# UNTANGLING FALSE ASSUMPTIONS REGARDING ATHEISM AND HEALTH

# by Jonathan Morgan

In the past decade, the cognitive science of religion has worked to find an evolutionary explanation for supernatural belief. The explanations are convincing, but have created the stereotype that atheism is unnatural. In a similar way studies linking religious belief and health have vilified atheism as unhealthy. But belief is too complex, health is too nuanced, and the data are too varied to draw such a generalization. Catherine Caldwell-Harris has developed a psychological profile to understand nonbelief as an expected outcome of individual difference and therefore natural. In a similar manner I argue that we should study the relationship between belief and health through the lens of individual differences. This approach is especially promising given recent research which indicates personality fully accounts for the relationship with well-being previously attributed to belief. This approach has the added benefit of neutralizing the conversation by understanding atheism as the healthy expression of a natural personality.

Keywords: atheism; cognitive science of religion; evolutionary psychology; health; individual differences; nonbelief; personality; religious belief; well-being; worldview

-Marie Bonaparte (1958)

Given the growing consensus that religiosity correlates with health, "sadism" may be more than just a witty quip. Each month new studies emerge linking religiosity and health: pro-religiosity correlates with cardiovascular health (Masters and Knestel 2011); "higher levels of religious and spiritual engagement have been shown to be associated with better adjustment in dealing with serious illness" (Kristeller et al. 2011, 550). These snippets caricature a nuanced and complex field of study. All research concerning religion and health faces the challenge of navigating construct validity, sampling, and analysis (Hwang et al. 2011, 609). But despite these challenges, the general impression is that religion and spirituality are good for your health.

Jonathan Morgan is a masters of theological studies (MTS) student specializing in psychology and theology at Boston University's School of Theology, Box 128, 745 Commonwealth Ave., Boston, MA 02215, USA; email: jrmorgan@bu.edu.

<sup>&</sup>quot;Atheism represents realism, but also sadism."

The inverse of this general impression seems to imply that atheism is unhealthy. But labeling atheism as unhealthy defames the nuanced worldviews of nonbelievers and may be the result of a mistaken syllogism. The stigma surrounding atheism has also been implicitly supported by cognitive scientists and evolutionary psychologists working to understand religion as a natural phenomenon. The result of their work "is a growing interdisciplinary consensus that religious belief may be the default setting for our species" (Caldwell-Harris 2012, 5). Just as linking religiosity and health implicitly links atheism and unhealthiness, describing belief as a natural phenomena implies that nonbelief is unnatural. This implication furthers the social stigma of atheists, adding unnatural and unhealthy to the already prodigious list of defamations.

Catherine Caldwell-Harris, a psychologist at Boston University, argues that viewing religion as natural need not imply nonbelief is unnatural. Instead both belief and nonbelief arise as the natural expression of particular personalities in particular environments (Caldwell-Harris 2012, 5–6). By explaining belief, of any sort, as a product of individual differences, Caldwell-Harris helps untangle atheists from implicit vilifications within the psychology of religion. Her work also sheds light on the link between atheism and health. By understanding health as affected by the same personality traits that govern worldviews, we can build an empathic understanding of atheists as a natural part of any healthy community.

This paper will first explore how the assumptions that nonbelief is unnatural and unhealthy persist. Then I will follow Caldwell-Harris's argument for why atheism is natural. Her argument will also reveal a personality profile of nonbelievers. Given this personality profile I will follow her example and try to untangle the assumption that atheism is unhealthy. To do so, I will argue that the complexity of belief and health as categories elude facile generalizations. Recent research shows that personality traits may fully account for the relationship between belief and health. If that research is correct, it provides a way to empathically understand the relationship between worldview and health.

# ATHEISM IS UNNATURAL AND UNHEALTHY?

"Religion thrives because it addresses people's deepest emotional yearnings and society's foundational moral needs."

-Scott Atran (2006, 407)

In "The Scientific Landscape of Religion: Evolution, Culture, and Cognition," Scott Atran presented his understanding of religion as "a converging by-product of several cognitive and emotional mechanisms that evolved under natural selection for mundane adaptive tasks" (Atran 2006, 408). Atran was not the first to understand religion from an

evolutionary perspective. *Faces in the Clouds: A New Theory of Religion*, by Stewart Guthrie (1993) can be seen as the first to develop an evolutionary explanation of religious belief.

Guthrie developed what has since been called the Hyperactive Agency Detection Device (HADD) hypothesis: our adaptive tendency to overattribute agency to phenomena led to religious belief as a by-product. But this is not the only evolutionary explanation for supernatural beliefs. The psychologist Justin Barrett and others have developed a similar argument: belief in God arises from our evolved ability to recognize mental states to others (Barrett 2004). Barrett argues that the Adaptive Theory of Mind causes us to imagine an all-powerful mind behind natural processes. So again, supernatural belief arises as a natural byproduct of our evolutionary development. These are just two of the adaptive traits that evolutionary psychologists believe give rise to belief in a supernatural entity, or entities. The arguments vary slightly, but the general thrust is that religious belief is a natural by-product of evolved traits. While these arguments are well supported and convincing, they implicitly support the inverse assumption that atheism is unnatural.

Barrett in particular does not stop at religion-is-natural and is adamant in pushing the inverse: atheism-is-unnatural. Caldwell-Harris summarizes his view: "atheism and nonbelief are cognitively difficult and unnatural because of the mental effort incurred in resisting the brain's meaning-making centers" (2012, 7). Since the mind has been tuned by evolution to believe in God, atheists are working against their cognitive defaults. In other words atheists are unnatural. Caldwell-Harris also chooses the psychologist Jesse Bering to represent the atheists-are-unnatural stance. Bering, himself an atheist, agrees with Barrett, a religious believer, that nonbelief requires a continual uphill battle against our cognitive instincts.

Bering and Barrett represent a larger camp within evolutionary psychology that believes if religion is natural then atheism must be unnatural. Caldwell-Harris will challenge the validity of this syllogism. In a similar way, linking health and religiosity reinforces the assumption that atheism-is-unnatural. Yet, the relationship between belief and health need not imply atheism is unhealthy.

Many studies linking religion/spirituality and health have focused on physical health. A strong positive link has been established for religious individuals coping with a wide array of conditions: cardiovascular health (Masters and Knestel 2011), cancer (Laubmeier et al. 2004), HIV (Ironson et al. 2011), and many others. Other studies have established an equally strong link between psychological health and religiosity/spirituality by examining depression (Perez et al. 2011), adjustment (Kristeller et al. 2011), anxiety (Inzlicht et al. 2011), and other affect states. These studies cross cultures, age, and social groups. They are prevalent enough that *The* 

*Journal of Behavioral Medicine* devoted their entire December 2011 issue to this research.

The general impression from this research is a strong correlation between religiosity/spirituality and health. But drawing the line of causation is a complex task. Is health a product of the social support religious communities provide or the religious beliefs that bind those communities? Are healthy individuals simply more likely to seek out religious participation? Do attachment styles or personality account for both the type of belief and well-being?

To handle this complexity researchers nuance the categories of religiosity and spirituality while also focusing on particular types of health. As early as the 1960s researchers were distinguishing between different kinds of religiosity when Gordon Allport (Allport and Ross 1967) used the categories of intrinsic vs. extrinsic religiosity to understand prejudice among believers. While these categories have been thoroughly critiqued, the trend of distinguishing between different types of religiosity and spirituality has only continued. Just drawing from the December issue mentioned above, researchers distinguish between: prayers of gratitude and prayers of petition (Perez et al. 2011); different views of God as loving or judging (Ironson et al. 2011); different levels of spiritual struggle (Park et al. 2011); and religiosity and spirituality as categories (McIntosh et al. 2011). To nuance the categories of belief is the norm. But if researchers are trying to study the difference between people who believe in a loving god and those who believe in a judging god, they cannot include those who believe in no god.

The implicit consequence is already drawn: any degree of religious belief is better than nonbelief for your physical and psychological health. This assumption may originate in the early work of Herbert Benson in *The Relaxation Response* (Benson and Klipper [1976] 2001), or the study by Randolph Byrd in the San Francisco General Hospital's coronary care unit (1988). Regardless of its origin, the negative perception that atheists are unhappy and unhealthy persists (Hyman 2006). This perception is latent within studies that link health and religiosity but it is also supported by studies that explicitly posit that nonbelievers do not fare as well as their religious peers (see Zuckerman 2009, 956).

Other research paints a more flattering, but still ambiguous, picture. Ventis represents this ambiguity by describing nonbelievers as psychologically healthy with such positive traits as self-control, self-acceptance, and flexibility; but he also acknowledges that high levels of neuroticism and anxiety are often related to nonbelief (1995, 43). In Maslow's study of personality development he reported that nonbelief seemed to be correlated with the highest levels of development (1970). Sociologists also support this positive view of nonbelievers: the highest levels of happiness are reported among the most secular nations (Zuckerman 2009, 956). Given the wide distance between these studies supporting nonbelief and those

condemning it, the relationship between nonbelief and well-being is necessarily complex.

But this complex picture has not translated to the general public. Instead "unhealthy" is grouped within the broader stereotype that atheists are poorly parented, immoral, unhappy, antisocial hedonists (Hwang et al. 2011, 613). As Zuckerman points out, "non-believers are still stigmatized to this day, with recent studies showing that a negative view of atheists is quite pervasive, especially in the United States" (2009, 949). This stigmatization is furthered by the assumption that atheism has negative effects on health; an assumption that often lies latent in research exploring the health benefits of belief. Through silence the negative perception continues.

In the next section, I present Caldwell-Harris's argument that this perception is unnecessary if we instead understand atheism as a product of individual differences. After following Caldwell-Harris's study I will look more closely at why these health studies are problematic and how Caldwell-Harris's understanding of atheism points toward a solution. By dismantling some of these false associations, I hope to help de-stigmatize atheism.

#### ATHEISM AND PERSONALITY

Catherine Caldwell-Harris's article, "Understanding Atheism/Nonbelief as an Expected Individual-Differences Variable," is a response to the assumption that since religion is natural, atheism must be unnatural. Barrett and Bering, vocal advocates of this assumption, act as her primary conversation partners. But she is not alone in her stance that atheism can be perceived as natural.

Sociologists have long supported the idea that atheism is natural because "what is natural (or expected) depends on broad characteristics of social organization" (Caldwell-Harris 2012, 7). Therefore religion and atheism are expected responses to different social environments. Similarly, nonbelief and belief are expected expressions of personality differences: "explaining religious belief as a consequence of human nature opens the door for a complementary explanation that degree of religious belief (including zero belief) is an expected individual-differences variable" (2012, 5–6). Where one falls on this spectrum from zero belief to full belief is predictable as the natural expression of particular personality traits within different social environments.

Caldwell-Harris's article goes on to describe those personality traits that predict nonbelief. Her work is based on a wide array of studies including demographic research, surveys of cognitive and personality measures, and research combining surveys, interviews, and free response questions (Caldwell-Harris 2012, 9). Combining these findings she proposes three personality dimensions that predict atheism: "These are individualism and

low sociality, preference for logical reasoning over intuition, and focus on here-and-now problem solving instead of concern for transcendence" (6). Within a permissible social environment atheism is a natural worldview given this combination of personality traits. I will take each of them up in turn.

The first group, "Lower sociality, individualism, nonconformity" (Caldwell-Harris 2012, 9) like any other group of traits, has benefits and downsides. One positive aspect of this personality is the internal locus of control which is more likely among atheists (Caldwell-Harris 2012, 9). On the other hand, this individuality can also lead to less social support than religious counterparts. Drawing from studies by Vassilis Saroglou (2010) and others, nonbelievers have also been shown to be "more open to new experience, less extroverted, less conscientious, and less neurotic than believers" (Caldwell-Harris 2012, 10). These traits, drawn from the "Big Five" personality traits, further establish that nonbelievers are typically individualistic. The link between nonbelief and individualism may also explain the high prevalence of young, white, male atheists, but such correlations are still little more than conjectures.

The second trait is a "preference for logical reasoning, naturalism and skepticism" (Caldwell-Harris 2012, 11). This trait could also be called systematic thinking and is often described simply as skepticism, which among the Big Five traits, is understood as nonagreeableness (Caldwell-Harris 2012, 11). But logical reasoning and a naturalistic perspective are important facets of this trait. One of the most common findings among sociological studies of atheism is the disproportionately high number of atheists in academia and scientific fields. This preference for systematic thinking would partially account for these statistics. It would also partially explain the common misconception that atheism grew out of the European Enlightenment where the values of reason and naturalism were lifted high. Social correlations aside, this trait also explains why atheists typically cite intellectual and logical arguments for not believing in religion (Caldwell-Harris 2012, 12).

The final trait that Caldwell-Harris draws from her survey is a "focus on here-and-now problem solving rather than concern for transcendence" (Caldwell-Harris 2012, 13). This does not mean that atheists are not concerned about the meaning of life. Far from it, atheists are just more prone to find their meaning in "this world." Making this case Caldwell-Harris draws from Zuckerman (2009) and many others who have argued that secular nonbelievers "have a stronger sense of social justice than do religious individuals" (Caldwell-Harris 2012, 13). Any comparison and competition between the social justice ethic of believers versus nonbelievers is unnecessary within this paper. To understand the personality of nonbelievers it is sufficient to understand that they typically "focus their moral concerns on the here-and-now" (Caldwell-Harris 2012, 13).

By drawing from a wide array of past empirical studies, Caldwell-Harris supports her case that these three personality dimensions co-occur with nonbelief. This correlation is used to mount her argument that atheism is just as natural as religion. But the latent argument supporting this naturalization of atheism is the belief "that specific personality traits and/or thinking styles facilitate non-belief" (Caldwell-Harris 2012, 15). This comes close to claiming causality, but she does not need to go that far. The correlation is enough to support her claim that when the social context allows, those people who are highly individualistic, systematic thinkers concerned with the here and now are likely to describe themselves as atheists.

Caldwell-Harris effectively uses this psychological profile to dismantle the assumption that nonbelief is unnatural. Understanding that a set of personality traits facilitates atheism also begins to unravel the misconceptions connecting atheism and unhealthiness.

# ATHEISM AND HEALTH

While the general view associates atheism with poor psychological health, the debate is still fiercely contested. Phil Zuckerman, a sociologist of Pitzer College, offers an extensive review of this complex debate (2009, 949). Some research correlates religiosity with reduced levels of depression, while others find no relationship. "Some studies indicate that secular people are less happy than religious people… yet international comparisons show that it is the most secular nations in the world that report the highest levels of happiness among their populations" (Zuckerman 2009, 956). The relationship between belief and health is not straightforward.

This complexity is expected given the nuanced studies cited above. There is no clear agreement about which type of religiosity correlates with which types of health. Certain types of religiosity may help your heart health but be bad for your psychological well-being (Masters and Knestel 2011). Religious people with a positive view of God may recover more quickly than strong atheists, but what about highly religious people with a negative image of God or a socially-engaged agnostic? The field only becomes more complex.

Despite the complexities, Zuckerman acknowledges "that a preponderance of studies do indicate that secular people don't seem to fare as well as their religious peers when it comes to selected aspects of psychological well-being" (2009, 956). Some argue that this is because being an atheist in the United States means being a member of a distrusted, stigmatized group, which would take a toll on anyone's sense of well-being (Zuckerman 2009, 949). But perhaps the strongest critique of the link between health and belief is the paucity of research on nonbelievers (Hwang et al. 2011, 613).

To fully understand the relationship between nonbelief and health requires studying nonbelievers as systematically and meticulously as researchers have studied believers.

This meticulous research is especially called for if we follow Caldwell-Harris's suggestion that we understand one's belief as being facilitated by individual-differences variables. If this is the case, then the spectrum of belief, from zero to full, is facilitated by personality difference. To understand the health of nonbelievers would require studying the health effects linked to varying degrees of individualism, systematic thinking, and pragmatic focus on the here-and-now. What is likely to emerge is a more complex appreciation than the simple atheism-is-unhealthy conclusion. This is an especially promising route given recent research by Corinna Loeckenhoff.

In a systematic study, Loeckenhoff et al. (2009) examined the association between personality traits, religiosity, and mental health in a group living with HIV. Through careful analysis they argue that "personality traits explained unique variance in mental health above spirituality and religiousness" (1411). In other words, personality accounts for the link between belief and health.

Previous research has studied the relationship between personality and mental health or religiosity and mental health, but how personality and religiosity are jointly related to mental health has been left unexamined (Loeckenhoff et al. 2009, 1412). Researchers have also studied the relationship between personality and religiosity. These studies suggest that "personality traits in adolescence predict religiousness and spirituality in late adulthood, whereas the empirical evidence for the converse pattern (i.e., religiousness and spirituality predicting future personality) is scarce" (Loeckenhoff et al., 1414). Loeckenhoff takes this to mean that personality has primacy over belief.

This conclusion is stronger than Caldwell-Harris's assertion that personality facilitates belief, but it is supported by a wide range of studies. Loeckenhoff draws extensively on Saroglou (2010), who provides a comprehensive meta-analysis of these studies. The specific association revealed by this research is that "Agreeableness and Conscientiousness were reliable correlates of religion across most samples" (Saroglou 2010, 115). Saroglou's meta-analysis legitimates Caldwell-Harris' work to find the correlates for nonbelief. But it goes further. Drawing from four recent longitudinal studies, Saroglou concludes "that personality has chronological priority and impact on religiousness rather than vice versa" (118). If Saroglou is correct in his meta-analysis, then studying the personality traits underlying belief, or nonbelief, may lead the way out of the complexity demonstrated above.

Loeckenhoff's work attempts to test these findings empirically. "If one adopts the notion that spirituality and religiousness can be understood as characteristic adaptations based on core personality dimensions, one would

expect that any beneficial effects of S/R are at least partially accounted for by the effects of underlying personality traits." (Loeckenhoff et al. 2009, 1417). If personality predicts belief, then perhaps personality also accounts for some of the health benefits associated with belief.

Loeckenhoff's findings confirmed past studies linking Conscientiousness with all S/R scales. Openness and Agreeableness also showed positive correlations, which helps legitimate her measures (Loeckenhoff et al. 2009, 1429). From this foundation her analysis goes on to "suggest that when the five NEO-PI-R domains are considered in combination, underlying personality traits fully account for the association of S/R with mental health" (1431). In other words, personality not only predicts belief, or nonbelief, it fully accounts for the correlation between religiosity and mental health.

To draw such a strong line of causation, in-depth longitudinal studies would be required. But this research tentatively strengthens Caldwell-Harris's theoretical claim. Loeckenhoff's words echo her thesis: "religiousness and spirituality are characteristic adaptations that develop as basic personality traits are channeled by cultural and environmental influences" (Loeckenhoff et al. 2009, 1431). Caldwell-Harris would merely add that nonbelief is an expected type of characteristic adaptation.

So, what does this reveal about the assumption that nonbelief is unhealthy? Given the complexity of the debate, Loeckenhoff and Caldwell-Harris provide a new lens that may untangle the complexities. As researchers distinguish between the different types of religiosity and spirituality, personality traits are a useful metric for describing the differences. If Loeckenhoff is confirmed by further research, then personality may be more than a useful descriptor, it may be the explanatory cause of any correlation between belief and health. If Caldwell-Harris's argument stands, then atheism should not be grouped to the side as a homogenous category of nonbelievers. Instead nonbelief can be understood as an expected worldview of highly individualistic, systematic thinkers who are pragmatically focused on the here and now. With this understanding of atheism, researchers can study the relationship between traits and health in a way that is less stigmatizing and more illuminating.

## Conclusion

Atheists have been historically stigmatized. They are the village outcast, the "other," the abnormal. As cognitive science and evolutionary psychology have begun to explore the origins of religion, this stigmatization has emerged in a new form. Atheism is portrayed as an unnatural worldview that goes against our cognitive defaults. Such a view echoes an essentialist belief that we all must have evolved to display the same characteristics and is antithetical to the diversity which fuels evolution.

By highlighting the diversity of personalities, Caldwell-Harris dismantles the syllogism that if religion is natural then atheism is unnatural. Instead we can understand belief and nonbelief as the natural outcomes of given personalities. The expression of these personalities is channeled by the cultural milieu in which they are situated. So if a culture punishes nonbelievers in a more extreme form than ostracism, the highly individualistic, systematic thinkers are not likely to call themselves atheists. But now, with a more pluralistic cultural environment, these personalities express themselves as atheists.

This empathic understanding of nonbelievers begins to unravel the stigma of atheists as unnatural. Like a Rorschach test, the deeply seated distrust of atheists shapes what we see in complexity. In the complexity of research on belief and health, this presumption sees a negative correlation between atheism and well-being. But belief is too complex of a category, health is too multifaceted, and the data are too nuanced to draw such a broad conclusion.

One way through this complexity may be offered by Loeckenhoff's research. If she is correct, then the relationship between belief (or nonbelief) and health can be accounted for by personality traits. Just as Caldwell-Harris argues that individual-differences account for the natural emergence of nonbelievers in a culture, Loeckenhoff argues that these same individual-differences explain the links between different types of belief and health. Her argument is supported by past research showing that personality is primary to belief and by her own empirical findings that personality accounts for the emotional well-being previously attributed to belief.

This research may help untangle the complex relationship between belief and health. Whether personality fully accounts for the relationship is yet to be seen. But this approach has the added benefit of neutralizing atheism. Instead of viewing nonbelief as an unhealthy choice, we can study the effects of individualism on heart health or how systematic thinking relates to emotional well-being. This approach detoxifies the conversation. Ultimately true health may come simply from the freedom to naturally express your personality.

## REFERENCES

Allport, Gordon W., and J. Michael Ross. 1967. "Personal Religious Orientation and Prejudice." Journal of Personality and Social Psychology 4:432–43.

Atran, Scott. 2006. "The Scientific Landscape of Religion: Evolution, Culture, and Cognition." In *The Oxford Handbook of Religion and Science*, ed. Philip Clayton and Zachary Simpson, 407–29. Oxford: Oxford University Press.

Barrett, Justin. 2004. Why Would Anyone Believe in God? Lanham, MD: Altamira Press.

Benson, Herbert, and Miriam Z. Klipper. [1976] 2001. The Relaxation Response. New York: William Morrow.

Byrd, Randolph C. 1988. "Positive Therapeutic Effects of Intercessory Prayer in a Coronary Care Unit Population." *Southern Medical Journal* 81:826–29.

- Caldwell-Harris, Catherine L. 2012. "Understanding Atheism/Non-belief as an Expected Individual-Differences Variable." *Religion, Brain and Behavior* 2(1):4–22.
- Guthrie, Stewart. 1993. Faces in the Clouds: A New Theory of Religion. New York: Oxford University Press.
- Hwang, Karen, Joseph H. Hammer, and Ryan T. Cragun. 2011. "Extending." Journal of Religion and Health 50:608-22.
- Hyman, G. 2006. "Atheism in Modern History." In The Cambridge Companion to Atheism, ed. Michael Martin, 27-46. New York: Cambridge University Press.
- Inzlicht, Michael, Alexa M. Tullett, and Marie Good. 2011. "The Need to Believe: A Neuroscience Account of Religion as a Motivated Process." Religion, Brain and Behavior 1(3):192-212.
- Ironson, Gail, Rick Stuetzle, Dale Ironson, Elizabeth Balbin, Heidemarie Kremer, Annie George, Neil Schneiderman, and Mary Ann Fletcher. 2011. "View of God as Benevolent and Forgiving or Punishing and Judgmental Predicts HIV Disease Progression." *Journal of* Behavioral Medicine 34:414-25.
- Kristeller, Jean L., Virgil Sheets, Tom Johnson, and Betsy Frank. 2011. "Understanding Religious and Spiritual Influences on Adjustment to Cancer: Individual Patterns and Differences." Journal of Behavioral Medicine 34:550-561.
- Laubmeier, Kimberly K., Sandra G. Zakowski, and John P. Bair. 2004. "The Role of Spirituality in the Psychological Adjustment to Cancer: A Test of the Transactional Model of Stress and Coping." International Journal of Behavioral Medicine 11: 48–55.
- Loeckenhoff, Corinna E., Gail H. Ironson, Conall O'Cleirigh, and Paul T. Costa, Jr. 2009. "Five-Factor Model Personality Traits, Spirituality/Religiousness, and Mental Health among People Living with HIV." *Journal of Personality* 77:1411–36.

  Masters, Kevin S., and Andrea Knestel. 2011. "Religious Motivation and Cardiovascular
- Reactivity Among Middle Aged Adults: Is Being Pro-Religious Really That Good For You?" Journal of Behavioral Medicine 34:449-61.
- Maslow, Abraham H. 1970. *Motivation and Personality*. New York: Harper & Row. McIntosh, Daniel N., Michael J. Poulin, Roxane C. Silver, and E. Alison Holman. 2011. 'The Distinct Roles of Spirituality and Religiosity in Physical and Mental Health after Collective Trauma: A National Longitudinal Study of Responses to the 9/11 Attacks." Journal of Behavioral Medicine 34:497–507.
- Park, Crystal L., Jennifer H. Wortmann, and Donald Edmondson. 2011. "Religious Struggle as a Predictor of Subsequent Mental and Physical Well-Being in Advanced Heart Failure Patients." Journal of Behavioral Medicine 34:426–36.
- Perez, John E., Amy R. Smith, Rebecca L. Norris, Katia M. Canenguez, Elizabeth F. Tracey, and Susan B. DeCristofaro. 2011. "Types of Prayer and Depressive Symptoms among Cancer Patients: The Mediating Role of Rumination and Social Support." Journal of Behavioral Medicine 36:519-30.
- Saroglou, Vassilis. 2010. "Religiousness as a Cultural Adaptation of Basic Traits: A Five-Factor Model Perspective." *Personality and Social Psychology Review* 14:108–25.
- Ventis, W. Larry. 1995. "The Relationships between Religion and Mental Health." Journal of Social Issues 51(Summer):33-48.
- Zuckerman, Phil. 2009. "Atheism, Secularity, and Well-Being: How the Findings of Social Science Counter Negative Stereotypes and Assumptions." Sociology Compass 3:949–71.