development of culturally competent and accessible services, which in turn, may increase engagement and service satisfaction among religious populations.

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PART 3. BOOKS

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