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Editor’s Foreword

A theme that pervades this issue of the Journal is the contributions and limitations of science to advance understanding of near-death experiences (NDEs) and related topics. The issue opens with another voice in the professional NDE literature’s ongoing dialog regarding NDE etiology. Here, Michael Potts, Ph.D., considers the possible role of N,N-Dimethyltryptamine (DMT). After reviewing NDE phenomenology, the place of DMT among causal theories of NDEs, and DMT phenomenology, Potts compares the two phenomenologies to evaluate the theory that DMT underlies or contributes to NDEs.

Next in the issue are a series of book reviews. The first, by Ryan D. Foster, Ph.D., is of Mahendra Perera, Karuppiah Jagadheesan, and Anthony Peake’s 2012 edited book Making Sense of Near-Death Experiences: A Handbook for Clinicians. Having published both an NDE clinical literature review and his own research on the effect of NDE information on bereaved members of grief counseling groups, Foster found the edited book a potentially helpful—but not the single most helpful—review of the scientific NDE literature for health professionals working with patients or clients who’ve had NDEs or who might benefit from information on NDEs.

Cliff Hamrick, M.S., M.A., then offers his perspective on Chris Carter’s 2012 book, Science and the Afterlife Experience: Evidence for the Immortality of Consciousness. Coming from a physical science perspective in which science often is equated with experimental research, Hamrick first expressed disappointment about the absence of reference to such research in the book and then transcended that disappointment to praise the book for its many strengths.

An NDE-related phenomenon on the forefront of scientific research is the topic of Annie Cap’s 2011 book Beyond Goodbye: An Extraordinary True Story of a Shared Death Experience, reviewed by Ph.D. student Marlise R. Lonn, M.S. Lonn relates how Cap has chronicled her experience and its aftermath that resembled the aftermath of NDEs and other potentially spiritually transformative experiences. As NDE researcher Penny Sartori indicated in her Foreword to the book, such detailed biographical material is invaluable to researchers with an eye
to conducting broad-based studies of phenomena receiving increased professional attention.

The last review is a comparison by Susan Varhely, Ph.D., of two books that share an uncommon feature: both written by physicians—people of science—whose worldviews were transformed by NDEs. Varhely found that despite this essential commonality, and the appearance of several similar points and themes between the two books, Eben Alexander’s 2012 Proof of Heaven: A Neurosurgeon’s Journey into the Afterlife and Mary Neal’s 2011 To Heaven and Back: A Doctor’s Extraordinary Account of Her Death, Heaven, Angels, and Life Again: A True Story conveyed very different tones—the former more scholarly and the latter more religious—and thus each offered a unique perspective.

This issue approaches closure with a Letter to the Editor by Stephen D. Carter, DDS. Considering efforts of philosophical materialists to explain NDEs as purely biological phenomena, and seeking to reconcile those efforts with certain observations he has made about NDEs and his understanding of evolution, Carter concludes for now that a full understanding of NDEs may lie beyond the scope of science.

This Journal issue closes with an obituary for Harold A. Widdison by his long-time colleague, Craig Lundahl. Remembering Widdison in this issue seems poignantly appropriate: His first NDE-related publication in 1982 was entitled Near-Death Experiences and the Unscientific Scientist, and in his last publication, which appeared posthumously through the efforts of his widow, Marie, in the Summer 2012 issue of this Journal, he continued to advocate against weak science and scientism in NDE-related publications.

It is my hope that through the many facets of this Journal issue, readers will advance in their own reflections on the relationship between NDEs and science.

Janice Miner Holden, Ed.D.
jan.holden@unt.edu
Does N,N-Dimethyltryptamine (DMT) Adequately Explain Near-Death Experiences?

Michael Potts, Ph.D.
Methodist University

ABSTRACT: Some NDE researchers have suggested that because some users of psychedelic drugs have experiences purportedly similar to near-death experiences (NDEs), the neural receptors and neurotransmitters affected by a particular drug may underlie out-of-body experiences and NDEs. One of the most recent psychedelic candidates that allegedly causes NDE-like experiences is N,N-dimethyltryptamine (DMT), a natural substance that the body produces in small amounts. If DMT experiences are phenomenologically similar to NDEs, then it is possible that the human body in extremis may produce larger amounts of DMT that reach psychedelic experience-causing levels in the blood. In this paper, I explore the issue of whether DMT might play a causal role in the production of NDEs. The first section summarizes basic information about NDEs, focusing on their phenomenological aspects. The second section classifies theories of NDEs to place the DMT theory in the context of the history of the debate over the cause of NDEs. The following section discusses DMT's chemical composition, physical effects, and psychological effects. The final section explores whether NDE and DMT experiences have a sufficient degree of phenomenological similarity to justify a causal role for DMT in the production of NDEs and concludes that such similarity is lacking.

KEY WORDS: near-death experiences; out-of-body experiences; N,N-dimethyltryptamine; phenomenology of NDEs

Since the publication of Raymond Moody’s Life After Life (1975), authors have produced a plethora of literature on the phenomena he termed “near-death experiences” (NDEs). An NDE is an experience in
which a person encounters an actual or anticipated (“fear-death”) close brush with death and has the subjective experience of profound peace and/or a sense of one’s consciousness functioning apart from the physical body; this latter sense can include a material aspect—perceiving the material world, sometimes termed out-of-body experience (OBE), and/or a transmaterial phase—perceiving and often interacting with environments and entities (deceased loved ones, spiritual/religious figures) not of the material world. Research indicates that approximately one in five people who survive an actual or anticipated close brush with death report an NDE (Zingrone & Alvarado, 2009). Phenomenologically indistinguishable experiences can occur apart from an actual or anticipated close brush with death, usually in other psychologically extreme states such as profound grief or other emotional arousal, deep relaxation, or intense physical exertion.

As one attempt to explain the origin of NDEs, some researchers have suggested that the activation or inhibition of particular receptor sites in the brain may be the cause of both OBEs and NDEs (Hill & Persinger, 2003; Jansen, 1989, 1996; Kärkkäinen, Forsström, Tornaeus, Wåhålå, Kiuru, Honkanen, Stenman . . . Hesso, 2005; Strassman, 1996, 2001; Strassman, Qualls, Uhlenhuth, & Kellner, 1994). One route these researchers have taken is to suggest that because some psychedelic drugs users’ experiences mimic key phenomenological aspects of NDEs, the receptors and neurotransmitters that the drug affects may underlie and, therefore, be responsible for producing, OBEs and NDEs. The drugs they have implicated include LSD, psilocybin, and ketamine. One psychedelic candidate that allegedly causes NDE-like experiences is N,N-dimethyltryptamine (DMT), a natural substance produced by the body in small amounts (Strassman, 2001). If DMT experiences are phenomenologically similar to NDEs, then it is possible that the human body in extremis may produce larger amounts of DMT that reach psychedelic-causing levels in the blood.

In this article, I explore the issue of whether DMT plays a causal role in the production of NDEs. The first section will summarize basic information about NDEs, with a focus on their phenomenological aspects. The second section will classify theories of NDEs to place the DMT theory in the context of the history of the debate over the cause of NDEs. The following section will discuss DMT’s chemical composition, physical effects, and psychological effects. The final section will explore whether NDE and DMT experiences have a sufficient degree of phenomenological similarity to substantiate a causal role for DMT in the production of NDEs.
Near-Death Experiences (NDEs)

Rense Lange, Bruce Greyson, and James Houran (2004) defined NDEs as “transcendental experiences precipitated by a confrontation with death and which do not seem to be accounted for by our current understanding of the dying process” (p. 161). Michael Sabom (1982) has proposed a useful distinction between “autoscopic” and “transcendental” NDEs. The autoscopic NDE involves a sense of separation from the body and may include seeing one’s physical body as well as seeing and hearing one’s resuscitation. The transcendental NDE involves visions of “another world,” including experiences of religious figures, such as angels or God. Janice Miner Holden (2009) made a similar distinction, referring to the “material aspect” and “transmaterial aspect” (p. 185) of NDEs. Both involve the experience of one’s consciousness functioning apart from the physical body. The material aspect involves an NDEr perceiving—seeing, hearing, etc.—material phenomena, mainly but not exclusively in the area surrounding her body. These phenomena include the NDEr’s body itself and/or the people, objects, and environments surrounding or distant from the body. The transmaterial aspect involves perceiving “phenomena in transcendent dimensions beyond the material world” (p. 185)—environments often of exceptional beauty and entities such as deceased loved ones and spiritual/religious figures.

The “gold standard” in assessing whether a person has experienced an NDE and the depth of the experience is the Near-Death Experience Scale (Greyson, 1983). Greyson (1983) culled the Scale’s 16 questions from a list of 80 features associated with NDEs. Among other experiences, the questions address temporal distortions, feelings of peace, a sense of separation from the body, and encountering dead relatives (Lange et al., 2004). For each question, the respondent subjectively rates the feature on a three-point scale: 0 indicating no experience of that feature, 1 indicating a mild experience, and 2 indicating the most intense experience. The Scale has been useful in distinguishing NDEs from other kinds of experiences. For a person to be considered as having an NDE, she must score seven or above, with higher scores indicating more features or more subjectively intense features.

The phenomena listed do not necessarily all take place in an NDE, and when they do, they do not occur in a set order. Most NDEs do not go beyond the feeling of peace or joy. However, full-fledged experiences that contain both material-world perceptions and transcendental elements can be impressive, especially if a patient details seeing her own
body and what was being done to it during, for example, open-heart surgery (see Sabom, 1982; Holden, 2009). Such cases of veridical NDE perception raise the issue of whether some spiritual part of a person really does separate from the body during NDEs. If so, NDEs could be construed as evidence of at least a temporary survival of a conscious part of a person after clinical death (cardio-pulmonary arrest). This possibility would still not answer the question of whether survival continues after the point of no return to physical existence that marks irreversible biological death. However, if a conscious part of people survives clinical death, the probability increases of survival beyond biological death.

The DMT Theory in the Spectrum of Theories of the Causes of NDEs

Theories of NDEs are divided into three main classes: (1) psychological theories, (2) physiological theories, and (3) non-materialistic (“spiritual” or “transcendental” theories; Greyson, Kelly, and Kelly, 2009). Psychological and physiological theories tend to be reductionist and deny that NDEs are anything more than the result of a particular psychological or physiological mechanism. However, such theories need not be reductionist; for example, if NDEs were correlated with low blood oxygen levels (current evidence is ambiguous; in a study of NDEs in cardiac arrest patients, those people having a near-death experience had higher blood oxygen levels than the non-experiencers; Parnia, Waller, Yeates, and Fenwick, 2001— but Michael D. Gliksman and Allan Kellehear (1990) argue that blood gas levels in cardiac arrest patients are not reliable indicators of actual cerebral oxygen levels), it is still possible that NDEs could reveal some kind of extraordinary perception or transcendent realm. The physiological theorist would have to further argue from parsimony to make her case.

Psychological theories can be divided into the following categories:

1. Fantasy or depersonalization to protect a person from the fear of death (Noyes & Kletti, 1976, 1977; Siegel, 1980)
2. A reliving of the birth experience (Sagan, 1979)
3. The role of personality factors in generating NDEs:
   A. Fantasy-proneness (Wilson & Barber, 1983)
   B. Absorption (Tellegen & Atkinson, 1974)
   C. Dissociative tendencies (Irwin, 1993)
The weakest of the psychological theories is Carl Sagan’s view that an NDE involves memories of the experience of birth, because the newborn baby’s brain is not developed enough to have sufficient cognitive capacity to remember the birth experience (Becker, 1982). In Becker’s critique of Sagan’s hypothesis, he also noted the fatal flaw in reductionist psychological theories: that they commit the genetic fallacy. The ultimate nature of NDEs cannot be decided in terms of psychological correlations with NDEs; NDEs could be ontologically transcendental experiences and a way to find peace at death. Psychology is not metaphysics. The genetic fallacy is particularly seen in Ronald K. Siegel’s (1980) article in which he went into detail on a history of human psychological motivations for belief in life after death, including explaining phenomena surrounding death such as dreaming of the deceased and phenomena such as rebirth in nature in springtime. In a sharp exchange, Ian Stevenson (1981) noted that the origin of human belief in life after death is irrelevant its truth or falsity. However, Siegel (1981) went on to argue that such psychological continuities have behind them common biological reactions to stimuli, common brain structures, and common patterns resulting from environmental stimuli that are exemplified by NDE and other phenomena surrounding death.

Reductionists have also tried to explain NDEs by physiological and pharmacological means. This is a broader category of potential explanations and includes:

2. Anesthesia (awareness during anesthesia to explain continued sense awareness of surgical patients who have NDEs; Blackmore, 1993)
3. Hypercapnia (also called “hypercarbia”), an excess of carbon dioxide in the blood (Blackmore, 1993; Klemenc-Ketis, Kersnik, & Grmec, 2010)
4. Hypoxia (a low blood oxygen level; Blackmore, 1993)
5. Natural endorphins and neurotransmitters (whose reception sites may be affected by psychedelic drugs such as LSD, ketamine, and DMT (see Morse, Venecia, & Milstein, 1989).

Greyson (2000, 2010), along with his colleagues (Kelly, Greyson, & Kelly 2007), have summarized objections to physiological reductionism, employing two major prongs: (1) patients while having NDEs are not in the physiological state demanded by a particular physiological theory, and (2) the phenomenology of NDEs differs in significant
ways from experiences resulting from physiological causes that allegedly cause NDEs. Experiences of persons suffering from hypercapnia/hypercarbia or hypoxia are often more emotionally distressing than the majority of NDEs are, and they are often disjointed, more like a dream than like the sense of reality that characterizes most NDEs. NDErs uniformly claim what William James (1997/1902) called (referring to mystical experiences) a "noetic quality" to their experiences: The experiences felt "realer than real." Temporal lobe epilepsy and temporal lobe lesions result in less unified experiences than characterize NDEs, and most people who have such experiences believe them to be imaginary, in contrast to most NDErs' view that their NDEs actually happened.

Contemporary physiological theories follow that of Susan Blackmore (1993) in developing a multi-causal model for NDEs. For example, DMT release might explain some NDEs or parts of NDEs, and hypoxia or hypercapnia might explain others. Temporal lobe excitation may be involved. This approach may be vulnerable to the objection that multiple leaky buckets still leak; that is, multiple weak physiological theories do not explain NDEs any better than one weak physiological theory. In addition, as Emily Kelly and her colleagues (Kelly et al., 2007) pointed out, major elements of NDEs, including their noetic quality, the life review, and meeting deceased relatives are not accounted for in many physiological theories. No physiological theory, they suggest, can explain veridical perception of loved ones who have died when the NDEr does not know prior to the NDE that the person has died. Thus, even combinations of physiological theories fail to adequately explain NDEs.

The weaknesses in other physiological theories will be shown to haunt the position that NDEs are caused by naturally psychotropic hormones in the body released near actual or feared death. It is also alleged that psychedelic drugs that act on those receptors result in a subjective state that mimics key features of NDEs. One candidate often discussed is ketamine, an animal anesthetic that in the past was used on humans, that affects NMDA receptors, and that results in psychedelic affects in humans (Jansen, 1989, 1996). Although Karl Jansen's claims have been sharply criticized (Bianchi, 1997; Fenwick, 1997; Kungurtsev, 1997; Morse, 1997; Twemlow & Gabbard, 1997; see also Jansen, 1997, in which he replied to his critics), I will use ketamine as an example of how drugs can be used to make a reductionist argument regarding NDEs:
1. Ketamine results in subjects experiencing phenomenological features found in NDEs, often surpassing a score of seven on the NDE Scale.
2. Ketamine acts on neurotransmitter receptor site S that is sensitive for neurotransmitter Y.
3. It is probable that Ketamine mimics the effects of large doses of Y.
4. Thus higher than normal levels of Y in extremis can trigger NDEs.
5. From an evolutionary perspective such high levels may function to calm an organism that is facing death.

As previously stated, not everyone who believes that neurotransmitters play a key role in causing NDEs are reductionists. For example, Rick Strassman, who has performed extensive experiments with DMT, is not a reductionist; see his discussion of ketamine in Strassman (1997). It may be the case that certain events must happen in the brain to “trigger” the soul’s release from the body, and these events will involve neurotransmitters. However, a skeptic concerning the existence of the soul, a transcendent realm, and/or survival of death could argue that if neurotransmitter release can explain the formation of NDEs, there is no need to posit a soul or support any survivalist interpretation of NDEs. Although I have argued elsewhere (Potts, 2011) that Occam’s Razor is not decisive in rejecting a particular scientific explanation, an analysis of the subjective states resulting from a particular psychedelic and those of NDEs could at least answer the question of whether NDEs are sufficiently similar to a drug-induced experience to suggest that they involve the same chemical facilitator.

The debate over this issue has been extensive, beginning with the discussion regarding whether drug-induced experience could induce a mystical or transcendent experience in general. William James (1902) suggested a non-reductionist interpretation of his experiences with nitrous oxide. Later, Aldous Huxley (1954), Huston Smith (2000), and Stanislav Grof (2009) all suggested that psychedelic drugs such as mescaline (Huxley) and LSD (Smith, Grof) could open the door to a transcendent realm, with R. C. Zaehner (1957) strongly disagreeing. With the beginning of the modern study of NDEs, this debate extended to those experiences. The debate has ranged over the major psychedelics, although focusing mainly on LSD, ketamine, and DMT (Greyson, 2000, 2010; Greyson, Kelly, & Kelly, 2009; Grof, 1985, 2009; Jansen, 1989, 1996; Luke, 2008; Morse et al., 1989; Ring, 1988; Rogo, 1984; Siegel, 1980; Strassman, 1996, 2001; Strassman et al., 1994; Yensen, 1988). The main issue is whether there is any more to NDEs than a physical experience caused by a neurological reaction to
psychedelic-like substances in the body. A secondary issue is whether psychedelics themselves are doorways to a transcendent realm. With this debate in mind, the next section will address DMT.

DMT

DMT and its close relative 5-methoxy-N,N-dimethyltryptamine (5-MeO-DMT, also known as bufotenine due to its presence in the venom of frogs from the *Bufo* genus) were first used as psychedelic substances by the native tribes of South America, especially in the Amazon region of Brazil (Stafford & Bigwood, 1993). They were used in religious ceremonies, medicine, magic, and various rites of passage and are still used today by two Brazilian religious groups: the Santo Daime and the Uniao de Vegetal (Riba, Valle, Urbano, Yritia, Morte, & Barbancu, 2003). The natives and the religious groups drink a beverage called ayahuasca that combines various parts of native plants. The active ingredients are DMT and monoamine oxidase inhibitors.

Since the synthesis of DMT in 1931, it has been researched, especially from the 1950s (Szara, 2007) until it was placed on Schedule I of the Controlled Substances Act in 1970, although there was already a trend toward making it illegal in individual state laws (Stafford & Bigwood, 1993). Since then, research has been more sporadic on DMT—and on psychedelics in general—but recent speculation about a possible causal role of DMT in schizophrenia has kept interest alive in DMT research (see, for example, Heller, Narasimhachari, Spaide, Haskovec, & Himwich, 1970; however, more recent research has yielded conflicting results; see Gable, 2007), and the pace of research articles published on DMT has increased.

In these publications, researchers have reported on their investigations of DMT’s chemical properties, pharmacology, and psychedelic effects. DMT is synthesized from the amino acid tryptophan (Jacob & Presti, 2004). Its molecular structure is simpler than the other tryptamine psychedelics such as psilocybin and bufotenine (Gable, 2007; Strassman, 2001). Solomon Snyder and Elliot Richelson (1968) found that tryptamines and other classes of psychedelics “all approximate a unique conformation, simulating in part rings A, B, and C of LSD” (p. 206). DMT is chemically similar to serotonin, and like LSD and psilocybin, DMT is a serotonin agonist at the 5-hydroxytryptamine (5-HT\textsubscript{2A}) and 5-HT\textsubscript{2C} receptors (Riba, Valle, Urbano, Yritia, Morte, & Barbanoj, 2003; Yritia, Riba, Ortuño, Ramirez, Castillo, Alfaro . . . Barbanoj, 2002). This similarity is important because
5-HT receptor sites exist in human central tissue in areas known to subserve emotional, perceptual, and somatosensory function. . . . 5-HT2 receptors were found in human cortical areas, mammillary bodies, claustrum, amygdala, caudate, putamen, nucleus accumbens, hippocampus. . . . cortex and striatum” (Strassman et al., 1994, p. 103).

The function of endogenous DMT is unknown. Endogenous DMT has been found in smaller amounts in urine and blood and in larger amounts in the stool, which has led to the suggestion that DMT may play some role in intestinal function (Kärkkäinen et al., 2005). However, Michael Jacob and David Presti (2005) pointed to recent research revealing the role of neurotransmitters outside the brain, including those in the gut, in helping to establish mood. They suggested that natural DMT has a calming rather than a psychedelic effect, which they believe has to do with DMT’s affinity for the trace amine (TA) receptor. Strassman (2001) suggested that the pineal gland may produce DMT, referring to its secretion of the non-psychedelic tryptamine N-acetyl-5-methoxytryptamine (melatonin).

Natural DMT is quickly broken down in the body, most likely through “first-pass enzymic degradation by monoamine oxidase (MAO)” (Yritia et al., 2002, p. 272). Without a monoamine oxidase inhibitor such as harmaline, which is found along with DMT and other MAOIs in the ayahuasca beverage, orally ingested DMT is dormant (Yritia et al., 2002). Besides oral ingestion, DMT can be smoked, snorted, or injected (Rodriguez, 2006). Early on, Stephen Szara (1969) discovered that DMT’s effect on animals is similar to the effects of mescaline and of LSD, although with short-lasting action: 45 minutes to one hour. Animals given 5-MeO-DMT engage in “head shaking, forepaw treading, flat-body posture, straub tail, and hindlimb abduction” (Shen, Jiang, Winter, & Yu, 2010, p. 661), behaviors that are standard responses to many hallucinogens; the authors noted that it also leads to sham rage in cats. Szara (1956) also discovered the psychedelic properties of DMT in humans: “visual hallucinations and illusions, distortion [sic] of the spatial perception and body image, disturbances of thought and speech, euphoria” (Szara, 1956, p. 441). Physical symptoms include an increase in heart rate and blood pressure and pupillary dilation (Strassman, 2001; Szara, 1956).

Strassman and his colleagues (Strassman et al., 1994) have done the most recent detailed studies of DMT’s effects on humans. With 12 subjects who were experienced users of psychedelics, they administered DMT via IV; one subject dropped out of the experiment. At first, on different days subjects would receive a low dose (0.04 mg/kg) and
a high dose (0.4 mg/kg) of DMT. Later, in a double-blind study with saline placebo, they received doses of 0.05, 0.1, 0.2, and 0.4 mg/kg. Doses of 0.2 and 0.4 mg/kg resulted in “the nearly instantaneous onset of visual hallucinatory phenomena, bodily dissociation, and extreme shifts in mood. . . . Auditory effects were noted in about half the subjects” (Strassman et al., 1994, p. 101). At the highest dose, subjects experienced a nearly immediate “rush” in which the normal perceptual field was replaced with a hallucinogenic one. The psychological effects peaked after two minutes and ended in most subjects by 30 minutes (Strassman, 1996). Subjective experiences that Strassman and his colleagues (1994) reported were almost all visual and included “concrete, well-formed, visual images” such as “a fantastic bird” or “human and ‘alien’ figures” (p. 100). Subjects also reported less specific visual images such as unusually intense colors or “beautiful, colorful pink cobwebs” (p. 100). Auditory effects including “chattering” or “enhanced ‘auditory acuity’” (p. 101). Cognitive effects ranged from “ineffability” to a “sense of experiencing ‘full intelligence’ or ‘full consciousness’—but an ‘emotionally detached’ entity” (p. 102). Some subjects also reported a sense of “an almost complete loss of control” (p. 102).

In another study, researchers compared the psychological effects of DMT and ketamine in nine (of an original fifteen) healthy subjects who completed the experiment by being given both drugs (Gouzoulis-Mayfrank, Heekeren, Neukirch, Stoll, Stock, Obradovic, & Dovar, 2005). Some types of experiences were common to both drugs, such as bodily misperceptions, including a sense of the body melting and a sense that even soft contact on the body made permanent indentations. Subjects experienced their body boundaries as vague. Also, high doses of both drugs resulted in paranoia and a sense of “altered meaning or significance” (p. 307). Visual hallucinations were more common with DMT, and subjects given DMT also reported auditory sensations of hearing whispering or a telephone ringing. Visual hallucinations associated with DMT administration included “complex geometrical patterns on the walls and body parts on the computer screen” (p. 307). Two subjects during DMT administration showed evidence of paranoia, believing that the scientists conducting the experiment were being directed by a higher being of some kind. Subjects’ thinking became disorganized, and logical connections between propositions loosened. Mood changes occurred, but two subjects felt anxious because they did not believe the mood changes were real as much as caused by DMT.

Ketamine led to “dose-dependent hypomimia, psychomotor poverty,
poverty of speech, apathy and withdrawal. Six subjects displayed catatonic-like behavior” (Gouzoulis-Mayfrank et al., 2005, pp. 207–208), and all subjects displayed emotional blunting and detachment from other people. Visual hallucinations occurred in only one subject, which involved “cartoon-like figures moving on the computer screen” (p. 208). Some subjects reported a sense of the body moving through space. With only one exception, subjects found the experience unpleasant. The authors concluded that DMT, an LSD-like drug, causes symptoms similar to the positive effects of schizophrenia, and ketamine, which is similar to PCP, causes symptoms similar to the negative effects.

Strassman (2001) was impressed with the subjects in his experiments who had visions of races of beings that the patients interpreted as “transdimensional” or “extraterrestrial.” Subjects reported hallucinations of intelligent insectoid and reptilian beings, and some hallucinations involved aliens experimenting and probing the subjects. A few subjects experienced NDE-like visions, including a vision of a tunnel that included seeing gremlin-like antagonistic beings as well as good beings who were aiding the subject. Strassman (2001), like Rodriguez (2006) after him, went as far as to suggest that the “realms” the subjects experienced might actually exist on some world in another dimension. But, in my view, this interpretation lends too much evidential value to the subjective certainly of some subjects that their experience was of an alternate dimension or world. Subjective certainty does not imply the truth of that about which one is certain. Person P could be certain that she sees a rabbit 20 yards from her—until she draws closer and sees that the animal is a squirrel. Her certainty that she saw a rabbit does not turn a squirrel into a rabbit. Such a “noetic quality,” a sense of certainty that one is gaining knowledge through an experience, is also present in mystical experiences, as William James (1902/1997) noted. As James recognized, although such knowledge may have overwhelming epistemic value for the person who had the experience, it does not necessarily have such epistemic value for those who did not have it.

**Does DMT Underlie NDEs?**

D. R. Hill and Michael Persinger (2003) argued that mystical experiences of all types, in which category they included NDEs, might be caused by strong magnetic fields that trigger the release of DMT by the pineal gland. They conducted an experiment in which weak elec-
tromagnetic fields were released into both cerebral hemispheres; the most vivid experiences occurred when the magnetic fields sent to the right hemisphere were 10% more intense than those sent to the left. Subjects experienced a sense of separation from their bodies, a white light, a sense of bodily deformation, and entities such as deceased relatives or another kind of being. They also experienced hallucinations of “cartoon characters, specific animals, insects, and reptilian-like references” (p. 1049). In addition, some experienced “odd tastes and smells and intense fear” (p. 1049). Hill and Persinger (2003) hypothesized that higher DMT levels will correlate with magnetic field signals sent to the brain. A major problem with Persinger’s studies, however, was noted by Pehr Granqvist and his associates (Granqvist, Fredrikson, Unge, Hagenfeldt, Valind, Larhammar, & Larsson, 2005) who used Persinger’s equipment and found that suggestion from the experimenter, rather than weak magnetic fields, was the cause of the reported sensory experiences. This result led to considerable discussion and controversy, and debate has continued (Larsson, Larhammer, Fredrikson, & Granqvist, 2005; Persinger & Koren, 2005; St.-Pierre & Persinger, 2006).

Van Lommel (2010) expressed the belief that DMT production is stimulated by epinephrine and norepinephrine. He indicated that two factors may increase the amount of DMT near death: (1) release of epinephrine and norepinephrine in response to the stress of terminal illness or injury, and/or (2) massive release of DMT by the pineal gland as the body begins the dying process. Van Lommel claimed that experiences similar to NDEs occur with the use of DMT. But I find problems with his position, specifically the absence of evidence for either mechanism and especially that either mechanism produces DMT in large enough amounts for psychedelic effects. These questions could be investigated. Researchers could measure the amount of DMT in the blood and/or tissues at the time of cardiac arrest and afterward to know that there is a correlation between cardiac arrest and sufficiently high levels of DMT. However, even if correlations could be shown, it would not count as causation without particularly strong evidence. I believe the value of van Lommel’s theories is to provide models for designing future experiments to test them.

Strassman (2001) and Hill and Persinger (2003) have independently made a strong claim: that DMT plays the main causal role in producing all mystical experience and all NDEs. Even van Lommel has not gone that far. But as Peter Fenwick (1997), speaking of ketamine, has noted, a particular drug such as ketamine may be involved
in some, but not necessarily all, NDEs. The same could be speculated regarding DMT. This assumption seems reasonable given the variety of situations in which NDEs occur. Although the claim that one drug, endogenous DMT, may produce NDEs while the body is near death and under great stress, is a simple hypothesis, it ignores the multiple redundancies and different sets of neurons (and sometimes different neurotransmitters) that yield similar experiences and behaviors. It is also possible that multiple systems contribute to NDEs; perhaps a ketamine-like blockage of the N-methyl-D-aspartate (NMDA) receptor combined with DMT’s action are necessary and jointly sufficient conditions for an NDE to occur. Fenwick (1997) also noted that because NDEs occur in many different situations, not all involving a shock to the brain through lack of oxygen or some other issue, it is unlikely that a single neuroprocess is the cause of all or most NDEs.

In addition, one should consider evidence of veridical perceptions occurring that go beyond current explanatory models of brain functioning. Pam Reynolds (Holden, 2009; Sabom, 1998) is a case in point. In order to have a large basilar artery aneurysm safely removed from her brain, there was a need to drain her blood, cool her body, and stop her heart. Near the start of the surgery, before cardiac arrest took place, she was fully anesthetized with eyes taped shut and ears plugged with speakers. Loud, rapid clicks were transmitted to one ear and white noise in the other. Her head was covered except for area around the incision. Yet despite the sensory blockage due both to being anesthetized and to the lack of visual and auditory input by normal means, Reynolds gave a detailed accounting of her surgery afterwards, with a number of specific facts verified, including the use of a bone saw and a groin incision. She heard a female voice saying that her right side vessels were too small and a male voice saying to try making an incision in the other side (Holden, 2009; Sabom, 1998). She also had a transcendental NDE in which she saw deceased relatives, possibly during the time she was in cardiac arrest, though it is impossible to tell for sure. However, it remains an impressive case.

Many NDEs occur after cardiac arrest, a devastating insult to the body that leads to a flat EEG in less than a minute. While the EEG only measures neocortical activity, a lack of cortical activity is at least prima facie evidence for a lack of consciousness—yet NDErs often have experiences in which they present specific, verifiable details about their resuscitations, have transcendental experiences that have a strong narrative structure (instead of the often choppy experiences involving DMT or ketamine), and occur with a clear sensorium (Grey-
The increasing number of veridical NDEs documented, including some in children, suggests that something other than an endogenous drug-based theory is adequate (see Ring & Lawrence, 1993; Rousseau, 2012).

Importantly, adherence to a DMT or ketamine model does not negate the possibility that NDEs are evidence of survival of death, of a soul that is separable from the body, or of some kind of “universal consciousness.” Van Lommel (2010) is a case in point, with his belief that the pineal gland, through its release of DMT, is the body’s link to universal, nonlocal consciousness. Strassman (2001) believed in the ontological reality of the claims of beings from other dimensions DMT experiencers claim to see. Rodriguez (2006) agreed. Such an emphasis on the pineal gland as the link between worlds sounds a great deal like René Descartes’s (1649/1989) claim that the pineal gland is the central point at which the soul interacts with the body (Lokhorst, 2008).

The most compelling reason against the DMT hypothesis of NDEs is the same reason the ketamine theory is flawed: The phenomenology of drug-facilitated experiences is far more different from than it is similar to the phenomenology of NDEs. An examination of the DMT literature indicates that studies such as Christopher Cott and Adam Rock’s (2008) and David Luke’s (2011) that argued for a similarity between DMT phenomenology and NDEs—with the former report emphasizing noetic quality and ineffability and the latter the appearance of discarnate entities—do not square with the bulk of the evidence. This is a similar problem to the one ketamine faces: The predominantly emotionally distressing experiences of ketamine do not square with the predominantly emotionally pleasurable NDEs. In the case of DMT, Strassman’s list of experiences can be compared to the items of the NDE Scale that reflect common-phenomenology from among hundreds of NDEs. The NDE Scale includes questions about the following (modified from Greyson, 2007, p. 409); components similar to those in DMT phenomenology are italicized:

**Cognitive items**
- Time distortion
- Thought acceleration
- Life review
  - *Sudden understanding*

**Affective items**
- Peace
- Joy
Feeling of cosmic unity

Light

**Purportedly paranormal experiences**

*Sensory vividness*
- Extrasensory perception
- Precognitive visions
- *Out-of-body experience*

**Transcendental items**

*Unfamiliar environment*
- Unidentified “presence”
- Religious or deceased spirits
- Border or “point of no return”

The list of DMT experiences gleaned from Strassman (2001) includes the following; components similar to those in NDE phenomenology are italicized:

*Vivid colors*
- *A Taj Mahal-like building*
  - A merry-go-round with people in 1890s outfits
  - Clowns (very common)
  - Circus imagery (very common)
  - Emotional shock
  - A sense of annihilation of personal identity

*Feeling loved*

*Gaining information*

*Noetic quality (“realer than real”)*
- DNA-like spirals
- Alphabet-like shapes
- Reptilian or insectoid alien beings
- High-tech machine-like objects
- Computer Board
- Ballroom
- Being on an operating table with “entities” examining the experiencer
- “Angelical singing” by “impersonal beings”

*Bright light*

*Sense of separation from the body*
- Programmed stick figures as in a video game
- Crocodiles raping and crushing an experiencer
- *A great, impersonal power behind all things*
- Hundreds of forms of beautiful women

Although some similar phenomena are common to both experiences, many unique phenomena characterize each of them. All perception involves interpretation, but it would be difficult in this case to
attribute content differences to interpretation alone. In addition, some similarities do not parallel these two experiences alone; ineffability, for example, characterizes mystical or religious experiences in general. On the other hand, the particular ineffability of the two experiences is only superficially similar: The ineffability of being probed by aliens is not similar to the ineffability of NDEs. Both the less common distressing NDEs (Bush, 2009) and DMT experiences involve demonic beings, but NDEs lack the science-fiction setting that often characterizes DMT experiences. Furthermore, some aspects of DMT experience resemble other psychedelic experiences more than NDEs; for example, the sense of alienation from one’s body is similar in DMT and in the other psychedelic experiences psychedelics of ketamine and LSD. And importantly, frequent or key NDE phenomena have not, to my knowledge, been reported among DMT experiencers, such as traveling through a tunnel into a transcendent realm or reporting subsequent to the experience that one perceived veridically during it. And finally, aftereffects of the experiences are dissimilar: Apparently permanent changes after NDEs are the rule rather than the exception (Noyes, Fenwick, Holden, & Christian, 2009) but after DMT experiences are the exception rather than the rule (Strassman, 2001).

This argument is not to claim that DMT plays no contributing role at all in the production of NDEs: It very well may. But thus far the evidence in its favor is not as strong as its advocates, such as Strassman and van Lommel, have claimed. If NDEs are neurally mediated, it is more likely that such complex experiences involve multiple neurotransmitters and regions of the brain other than or in addition to HT serotonin receptors. Veridical perceptions and complex experiences of NDErs during total anesthesia and cardiac arrest support the possibility that nonphysical mechanisms may be at work in NDEs, or if the mechanisms are physical, they appear to defy the prevailing conception of science. At this stage the cause or causes of NDEs cannot be identified with reasonable certainty. Rather, there is, given the evidence, reasonable certainty that DMT is neither the only nor the chief mechanism in the production of NDEs.

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BOOK REVIEW
Ryan D. Foster, Ph.D., LPC-S, NCC
Marymount University


As a counselor educator and practitioner whose primary research interest is to broaden understanding of transpersonal phenomena among mental health care professionals, I was looking forward to reading Making Sense of Near-Death Experiences: A Handbook for Clinicians, and even more excited to learn that several experts in the field of near-death studies had written chapters in this book. In addition, because I co-authored a chapter (Foster, James, & Holden, 2009) a few years ago in which my co-authors and I reviewed implications of near-death experience (NDE) research on health care professionals, I was curious to see what additional applications the authors of the chapters in Making Sense offered.

In Jan Holden’s Foreword to the book, she described her perception of the intent of this edited work: to provide health care professionals from a variety of disciplines accurate and timely information that may assist them to better prepare for a patient or client’s report of an NDE. Unfortunately, I found that this text offered nothing new to health care professionals that couldn’t be found elsewhere, and overall seemed to lack important details that would assist health care professionals in developing a more complete picture of NDEs. In my opinion, health care professionals would be served better in reading something like The Handbook of Near-Death Experiences (Holden, Greyson, & James, 2009) in which chapter authors provided comprehensive re-

Ryan D. Foster, Ph.D., LPC-S, NCC, is assistant professor in the Department of Counseling at Marymount University in Arlington, VA, and assistant editor for media reviews for the Journal of Near-Death Studies. Correspondence regarding this Review should be addressed to Dr. Foster at Marymount University, 2807 N. Glebe Rd, Ballston Rm 809, Arlington, VA 22207; email: rfoster@marymount.edu.
views of all published research through 2006. In the spirit of full disclosure, I co-authored one of the chapters in the *Handbook*.

One of the prominent issues that plagues *Making Sense* is the lack of focus on scholarly writing throughout each chapter. Likely this concern is due to a poor editing process. For example, the authors were consistently inconsistent with changing between use of third person and first person to describe themselves—sometimes within the same paragraph. Although this book was intended for a practitioner-oriented audience, I found the inconsistent use of basic scholarly writing style made many portions of the book difficult to read; hence, I struggled to understand some of the theses in many of the chapters. Notwithstanding these weaknesses, I did find aspects of value throughout the book, which I describe in the following review of the contents of each chapter.

**Chapter Topics**

Subsequent to Jan Holden’s Forward and editor acknowledgements, editors Mahendra Perera, Karuppijah Jagadheesan, and Anthony Peake provided the reader with an introduction and brief summary of each chapter. The most helpful part of the Introduction was an acknowledgement of their intent to balance presentation of NDE research and their authors’ unique views of practical implications for health care practice. However, I disagreed with their editorial intent to allow authors to express their individual perspectives, indicating to me a non-scholarly focus, opening up debate about the degree to which editors ensured that authors’ points of view were based on tentative research conclusions.

Chapter One was written by P. M. H. Atwater. In typical Atwater style, she quoted herself as a precursor to the chapter content. Atwater began by giving intriguing background information about Raymond Moody’s early interaction with George Ritchie and the subsequent formation of the Association for the Scientific Study of Near-Death Phenomena, now the International Association for Near-Death Studies. The remainder of the chapter included definitions and features of NDEs, the bulk of which were culled from Atwater’s own investigations—which she referred to as research. Here, too, Atwater made a basic mistake in making conclusions based in science: She seemed much too convinced that her investigations yielded inarguable results.

In Chapter Two, Perera and Rohan Jayasuriya presented a review
of epidemiological studies. I expected to see references throughout the chapter to Nancy Zingrone and Carlos Alvarado’s (2009) work as well as Allan Kellehear’s (2009) chapter in *The Handbook of Near-Death Experiences* (Holden et al., 2009). Alas, the authors of this chapter made no reference to these prior analyses. However, Perera and Jayasuriya presented an analysis based in solid scientific methodology with useful implications for future research.

Jagadheesan and John Belanti discussed NDE phenomenology in Chapter Three. A unique aspect of this chapter was Belanti’s narrative of his own NDE and subsequent application of Moody’s (1975) original 15 features. The authors also discussed common aftereffects of NDEs as well as characteristics that distinguish NDEs from other brain-states, such as hallucinations, drug-induced states, and potentially related transpersonal phenomena. They also reviewed ways in which a practitioner may distinguish NDEs from other states of consciousness through use of Ring’s (1980) Weighted Core Experience Index and Greyson’s (1983) NDE Scale.

In Chapter Four, Ornella Corazza and K. A. L. A. Kuruppuarachi identified cross-cultural aspects of NDEs. They reviewed research on NDEs across the globe from China, Japan, India, Sri Lanka, and Melanesia, providing a comparison of non-Western and Western NDE features. This chapter, in my view, is one of the most complete chapters in the book.

Cherie Sutherland presented an excellent review of the literature on children’s NDEs in Chapter Five. She provided a helpful comparison of child NDEs to adult NDEs and reviewed in detail many of the concerns relevant to collecting retrospective accounts of NDEs that can be several decades old. Sutherland linked results from investigations into accounts of child NDEs to a number of implications for both health care professionals and parents whose children report NDEs.

In Chapter Six, cardiologist Pim Van Lommel discussed pathophysiological aspects of NDEs. He reviewed related physiological and chemical processes in coming close to death, such as oxygen deficiency, carbon-dioxide overload, ketamine, endorphin, and psychedelics. The most helpful aspect of this chapter, in my opinion, was his review of brain functioning when people come close to or enter clinical death.

Chapter Seven, written by Satwant Pasricha, included a review of common psychological aspects of NDEs via the use of case studies. Pasricha distinguished NDEs from such psychological phenomena as birth memory, depersonalization, autoscopy, and post-traumatic stress disorder. He ended his chapter with guidelines for mental health pro-
fessionals who counsel NDE clients. Curiously, he made no reference to the disclosure needs of NDErs outlined by Hoffman (1995a, 1995b); certainly, as a professional counselor myself, I find Hoffman’s qualitative study incredibly useful as I attend to clients who have reported NDE or NDE-like phenomena.

In Chapter Eight, Peake placed close focus on a commonly reported experience in NDEs, that of a bright, all encompassing light or source of light. He reviewed applications of particular forms of light as an agent in heightened levels of consciousness and potential related effects on the brain. Additionally, Peake indicated possible connections between zero point energy, a concept from quantum physics, and various levels of consciousness.

In Chapter Nine, Paul Badham discussed religious aspects of NDEs. Particularly intriguing in this chapter is inclusion of descriptions of NDE-related phenomena in major Eastern and Western religious texts—a topic previously addressed by Farnaz Masumian in The Handbook of Near-Death Experiences (Holden et al., 2009).

In Chapter Ten, Peter Fenwick reviewed aftereffects of NDEs and subsequent implications for medical professionals. I found it curious that this chapter was included, as the information therein seemed repetitive based on previous chapters in this book.

Chapter Eleven, written by David Wilde and Craig Murray, acted as a concluding chapter to the book. The authors summarized major NDE research findings and implications for future research. From my point of view, Wilde and Murray provided an honest and accurate view of the current state of NDE research, including the methodological issues that have plagued prior NDE research. Although this chapter was a valuable inclusion, it was curious to me that the editors also included a subsequent Conclusion chapter that, to me, was unnecessary and, once again, repetitive.

**Concluding Evaluation**

Overall, I ended up with a conflicted view of this book. Whereas I agree that a broad range of health care professionals would do well to have a concise overview of NDEs in order to provide the best professional care to patients and clients, I think the editors could have been more comprehensive in their editorial process. In addition, much of the information was repetitive, contradicting the idea of having a concise guidebook. The actual text could have been greatly improved by applying basic writing edits and adhering to a more scholarly writing
style. Additionally, in some cases I thought the editors should have mitigated author opinion by explicitly distinguishing points of view versus conclusions based in research evidence. Although I might recommend this book to a general audience of health care providers, I believe there are much stronger texts that can serve as more comprehensive yet easily accessible guidebooks for health care professionals, particularly those who are most likely to be first line responders to patients or clients who report NDEs.

References


BOOK REVIEW

Cliff Hamrick, M.S., M.A., LPC

Austin, TX


Since childhood, I have had two interests: science and the paranormal. I would often sneak away into my school library to read books ranging from ecology to séances, astronomy, and ghosts. My interests were varied, and I never saw a contradiction between them. Eventually, when it came time to go off to college and choose a career path, I went the route of science. I studied biology and eventually went on to graduate school to study biology and science education, which was followed by a few years teaching freshman biology at Baylor University and then on to working in the publishing field working on science education products and tests. But I never lost my interest in the spiritual and paranormal, and I believe that this interest was part of my reason to change my career path to become a psychotherapist specializing in spiritual therapy. Some of the work that I do is to help clients reconcile their powerful spiritual experiences with their previous experience or lack thereof. Because of this work, I was interested in writing a book review for the Journal of Near-Death Studies, as some clients are likely to have a near-death experience (NDE) that is outside their spiritual beliefs and experiences.

I believe my background in both science and psychology was the reason I was asked to review Chris Carter’s book, Science and the Afterlife Experience: Evidence for the Immortality of Consciousness. Until I received this book, I had never really thought much of near-death or afterlife experiences nor had I heard of this author. I suppose...
I always assumed that an afterlife was a given fact and not in need of study. But I was excited to receive this book, as the title suggests scientific evidence in support of an afterlife. Unfortunately, I was initially disappointed in the book, though ultimately I also found considerable value in it.

Carter, by his own description, is not a scientist but a philosopher. I think that this difference is at the core of my initial disappointment. This book is the third of a trilogy in which Carter discussed various psychic or paranormal phenomenon, and I agree with his statement that it is not necessary to have read the previous books in order to follow this one. The author stated that “the purpose of this book is to examine the most convincing ancient and modern evidence for the existence of the afterlife; to carefully consider all the skeptical objections; and finally, to arrive at a solution to the deep and ancient mystery” (p. 5). He also listed many practical benefits to belief in an afterlife, including overcoming fear of death, strengthening courage to fight for freedom and social justice, and helping to counter the extreme materialism of modern Western society.

I appreciate and agree with Carter’s position that belief in an afterlife can have practical benefits through a spiritual awakening that can help people cope with many challenges of modern civilization. However, to the purposes of this book, I feel that the author did an excellent job examining evidence for the existence of an afterlife and considering the skeptical objections but fell far short of arriving at a solution to the mystery of an afterlife. This book contributes to the study of an afterlife by being an excellent sourcebook of case studies and counterarguments to skeptics, but it does not add any new evidence or theories concerning an afterlife.

The contents of the book comprise an excellent summary of various cases concerning the afterlife. Carter began with background information on psychic phenomena and NDEs. This introductory section focused on the basis of the controversy surrounding psychic phenomenon, mainly the pushback of scientists after the Catholic Church’s suppression of scientific research. Carter also pointed out that modern physics does not prohibit consideration of psychic phenomenon; however, neither does it necessitate it. In part one, Carter addressed the topic of reincarnation and provided a series of case studies that appeared to me to be credible evidence for the possibility of reincarnation, a list of characteristics common to most cases of reincarnation, and a variety of alternative explanations for reincarnation evidence. In part two, Carter addressed the topic of apparitions, various case
studies of apparitions of the living and the dead, and the characteristics and theories of apparitions. In the final part three, he discussed messages from the dead, including mediums, the work of the Society for Psychical Research, and many case studies of one-way and two-communications with spirits.

Throughout all parts of the book, Carter repeatedly did an excellent job of providing a case study, examining it from various angles, and explaining why this case should be considered evidence for an afterlife of some kind. I appreciated the way he presented the information without making any absolute statements beyond the facts of each case. He never tried to present a case as evidence for a particular afterlife or as support for a particular spiritual tradition.

My primary complaint about this book is that it contained so little of what is generally considered science. When I began reading, I expected to encounter experimental research that pointed to the existence of an afterlife or some kind of scientific explanation of what an afterlife might be that could be explored through experimental research. There was, however, none of this. The book consisted almost entirely of case studies. The author would present the details of a case study and explain how the existence of an afterlife was the most reasonable explanation for the events in the case study and that all other explanations required a form of mental gymnastics if not contortion. When the author was presenting a case study, he was usually being critical of the skeptics of an afterlife or paranormal phenomenon.

Unfortunately, case studies provide only anecdotal evidence—the weakest form of scientific support. Perhaps the greatest problem with anecdotal evidence is that it is based solely upon eyewitness testimony, and as extensive systematic research indicates, eyewitness testimony is highly prone to error. From what I gather, Carter is a philosopher who has not conducted experimental research. He provided a logical argument with anecdotal evidence, but such arguments and evidence have misled humanity in the past. For instance, before humans had circumnavigated the globe, there was a good solid argument, even supported by empirical data, that the Earth was flat and did not move. Despite the quality of the argument and the data, that hypothesis was wrong.

I would have been satisfied if Carter had presented some kind of theoretical framework of what the afterlife is or how it functions that could conceivably be researched experimentally. It does not matter if that research can be conducted this year or even this century. Democritus developed the hypothesis that all matter was composed of indi-
visible particles around 400 BCE, but the technology to support his hypothesis did not exist until over 2,000 years later. However, Carter did not give even a hint as to what consciousness is or what the nature of afterlife might be.

If the word ‘science’ had not been in the title of the book and Carter had instead called it *The Case for an Afterlife*, then I would consider this book a great success. Despite my criticisms of its relatively weak science, Carter made an excellent case that there must be some form of afterlife and that human consciousness persists even after the death of the physical body. I feel that he has presented enough case studies with adequate explanations that for a skeptic to simply “wave away” the notion of paranormal experiences would be a display of arrogance and narrow-mindedness. However, I believe this book is most useful for people like me who believe that there is an afterlife but lack the means to make a coherent argument for that belief. The long sequence of case studies and the thoroughness with which Carter dissected them provides an excellent resource for those who find themselves on the losing end of an argument with a staunch but less well-informed skeptic. I would also hope that some budding scientists out there would pick up this book and realize that there is enough of a logical argument and preliminary scientific support for the possible existence of paranormal phenomena that these phenomena are truly worthy of experimental study—whatever form such research might take.
BOOK REVIEW

Marlise R. Lonn, M.S., LPC-S
University of Texas at San Antonio


Prior to entering a Ph.D. program, my most recent work experience was with a non-profit hospice as a bereavement and spiritual care coordinator. It was during this time that I became exposed to and interested in the experiences of the dying and their loved ones who were left to grieve them. I witnessed individuals who were near death see and speak to deceased family members who were not visible to anyone else in the room. I listened as bereaved parents, spouses, siblings, partners, and friends shared experiences of having been visited by the recently deceased. And I heard the longing in the voices of some bereaved who wanted desperately to have some sort of sign or extraordinary experience that would confirm the continued spiritual presence of the person who had died. Beyond Goodbye: An Extraordinary True Story of a Shared Death Experience addresses some of these experiences from both a personal and scientific perspective.

The author, Annie Cap is not only a writer but also a therapist trained in emotional freedom techniques, reflexology, massage, aromatherapy, and Reiki, all of which she uses to assist people with a variety of physical and emotional issues. She is a dual citizen of the United States, where she originated, and the United Kingdom, where she has made her home for decades and currently resides. Additional information about Cap and her work can be found at http://www.anniecap.co.uk/.

Marlise R. Lonn, M.S., is a Texas Licensed Professional Counselor-Supervisor and a doctoral student in the Department of Counseling, College of Education and Human Development, University of Texas at San Antonio. Correspondence regarding this review should be addressed to Ms. Lonn at 6850 Enchanted Spring, San Antonio, TX 78249; email: marliselonn@gmail.com.
Although I have no relationship to Cap, after reading her book, I feel as if I know her. That is the personal nature of her book. Cap's story is unique in multiple ways. First, she had a shared death experience (SDE), which is different from, but had similar aftereffects of, a near death experience (NDE). Second, she described the resistance, challenges, and spiritual development that followed her SDE. The experience itself was one thing; living with the ongoing aftereffects was another.

Cap's contribution to the literature in this field is twofold. First, she wrote a book for the layperson. It is easy to read, and she provided the reader with basic definitions as needed. True to her intended purpose, this is a book that may help those who are struggling with the aftereffects of NDEs and similar spiritually transformative experiences (STEs). Professionals who do not share a similar experience but work with near-death experiencers (NDErs) may also gain insight into the mixed emotions and confusing experiences their clients may encounter. Second, Cap's experience was not a “traditional” NDE or other STE. She described an SDE, a rare occurrence but one worth writing about and worth researching in the future, as noted in the Foreword.

The book's Foreword was written by Penny Sartori, Ph.D., RGN, who is a lecturer and researcher on NDEs and has published a book focused on the experiences of intensive care patients. Sartori is one of many experts in the field of near-death studies whom Cap interviewed as she searched for explanations and understanding of what she was experiencing.

In addition to interviewing professionals, Cap engaged in research as she prepared to write this book. In her Introduction, Cap made it clear that she desired to help those who have lost someone they deeply love and to validate and normalize the aftereffects of NDEs and other STEs.

The book is comprised of two parts. The first part encompasses the bulk of the text and focuses on the author's personal transformative experiences. The author's authenticity and transparency is one of the strengths of this book; Cap privileges the reader to experiences, both external and internal, that many people choose not to disclose. A central aspect is the revelation that understanding and adjusting to life after an NDE, SDE, or STE is a process. Cap shared critical aspects of her experiences and her process of adjustment, acceptance, and growth that followed. The second part of the book summarizes information Cap gleaned from interviewing NDE, SDE, STE, and after death com-
munication (ADC) experts. Her story is meant to provide the reader with illustrations, guidance, and a framework for understanding.

In the first two chapters, Cap, the youngest of seven children, recounted the early life of her parents, their distinctly different backgrounds, their passion, and the drama of their marriages and divorces. She provided a detailed account from her own memory and from stories her parents and relatives told her. This background provides richness and context to the rest of her narrative. The author is clear that this is a very personal story, and it is in these first chapters that the reader has an opportunity to gain entrance into her physical and emotional world as well as the nature of her close relationship with her mother, Betty.

Chapters 3–5 introduce Cap’s spiritually transformative story and highlight a series of events that occurred in the seven years following her mother’s death. The author empathically shared in her Mother’s death, an experience that her siblings did not share. This loss left Cap feeling isolated. She stated her hope that her spiritual story will provide a light and lift the loneliness of others who have also experienced shared death but may not have spoken freely of it. This unique experience compelled her to search the Internet to find out if others had similar experiences. This process led her to the experts whom she interviewed and to the realization that her impactful, life-changing SDE aftereffects—were similar to NDErs’ aftereffects.

In Chapter 5, Cap described the extraordinary, empathic contact she experienced with her mother as she passed away. At the time, she did not know she was having an SDE. While on the phone, the author was able to be with her mother as she took her final breaths. As she heard her mother struggle to breathe, she knew that what she had experienced moments before was the same physical processes her mother was going through. This had been her beloved mother’s way of reaching her, of contacting her daughter who lived on another continent.

Chapters 6–8 chronicle the beginning of Cap’s spiritual transformation and belief in an afterlife and the consideration that there may be a God. She began engaging in spiritual practices including prayer and meditation. In Chapter 6, she described her first ADC with her Mother, and from here the story really begins to gain momentum. Wracked by grief, crying—even in her sleep, Cap began to feel someone stroking her hair to comfort her. Fearful and disturbed the first night, later that week she began to realize it was her mother, comforting her the way she did when the author was a child. Cap felt her mother was trying to tell her something important—but the full message was not
yet clear. To further prove her ongoing existence, the author's mother made her presence known in other ways that were undeniable to both the author and her husband. This was the beginning of a complete turnaround in the author's spiritual life.

In Chapter 8 Cap revealed that as a Reiki practitioner, she was familiar with energy work and was a collector of rocks and crystals. After her mother had contacted her, the author also began to feel the presence of other ghost-spirits, to see sparkles, and to experience increased sensitivity to energy, light, and sound as her other senses were heightened. Unwelcome contact by spirits other than her mother began to occur, inciting fear and discomfort.

Substantial challenges in Cap's personal life—seeing ghosts, experiencing synchronicities, finding a spiritual teacher, and becoming a Reiki master—are chronicled in Chapters 9–11. Once Cap began participating in a guided meditation group, she began during meditation to go into trances and to channel, during which she started having conversations with her mother and other deceased relatives. Around this time, the author discovered a method for channeling by writing as opposed to speaking, and the chapter text includes some of her fascinating journal entries. During this time, Cap recognized that some of her childhood beliefs and fears may have been a result of her sensitivity to energies and spirits at a young age. The author continued to read, attend workshops, and learn about entities and angels as part of her spiritual journey.

In Chapters 12–16, Cap revealed much of what she learned about angels, auras, crystals, spirit guides, and mediums. In Chapter 13, she described how synchronicity brought her a new client who was open to the spiritual and was knowledgeable about channeling. From this client, the author learned about an organization where she could take some courses. Cap described a time of confirmation and acceptance of her SDE aftereffects and the extraordinary spiritual experiences of others.

In Chapter 13, as Cap described her recognition of her new spirit guides, I found myself witnessing the strengthening of her belief in what she was experiencing. Finally, in the face of undeniable ongoing experiences of apporting—items disappearing and reappearing somewhere else, spontaneous telekinesis, and channeling, the author was forced to believe in things unseen. As she explained, the confirmations of her experience were fabulous and were coming in various forms and from a variety of people in her life.

Some of the experience Cap gained while attending workshops and
listening to speakers gave her knowledge to be able to have more success and control with voice channeling—and some exposed her to things she did not really want to know. These latter she reportedly opted not to include in this book. In Chapter 16, I shared in Cap’s sense of relief as she conveyed the deep spiritual awakening propelled by the extraordinary experience of seeing and experiencing the flow of love from her mother as she appeared unexpectedly through another person. This encounter served to ease the author’s struggle by fostering an absolute belief in presence of spirits and faith in God. Cap described feeling whole and having increased patience about channeling her spirit guides. As her fear diminished, Cap was more and more open to the signals of spirits when she meditated and felt increasingly confident to meditate on her own. The author shared the experience of recognizing God’s presence and God’s voice and His message for her and her life—a message she shared with her readers through her book.

Part 2 of Beyond Goodbye is introduced by Chapter 17, a brief description of the controversy within medical science about NDEs. Cap introduced the idea of the brain not as a producer but as a receiver of the mind. She also provided background information on a series of NDE studies on cardiac arrest patients. Thus began the more objective part of the book in which the author shared information she researched during her personal quest for understanding.

Chapter 18 presents a list of common features of NDEs. These can include light, a loving presence, a life-review, an out-of-body experience, and visions of angels as well as deceased relatives, close friends, and pets. Cap reminded readers that a small percentage of NDEs are not pleasant. However, pleasant or not, most NDEs result in overall positive, life-changing aftereffects. The author briefly outlined possible explanations as to why some people have NDEs and others do not.

In her interviews with NDE experts, Cap detailed psychological, physical, and attitudinal SDE aftereffects. She learned that, unlike her, some people do not respond well to the impact an NDE, SDE, STE, or ADC has on their lives, and they are unable to integrate their experience and changed self into their lives. These people may struggle with feeling like they are going crazy; they are part of the audience Cap hoped to reach with her story. She encouraged those who have experienced an NDE to visit the websites and resources listed in her book.

With regard to moving research forward, Cap shifted her focus to sharing information from cardiac arrest studies. Because they are
based in research and are scientific in nature, she believed they can lend credibility to and validate the experiences reported by people who have some of these rare NDE encounters.

To conclude the book, Cap shared her theory of the seventh sense. Beyond the five senses, and beyond the 6th sense of psychics, the seventh sense is about openness and receptivity that helps move a person toward one’s full potential when one touches the other-side-of-life. This is a concept that came from her own experience and from talking with others. Here, Cap posed an appropriate question, “What’s next?”

I found the strength of this book to be in its personal nature. That same quality contributed to the book’s weakness. At times, I found chapters to be a bit choppy and to leave some gaps. These aspects may have been necessary given the author’s need to focus the content and sift through the variety of significant experiences, struggles, and transformations she had experienced. In the second part of the book, beyond a resource list and a list of common STE and NDE features and aftereffects, I would have appreciated Cap using her unique position to offer additional practical guidance, both for those currently processing their own experiences and as a primer for those who witness experiencers’ struggles and want to offer support.

Those who are not already open to energy work, channeling, or other supernatural phenomenon may not be able to identify with Cap and the way she responded to her own STE. However, because she wrote in such an honest, accessible style about myriad supernatural, spiritual experiences, I suspect many readers will devour it in a weekend, whereas others may choose to savor it over the course of a few weeks.

*Beyond Goodbye* is different from other books in which authors have written about their own or others’ NDEs and, as such, serves an important purpose. Although Cap’s SDE was indeed rare, she wrote about her course of development in a way that may empower others to process their own experiences with less fear and more hope. These qualities were evident in the conclusion of Part 1 as Cap wrote about her revelation of no longer fearing physical death, of believing firmly in the continuance of life beyond death, and of the existence of angels—knowledge she acquired during the seven year journey following her SDE.

For me, three primary themes emerged and were interwoven throughout the book: personal narrative, spiritual transformation, and synchronicity. The first is simply the author’s story. Cap shared her experience in a candid way intended to open parts of her life to the reader, exposing the sometimes private encounters of those who are
trying to make sense of the supernatural in their lives. The story is also a vehicle for exploring a particular realm of spiritual awakening and reconnection to faith and God. For the author, an important part of experiencing beyond-death contact with her mother was her movement from atheist/agnostic to believer.

Time and again throughout her narrative, Cap entered and exited relationships and became attuned to the synchronicity that her new openness enabled her to recognize. Some shifts in noticing relationships and events are subtle, but can have a profound impact when recognized and acknowledged. These threads woven throughout *Beyond Goodbye* are unique and yet border universal experiences. I recommend this book to individuals who may be struggling with the aftereffects of an NDE, SDE, STE, or ADC. I also urge health professionals to read it as a possible recommended resource for their clients and patients struggling in the aftermath of STEs and needing the sense of personal companionship and instillation of hope that Cap’s book has the potential to provide.
BOOK REVIEW

Susan Varhely, Ph.D., LPC
Adams State University

Proof of Heaven: A Neurosurgeon’s Journey into the Afterlife
by Eben Alexander, New York, NY: Simon & Schuster, 2012,
$29.99 unabridged CD ISBN (978-1-4423-5931-4), $17.95 audio

To Heaven and Back: A Doctor’s Extraordinary Account of
Her Death, Heaven, Angels, and Life Again: A True Story
by Mary C. Neal, Colorado Springs, CO: WaterBrook Press, 2011,
$25.00 unabridged CD (ISBN 978-0-385-36297-9), $38.00 audiobook

These two books, Proof of Heaven and To Heaven and Back, are ac-
counts of deeply personal near-death experiences (NDEs) by physi-
cians. I recognize the profound meaning the books represent for the
authors as well as the courage it must have taken for persons of sci-
ence to relate experiences that seem to challenge what they had been
taught, what they had lived by, and, perhaps, who they thought they
were. I feel a deep sense of respect for them and for their commitment
to share their message, and I am honored to be reviewing their work.

One might expect a great deal of similarity among various accounts
that present personal NDEs, especially if one is not that familiar with
this area. Although, the core or essence of the experiences for both
of these authors, Mary Neal and Eben Alexander, is similar, I found
the totality of the reading experience to be very different. What this

Susan Varhely, Ph.D., LPC, is a psychotherapist, professor, and Chair of the Depart-
ment of Counselor Education at Adams State University in Alamosa, CO. Correspon-
dence regarding this review should be sent to Dr. Varhely at email: scvarhel@adams.
edu.
difference immediately emphasized for me is how very much an individual’s personality, way of moving through the world, and belief system are reflected in one’s writing and in what and how one communicates. The interpretation and meaning attached to experiences are influenced not only by personal cultures but also by individual hopes and dreams, by perceived needs, and by desires sought.

**Summary of *Proof of Heaven***

Alexander’s text is short—35 chapters—each brief and succinct. One should not, however, confuse brevity with ease of reading. On the contrary, each chapter is filled with descriptions and teachings, some quite complicated and unquestionably written by a scientist and, as he put it, “seeker of truth.” There is nothing sentimental about this work. One learns about the workings of the brain and meaning of consciousness as well as the limitations of human language to express experiences of deeper spiritual realms.

It is clear that Alexander wanted readers to grasp the importance of his experience, the unlikelihood of it occurring to someone like him with a scientific background and little religious connections, and his difficulty communicating its true essence. Although I was aware that much of what is experienced within an NDE is separate from the person on the physical plane, Alexander’s physical context did help me to understand the person who had the transcendent experience and enabled me to feel more like a companion on the journey rather than just an observer of it. At several points I found I had to really engage my intellectual processes with focused concentration. Only occasionally were my emotions tapped. After reading some of the more complex chapters, I found I wanted merely to sit still and ponder what I had just read. I found it a thought-provoking and extremely interesting experience.

In the Prologue, Alexander introduced himself with a peek into both his personality and his training as a neurosurgeon. He also laid the groundwork for the serious and unusual illness that arose suddenly, progressed rapidly, and resulted in, as he termed it, his brain “crashing.” He related how he slipped into a coma that lasted 7 days, during which time the outer surface of his brain, the neocortex, was totally nonfunctional. He opened the doorway to his remarkable journey: “The neocortex was out of the picture. I was encountering the reality of a world of consciousness that existed completely free of the limitations of my physical brain” (p. 9). He then presented the caveat
to which he returned in one form or another throughout the text: that his experiences are beyond ordinary understanding. Yet his passion for sharing them was evident from the beginning.

In Chapters 1–4, Alexander graphically but succinctly described the onset of pain, its rapid increase, his rush to the emergency room, and his eventual incapacitation. Initially baffled, his doctors eventually diagnosed his illness as a serious form of bacterial meningitis. Alexander offered the reader some foundational medical information regarding this disease that, besides being very interesting to learn, also underscores how rare and, most often, fatal it is. Tests showed how truly ill he was, and family from various parts of the country began to arrive. No one was prepared for what they witnessed. Alexander described the experience of his oldest son, Eben IV, when he saw his father in the hospital, in a coma, attached to machines:

In spite of all the machines doing their best to make it seem otherwise, he was looking at what he knew was, essentially, a corpse. My physical body was there in front of him, but the dad he knew was gone. (p. 28)

In Chapter 5, aptly titled “Underworld,” Alexander began to describe his experience of his body in coma. As I read, I found I needed to relinquish attachment to my rational mind and open myself to intuiting what Alexander was sharing. In the first of many paradoxes Alexander presented throughout the book, he related that he felt submerged in mud while at the same time was able to see through it. The boundaries usually associated with consciousness dropped away, and the anchors of memory and personal identification disappeared. He also related a pounding sound that sent vibrations through the mud. Alexander was clear that at this time he had no awareness of his body, nor did he have a sense of time. In retrospect, he initially considered that this experience might be connected to what his brain was experiencing while being destroyed by bacteria, but then he recognized that during the experience his consciousness was limited but not foggy—presumably exceeding what a brain in that condition should have been about to produce: “I was simply a lone point of awareness in a timeless red-brown sea” (p. 31). His experience reminded me of the occasional times I have awakened from a deep sleep and for a few moments have not known where I was, feeling suspended with an inability to attach to anything familiar. I recalled the experience being uncomfortable and the relief that emerged when I finally identified time and place.

Alexander also related feelings of discomfort and a sense of being
trapped, of not belonging or being part of what he was experiencing. He identified grotesque faces of animals that would rise up and then disappear. He heard terrifying sounds that were, however, somewhat familiar to him. A fascinating observation that he made was that the more he felt separate from what was surrounding him, from what he was experiencing, the more ugly and threatening the faces became and the more intensified the sounds. Duality and separateness increased the discomfort. He felt as if he was moving close to panic. He felt a need to escape—but did not know where to go. He related one of the mysteries of his experience: As he asked himself the question of where to go, immediately something new arose out of the darkness—something exactly opposite of what he was experiencing. He left me knowing that something indescribable was about to emerge.

In Chapter 6, Alexander presented his relationship to religion, or better expressed, the absence of any real relationship to religion and his belief that the afterlife was reserved for religion, not the domain of science. “As much as I'd grown up wanting to believe in God and Heaven and an afterlife, my decades in the rigorous scientific world of academic neurosurgery had profoundly called into question how such things could exist” (p. 34). I got the sense that he wanted to assure the reader that what was forthcoming in the next chapter was not something he would have conceived of, believed in, or created, given his strong immersion in science.

In Chapter 7, Alexander described a light that emerged out of the darkness. The hard metal sound was replaced by the most beautiful music he had ever heard. He moved from looking at the light to being through it. He used adjectives such as “brilliant” and “ecstatic” to describe what he was seeing and experiencing. I sensed he could neither contain nor express what he had experienced: “I felt like I was being born. Not reborn, or born again. Just . . . born” (p. 38). This is one of the many times that the limits of language became evident. I also felt certain that a reader could not truly grasp the experience without actually having had it oneself. He described a beautiful girl with whom he found himself riding on the wing of a butterfly:

She looked at me with a look that, if you saw it for a few moments, would make your whole life up to that point worth living . . . it was a look that was . . . beyond all the different types of love we have down here on earth. (p. 40)

And somehow, without words, the girl communicated to him the powerful and critical message that he was loved and cherished, had noth-
ing to fear, and could do no wrong—and that he would be going back. At that point, Alexander could not imagine where “back” was! He asserted unequivocally that this experience was the most real of his life.

In Chapter 8, Alexander further discussed his disease and how he might have contracted it. It is clear that his doctors were uncertain of its origin and were very concerned about his prognosis.

Chapter 9 is very aptly entitled “The Core.” Here Alexander presented the heart and center of his experience. He spoke of the absence of duality and the experience of a higher vibration. He identified a brilliant orb, a Being, which he referred to as God, the Creator, the Source, and which he described with the term “Om.” Ineffability and paradox were again apparent, as in his use of “dazzling darkness” to describe God. He continued to emphasize the presence of love as the most powerful force. He spoke of many universes and countless higher dimensions that can be known only through direct experience. I sensed his inner push to share all he possibly could, yet his awareness that there was so much more: “It will take me the rest of my life, and then some, to unpack what I learned up there” (p. 49).

In Chapters 10 and 11, the person of Alexander continued to be fleshed out. Among the many things he shared about himself was the importance of family to him and the fact that he was adopted. Throughout most of his younger life he moved in and out of being interested in his adoptive status with a minimum of emotional consequences. However, later married and, subsequently, through his son’s curiosity, he attempted to find his biological family. His initial failure in this attempt resulted in powerful feelings, like “someone cut off from my source. I defined myself in the context of something I had lost and could never regain” (p. 56). As Alexander shared his struggles, which included bouts of depression and difficulties with alcohol, I found myself being very impressed and moved by his courage to reveal his vulnerability. In the midst of the sadness he experienced, he realized that he wanted a God, one that was all loving, but he did not believe it was possible to find one. His personal darkness seemed to have been lifted when he finally was able to reconnect to his birth family, yet the question of God’s existence still remained unanswered for him.

Chapter 12 returned focus to the Core. Providing further description, Alexander expressed this experience as being akin to a tour of the “invisible spiritual side of existence” (p. 69). Time and space did not exist. Thoughts and the fulfillment of thoughts were simultaneous. And, again, the essence of the experience was indescribable Love. I felt the power and awe of his closing words to this chapter: “The
unconditional love and acceptance that I experienced on my journey is the single most important discovery I have ever made, or will ever make . . . that sharing this very basic message . . . is the most important task I have” (p. 73).

In Chapter 13, Alexander re-emphasized the seriousness of his physical condition. Thus he reminded readers that while at a transcendent level amazing experiences were manifested, at the physical level the situation was dire.

In Chapter 14, Alexander emphasized some of the uniqueness of his NDE compared to others’ accounts. He did not engage in a life review and did not remember his earthly identity. He did not meet anyone he recognized as someone who had previously died. For Alexander, he was free completely of his earthly identity. Even to him, pondering this absence seemed perplexing. Yet, he considered this unusual state of total identity amnesia to have been beneficial, because it facilitated full acceptance of his experience as he was experiencing it, with total equanimity.

I found Chapter 15 to be one of the more complex chapters but certainly extremely informative and interesting. Alexander expanded on the beneficial process of forgetting. What struck me the most was how forgetting allowed him to be fully present to the here and now. As one who practices mindfulness meditation, I am very aware of how the past and future continually pull me from the experience of the Now. Yet, I must admit, releasing the attachment, even though I strive for it through practice, does evoke fear. For Alexander, this process was an “organic” one, devoid of anxiety, that enabled him to be conscious of spiritual realms that he realized were the true reality.

Chapters 16–19 return the reader to the hospital and the experiences of those “left behind” during Alexander’s travels to spiritual realms. He described a psychic connection with a friend of his wife’s—a source of encouragement to family in the midst of the serious physical condition that showed no sign of improvement. Family and friends maintained their vigil, trying to keep fading hopes alive. They continued to talk to his comatose body, encouraging him to heal himself and assuring him of their love for him.

In Chapter 20, Alexander referred to the young woman on the butterfly wing as his guardian angel—a constant companion as he learned an “eternity” of lessons from the Creator. Although Alexander had originally been able to move from the realm of the “Earthworms-Eye View” through the “Gateway” into the “Core” merely by thinking about it, at this point he discovered that this process was no longer
possible: “The gates of Heaven were closed” (p. 102). Alexander struggled again to express the keenness and depth of disappointment that he experienced with words such as “heartbroken” and the phrase a “world of ever increasing sorrow” that he fell into. He began to see beings that resembled people that he knew in life. He also felt these beings praying for him, and he believed that their prayers were aiding him in his transition. He also realized that he would always have Heaven within him. He sensed that he was returning to his body but that he was not alone in this process.

Chapters 21–23 recount the continued gravity of his physical condition. According to his physician, the higher-level functioning of his brain was still completely absent. There was serious consideration from his doctors that it was time to let his body die. Yet, still in the spiritual realm, Alexander was becoming aware of more vaguely familiar faces. Although returning to his body was not what he wanted, he began to become powerfully aware of how important his survival was to his young son. It is as if this strong bond and responsibility spurred him on in his journey to return to his body and to life. Just at the moment when all hope of his survival was just about lost, Alexander opened his eyes and uttered his first words in seven days: “Thank you,” and then “Don’t worry, all is well” (p. 113).

In Chapters 24–28, Alexander continued to explore his challenging return to his body. He was delusional and confused, uttering unintelligible statements and unable to remember the names of those close to him. He was definitely back—in a severely disabled brain. “My mind—my real self—was squeezing its way back into the all too tight and limiting suit of physical existence, with it spatio-temporal bounds, its linear thought, and its limitation to verbal communication” (p. 117). What before his NDE he had thought was the only possible existence subsequently became an existence filled with limitations. However, as his neuro-challenges began to lessen, Alexander realized that he was compelled to tell his story. He decided, on the advice of his older son, to write down, as best he could, all that he experienced—and only then would he read about others’ NDEs so that their influence on his account would be minimized.

It should not be surprising that those people of science with whom he desperately wanted to share his experience really struggled with embracing it. At one time, he realized, he would have been among those skeptics. He was clearly changed through his experience. But he knew that somehow he had to make sense of what seemed impossible: that while his brain was not working at all, he had been completely
aware within an existence totally filled with “love, consciousness and reality” (p. 130). For him, that experience was more real than—and essentially different from—his physical existence. “How was I going to create room for both of these realities to coexist?” (p. 130).

In Chapter 29, Alexander presented the similarity of his experience with other NDEs even though, as he indicated, each experience is unique. Among the often-shared elements were a dark tunnel opening into a beautiful bright landscape, the presence of angelic beings as guardians—more sensed as angelic rather than necessarily looking the role, being outside of linear time and space, hearing in one’s total being otherworldly music, instantaneous understanding, and, above all, experiencing total unconditional love.

In Chapter 30, Alexander presented a moving account of a former patient’s dying daughter’s encounter with a “miracle” in the form of a dream of a loved one who had previously died. When first told of this dream, prior to his own NDE, Alexander was sure it was without substance and was only a way to ease the fear of this dying girl and her mother. However, after his own experience, he viewed her experience as real, a true encounter with what existed after death. How does science make room for miracles? He could now accept that they both can exist. Yet even his own knowing was tenuous in that at times he had to reaffirm for himself the validity of his experiences.

This phenomenon segued into Chapter 31 in which Alexander classified people into three groups regarding the question of the reality of NDEs: believers who find it easy to accept, those who are absolutely dismissive of any possible reality or validity of NDEs, and a middle group who do not believe yet are open to the possibility. The latter group was Alexander’s intended audience. In this chapter, he first presented possible arguments against his experiences being a true encounter with the afterlife and then countered these arguments from a scientific perspective. Clearly, he wanted to be proactive in confronting the position of skeptics!

In Chapter 32, Alexander expressed how his NDE provoked in him a different perspective on religion. Whereas religion had previously held no meaning for him, after his NDE some religious symbols had come to hold meaning related directly to his NDE.

As was the case with some previous chapters, Chapter 33, “The Enigma of Consciousness,” was one of the denser and more technically instructive. Alexander began with his own struggle in the face of consciousness as viewed by traditional science versus his personal experience of consciousness within his NDE. As someone with an interest
in, but only a layperson’s understanding of, quantum physics, I appreciated Alexander’s comprehensible explanation of energy and relationships at the subatomic level. Nevertheless, I found it difficult to clearly grasp the relationship between the mechanisms of the quantum world and the case Alexander was trying to make for consciousness existing beyond the physical body. What I could appreciate is how very much he wanted to “prove” the reality of his experience in concrete terms so that readers would not question its validity. This issue relates to my perception of the difference between knowing and believing. Alexander knows his experience is real; the proof is within him. For those of us who have not had these experiences, we can only believe in what he says. Alexander is aware of this dilemma as indicated in his own words: “The universe is so constructed that to truly understand any part of its many dimensions and levels, you have to become a part of that dimension” (p. 156). He followed this admission with a statement I found both powerful and exciting: “You have to open yourself to an identity with that part of the universe that you already possess, but which you may not have been conscious of” (p. 156).

Here we have it! Non-NDErs can become conscious, even as Alexander was, without dying; we just have to open to what is already present. Many of the spiritual traditions, in one way or another, speak to this point. Jack Kornfield, for example, addressed the timelessness of the human spirit (2009):

The knowing or pure consciousness is called by many names, all of which point to our timeless essence. Ajahn Chah and the forest monks of Thailand speak of it as the ‘Original Mind’ or the ‘One Who Knows.’ In Tibetan Buddhism it is referred to as ‘rigpa,’ silent and intelligent. In Zen it is called the ‘mind ground’ or ‘mind essence.’ Hindu yogis speak of the ‘timeless witness. (p. 42)

And the way to this experience of deep consciousness is prayer and meditation. Alexander’s recommendation of these processes reflected his passionate desire that everyone experience connection to God as he had.

To my mind, the book would have been complete at this point. Yet Alexander had withheld from readers one further powerful confirmation of the reality of his experience—which he revealed in Chapter 33 and which I leave for readers to discover, savor, and contemplate for themselves.

Alexander related that through his NDE he experienced a deep transformation and committed himself to making the world a better
place for all who live in it. I continue to feel inspired by his commitment and grateful that I have benefited from it through the reading of this book. For me, he may not have proved the existence of an afterlife, but he certainly reinforced that possibility.

**Summary of *To Heaven and Back***

Neal laid the foundation for this reading with her opening statement: The accident that resulted in her NDE, rather than being the tragedy that many people had called it, was actually the best thing that had ever happened to her. “Not only did I have the privilege of experiencing heaven, but I continued to experience the intensity of God’s world and conversed with Jesus several times in the weeks after my return” (p. xiii). Throughout the text, Neal presented correlations and clarifications for her experiences with references to the Bible. Like Alexander, she felt compelled to share her experience with others.

This text is relatively short, with 33 brief chapters, each headed with a quote from the Bible. I noted a pervasive religious overtone throughout, and, although Neal indicated that she often questioned her spirituality, it seemed to me that spirituality was woven, to one degree or another, into the fabric of her entire life prior to her NDE.

In Chapters 1–7, Neal presented a biographical sketch of the years leading up to the accident that resulted in her NDE. She consistently made reference to her spiritual development. She related feeling loved and content within her family despite her parents’ divorce when she was in the 7th grade. Though her illusions of the all-American family were crushed, she did not seem deeply traumatized. She held on to the belief that her dad would return, even though he never did.

Neal related a high school incident that demonstrated her openness to the presence and intervention of God. After she and some friends were in an auto accident, she heard the reassuring voice of God. She identified this experience as the first time she was aware of God’s presence in her life and as her opening to the possibility of God being a greater force and reality than she had considered previously. Neal related her teenage missionary experience in Mexico and the increased intensity of her religious fervor. In recalling this time, Neal expressed the belief that God had been present in her mission hospital work.

As she matured and pursued her education, with the ultimate goal of becoming a doctor, her thoughts regarding spirituality receded somewhat. During this time, she took up scuba diving and one day found herself once again in a life-threatening situation. Having unintention-
ally entered an underwater cave, she and her instructor discovered that their oxygen tanks held less air than they needed to reach the surface. Neal remembered calling out to God for help and immediately feeling His presence. Her resulting comfort enabled Neal to slow her breathing, and shortly thereafter, they discovered a crack in the rock through which they could surface. Whereas her instructor attributed their survival to luck, Neal attributed it to Divine intervention. She credited this experience with re-awakening her dormant spirituality.

Neal described her medical training and her connection to Bill who later became her husband. She related how she had again relegated God to a peripheral position in her life: “It was as if I consigned God to the backseat of my car. I wanted Him to be present, but didn’t want Him to distract me and I certainly wasn’t ready for Him to drive the car” (p. 25). Neal also, like Alexander, conveyed the view that spirituality was considered incompatible with science.

Indicating a retrospective awareness that God was woven in subtle ways into her early work as a physician and her developing relationship with Bill, Neal eventually described having achieved “success” in both her work and her personal life. She philosophized about the struggles of working women with families. Having pondered if she was truly following God’s plan for her, she acknowledged, “I had done a lot of thinking and contemplating with regard to my spirituality, my desire to put God and my family at the top of my priority list, . . . but not much in the way of action” (p. 40). With this awareness, she renewed her commitment to live a “Christ-centered life,” and her family moved from Los Angeles to Jackson Hole, Wyoming for an existence both quieter and closer to nature.

In Chapter 8, Neal introduced the couple that were her and Bill’s companions on the trip to Chile in which her kayaking accident resulted in her NDE. Then in Chapter 9, Neal described the trip leading up to and including the crucial event on the river. I felt tense and apprehensive reading her account of her kayak cresting the waterfall, “rocketing” down the waterfall with its front end diving under another boat, and eventually becoming lodged under water beneath the other boat and underwater rocks. The force of the water made escape impossible. In Chapter 10, she related how she did not panic but reached toward God for intervention (at which point I recalled Alexander’s last words before slipping into coma: “God help me.”), how she thought of her family and her relationship with God, how she felt God present and holding her while she remained fully aware of her predicament
and surroundings, and how she felt profound comfort and peace as she gave up trying to breathe and assumed she would die.

In Chapter 11, Neal related how after 14 minutes under water, her rescuers managed to save her—according to them, only through Divine intervention. They described her body as purple, bloated, and oxygen-starved; they believed if she survived, she would be in a permanent vegetative state. After prolonged CPR and prayer, Neal took gasping breaths and eventually breathed more normally.

Neal’s NDE during submersion and rescue is the subject of Chapter 12. “While my body was being slowly sucked out of the boat [by the force of the water], I felt as though my soul was slowly peeling itself away from my body” (p. 68). She described her soul rising out of the river at which time she encountered 15–20 souls that she believed were sent by God. These souls seemed to embody pure joy, which permeated her being. Although she could not identify them specifically, she was aware she had known them “for all eternity” (p.68). Her sense was that they were her guides and protectors across what she referred to as “the divide of time and dimension that separates our world from God’s” (p. 69). She described these souls as blindingly and invigoratingly brilliant and as communicating without speech. Absolute love was “palpable,” and love and joy were deeper than she had ever experienced on earth as she hugged and danced with these souls. At this point Neal expressed, as did Alexander, the absolute inadequacy of human language to describe her experience. Meanwhile, amidst her ecstasy, she observed her companions on earth pleading with her to breathe, and out of empathy for them, she returned momentarily to her body to take a breath and then left again.

Neal recounted being pulled toward a radiant hall filled with unconditional love. “I knew with a profound certainty that it represented the last branch point of life, the gate through which each human being must pass” (p. 73). Within the hall, she believed, the life review was experienced, at which time those who entered it were offered the final opportunity to choose God or to turn from God for all eternity. She was ready to reunite with God even as she continued in awareness of her earthly companions’ supplications for her to live and she began feeling annoyed with them for not letting her go. Her spiritual companions explained that she had not completed her work on earth and thus was not ready to enter the hall—the reasons for which, after returning to her body, she would better understand in time. She believed they shared her sorrow and grief about her having to return. “I sat down in my body and gave these heavenly beings, these people who
had come to guide, protect, and cheer for me, one last, longing glance before I lay down and was reunited with my body” (p. 74).

In Chapters 13–15, Neal described her decision to forego treatment until she arrived at her home hospital in Jackson Hole and the challenges of that journey—including inability to move her legs and extreme difficulty breathing. Upon reaching the hospital, Neal lost consciousness and was considered at risk of dying. She attributed her gradual stabilization in part to the prayers of many caring people.

In Chapter 16, Neal described an unusual occurrence. Upon awakening in the hospital, her vision was extremely blurry. Unable even to see the television clearly, she picked up a Bible to search for words of strength. All was blurry except three passages that emerged crystal clear: “Rejoice always” (I Thessalonians 5:16), “Pray without ceasing” (I Thessalonians 5:17), and “Give thanks in all circumstances, for this is the will of God's in Christ Jesus for you” (I Thessalonians 5:18). Neal expressed the belief that these messages were directions from God not only to her but also to all humanity.

Chapters 17 and 18 present Neal's beliefs about the purposes of her NDE as well as the reasons for her return to life. She reported that following her NDE, she became more accepting of and compassionate toward people for whom she previously would have felt considerable irritation. She addressed the constant presence of angels as well as, during her month-long hospital stay, several meetings with an angel in which she received teachings. These included lessons about God’s intentions for humans on earth as well as the responsibilities that we humans have for each other. They also included additional reasons for her return to life: to ensure her husband's continued health; to support her family upon the future death of her son; to help others find their way back to God; and finally, to tell the story of her experiences.

In Chapter 19, Neal spoke of the various struggles she experienced upon returning home. Both legs were in casts up to her hips, so she depended on others for mobility. Though physically present, emotionally she was in her own world trying to make sense of her experience. She indicated that it took her more than a year to accept that she was sent back because she had work to do.

Chapters 20–21 address some events related to two significant people in Neal’s life: her father and her stepfather—both near death. She described both the importance and the challenges of her to travel to their bedsides; how, upon their deaths, she was able to be a comfort to family; and how some small “miracles” in the process confirmed for her a Divine presence.
In Chapter 22, Neal addressed the beginning of her sharing her experiences with the public. She encountered great interest from people hungry for confirmation of life after death. She strove to convey that God considers each person special and of value. She discovered that telling her story opened the door for others to relate similar experiences that, up until then, they had kept secret. She observed that no matter how much time elapsed, people’s descriptions of experiencing either God’s presence or intervention reflected consistency and clarity. She noted the similarity between her own and others’ NDEs. Like Alexander, Neal emphasized that everyone has the potential to have intense spiritual experiences like NDEs if they can transcend the distractions of everyday life and thereby “discern that which is most important: our relationship with God” (p. 138). Both Neal and Alexander indicated that through dedicated prayer and meditation, one can train oneself to be mindful of Divine presence.

In Chapter 23, Neal revisited her emotional confusion following her accident and NDE, wondering still what she was supposed to do with her life. She renewed her commitment to live a God-centered life, believing that if she followed this path, then whatever she needed would come her way.

Chapters 24–26 focused again on significant people in Neal’s life, and I found these chapters quite moving. She detailed her close connection—which she termed a soul connection—with her oldest son, Willie, including a particular comment he’d made to her prior to her accident: “You know I’m never going to be eighteen. That’s the plan. You know that” (p. 150). Reflecting on her NDE message about his impending death, Neal described anticipatory grief as well as close calls in which Willie’s life had been spared and her hope that perhaps the plan had changed. She also recounted how Divine intervention led her to urge her husband to get a physical exam in which a tumor was found early enough to be treated as well as how a young man involved in her family’s life was inspired by the “miracles” recent events to commit to a God-centered life.

In Chapter 27–29, Neal interwove the topics of her ambivalence and practical challenges in writing about her NDE and the events leading up to Willie’s death. In particular, she expressed the irony that shortly after she had finally completed her manuscript and felt “I had been obedient to God. Life could not have seemed better” (p. 171), she received the news of Willie’s fatal accident: struck by a young, distracted driver.

Neal’s response to her son’s death—both practical and spiritual—
was the topic of Chapters 30–33. In particular, she detailed the complex role her NDE played in her grief and her circuitous path toward forgiveness and toward rediscovering at yet another, deeper level, the necessity of relying on God to get beyond human limitations.

Neal entitled her final Chapter 33 “Logical Conclusions.” From her experiences, she has concluded that she is always connected to God who is real and can be trusted, has a plan for her, and will support her in this plan. She reported a personal transformation that included a deeper faith. Although I appreciate her perspective, not having had her experiences I did not arrive at her same logical conclusions but was more open to accepting them as a matter of faith.

**Conclusion**

In summary, I found reading *To Heaven and Back* an engaging and emotionally evocative process. I considered the book an inspirational, perhaps even devotional work that reminded me of teachings I received as a young person within a traditional Christian church. By contrast, with *Proof of Heaven*, I found it necessary to really concentrate and study what often was quite technical material. Even the NDE presentation had that “scholarly” twist. Alexander conveyed that his NDE was an equally a deeply spiritual experience as Neal’s but without the aforementioned religious overtones. Clearly, despite the now-well-established similarities among NDEs, even among physician NDErs, perspectives can vary considerably.

I found each book valuable in its own way, and having read them both, I came away feeling wiser, more informed, curious, hopeful, and grateful for the opportunity the authors provided by sharing their life-transforming experiences. For me, the greatest gift was the message from both authors that if we humans engage in our own inner work and care for others with loving-kindness, we can participate in the experience of unconditional love.

**References**

LETTER TO THE EDITOR

Near-Death Experiences Beyond the Scope of Science

To the Editor:

I recently became interested in near-death experiences after hearing about neurosurgeon Eben Alexander and reading his book, *Proof of Heaven* (Alexander, 2012). Heretofore, I had considered all NDEs as simply abnormal brain functions that merited little attention, but now I’m intrigued. In recognizing Alexander’s credentials and with my interest piqued, I’ve been online and discovered a world of thought and debate.

As a dentist, I have a strong appreciation for science, and as an inventor with several science-based patents, I also have the greatest respect for the scientific method. Obviously I am skeptical of subjective claims that can’t be proven. Seeking input from science, I was drawn to the September 12, 2011 article in *Scientific American* in which Charles Choi asserted that NDEs are the result of abnormal functioning of dopamine and oxygen flow in the dying brain. This is the revelation that many biological scientists had been waiting for, because it purports to silence the debate, as is noted in the title of the study, “Near-Death Experiences Now Found to Have Scientific Explanation”. Other studies have attributed NDEs to carbon dioxide concentrations in the brain at the time of death.

In a superficial sense, there would seem to be a correlation between conventional dreams and NDEs, because both are constructs of a subconscious/unconscious brain. However, in conventional dreams, I am not aware of dreamlike communication with a deity, even among people who have been religious all their lives. Of course, there is the occasional flake who claims God appeared to him in a dream and directed him to guide the flock in a particular manner, but those are rare.

If dreams about God were commonplace, we could assume that the brain was conditioned for such, and the NDE/God conundrum would not present itself. However, contrast the typical dream’s absence of deity interaction and NDEs in which the majority of experiencers recall vividly having had a meeting with a god of some fashion. How does the absence of oxygen and an excess of carbon dioxide in the dying
brain account for the preceding dichotomy? What part of physiology interfaces with a dying brain to create the perception of meeting with God, and for what purpose? Although NDEs are recalled and interpreted through the prism of one’s composite experiences, they can’t be ascribed to religious indoctrination because the phenomenon affects the good, the bad, the atheist, the believer, the child (who understands neither the finality of death nor the metaphysical concept of life after death), and the adult, and it manifests itself in all cultures the world over. What evolutionary purpose is served by a dying brain that, at the last moment of earthly existence, indulges in a fanciful interaction with a deity? What is the biological benefit? None that I can see. According to the principles of evolution, life does not expend effort on frivolous endeavors, and NDEs, from a biological perspective, appear to be complete frivolity. In arguing that there is no evolutionary/biological benefit from NDEs, one could also argue that NDEs are beyond the biological world.

The burden of proving the validity of the phenomenon is not on the people who experience NDEs; rather, the onus is on masters of the biological sciences to give a credible explanation for such frivolous final-moment dallying with the deities, and I have not seen anything that even remotely approaches an adequate explanation. In the final analysis, I believe we must recognize that there may be phenomena that can’t be explained with Bunsen burners and pipettes, or cyclotrons for that matter.

References


Stephen D. Carter, DDS
Snellville, GA
OBITUARY: HAROLD A. WIDDISON

Dr. Harold A. Widdison was Emeritus Professor of Medical Sociology at Northern Arizona University in Flagstaff, Arizona. Dr. Widdison taught sociology courses for 30 years and was a researcher in the field of near-death studies for over 30 years.

Dr. Widdison was born in Salt Lake City, Utah in 1935. At the age of 12 he moved with his family to Montana where he lived until he graduated from high school. He earned a B.S. degree in Sociology in 1959 and an M.S. in Business in 1961 from Brigham Young University. He was employed for five years at the Atomic Energy Commission in Washington, DC, before returning to graduate school at Case Western Reserve University in Cleveland, Ohio where he obtained his Ph.D. in 1970 in the fields of medical sociology and statistics.

From 1973 until his retirement in 2003, Dr. Widdison was a faculty member at Northern Arizona University in the Department of Sociology. He created and taught one of the first, if not the first, course on Death, Grief, and Bereavement, and he was instrumental in establishing some of the earliest courses in the country on those topics. While teaching this course, he became aware of the writings of Raymond Moody, Jr., George Ritchie, and others on near-death experiences (NDEs). Dr. Widdison lost his father not long before this discovery, which piqued his interest in the subject of NDEs. He began searching out various sources, including books, diaries, and journal articles, that related to the topic.

In 1982, Dr. Widdison contributed an article entitled Near-Death Experiences and the Unscientific Scientist to the first anthology on the subject of near-death research entitled A Collection of Near-Death Research Readings. In 1997, he co-authored with Craig R. Lundahl the book The Eternal Journey: How Near-Death Experiences Illuminate Our Earthly Lives. This book covered the whole spectrum of life from pre-earth life to earth life to post-earth life based on cases of NDEs spanning a period of over 200 years. It also examined pleasurable as well as distressing NDEs. In 2004, Dr. Widdison published another book on the subject entitled Trailing Clouds of Glory: First Person Glimpses into Premortality. Since 1972 he presented professional workshops, papers, and research at national and international conferences on death and NDEs. He authored or co-authored articles and
book reviews over the years in the *Journal of Near-Death Studies* on the topic of NDEs, and he gave a number of presentations at meetings of the International Association for Near-Death Studies (IANDS).

In addition to his interest in NDE research, Dr. Widdison had a very personal concern for the plight of people with disabilities and served many years on the Board of Directors of the Hozhoni Foundation in Northern Arizona. Among his other interests was studying rock art. He was an excellent photographer and visited and photographed Native American rock art throughout the western United States, Mexico, and Canada.

Dr. Widdison will be remembered as a family man, for his sense of humor, and for his concern for and kindness to others. He was liked by his students and was devoted to them. He was always concerned with helping his students and providing them with knowledge they could use in their careers.

Dr. Widdison continued to contribute to the field of near-death studies until his unexpected death on November 1, 2012.

Craig R. Lundahl
Silver City, NM