## Differentiating Spiritual and Psychotic Experiences: Sometimes a Cigar Is Just a Cigar

Bruce Greyson, M.D.

University of Virginia

ABSTRACT: Spiritually transformative experiences, either spontaneous or intentionally sought, lead people to perceive themselves and the world in profoundly different ways, expanding their identity, augmenting their sensitivities, and altering their values, priorities, and sense of meaning and purpose in life. Since the ascendance of psychodynamic theories a century ago, skeptical psychologists have interpreted spiritual experience as a neurotic defense against life's vicissitudes. With the development of neurocognitive psychology in recent decades, skeptical neuroscientists have reinterpreted spiritual experience as a hallucination produced by the brain.

Although both of those interpretations are plausible for *some* experiences that are couched in spiritual terms, the assumption that *all* spiritual experiences are pathological is based on the erroneous notion that any experience that differs from normal perception is abnormal. That assumption can be maintained only by ignoring the profound differences between spiritually transformative experiences and psychotic experiences. These pervasive differences include the context in which the two kinds of experience occur, the content of the experience itself, how the experience is remembered, and how the experience affects the individual. Spiritually transformative experiences, unlike most forms of mental illness, may enhance serenity and sense of purpose and expand the experiencer's perception and appreciation of the world.

KEY WORDS: spiritual experience; spiritually transformative experience; mystical experience; psychosis; mental illness; differential diagnosis

Bruce Greyson, M.D., is Chester F. Carlson Professor of Psychiatry and Neurobehavioral Sciences and Director of the Division of Perceptual Studies at the University of Virginia Health System. This paper is a condensed version of a presentation at the American Center for the Integration of Spiritually Transformative Experiences 2nd Annual Conference on Therapeutic Issue of Spiritually Transformative Experiences, Arlington, VA, October 4, 2013. Correspondence regarding this article should be addressed to Dr. Greyson at the Division of Perceptual Studies, University of Virginia Health System, 210 10th Street NE, Charlottesville, VA 22902-4754; email: cbg4d@virginia.edu.

According to the American Center for the Integration of Spiritually Transformative Experiences (ACISTE), spiritually transformative experiences—which overlap with numinous, noetic, transcendent, transpersonal, mystical, religious, and ecstatic experiences—cause people to perceive themselves and the world profoundly differently by expanding their identity, augmenting their sensitivities, and altering their values, priorities, and appreciation of the purpose of life. Such experiences may be sought through meditation, yoga, drugs, religious practice, dance, drumming, sensory deprivation, or prayer; or they may occur spontaneously and unexpectedly, as with trauma, illness, emotional crisis, or deep relaxation. Such experiences may be catalysts for permanent and dramatic changes and positive transformations, or they may involve difficult challenges before the experience is completely integrated into the experiencer's life (www.aciste.org/index.php/about-stes/what-is-an-ste).

There is a long tradition among psychiatrists and psychologists of regarding spiritually transformative experiences as evidence of pathology. Sigmund Freud referred to religion as an "illusion," a neurotic defense against life's vicissitudes (Freud, 1927). Since the ascendance of psychodynamic theories a little more than a century ago, many psychiatrists and psychologists have followed Freud in interpreting spiritually transformative experiences as neurotic defenses against stress and the fear of death.

But the fact that an experience may gratify unconscious psychological desires or defend against psychological fears does not mean that the experience is nothing but a neurotic defense. Psychoanalytic theorists proposed that all curiosity and novelty-seeking is ultimately derived from our innate drive to get pleasure from looking for hidden things, which in turn is a sublimation of the inherent drive to get sexual pleasure from looking at erotic objects (e.g., Akhtar & O'Neill, 2009; Aronoff, 1962). But if, according to this psychoanalytic interpretation, Christopher Columbus set sail looking for what we now call America because he was seeking hidden erotic stimulation, that neurotic motive does not negate the fact that America really existed.

There is an apocryphal story about a psychoanalytic colleague of Freud's who suggested that Freud's addiction to cigars was related to their function as a phallic symbol, to which Freud countered, "Sometimes a cigar is just a cigar!" (Faragher & Heimann, 1954; Wheelis, 1950). Objects that can serve as symbols are not always just symbolic. Likewise, although sometimes what seems like a spiritual experience may actually be a hallucination or misinterpretation based on uncon-

sciousness feelings, I contend that sometimes what seems like a spiritual experience is just a spiritual experience.

With the rise of neurocognitive psychology in recent decades, skeptical neuroscientists have reinterpreted spiritual experiences not as neurotic defense mechanisms but rather as meaningless hallucinations produced by the brain. With the development of more sophisticated neuroimaging techniques, neuroscientists have been mapping brain activity associated with various mental functions, including spiritual experience. When they do find some consistent pattern of activation associated with some function, neuroscientists often interpret the finding to mean that those activated areas in the brain are instrumental in causing that function (Blanke, Mohr, Michel, Pascual-Leone, Brugger, Seeck, Landis, & Thut, 2005; Frith, 2004; Shermer, 2003). An equally plausible interpretation that they regularly fail to mention, however, is that activation of those brain areas is associated with a certain function, but not necessarily causing it. Exclusion of the second possible interpretation reveals a bias against the very real possibility that consciousness is not produced by the brain but, rather, is essentially independent of the brain but closely associated with it during physical existence.

Neuroimaging, such as with an EEG or fMRI scan, could show the areas of your brain activated by reading this article: those areas of the brain involved in perceiving and processing written language. But neuroscientists do not interpret this to mean that those areas of your brain are *producing* the written words on the page. Likewise, if certain areas of the brain are activated when someone claims to be in communion with the divine, why should someone interpret that to mean that those areas of the brain are *producing* the sensation of being in communion with the divine? All human experiences are processed in people's brains in order for them to organize, interpret, and express them, but that fact does not establish that all experiences *originate* in brain activity (Araujo, 2012; Beauregard, 2007, 2012).

The basis for considering spiritual experiences as either a neurotic defense or an artifact of brain activity is the belief that any experience that differs radically from normal perceptions is, by definition, abnormal. This assumption is rooted in the centuries-old tradition of Occam's razor, the principle popularized by the medieval philosopher William of Ockham in the 1300s that in the interest of parsimony, among competing hypotheses, the hypothesis with the fewest assumptions should be selected.

But is the most parsimonious hypothesis usually the most accu-

rate? Time and again, the world has proven to be far more complex than people had imagined, with redundancy rather than parsimony being the rule. Occam's razor is a principle that likely says more about people's limited tolerance for abstract thinking than it does about how the world actually works. Certainly, if two hypotheses explain all the data equally well, it is easier to work with the simpler hypothesis. But too often the simpler hypothesis is used as a rationale for ignoring the data that do not fit. As astrophysicist Paul Willard Merrill wrote, when faced with facts that contradict one's expectations, "if discordant values be omitted the others agree very well" (1940, p. 63).

In actual practice, Occam's razor is often a misleading guide. Suppose a person familiar with dogs is introduced to a cat for the first time. Occam's razor might lead that person to assume that this small, furry, four-legged, domesticated, playful animal is a dog. If the cat owner then points out that, unlike dogs, this animal called a "cat" does not bark to communicate, but meows; does not wag its tail to show pleasure, but rather purrs; hunts alone rather than in packs; and doesn't pant. Faced with these apparent discrepancies, the dog fancier might apply Occam's razor and conclude that this so-called "cat" is really a somewhat *atypical* dog, preferring not to postulate a totally separate kind of animal when calling it a dog explains most of its main characteristics.

This process happens routinely with spiritually transformative experiences. Persons familiar with symptoms of psychosis, when introduced to someone who has had a spiritually transformative experience, might assume that this person who has visions that others can't see or hear, who has unorthodox beliefs outside the mainstream, and who has exhibited radically changed behavior since the spiritually transformative experience, is obviously psychotic. If it is then pointed out that, unlike most people with psychosis, this spiritually transformed person is joyful rather than fearful, is altruistic and compassionate toward others rather than being self-absorbed and paranoid, does not forget or deny the strange visions when given medications, and so on, then again, faced with these discrepancies, the person familiar with psychosis might apply Occam's razor and conclude that this so-called "spiritually transformative experience" is really a somewhat atypical psychotic break, preferring not to postulate a totally separate kind of experience when calling it a psychotic break explains most of its main characteristics.

Are some mainstream psychologists really so locked into their worldview that they ignore data that contradict their beliefs? Two

prominent British psychologists recently published a paper in the prestigious journal Trends in Cognitive Sciences, with the definitive title, "There is nothing paranormal about near-death experiences" (Mobbs & Watt, 2011). It bore the subtitle, "How neuroscience can explain seeing bright lights, meeting the dead, or being convinced you are one of them." They were able to explain all the features of near-death experiences simply by ignoring any features for which they had no explanation. In fact, one of the two authors, Caroline Watt, acknowledged in a subsequent interview that they did not consider features they could not explain, such as accurate out-of-body perceptions or meeting deceased people not yet known to have died, because they did not consider those features central to near-death experiences (Tsakiris, 2012). As stated in a response to their article, which was also published in Trends in Cognitive Sciences, of course there is nothing paranormal about neardeath experiences if one ignores all the paranormal features (Greyson, Holden, & van Lommel, 2012). As Merrill noted, "if discordant values be omitted the others agree very well" (1940, p. 63).

I am not suggesting that this discounting of disquieting data is either intentional or malicious. My impression from studying and working with scientists for a half century is that most of them are motivated by the search for truth, the quest to understand the world as it truly is. However, I am not alone in also having observed that most people see only what they expect to see, only what their backgrounds have prepared them to recognize. "Inattentional blindness" is the well-researched failure to notice an unexpected stimulus that is in one's field of vision. Although a number of factors can influence the ability to notice unexpected objects, the most influential factor affecting inattentional blindness is a person's own preconceived expectations (Most, Scholl, Clifford, & Simons, 2005). A firm belief in any given worldview will inevitably incline someone to regard data consistent with that worldview as valid and to regard contradictory data as unimportant or flawed.

So our colleagues who deny the legitimacy of spiritually transformative experiences may not be intentionally ignoring the data that don't fit; they may really not be able to recognize them as spiritually transformative. As it happens, some of the most marked effects of spiritually transformative experiences do in fact sound like effects of psychosis. People who are undergoing profound transformation tend to re-evaluate everything they had taken for granted all their lives and challenge their and their culture's basic understanding of the world. But whereas psychotic experiences usually leave the individual

in distress with significant social and occupational dysfunction, spiritual experiences often propel the individual on a journey of personal growth that leads to enhanced enjoyment of life. There is a maxim that the mystic swims in the waters in which the psychotic person drowns (Cortright, 1997, p. 169). If some exceptional experiences that involve visions and unconventional beliefs are psychotic symptoms, whereas other exceptional experiences that involve visions and unconventional beliefs are spiritual experiences, is it possible reliably to differentiate spiritual transformation from psychosis?

Sometimes perceptual experiences that sound otherworldly may in fact be misperceptions of events in the physical environment. A young man who was in a motorcycle accident in which gasoline had leaked into his helmet while he was pinned under his motorcycle was brought to the emergency room intoxicated by the gasoline fumes, in addition to suffering some broken bones and abrasions. He later reported to me that he had blacked out after the crash and then awoke to find himself in a putrid-smelling environment where beings with no facial features were torturing him, some holding him down while others stuck needles into his body. Was this a hellish near-death experience or a toxic hallucination? Actually, it was neither; it was a confused perception of something that really happened. He had become combative as a result of the gasoline fumes, and the medical team, who were wearing surgical masks covering their faces, had to give him a malodorous sedating gas to breathe and then hold his hands and legs in order to draw blood and start an intravenous line.

We should note here that delusions, defined traditionally as idio-syncratic, fixed, false beliefs, are not always dysfunctional but can, in fact, sometimes be helpful. For example, a neglected or abused child's belief that her parents really love her may be quite wrong but may, nevertheless, help her tolerate stress. Likewise, an economist's belief that the U.S. banking system has been sufficiently reformed so that the economy is no longer vulnerable to a crash like the one in 2008 may be quite wrong, but again it may help the economist tolerate stress. In such cases, the delusions may be quite adaptive, at least in the short term.

To differentiate reliably between psychotic symptoms and spiritual experiences, one must consider the context of the experience—the role it plays in someone's life. Psychotic delusions are idiosyncratic, fixed, false beliefs. Health professionals don't regard as psychotic false beliefs that are not idiosyncratic. If someone says that God wants people to stop drinking colas because they are inherently evil, that idea

might reasonably be considered psychotic. But if that person's church teaches that drinking caffeine is abusing the human body and therefore violating God's wishes, that belief can be seen as culturally sanctioned and adaptive for a member of that church community: It is not idiosyncratic. Of course, the assessment as to whether or not a belief is consistent with one's culture is a subjective judgment and will depend to some degree on the evaluating health professional's knowledge and belief system. So when a patient describes something that doesn't fit into one's own worldview, one needs to be aware of one's own biases as to what is normal.

Likewise, health professionals can dismiss as pathological those probably false beliefs that are not fixed. If someone says that a guardian angel saved him from falling in front of a train, a health professional might consider that a psychotic belief. But if the professional then asks, "Are you sure that's what happened?" the person may say something like, "Well, I was leaning forward to look for the train and almost fell onto the tracks, but I felt someone grab me and pull me back. When I looked around, I couldn't see who had done that, so I thought maybe God had sent an angel to rescue me." It's not a fixed idea, and by itself it does not sound pathological; in fact, it may well enhance the individual's self-esteem.

The distinction between the pathological and the adaptive may be more difficult with beliefs that seem to be both relatively idiosyncratic and fixed, and which a health professional may suspect are false but not know for certain. Again, the critical step in evaluating whether or not these beliefs are psychotic is assessing the context. Many neardeath experiencers (NDErs), for example, believe their survival was miraculous and could have happened only by divine intervention. If they believed they were sent back to physical existence so they could care for a dying parent or to raise a handicapped child, that idea not only sounds nonpsychotic but may, in fact, restore meaning and purpose to someone who had previously been depressed and without direction in life. This is not a belief that most health professionals would want to eradicate. On the other hand, if they believed they were sent back so they could sneak into Iran and personally persuade the Supreme Leader to give up his quest for nuclear weapons, that idea does sound psychotic and like something a health professional would want to try to eradicate before the person can act on it.

In considering the *context* of an experience, health professionals must look beyond the content of the experience itself and look instead at the role the belief plays in the experiencer's life. Several years ago,

a colleague and I surveyed two groups of people who reported hearing voices repeatedly (Greyson & Liester, 2004). We compared the attitudes toward those voices of people who had schizophrenia and of people who had been hearing voices since their NDEs. More than 80% of NDErs wanted to keep hearing the voices compared to only 10% of the people with schizophrenia. More than 60% of NDErs found the voices soothing or comforting compared to 15% of the people with schizophrenia. On the other hand, almost none of the NDErs found the voices distressing or threatening compared to 40% of the people with schizophrenia. Almost 60% of the NDErs said that hearing the voices made them feel better about themselves compared to 20% of the people with schizophrenia. On the other hand, almost none of the NDErs said that hearing the voices made them feel worse about themselves compared to half the people with schizophrenia. And a third of the NDErs said that hearing voices had a positive impact on their relationships with other people compared to less than 10% of the people with schizophrenia. On the other hand, whereas about 15% of the NDErs said that hearing voices had some negative impact on their relationships, that figure was 60% among people with schizophrenia. It appeared that hearing voices that no one else can hear was a very positive experience for the NDErs but a very negative experience for the people with schizophrenia. That is, sometimes experiences that sound like psychotic hallucinations can in fact be life enhancing rather than life diminishing.

A number of clinicians have written about the distinctions between unconventional experiences that are symptoms of psychosis and those that are spiritually transformative. In addition to my own clinical experience and research data, I have drawn on the work of others such as Jan Holden (2013), Harold Koenig (2007), David Lukoff (2007), Penny Sartori (2004, 2008), Alexander Moreira-Almeida and his colleagues (Menezes & Moreira-Almeida, 2009, 2010; Moreira-Almeida, 2012; Moreira-Almeida & Cardeña, 2011), and Kathleen Noble (1984), to delineate the differences between psychosis and spiritual transformation. These differences are summarized in Table 1.

Psychosis and spiritual transcendence differ in terms of the context in which they occur, the content of the experience itself, how the experience is remembered later on, and how the experience affects the individual. None of these distinctions between the two, however, is absolute; they are generalizations, and like all generalizations, there are going to be exceptions.

First, spiritually transformative experiences, at least those that oc-

cur spontaneously, typically occur in the context of life-threatening or otherwise extreme situations, such as severe stress or meditation; they are usually brief experiences that do not recur; and they occur to people with good prior functioning who are not currently suffering mental illness, intoxication, or metabolic derangements. Psychotic experiences, in contrast, usually occur to people with a history or marginal functioning who are currently suffering mental illness, intoxication, or metabolic derangement; usually occur in the absence of extreme situations; and are usually prolonged and recurrent. Again, there are exceptions to these generalizations, and it is possible to have a spiritually transformative experience "out of the blue" or to have a psychotic experience under life-threatening stress, but those are the rare exceptions.

Second, spiritually transformative experiences tend to have specific and detailed content that is often unrelated to the immediate physical environment, but that may include verifiable perceptions; it is usually structured, compatible with religious or spiritual traditions, and consistent across individuals and cultures. In contrast, the content of psychotic experiences is usually vague and nonspecific, does not include verifiable perceptions, and is idiosyncratic to each individual.

Third, spiritually transformative experiences are usually remembered later on as real or very commonly "realer than real," and their memory does not fade over decades, retaining its original vividness and richness of detail. Memories of psychotic experiences, in contrast, are regarded afterwards as unreal or dreamlike events, and usually become less vivid and less detailed over time until they are completely forgotten.

Finally, people who have had spiritually transformative experiences usually pursue exploring their experience in an effort to seek and develop insight into the meaning of the experience, often by sharing their insights with other experiencers. If they are disturbed at all by their experience, it is only temporarily until they can integrate the experience into their lives; they do not subsequently develop symptoms of mental illness, but sometimes develop unusual sensitivities to light, sound, and electromagnetic fields. People who have psychotic experiences, in contrast, usually avoid exploring their experiences and do not seek to understand them. They do not generally share with others their psychotic experiences, which they find permanently disturbing. They do not develop environmental sensitivities, but often develop signs of mental illness such as cognitive disorganization and flat affect.

Table 1 Comparison of Spiritually Transformative Experiences and Psychotic Experiences\*

Feature	Spiritually Transformative Experience	Psychotic Experience
Context of experience:		
Usually occurs during life-threatening or otherwise extreme situations	Yes	No
Usually rare and of short duration	Yes	No
Usually occur in absence of mental disorder, intoxication, or metabolic derangement	Yes	No
Usually follow prior normal functioning	Yes	No
Content of experience:		
Specific and detailed	Yes	No
Patterned, structured, non-random organization	Yes	No
Consistent across individuals and cultures	Yes	No
May include verifiable perceptions, such as veridical out-of-body perceptions	Yes	No
Compatible with religious or spiritual tradition	Yes	No
Unrelated to events in the physical environment	Yes	No
Later recollection of experience:		
Experience recalled as real or hyper-real	Yes	No
Memory persists over time without fading	Yes	No
Memory remains vivid over time	Yes	No
Memory retains original detail over time	Yes	No

Spiritually transformative experiences usually lead to enhanced sense of meaning in life, increased joyfulness, decreased fearfulness (usually complete loss of fear of death), and feeling more connected to other people and less self-absorbed, leading to more altruistic behavior. In contrast, psychotic experiences usually lead to decreased sense of meaning in life, decreased joyfulness and increased fearfulness, and feeling more alienated from other people and more self-absorbed.

People who have had psychotic experiences often have negative out-

Table 1 (continued)

Feature	Spiritually Transformative Experience	Psychotic Experience
Aftereffects of experience:		
Insight into meaning of experience	Yes	No
Distress, if any at all, lasts only till experience integrated	Yes	No
Positive exploratory attitude toward experience	Yes	No
Desire to share with other experiencers	Yes	no
Absence of symptoms of mental illness	Yes	No
Absence of thoughts if harming self or others	Yes	No
Ability to maintain jobs and relationships	Yes	No
Absence of legal difficulties	Yes	No
Increased sensitivities (e.g., to electromagnetic fields)	Yes	No
Positive outcome over time		
Life becomes more meaningful	Yes	No
Increased joy, decreased fear	Yes	No
Expunged fear of death	Yes	No
Feelings of increased connectedness to others	Yes	No
Less self-absorbed, more altruistic	Yes	No
Unaffected by antipsychotic medication	Yes	No

<sup>\*</sup>This table reflects tendencies rather than absolutes; exceptions exist but are uncommon.

comes, including difficulty maintaining jobs and relationships, struggling with impulses to harm themselves or others, and legal complications. Their distressing thoughts, feelings, and behavior may be lessened by antipsychotic medication. In contrast, people who have had spiritually transformative experiences usually have positive outcomes, and do not struggle with relationships, jobs, harmful impulses, or legal issues; and antipsychotic medications have no effect on them or on their memories of their extraordinary experiences. Again, there

are exceptions to these generalizations, and some people can learn and grow from their psychotic experiences (Nixon, Hagen, & Peters, 2010), whereas some people may struggle for years to try to understand and integrate their spiritually transformative experiences, but those are rare exceptions. In general, positive outcomes should raise one's suspicion that the experience was a spiritually transformative event, whereas negative outcomes should raise one's suspicion that the experience was of a psychotic state.

The bottom line in differentiating psychosis from benign spiritually transformative experience was proposed 2,000 years ago in the Sermon on the Mount (Matthew 7:20): "By their fruits you shall know them"—and reaffirmed and clarified in Paul's letter to the Galatians (5:22–23: "But the fruit of the Spirit is love, joy, peace, forbearance, kindness, goodness, faithfulness, gentleness and self-control. Against such things there is no law." Despite phenomenological similarities, mental disorders and spiritually transcendent experiences yield very different fruits. In the Diagnostic and Statistical Manual of Mental Disorders (5th Edition), the American Psychiatric Association (2013) defined mental disorders as causing significant disturbance in an individual's cognition, emotion regulation, or behavior and as being associated with significant distress in social, occupational, or other important activities. In contrast, ACISTE defined spiritually transformative experiences as expanding the individual's identity, augmenting their sensitivities, and altering their values, priorities, and appreciation of purpose in life. Thus, a non-ordinary experience that leads only to increased distress and dysfunction and withdrawal from others may be best considered a symptom of mental illness, whereas a non-ordinary experience that leads ultimately to personal growth, increased serenity and sense of meaning and purpose, and engagement with others may be best considered a spiritual experience.

## References

Akhtar, S., and O'Neill, M. K. (Eds.). (2009). On Freud's "The future of an illusion." London, England: International Psychoanalytic Association/Karnac Books.

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Araujo, S. F. (2012). Materialism's eternal return: Recurrent patterns of materialistic explanations of mental phenomena. In A. Moreira-Almeida & F. S. Santos (Eds.), *Exploring frontiers of the mind-brain relationship* (pp. 35–51). New York, NY: Springer.

- Aronoff, J. (1962). Freud's conception of the origin of curiosity. *Journal of Psychology*, 54, 39–45.
- Beauregard, M. (2007). Mind really does matter: Evidence from neuroimaging studies of emotional self-regulation, psychotherapy, and placebo effect. *Progress in Neurobiology*, 81, 218–236.
- Beauregard, M. (2012). Functional neuroimaging studies of emotional self-regulation and spiritual experiences. In A. Moreira-Almeida & F. S. Santos (Eds.), *Exploring frontiers of the mind-brain relationship* (pp. 113–142). New York, NY: Springer.
- Blanke, O., Mohr, C., Michel, C. M., Pascual-Leone, A., Brugger, P., Seeck, M., Landis, T., and Thut, G. (2005). Linking out-of-body experience and self processing to mental own-body imagery at the temporoparietal junction. *Journal* of Neuroscience, 25, 550–557.
- Cortright, B. (1997). Psychotherapy and spirit: Theory and practice in transpersonal psychotherapy. Albany, NY: SUNY Press.
- Faragher, R. V., & Heimann, F. F. (1954). Price controls, antitrust laws, and minimum price laws—the relation between emergency and normal economic controls. Law and Contemporary Problems, 19, 648–684.
- Freud, S. (1927). The future of an illusion. London, England: Hogarth Press.
- Frith, C. (2004). The pathology of experience. Brain, 127, 239–242.
- Greyson, B., Holden, J., & van Lommel, P. (2012). 'There is nothing paranormal about near-death experiences' revisited: Comment on Mobbs & Watt. Trends in Cognitive Sciences, 16, 445.
- Greyson, B., & Liester, M. B. (2004). Auditory hallucinations following near-death experiences. *Journal of Humanistic Psychology*, 44, 320–336.
- Holden, J. M. (2013). In R. Moore (Ed.), Near-death experiences: What medical professionals need to know [Film]. Fort Myers, FL: Blue Marble Films.
- Koenig, H. (2007). Religion, spirituality and psychotic disorders. Revista de Psiquiatria Clinica, 34 (Suppl. 1), 40–48.
- Lukoff, D. (2007). Visionary spiritual experiences. Southern Medical Journal, 100, 635–641.
- Menezes, A., & Moreira-Almeida, A. (2009). Differential diagnosis between spiritual experiences and mental disorders of religious content. *Revista de Psiquiatria Clinica*, 36(2), 75–82.
- Menezes, A., & Moreira-Almeida, A. (2010). Religion, spirituality, and psychosis. *Current Psychiatry Reports*, 12, 174–179.
- Merrill, P. W. (1940). Spectra of long-period variable stars. Chicago, IL: University of Chicago Press.
- Mobbs, S., & Watt, C. (2011). There is nothing paranormal about near-death experiences. *Trends in Cognitive Sciences*, 15, 447–449.
- Moreira-Almeida, A. (2012). Assessing clinical implications of spiritual experiences. *Asian Journal of Psychiatry*, 5, 344–346.
- Moreira-Almeida, A., & Cardeña, E. (2011). Differential diagnosis between non-pathological psychotic and spiritual experiences and mental disorders: A contribution from Latin American studies to the ICD-11. *Revista Brasileira de Psiquiatria*, 33 (Suppl. 1), 529–589.
- Most, S. B., Scholl, B. J., Clifford, E., & Simons, D. J. (2005). What you see is what you set: Sustained inattentional blindness and the capture of awareness. *Psychological Review*, 112, 217–242.

- Nixon, G., Hagen, B., & Peters, T. (2010). Psychosis and transformation: A phenomenological inquiry. *International Journal of Mental Health and Addiction*, 8, 527–544.
- Noble, K. D. (1984). Psychological health and the experience of transcendence. Counseling Psychologist, 15, 601–614.
- Sartori, P. (2004). A prospective study of NDEs in an intensive therapy unit. *Christian Parapsychologist*, 16(2), 34–40.
- Sartori, P. (2008). The near-death experiences of hospitalized intensive care patients: A five year clinical study. Lewiston, NY: Edwin Mellen Press.
- Shermer, M. (2003). Demon-haunted brain. Scientific American, 288(3), 47.
- Tsakiris, A. (2012). 165. Dr. Caroline Watt defends, "There is nothing paranormal about near-death experiences." *Skeptico: Science at the Tipping Point*, radio interview #165. Retrieved from http://bit.ly/MITeGP.
- Wheelis, A. (1950). The place of action in personality change. *Psychiatry*, 13, 135–148.