Editor's Foreword • Janice Miner Holden, Ed.D.

ARTICLES

Refreshment and Reunion in Paradise: Near-Death Experiences in Early North African Christianity • Stephen E. Potthoff, Ph.D.

Did Emanuel Swedenborg Have Near-Death Experiences? Envisioning a Developmental Account of NDEs • Simon R. Jones, M.A., and Charles Fernyhough, Ph.D.

BOOK REVIEW

The Big Book of Near-Death Experiences: The Ultimate Guide to What Happens When We Die, by P. M. H. Atwater • Reviewed by Jeffrey Mishlove, Ph.D.

LETTER TO THE EDITOR • Robert G. Mays, B.Sc., and Suzanne B. Mays

Volume 27, Number 3, Spring 2009
www.iands.org
Editor's Foreword 139
Janice Miner Holden, Ed.D.

ARTICLES
Refreshment and Reunion in Paradise: Near-Death Experiences in Early North African Christianity 141
Stephen E. Potthoff, Ph.D.

Did Emanuel Swedenborg Have Near-Death Experiences? Envisioning a Developmental Account of NDEs 157
Simon R. Jones, M.A., and Charles Fernyhough, Ph.D.

BOOK REVIEW
The Big Book of Near-Death Experiences: The Ultimate Guide to What Happens When We Die, by P. M. H. Atwater 189
Reviewed by Jeffrey Mishlove, Ph.D.

LETTER TO THE EDITOR 195
Robert G. Mays, B.Sc., and Suzanne B. Mays
JOURNAL OF NEAR-DEATH STUDIES (formerly ANABIOSIS) is sponsored by the International Association for Near-Death Studies (IANDS). The Journal publishes articles on near-death experiences and on the empirical effects and theoretical implications of such events, and on such related phenomena as out-of-body experiences, deathbed visions, the experiences of dying persons, comparable experiences occurring under other circumstances, and the implications of such phenomena for our understanding of human consciousness and its relation to the life and death processes. The Journal is committed to an unbiased exploration of these issues and specifically welcomes a variety of theoretical perspectives and interpretations that are grounded in empirical observation or research.

The INTERNATIONAL ASSOCIATION FOR NEAR-DEATH STUDIES (IANDS) is a worldwide organization of scientists, scholars, healthcare providers, near-death experiencers, and the general public, dedicated to the exploration of near-death experiences (NDEs) and their implications. Incorporated as a nonprofit educational and research organization in 1981, IANDS's objectives are to encourage and support research into NDEs and related phenomena; to disseminate knowledge concerning NDEs and their implications; to further the utilization of near-death research by healthcare and counseling professionals; to form local chapters of near-death experiencers and interested others; to sponsor symposia and conferences on NDEs and related phenomena; and to maintain a library and archives of near-death-related material. Friends of IANDS groups are affiliated in many cities to provide information, support, and networking for near-death experiencers (NDErs) and their families, healthcare providers, and anyone with personal or professional interest in NDEs and related phenomena. Information about membership in IANDS can be obtained by contacting IANDS, 2741 Campus Walk Avenue, Building 500, Durham, NC 27705-8878, USA; telephone and fax: (919) 383-7940; e-mail: services@iands.org; Internet website: www.iands.org.

MANUSCRIPTS should be submitted preferably by e-mail or in hard copy or on computer disk, preferably formatted in Microsoft Word, to Janice Holden, Ed.D., Department of Counseling and Higher Education, University of North Texas, 1155 Union Circle #310829, Denton, Texas 76203-5017; telephone: (940) 565-2919; e-mail: jan.holden@unt.edu. See inside back cover for style requirements.

SUBSCRIPTION inquiries and subscription orders, and ADVERTISING inquiries should be addressed to IANDS, 2741 Campus Walk Avenue, Building 500, Durham, NC 27705-8878, USA; telephone and fax: (919) 383-7940; e-mail: services@iands.org.


JOURNAL OF NEAR-DEATH STUDIES (ISSN: 0891-4494) is published quarterly in the Fall, Winter, Spring, and Summer by IANDS, 2741 Campus Walk Avenue, Building 500, Durham, NC 27705-8878, USA; telephone and fax: (919) 383-7940; e-mail: services@iands.org.

COPYRIGHT 2009 by the International Association for Near-Death Studies. No part of this work may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, microfilming, recording, or otherwise, without written permission from the Publisher, with the exception of any material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work.
Editor's Foreword

In this issue, authors address near-death experiences (NDEs) across a wide time spectrum, from historical to contemporary to future. It is the third of a few transition issues between Dr. Greyson's editorship and my own, in which he oversaw the peer review process and accepted the articles and I endorsed his decision and worked with the authors on final edits.

In the lead article, religion and philosophy professor Stephen E. Potthoff examines the visions of two 3rd century North African Christian martyrs as they approached their deaths. He evaluates how their visions compare to contemporary NDEs with an emphasis on the ability of such experiences to constructively transform both those who experience them and those who learn of them.

In the second article, psychology doctoral candidate Simon R. Jones and professor Charles Fernyhough examine the visions of the 18th century mystic Emanuel Swedenborg. They evaluate how his visions compare to contemporary NDEs with an emphasis on possible physiological factors in the facilitation of such experiences.

In his book review, higher education dean and parapsychologist Jeffrey Mishlove examines a voluminous work that addresses primarily contemporary NDEs, P. M. H. Atwater's The Big Book of Near-Death Experiences. He evaluates the strengths and limitations of this work that he considers "the most comprehensive presentation of knowledge concerning ... NDEs ... yet assembled ...."

This issue concludes with a letter to the editor from NDE investigators Robert G. Mays and Suzanne B. Mays. In it, they examine methodology in critical care physician Sam Parnia's recently announced AWARE study to expand understanding of the nature of consciousness at death. They recommend modification of the proposed methodology to more fully achieve the study's aim by maximizing future knowledge of apparently nonphysical veridical – that is, verified as accurate – perception during the first moments of death.

It is my hope that readers of this volume will enjoy an exploration of NDEs ranging from the distant past to the much-anticipated future.

Janice Miner Holden, Ed.D.
jan.holden@unt.edu
Refreshment and Reunion in Paradise: Near-Death Experiences in Early North African Christianity

Stephen E. Potthoff, Ph.D.
Wilmington College, Wilmington, OH

ABSTRACT: While awaiting execution for their Christian faith in a Carthaginian prison in 203 CE, the Roman matron Perpetua, along with her companion Saturus, both recorded visions in which they traveled to an otherworldly garden where they experienced spiritual refreshment and were reunited with a divine being and departed companions. Modern scholars have contributed much to recapturing the meaning of these visions by placing them within their wider cultural and psychological contexts. Nevertheless, these scholars have largely overlooked the many characteristics such ancient visions share in common with modern near-death experiences (NDEs) and otherworld journeys cross-culturally. Perpetua and Saturus returned from their otherworld journeys no longer fearing death and able, like modern near-death experiencers, to bring healing, hope, and meaning in the face of death to the community around them. The accounts of their NDEs, passed down for many generations, transformed ancient views and beliefs about the afterlife, a transformation reflected particularly in the construction and decoration of early Christian cemeteries as paradise.

KEY WORDS: martyrs; Early Christianity; ancestor cult; near-death experience.

One of the most remarkable documents preserved from Western antiquity is the 1700-year-old personal diary of a young North African

Stephen E. Potthoff, Ph.D. is Assistant Professor in Religion and Philosophy at Wilmington College in Wilmington, OH. For the present article, he drew from his doctoral dissertation at the University of Minnesota, in which he examined the connection between martyrs' near-death experiences and early Christian ancestor cult in ancient Carthage. Reprint requests should be addressed to Dr. Potthoff at Pyle Box 1203, Wilmington College, 1870 Quaker Way, Wilmington OH 45177; e-mail: Stephen_Potthoff@wilmington.edu.

Journal of Near-Death Studies, 27(3), Spring 2009 © 2009 IANDS
woman named Perpetua. A new mother, a Christian convert, and a martyr, Perpetua met her death in 203 CE during the reign of the Roman emperor Septimius Severus. Perpetua's diary is preserved as part of a larger martyrlogical account known as the Passion of Perpetua and Felicitas (PP; Musurillo, 1972, pp. 106–131) in which a narrator recorded the experiences of Perpetua and her companions as prisoners awaiting their executions in the Carthage amphitheater. The PP consists of 21 chapters, each with "verse" subsections specified in the original Latin text (Musurillo, 1972); it is these chapters and verses that I reference throughout the following article.

Some of the most fascinating passages from Perpetua's diary record four visions she experienced, all of which in various ways prepared Perpetua for her own imminent death. In the first of these four visions, Perpetua described stepping on a menacing dragon's head, ascending a perilous bronze ladder affixed with all manner of sharp instruments, and emerging in an immense garden. Surrounded by thousands of people clad in white, she was welcomed by a gray-haired shepherd who offered her a mouthful of milk he was drawing, after which she awakened with the taste of something sweet still in her mouth, secure in the knowledge that she would soon leave this life.

Perpetua received her second vision soon after being condemned to death. Having watched her father beaten because of her refusal to sacrifice on behalf of the emperor, Perpetua parted from both her birth family and her newborn child. A few days later, while in prayer, she peered into the postmortem realm and saw Dinocrates, her long-deceased brother, still suffering from the facial cancer he had while alive, and straining to drink from a pool of water whose rim was too high for him to reach. Immediately, she was moved to pray for him, and in a third vision saw Dinocrates now healed of his disease, drinking from a bottomless, gold-rimmed pool, after which he began to play.

After an account of Perpetua's fourth vision, in which she became a man and defeated an Egyptian gladiator in combat, the PP includes a vision that an imprisoned companion of Perpetua, named Saturus, reported. In his account, Saturus described leaving his body in the company of Perpetua and four angels. Gently ascending away from the world into an intense light, they emerged in a garden full of cypress trees, rose bushes, and all manner of flowers. Soon, they were reunited with other already deceased martyrs, after which an enthroned white-haired man, surrounded by many elders, greeted them. Perpetua and
STEPHEN E. POTTHOFF

Saturus then met with other members of their church family and were even called upon to settle a dispute between a bishop and presbyter. Echoing Perpetua’s experience receiving the shepherd’s sweet milk, Saturus reported that all present in this paradisal garden were sustained by an indescribably delicious aroma.

Beginning with Augustine of Hippo, the visions of Perpetua and Saturus have inspired a wide variety of interpretations from theological, historical, and psychoanalytic perspectives (Rousselle, 1987, pp. 194–197; Shaw, 1993, pp. 36–42). Modern studies, such as Joyce Salisbury’s (1997) excellent book *Perpetua’s Passion* and the Jungian analysis by Marie-Louise Von Franz (1980), have done much to recapture the meaning of these visions by relating them not only to their wider cultural and symbolic context but also to the individual psychological issues and struggles of the martyrs themselves. More recently, Jan Bremmer (2002) analyzed the visions of Perpetua and Saturus within his broader investigation of the roots and evolution of beliefs about the afterlife in Greco-Roman and Christian antiquity (pp. 57–64). Yet, though Bremmer devoted a chapter to ancient and modern near-death experiences (NDEs), he made only brief and passing mention of the visions of Perpetua and Saturus (pp. 96, 97, 99).

Contemporary analysts have operated predominantly from a particular interpretive paradigm whereby they have labeled and treated these ancient visions as dreams in the broadest sense without, for the most part, exploring what might be distinctive about them in both ancient and modern contexts. In my own analysis, I picked up where other scholars have left off, seeking to illuminate the numerous features these ancient visions share in common with modern NDEs. Far from being ordinary dreams, the visions of Perpetua and Saturus profoundly transformed not only the visionaries themselves but also the entire community of Christians who continued to experience the deceased martyrs as a living, healing presence in their midst.

The Visions of Perpetua and Saturus as Ancient NDEs

Though the visions of Saturus and Perpetua can be fully understood only within their own cultural context, they nevertheless share a significant number of traits in common with modern NDEs. As is the case with most modern NDEs, Perpetua and Saturus received their visions in a physical condition close to death and regarded their
visionary journeys as divine in nature. Additional similarities include an experience of separation and travel away from the body or earth, an otherworldly destination, a reunion with those who have died before, a meeting with a central divine being, and an experience of profound transformation in the face of death that inaugurates the visionary in a new and special role as healer with a semi-divine status.

The first similarity to note between these ancient and modern NDEs is that they occur in circumstances of extreme physical distress that bring individuals close to death, both physically and psychologically. As Carol Zaleski has observed, NDEs share much in common cross-culturally with shamanic and similar “otherworld journeys” in which, during extraordinary states of consciousness associated with physical distress, the spirit is understood to leave the body and travel in the spirit world (1987, p. 163; 1996, p. 23). Lakota shaman Black Elk's Great Vision for his people, an extensive otherworld journey out of the body he experienced at nine years of age, was preceded, like many initiatory shamanic visions, by serious illness during which he was “almost the same as dead” (Eliade, 1964, p. 33; Neihardt, 1932, pp. 18, 39–40). Modern American NDEs are frequently reported by those who have come close to death as defined by our own culture. Often, American near-death experiencers return from “clinical death,” a state defined by the cessation of heartbeat and respiration, a drop in blood pressure and body temperature, and so on (Moody, 1975, pp. 147–148; Morse & Perry, 1990, p. 25). However a culture might define death, though, near-death experiencers enter special or altered states of consciousness in which they come face to face with the wider meaning of their own deaths and lives (Zaleski, 1987, p. 164).

As prisoners awaiting their own executions, Perpetua and Saturus found themselves near death, physically as well as psychologically. Robin Lane Fox (1986) has noted that the conditions of darkness, starvation, and sleeplessness in ancient Mediterranean prisons assured that visions abounded among early Christian martyrs-to-be (pp. 400–401). Early on in her diary, Perpetua wrote of the terror she felt, never having been in such darkness before (PP, 3.5), and made special note of the rare instances in which her captors released her and her companions briefly from the prison to refresh themselves (PP, 3.7). Not long before her execution, Perpetua complained to the military tribune of the prisoners' poor health (PP, 16.3). Right after being tossed by an enraged cow in the arena, Perpetua was described explicitly by the narrator of the account as being in an ecstatic trance.
state: She was “awakened from a kind of sleep” (quasi a somno expergita), having been in spiritu et in extasi (PP, 20.8).

Although the anonymous author of the PP and the martyrs themselves regarded their visions as divine in origin, writers in the wider ancient Mediterranean region held a variety of opinions on the nature and origins of dreams. Following Aristotle, Cicero, for instance, saw dreams as arising within the mind or soul of the dreamer, derived ultimately from memories of waking experience (De Divinatione 2.128, in Miller, 1994, p. 44). In his Oneirocritica, Artemidorus, dream researcher par excellence of the 2nd century, wavered in his opinion as to whether dreams came from inside or outside the dreamer’s mind, though he assigned absolute authority to dreams in which the gods appear (Miller, 1994, p. 82). Closer to home for Perpetua and Saturus, the early church father Tertullian (3rd century A.D./1976), on the other hand, in his treatise On the Soul, classified dreams as coming from the soul, the Devil, or God (Salisbury, 1997, p. 95).

For her own part, Perpetua unequivocally understood her dreams as coming from God. Those awaiting martyrdom quite often received dreams and revelations that were accepted as prophetic, always originating in God (Salisbury, 1997, p. 97). Like those who sought out dreams from Asclepius and other healing gods in the ancient practice of incubation, Perpetua also requested and received a vision from God (Von Franz, 1980, p. 16). When introducing the accounts of her first, second, and third visions, she employed the phrase et ostensum est mihi hoc (“and this was revealed to me”), emphasizing the external, divine origin of her visions and her own experience as recipient (PP, 4.2). As Jacqueline Amat (1985) has noted, ostensio, the noun form of ostendere, seems in ancient sources to describe “a striking scene, close to prodigious, that manifests divine power” (p. 68) and serves as a vehicle of revelation (Miller, 1994, p. 151). Echoing Perpetua’s brother’s description of her first vision, the narrator described Saturus’s vision as visio, a term similar to ostensio which designated a prophetic dream (Miller, 1994, p. 151; PP, 4.1, 11.1).

Saturus and Perpetua would have rejected the suggestion that their visions were merely the product of mental activity in their own souls. For both martyrs, their visions were ultimately authoritative as revelations of divine reality and truth, more real, or at least as real, in fact, as waking life. Perpetua underscored the reality and authenticity of her first vision in noting that she woke up still tasting the milk curds the shepherd figure had offered her. Some 50 years later, the
narrator of the Passion of Marian and James would write with regard to these North African martyrs' otherworldly visions: "O sleep more intense than all our waking hours! How happily he sleeps this sleep who is awake by faith" (Pass. SS Mariani et Iacobi, 7.5, in Musurillo, 1972, pp. 204–205).

Like Perpetua and Saturus, modern near-death visionaries view their experiences as qualitatively distinct from ordinary dreams and more real even than waking life (Zaleski, 1996, p. 67). Raymond Moody (1975) noted that near-death visionaries describe their experiences "not as dreams, but as events which happened to them" (p. 176). Psychiatrist and near-death visionary George Ritchie, whose extraordinary otherworld journey to various hellish and heavenly realms originally inspired Moody to write Life after Life, emphasized that "this experience was the most entirely real thing that's ever happened to me" (Ritchie & Sherrill, 1978, p. 16).

The divine and "ultimately real" nature of NDEs is assumed by the ever-growing ranks of NDE researchers as well. In his insightful and pioneering comparative study of NDEs and UFO encounters, Kenneth Ring concluded that both phenomena represent encounters with what French Islamic scholar Henry Corbin labeled the imaginal realm (Ring, 1992, pp. 220–221). Not to be confused with mere imaginative fantasy, the imaginal realm is "ontologically real" with its own supersensory form, dimensions, and entities (p. 221). Lying "beyond both fantasy as such and the physical world," the imaginal realm is apprehended not through the five senses but in extraordinary states of consciousness where the human imagination functions much like an "organ of perception" (pp. 220–221).

As Zaleski (1987) noted, modern near-death visionaries find themselves, like Perpetua and Saturus, surrounded by a believing community of supportive listeners who validate their experiences against the claims of modern Ciceronian reductionism (pp. 148, 155–156). Ring joined many other researchers in citing the profound transformative effects of these experiences in people's lives as the most compelling evidence of their authenticity and divine nature (Valarino, 1997, p. 135). "When we come to examine the core of full NDEs," Ring wrote, "we find an absolute and undeniable spiritual radiance. The spiritual core of the NDE is so awesome and overwhelming that the person who experiences it is at once and forever thrust into an entirely new mode of being" (Ring, 1984, p. 50). Ring saw NDEs ultimately as vehicles not only of personal transformation but also as working to
bring about "an evolutionary thrust toward a higher consciousness for all humanity" (Valarino, 1997, p. 147).

Another striking feature Perpetua's and Saturus's visions share in common with modern near-death accounts are experiences of passage or travel. Perpetua's experience of passage, in which she treaded upon a dragon's head and ascended a perilous ladder, points to her own martyrdom as well as her victory over death. The frightening or at least unpleasant nature of this passage experience characterizes many modern NDEs as well. One of Moody's (1975) informants spoke of traveling through a long dark place that was like a sewer, whereas others reported drifting through darkness (pp. 30-34).

Unlike Saturus and many modern near-death visionaries, however, Perpetua made no reference to actually leaving her body. Indeed, her experience seems significantly more corporeal in nature: She used her feet to step on the dragon's head and climb the ladder, and she awoke after eating the cheese with the taste of something sweet still in her mouth. As Zaleski (1987) has noted, in modern accounts, there seems to be a roughly even division between those who describe themselves during the visionary journey as possessing an "airy or ethereal body" and those who speak simply of "me" without resort to "elaborate somatic analogies" (p. 117).

In contrast to Perpetua, Saturus echoed many modern accounts when he described leaving his body behind and being carried by four angels gently upward toward an intense light. In modern NDEs, the most well-known mode of passage is through a tunnel with a light at the end (Moody, 1975, pp. 30-34, 62). One of Moody's (1975) informants, though, described sailing in a boat toward the far shore of a body of water (p. 74), and Osis and Haraldsson (1977) recorded the visions of a woman in India who rode a cow to heaven and of an American woman who took a taxicab (pp. 153, 163).

Angelic psychopomps and other guides are common to medieval European NDEs and are known in many shamanic cultures as well (Eliade, 1964, pp. 85, 93). In his Great Vision, the Lakota shaman Black Elk was taken to the teepee of his Grandfathers in the sky by two men bearing spears of lightning (Neihardt, 1932, pp. 18-19).

The visions of Perpetua and Saturus are also strikingly similar to modern NDEs in their descriptions of the otherworld landscape and inhabitants. Perpetua described her otherworldly destination as spatium immensum horti (the immense open space of a garden) (PP 4.8). Jacqueline Amat (1985) imagined here an open prairie reminis-
cent of the Isles of the Blessed that Lucian, in his *True Histories* 1.2, described as a meadow full of flowers (p. 119). Like Perpetua, Saturus emerged after his journey in a heavenly garden that he described as a *viridarium* filled with rose bushes, all manner of flowers, and cypress trees (*PP* 11.5). A more specific term than *hortus*, *viridarium* designated a type of ornamental park filled with trees and flowers that was planted around villas as well as tombs and temples (Amat, 1985, p. 124).

In modern NDEs, though cities, universities, monasteries, and other settings are also encountered, meadows and gardens are a recurrent feature in accounts from both the United States and India (Brinkley & Perry, 1994, p. 29; Osis and Haraldsson, 1977, pp. 162, 178; Ritchie & Sherrill, 1978, p. 69). Echoing the account of a man in India who died and went to a “beautiful garden ... which I cannot describe” (Osis & Haraldsson, 1977, p. 180), American near-death visionary Betty Eadie, in her book *Embraced by the Light*, recounted visiting a garden filled with trees and flowers the colors of which were far more intense than anything on earth. “The flowers,” she wrote, “are so vivid and luminescent with color that they don’t even appear to be solid” (Eadie & Taylor, 1992, pp. 78–79).

As illustrated by Eadie’s account, in many ways the most remarkable aspect of these otherworld landscapes are the vivid sensory and affective experiences associated with them. Perpetua wrote of thousands of people dressed in white garments, Saturus of the immense light (*lucem immensam*) of the garden awaiting him, the singing cypresses, and the choir chanting endlessly “Holy, holy, holy!” (*PP* 4.8; 11.4; 11.6; 12.2).

Although beautiful music is sometimes noted in modern NDEs, the experience of an unearthly, all-encompassing light, Zaleski (1987) concluded, constitutes “one of the few truly ‘core’ experiences that cut across historical and cultural boundaries” (p. 125). In his study of pagan and early Christian views of the afterlife as reflected in grave inscriptions, Bremmer (2002) observed that whereas light is occasionally mentioned in pagan epitaphs describing the hereafter, “literally dozens of Christian funerary epitaphs speak of heaven as a *lux vera*, a *lux perpetua*, an expression which has even been incorporated into the Christian liturgy” (p. 60). Conversely, the senses of taste and smell figure much more prominently in ancient NDEs than in modern ones. Perpetua awoke still tasting the cheese curds she had received, and Saturus wrote of everyone being nourished by an indescribable fragrance (*odore inenarrabili alebamur*) (*PP* 13.8).
In addition to entering and being rejuvenated in unearthly gardens, both ancient and modern near-death experiencers have encountered central divine beings. Black Elk met the Six Grandfathers of his people, and Eadie, whose mother was a Sioux Indian, met Jesus Christ (Eadie & Taylor, 1992, p. 42; Neihardt, 1932, p. 21). Like many other modern American near-death experiencers, Dannion Brinkley, who was temporarily struck dead by lightning, wrote simply of the “Being of Light” (Brinkley & Perry, 1994, p. 11; Moody, 1975, pp. 58–64).

As the central divine figure in their visions, both Perpetua and Saturus encountered in the middle of the heavenly garden a white-haired man (hominem canum), though like many modern near-death experiencers, they never actually identified this divine figure by name (PP 4.8; 12.3). There are also noteworthy differences in the two descriptions. Whereas Perpetua reported an elderly shepherd milking sheep, Saturus described the white-haired man in regal terms: He was seated on a throne surrounded by an entourage of elders and angels, and four of the angels had to lift Saturus up so that he could greet the man with a kiss.

Given that neither Perpetua nor Saturus identified the white-haired man by name, this figure’s identity remains somewhat ambiguous. Ancient Christian audiences might easily have identified the shepherd figure as Christ, God, or both. Similarly, an enthroned figure, whom the angels in Saturus’s vision referred to as Dominum, the Lord, could be understood not only as God or Christ but even as a deceased apostle or church elder (PP 11.10). Such ambiguity or fluidity of identity is characteristic of the “Light” or “Being of Light” reported in many modern American NDEs as well: Visionary images of the divine often go beyond established religious or cultural categories and conceptions, making them at once vibrant, compelling, and challenging of set ideas.

For both Perpetua and Saturus, as well as for modern near-death visionaries, the encounter with the divine being represented a return to source, a coming home. Referring to the elders in Saturus’s vision who told him and Perpetua to “go and play” (PP 12.6), Robin Lane Fox (1986) noted: “In the next life, the martyr expected to return to a childlike peace and a harmless simplicity of heart” (p. 403). For both Saturus and Perpetua, visiting the heavenly garden reunited them with their wider Christian family and community. Whereas Saturus met other martyrs who had passed on, Perpetua was reunited with thousands of the faithful dressed in white. The shepherd then greeted Perpetua as a kind father. “Welcome, my child,” he exclaimed (PP 4.9).
As Salisbury (1997) pointed out, the sweet milk curds Perpetua then received would have reminded her of the rites that signaled her initiation and belonging in the family of the Christian faithful, both on earth and in the beyond. Newly baptized church members celebrated their first Eucharist by receiving milk and honey as a foretaste of the "sweetness of heaven," and Carthaginian worshippers consumed milk and cheese in church as a regular part of Holy Communion (p. 103). In the ancient mystery religions as well, milk was, for obvious reasons, the drink of the spiritually reborn (Von Franz, 1980, p. 33). Thus, just as Perpetua had been nursing her own infant, so now the shepherd offered her milk of the newly born, embodying a striking combination of paternal and maternal attributes.

For modern near-death visionaries as well, the encounter with the divine being represents a homecoming, a return to childlike innocence. Describing her reunion with Christ, Eadie wrote:

I felt an utter explosion of love. It was the most unconditional love I have ever felt, and as I saw his arms open to receive me I went to him and received his complete embrace and said over and over, "I'm home. I'm home. I'm finally home." I felt his enormous spirit and knew that I had always been a part of him, that in reality I had never been away from him. (Eadie & Taylor, 1992, p. 41)

When Moody asked Dannion Brinkley why, after his near-death vision, he was no longer afraid to die, Brinkley drew on more maternal imagery, explaining: "Living on earth is like being forced to go to summer camp. You hate everyone and you miss your momma. Raymond, I'm going home" (Brinkley & Perry, 1994, p. 183).

Black Elk, too, was warmly welcomed into the rainbow teepee of the Six Grandfathers, and he saw himself planting a cottonwood tree under which his people, with all their children and animals, would live "like little chickens under the mother sheo's [prairie hen's] wing" (Neihardt, 1932, p. 29). Standing in his vision on the highest mountain, Black Elk then experienced himself and his people as part of the wider family of humanity and totality of all living things. "And while I stood there," he recounted,

I saw more than I can tell and I understood more than I saw; for I was seeing in a sacred manner the shape of all things in the spirit, and the shape of all shapes as they must live together like one being. And I saw that the sacred hoop of my people was one of many hoops that made one circle, wide as daylight and as starlight, and in the center grew one mighty flowering tree to shelter all the children of one
mother and one father. And I saw that it was holy. (Neihardt, 1932, p. 36)

Echoing many modern near-death visionaries, Black Elk remembered afterward continually feeling “homesick for the place where I had been” (Neihardt, 1932, p. 42).

For both ancient and modern near-death experiencers, the spiritual transformation they undergo in the visionary realm manifests itself both on an individual and communal level once they return. On the level of individual psychology, modern near-death visionaries consistently report and exhibit profound transformation characterized, as Zaleski (1996) summarized, by a “loss of fear of death, newfound zest for everyday life, and renewed dedication to the values of empathetic love, lifelong learning, and service to others” (p. 19).

Assessing the individual transformative effects of NDEs in ancient Carthage is much easier for Perpetua than for Saturus, who offered no interpretation of his visionary experience. Perpetua, like modern near-death experiencers, returned from her otherworld journey no longer fearing her own imminent death, a transformation that many modern commentators have noted (Amat, 1985, p. 73; Pettersen, 1987, p. 147; Von Franz, 1980, pp. 18–19, 75). To successfully navigate the ladder—one of the commonest images, Peter Dronke (1984) noted, for the “shaman’s or initiate’s means of ascent to heaven”—Perpetua had to conquer her fear of the dragon at the base (p. 7). Non me nocebit, in nomine Iesu Christi (“He will not harm me, in the name of Jesus Christ”), Perpetua exclaimed, and treaded upon the dragon’s head (PP 4.24).

After her fourth vision, in which she overpowered an Egyptian gladiator and stepped on his head, Perpetua awoke with a deeper understanding of her visionary experience: “It was not with wild animals that I would fight”, she realized, “but with the devil, but I knew that I would win the victory” (PP 10.14). In his letter To the Martyrs, Tertullian (3rd century A.D./1976) also described martyrdom as a trampling on the devil, equating the devil with a snake or dragon (p. 18; Salisbury, 1997, p. 100). Elsewhere, Tertullian identified fear as the primary weapon of Satan, implying, as Perpetua already knew first-hand from visionary experience, that “victory over the dragon was a victory over fear” (Amat, 1985, pp. 73–74). Like her companion Felicitas who knew that “another will be inside me who will suffer for me,” Perpetua could draw courage from the assurance in her fourth vision of Pomponius the deacon who told her: “Do not be afraid. I am here, struggling with you” (PP 15.6; 10.4).
Perpetua's first visionary journey up the ladder of fear to enlightenment, rebirth, and victory over death saw its continuation and consummation in her fourth vision with which it shared many structural and thematic similarities. Just as she had to climb a perilous ladder in her first visionary journey, so then in her fourth vision she had to traverse a path “through rough and broken country” (PP 10.3). She trampled the head of the Egyptian gladiator just as she had trodden upon the dragon's head, but this time she rose into the air without the aid of a ladder, perilous or otherwise. And whereas before she drank the milk of the newly born, so then she received the victorious gladiator's reward, the golden bough of eternal life (Von Franz, 1980, p. 69).

Perpetua’s visionary journeys from darkness to light, in which she experienced rebirth and ultimate victory over death, show striking structural and thematic parallels not just with shamanic initiatory visions and modern Western NDEs. They also mirror to a remarkable extent the experiences, what little we know about them, of initiates into the ancient Mediterranean mystery religions. A literary fragment attributed to Plutarch notes that “people who die and people who are initiated go through comparable transformations” (Meyer, 1987, p. 8). Immediately after this intriguing observation follows an account of the initiatory experience, possibly within the Eleusinian mysteries, that could well be describing an NDE, either ancient or modern. Touching on many elements common to both Perpetua’s and Saturus’s visionary accounts, the author of this fragment recounted the process by which mystery initiation served to conquer the fear of death and instill hope for the next life:

At first there is wandering, and wearisome roaming, and fearful traveling through darkness with no end to be found. Then, just before the consummation (telos), there is every sort of terror, shuddering and trembling and perspiring and being alarmed. But after this a marvelous light (phos) appears, and open places and meadows await, with voices and dances and the solemnities of sacred utterances and holy visions. In that place one walks about at will, now perfect and initiated (memuemenos) and free, and wearing a crown, one celebrates religious rites, and joins with pure and pious people. (Meyer, 1987, p. 9)

Yet, the transformation near-death experiencers undergo manifests itself not only on the hidden stage of their interior lives but also in their exterior lives. After his NDE, Brinkley left his job as a government black operative to care for the dying in hospices and to
establish centers for the sick and dying that he had seen in his vision. Like Brinkley, Black Elk worked to bring healing to his people by reenacting his visionary experience in the Horse Dance and other ceremonies involving the whole community (Neihardt, 1932, pp. 136–148).

Perpetua, too, returned from her first visionary journey with newly gained spiritual wisdom, authority, and power to heal, which she imparted to those around her. Together with her fellow confessors, she interpreted her first vision as prophetic in nature: “We realized,” she wrote, “that we would have to suffer, and that from now on we would no longer have any hope in this life” (PP 4.10). In her capacity to heal, however, Perpetua, unlike many other imprisoned martyrs whom Tertullian mentioned, directed her attention not to living Christians who sought purification from their sins but, rather, to her brother Dinocrates who had died years earlier (Fox, 1986, p. 448). After seeing Dinocrates in her second vision suffering and thirsty in a dark place, she prayed, bringing him light and refreshment—in this case water rather than milk—which she herself had just received through her own visionary journey of death and rebirth. Receiving the shepherd’s milk thus empowered Perpetua to bring healing and nourishment to her deceased brother, reenacting in visionary form the sort of ritual Perpetua, in observance of Mediterranean ancestral rites in the cemetery, would have carried out at her brother’s grave (Potthoff, 2000, pp. 27–28, 56–58; Quasten, 1940, pp. 256–257).

Unlike modern near-death experiencers, both Perpetua and Saturus also continued to remain a healing and divine presence in their own communities in their postmortem existence. The prologue of the PP presents the hearing of the account that early Christians read aloud as a means of communion not only with the deceased martyrs but also with Jesus Christ himself (1.6). The postmortem healing presence of these martyrs has also been documented archaeologically by the practice of burial ad sanctos (burial near martyrs and saints). Thousands of the faithful at the ancient Basilica Majorum in Carthage sought graves as close as possible to the probable graves of Perpetua and her companions (Frend, 1977, p. 25). Underlying this practice was the belief that the martyrs were present simultaneously in paradise and in the grave, available to refresh, purify, and protect all those buried around them (Duval, 1988, pp. 142,145). As is well-known, the healing power of martyrs’ relics was thought to extend to the living as well. To quote Peter Brown (1981), through the healing miracles at the
martyrs' tombs, "the eternity of paradise and the first touch of the resurrection come into the present" (p. 78), making "visible the invisible refreshment of the saints" in heaven (p. 75). The refreshment (Latin refrigerium) of paradise that Perpetua and other martyrs enjoyed in the visionary context had its counterpart in the graveside meals (refrigeria) that early Christians celebrated annually at the tombs of the departed (Potthoff, 2000, pp. 207-208, 222-223; Quasten, 1940, pp. 256-257).

The profound role the NDEs of early Christian martyrs played in shaping views about the afterlife is also apparent in the construction and decoration of early Christian churches throughout the Mediterranean. To enter a Christian basilica was to step into a liminal realm betwixt and between, a sacred space where paradise spilled over into everyday space and time. Surrounding and covering in mosaic form the graves of all the Christian departed were the furnishings of paradise reported by the martyrs who had visited this wondrous realm within the context of otherworld visionary journeys. Stonemasons translated the landscape of the visionary paradise, with its rolling meadows, cypress trees, flowers, fountains, and peacocks, into a funerary landscape of mosaic and marble. The martyrs' near-death visions of paradise, in many ways the imaginal counterpart to the external ritual act of creating a paradisal realm in the cemetery, provided blueprints and images from the spirit realm, which stonemasons sculpted into a culturally-shared sacred landscape where all Christians could experience healing and hope across the boundary of death (Potthoff, 2000, pp. 7, 229; Ring, 1992, pp. 218-222;).

The visions of Perpetua and Saturus, far from being "ordinary" dreams in either ancient or modern contexts, belong within the wider category of powerfully transformative otherworld journeys exemplified by shamanic initiatory visions and modern NDEs. Like traditional shamans and modern near-death experiencers, Perpetua and Saturus came face to face with their own deaths at life's boundary, to return spiritually reborn and transformed. No longer afraid to die, they returned to life to share the light and refreshment of paradise with all those around them – and with many generations to come. Citing such modern visionary phenomena as the appearances of the Virgin Mary at Medjugorje, Fox (1986) aptly noted: "Historians of the early Church have tended to overlook that they, too, are living in this golden age of visions: Encounters and sightings have not yet occurred in scholarly libraries" (p. 376). Whether in the ancient Carthaginian church or the
modern United States, the powerful and pervasive impact of NDEs has much to teach about dream and visionary experience as a vehicle of transformation and revitalization not only in individual lives but also in wider religious communities and movements as a whole.

References


Did Emanuel Swedenborg Have Near-Death Experiences? Envisioning a Developmental Account of NDEs

Simon R. Jones, M.A.
Charles Fernyhough, Ph.D.
Durham University, UK

ABSTRACT: The causes of Emanuel Swedenborg's (1688–1772) voices and visions remain unclear. It has recently been argued that post-hoc diagnoses of schizophrenia and epilepsy are not congruent with Swedenborg's actual experiences. In this article we examine the phenomenological commonalities between Swedenborg's experiences and near-death experiences (NDEs). Using the Near-Death Experience Scale (Greyson, 1985), we show that Swedenborg's experiences meet accepted criteria to be classified as NDEs. However, despite significant evidence for such commonalities, Swedenborg's experiences also show a number of points of divergence from NDEs. After reviewing the evidence for a potential role of hypoxia in generating NDEs, we hypothesize that a proximal cause of Swedenborg's experiences was his tendency to hypoventilate. Further, we argue that a distal cause of Swedenborg's experiences was neural changes induced by his lifetime of unusual respiration, in conjunction with a predisposition to temporal lobe seizures. We conclude by proposing a number of empirically testable hypotheses emerging from our arguments, centered around a developmental approach to NDEs.

KEY WORDS: development; hallucinations; hypoxia; near-death experience; Emanuel Swedenborg.

---

Simon R. Jones, M.A., is a Doctoral Candidate in Psychology at Durham University, United Kingdom, where Charles Fernyhough, Ph.D., is a part-time Senior Lecturer in Psychology. The authors wish to thank Profs. Janice Holden and Bruce Greyson for their helpful suggestions during the finalization of this article. Reprint requests should be addressed to Simon R. Jones at the Department of Psychology, Durham University, South Road, Durham DH1 3LE, United Kingdom; e-mail: s.r.jones@durham.ac.uk.
Emanuel Swedenborg’s (1688–1772) experiences were, in the words of William James (1902/1960), “the palmary one[s] of audita et visa, serving as a basis of religious revelation” (p. 460). Experienced through a range of sensory modalities, reflected in his memorable phrase “I have seen, I have heard, I have felt” (1749–1756/1872, n68), Swedenborg’s voices and visions are detailed in the records he kept in a range of works including his *Spiritual Diary* (1746–1765/1883), *The Word of the Old Testament Explained* (1746–1747/1928), *Arcana Coelestia* (1749–1756/1872), *Life on Other Planets* (1758/2006), *Heaven and Hell* (1758/1931), and *True Christian Religion* (1771/1883). He wrote these works in short passages that he numbered; thus, in this article, we will follow the custom of citing direct quotes from his work with reference to “n” for passage number rather than “p” for page number.

The form and content of Swedenborg’s experiences evolved over time (Toksvig, 1948), exhibiting a significantly different character pre- and post-1744. In the eight years before 1744, Swedenborg’s experiences included dreams, “visions when my eyes were closed,” “fiery lights,” and hearing “speech in morning time” (1746–1765/1883, n2951). Swedenborg later noted that had the nature of these events not changed post-1744, then he could “have fallen into the opinion (that these) things were phantasies” (1746–1765/1883, n2951). However, following two separate occasions in April 1744 and April 1745 in which Swedenborg experienced seeing Jesus and God respectively, both of whom spoke to him during nighttime visions, the nature of his experiences changed. During these events, Swedenborg experienced what he later described as the opening of his “interior sight” (1749–1756/1872, n1619), allowing him to see and hear “things of another life, which cannot possibly be made visible to the bodily sight” (1749–1756/1872, n1619). Swedenborg was henceforth able to enter into a ‘spiritual world’ on a daily basis and to engage in detailed conversations with the beings he encountered there, which he understood variously as spirits, angels, and demons (for further descriptions, see Benz, 2002; Jones & Fernyhough, 2008; Toksvig, 1948). In a typical example of his later experiences (Benz, 2002) Swedenborg reported the following. While “engaged in meditation upon the creation of the universe,” he recorded that an angel “above me on the right” noticed him and, “descended, and invited me up” into a spiritual world (1771/1883, n76). Swedenborg claimed that he was then conducted to the palace of a prince where there ensued a long
discussion with its occupants, after which "the angel, who had introduced me, accompanied me to the house where he found me, and from thence re-ascended to his own society" (n76).

Swedenborg (1758/1931) developed a detailed topography of the spiritual world he encountered. From his experiences he described how, after death, an individual's spirit went into a spiritual realm, an intermediate state between heaven and hell. This world appeared "like a valley between mountains and rocks, with here and there windings and elevations" (n428). It was in this intermediate zone that newly deceased individuals were thought to meet their friends and family. The purpose of this spiritual realm was for individuals to reveal their true identities, after which they would either descend to hell or ascend to heaven, through "gates and doors" (n429).

**Understanding and Explaining Swedenborg's Experiences**

For over two centuries, investigators have scrutinized Swedenborg's experiences. From within medicine, psychiatrists have proposed that Swedenborg suffered variously from monomania (Maudsley, 1869), schizophrenia (Jaspers, 1923/1962), epilepsy (Foote-Smith & Smith, 1996), and non-epileptic partial complex seizures associated with vascular disease (Bradford, 1999). We have recently argued (Jones & Fernyhough, 2008) that the phenomenology of Swedenborg's experiences does not fit with any of these diagnoses and that he should instead be understood as experiencing hallucinations without mental disorder. Such an approach stems from research showing that otherwise healthy individuals may experience hallucinations in the absence of the social dysfunction or distress associated with clinical psychosis and that such experiences exist on a continuum stretching into the normal population (de Boismont, 1860; Johns & van Os, 2001; Posey & Losch, 1983; Tien, 1991).

Notwithstanding our call for Swedenborg's experiences to be reinterpreted within discourses outside medical psychiatry (Jones & Fernyhough, 2008), the physiological and biological causes of his voices and visions remain to be explained. In this article we address the likely causes of Swedenborg's experiences, employing the distinction between likely proximal and distal causes. Whereas a proximal cause is the link in a causal chain that immediately precedes an event,
a distal cause is a link in the causal chain that precedes the proximal cause (Jackson & Coltheart, 2001). For example, whereas the immediate, proximal cause of a stomach pain may be an acidic meal, the more removed, distal cause may be stress over a period of years causing a proneness to stomach ulcers, possibly with a genetic predisposition to develop such ulcers.

In contrast to the finding that Swedenborg's experiences have only limited phenomenological parallels with the hallucinations of schizophrenia and epilepsy (Jones & Fernyhough, 2008), both Raymond Moody (1975) and Leon Rhodes (1982, 1996) have argued that a number of phenomenological commonalities exist between Swedenborg's experiences and those reported by individuals during near-death experiences.

Across cultures that include European, Middle Eastern, African, Indian, East Asian, Pacific, and Native American, the dying have reported anomalous experiences (Greyson, 2006). However, it was not until 1975 that Moody brought such experiences together under the heading of "near-death experiences" (NDEs; p. 13). Moody and Paul Perry (1988) subsequently defined NDEs as "profound spiritual events that happen, uninvited, to some individuals at the point of death" (p. 11). After reviewing 150 cases of NDEs, Moody was able to delineate 15 common aspects of the experience. These included inexpressibility, feelings of peace and quiet, unusual auditory experiences, seeing a dark tunnel, meeting other spiritual beings, a life review, and coming back into the body. These features may occur whatever the cause of the NDE, be it cardiac arrest, accidents, or suicide (Greyson, 2006). Furthermore, culturally contingent social representations of the afterlife, and hence individuals' expectations of it, do not appear to influence the form or content of the NDE itself (Athappilly, Greyson, & Stevenson 2006).

In the present paper, we set out to examine three questions. First, to what extent did Swedenborg's experiences share commonalities with NDEs reported today? Second, if significant parallels are found, what common mechanisms may underlie Swedenborg's experiences and NDEs? Finally, how can Swedenborg's experiences inform ongoing efforts to study, conceptualize, and offer theoretical explanations for NDEs?

Were Swedenborg's Experiences like NDEs?

Moody (1975) was first to propose parallels between Swedenborg's experiences and NDEs. He claimed that Swedenborg's day-to-day
voices and visions, involving leaving the body, speaking with angels, and seeing bright lights, were consistent with many facets of modern day NDEs. However, Moody’s aim was not to provide a systematic analysis of Swedenborg’s experiences; rather, his interest in the two forms of experience was in supporting his claim for the ahistorical, universal nature of NDEs. Furthermore, as a basis for his claim, Moody consulted only one anthology of Swedenborg’s writings.

In later studies, Rhodes (1982, 1996) overcame these limitations of Moody’s (1975) work by using a far greater range of Swedenborg’s works to examine his experiences in the context of NDEs. Rhodes (1982) concluded that “the NDE is closely related to Swedenborg’s experiences” (p. 30) and that “on numerous ... occasions [Swedenborg] gives descriptions comparable to those of a person returning from a condition of clinical death” (p. 20). However, Rhodes’s work, like Moody’s, suffers to some degree from a confirmatory bias. Both authors picked out aspects of the phenomenology of Swedenborg’s experiences that coincide with those that near-death experiencers (NDErs) report, yet both sidelined or did not address at all those aspects that differ from what NDErs report. Thus, there is a need for a systematic examination of the extent to which Swedenborg’s day-to-day experiences genuinely paralleled those found in NDEs.

Before we compare and contrast the phenomenology of Swedenborg’s experiences with those of NDEs, it is important to note one clear difference that Rhodes (1982) identified. Swedenborg’s experiences, occurring as they did on a daily basis, were not associated with obvious traumas resulting in a ‘near-death’ state. Swedenborg made only one reference to a putative near-death state being associated with one of his experiences, and even in that case it appears unlikely that he was physiologically close to dying. In this instance, Swedenborg (1758/1931) reported how “by living experience” (n448) he once underwent the process of dying, followed by being “raised” (n448) into a spiritual world. Swedenborg described how “I was bought into a state of insensibility as to the bodily senses, and thus nearly into the state of dying persons ... and ... I perceived that the respiration of the body was almost taken away” (n448). This process was followed by “a drawing, and, as it were, a pulling out of the interiors of my mind ... from the body” (n448). Swedenborg then reported encountering angels who communicated their thoughts to him by “looking into my face, for in this manner communication of thoughts is effected in heaven” (n448). This experience has many similarities with the experiences
NDErs report (Moody, 1975). However, in making their claim for a connection between Swedenborg's experiences and NDEs, Moody and Rhodes were more interested in Swedenborg's day-to-day experiences than in this isolated report of a near-death state. It is to these commonalities that we turn first.

**Swedenborg's Experiences and NDEs**

Since Moody's (1975) seminal work in which he identified 15 facets of the NDE, researchers have published a large body of systematic study of NDEs (e.g., Greyson, 2000, 2003, 2006; Parnia & Fenwick, 2002). In particular, Bruce Greyson (1985) devised a tool, the Near-Death Experience Scale (NDE Scale), to develop accepted criteria for their occurrence. This instrument, which is reliable, valid, and easily administrable, enables researchers and clinicians to differentiate NDEs from organic brain syndromes and non-specific stress responses (Greyson, 1985). Participants' NDEs are rated on the presence of 16 components, each of which can score zero, one, or two points, depending on the extent of their presence. Greyson designated a total score of 7 or higher as signifying the presence of an NDE. Although applying this tool to Swedenborg's writings is necessarily a subjective process, we argue that it may be useful in quantifying the extent of the parallels between Swedenborg's experiences and NDEs. In Table 1, we score the applicability of each item on the NDE Scale to Swedenborg's day-to-day experiences. We discuss the reasons for each of these scores below.

The first four items on the NDE Scale relate to cognitive aspects of the experience. Of these four items, we found items 1, 3, and 4 are not typical of Swedenborg's experiences. Time did not appear to speed up during his visions (item 1), scenes from his own past did not come back to him (item 3), and he did not suddenly seem to understand everything (item 4). Instead, the visions typically appeared to take place in real-time, like a film (Benz, 2002), in which Swedenborg encountered novel beings and situations, rather than events from his past; and, rather than sudden flashes of insight, Swedenborg was gradually shown and told details about the spiritual world through didactic conversations. Thus, a conservative approach would score 0 for Swedenborg on all these items.

However, item 2, 'Were your thoughts speeded up,' does appear to be applicable to Swedenborg. Many people who have experienced NDEs
Table 1
Ratings of Swedenborg's Experiences on the NDE Scale

<table>
<thead>
<tr>
<th>Component</th>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>1. Did time seem to speed up?</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2. Were your thoughts speeded up?</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>3. Did scenes from your past come back to you?</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4. Did you suddenly seem to understand everything?</td>
<td>0</td>
</tr>
<tr>
<td>Affective</td>
<td>5. Did you have a feeling of peace or pleasantness?</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>6. Did you have a feeling of joy?</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>7. Did you feel a sense of harmony or unity with the universe?</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>8. Did you see or feel surrounded by a brilliant light?</td>
<td>2</td>
</tr>
<tr>
<td>Paranormal</td>
<td>9. Were your senses more vivid than normal?</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>10. Did you seem to be aware of things going on elsewhere, as if by ESP?</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>11. Did scenes from the future come to you?</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>12. Did you feel separated from your physical body?</td>
<td>1</td>
</tr>
<tr>
<td>Transcendental</td>
<td>13. Did you seem to enter some other unearthly world?</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>14. Did you seem to encounter a mystical being or presence?</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>15. Did you see deceased spirits or religious figures?</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>16. Did you come to a point or border of no return?</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

reported “direct, unimpeded transfer of thoughts takes place.” Mitchell Leister (1998) gave the example of an individual who described the communications she received during her NDE as being “instant” and a form of “thought transfer” (p. 239). Swedenborg, too, experienced communication via thought transfer. For example, he claimed, “I have frequently discoursed with spirits ... in their proper tongue, that is, by ideas of thought” (1749–1756/1872, 1639). Signe Toksvig (1948) noted that “Swedenborg despaired of expressing the rapidity of this mode of communication” (p. 265) and that he experienced angels as being able to see “all the branching implications of an idea in all its complexity at one and the same time” (p. 265). Swedenborg often seemed to experience the elevation of his thoughts
to this "cognitive level" (Benz, 2002, p. 285) during his later visions. We conservatively score these phenomena as 1 on the NDE Scale, being faster than usual thoughts—as opposed to the 2-point NDE-Score score of incredibly fast.

The second four items on the NDE Scale address affective components of the experience. The emotion Swedenborg portrayed as associated with his experiences varied between his different works. In works published during his lifetime, such as Arcana Coelestia, Swedenborg's visions can come across as dry, didactic, intellectual experiences, or even "downright monotonous events" (Benz, 2002, p. 272). However, in his posthumously published personal diary (1746–1765/1883), Swedenborg revealed the direct, colorful, and emotional aspects of his experiences (Benz, 2002), and it is clear that his writings designed for public consumption are typically "devoid of their original emotional content" (p. 272).

Items 5 and 6 on the NDE Scale address whether the individual had a feeling of peace, pleasantness, or joy during the experience. Swedenborg (1758/1931) described a number of such experiences, reporting how "the peace of heaven has been perceived by me ... [while] ... elevated and withdrawn from the body" (n284). Swedenborg also reported that it was "frequently, and for a long continuance, granted me by the Lord to perceived the delights of heavenly joy" (1749–1756/1872, n545). Such experiences were an "affection of innumerable delights and joys" (n545). We believe both these items qualify for a score of 2 on the NDE Scale, involving as they did extreme peace or pleasantness and joy.

Item 8, which addresses whether the individual saw or felt surrounded by an 'incredible' light, is also applicable to Swedenborg. First, he claimed that angels and spirits "live in an aura of light" (1749–1756/1872, n1116) and, moreover, in "the highest degree of light" (n1116), to which "the midday light of this world cannot be compared" (n322). Elsewhere he stated that the "the light in heaven is such as to exceed the noon day light of this world in a degree surpassing all belief" (n1521). He also often reported seeing "a bright flaming light, which ... beamed forth before my eyes" (n1117). On this basis, we concluded Swedenborg qualifies for a score of 2 for this item, involving, as his experiences, did a bright or brilliant light he believed to be clearly of mystical or otherworldly origin.

The only affective component we found not applicable to Swedenborg is item 7 of the NDE Scale that addresses whether the individual
felt a sense of harmony or unity with the universe. Swedenborg did not seem typically to have undergone a feeling of mystical union with the universe, save for rare experiences (see Toksvig, 1948, p. 299). We hence scored him at zero on this item.

Greyson (1985) classified the third set of items on the NDE Scale as involving paranormal aspects. The first of these, item 9, addresses whether the individual's senses were more vivid than normal. This phenomenon was certainly the case for Swedenborg who noted how he saw “every single object much more vividly than ... similar objects on earth” (1749–1756/1872, n1622). We conservatively gave Swedenborg a score of 1, more vivid than usual, on this item—as opposed to a score of 2, which requires senses to be incredibly more vivid than normal.

Items 10 and 11 on the NDE Scale address whether the individual seemed to be aware of things going on elsewhere, as if by ESP, or whether scenes from the future came to them. Although Swedenborg claimed to have had psychic experiences (Toksvig, 1948), these features do not appear to have been typical of his visions themselves. Similarly, the content of the visions was not typically of future events but, rather, focused around didactic discussions (Benz, 2002). We therefore scored him zero on both of these items.

Item 12 on the NDE Scale addresses whether the individual felt separated from one's physical body. Greyson and Ian Stevenson (1980) reported that 75% of NDEs feature such an out-of-body experience, with the majority occurring within a limited area within a few yards of the body. Swedenborg rarely reported the specifics of his transitions between the material world and the spiritual world. As Ernst Benz (2002) noted, most of Swedenborg’s descriptions begin with formulaic lead-ins such as, “Once I saw in the spiritual world ...” or “I looked out into the spiritual world and saw ...” or “I was in the spirit when ....” Swedenborg defined “being in the spirit” as “a state of mind separate from the body” (1771/1883, n157). During this state, which Swedenborg inhabited for a period of decades, he recorded that he was “in the spirit and in the body at one and the same time, and only on some particular occasions out of the body” (n157).

These instances of Swedenborg being out of the body included his putative near-death state described above, in which he recorded that he underwent “a drawing, and, as it were, a pulling out of the interiors of my mind ... from the body” (1758/1931, n448). In another example, he described how “I was once withdrawn from ideas of things material, or of the body ... I perceived material things which are such as are
worldly and corporeal, as beneath me, and remote” (1749–1756/1872, n1526). Swedenborg expanded on what is presumably the same experience in his personal diary. Here he stated that

there appeared ... a lively sparkling of light ... like an adamantine light or the light sparkling from diamonds ... and it withdrew me from corporal ideas; yea, from the body itself. When I was in that light I beheld corporeal things as though beneath me, which I indeed felt, but as though removed from me, and not belonging to me. (1746–1765/1883, n 600)

Elsewhere he also reported the experience of being “elevated into the light, which glittered like the light radiating from diamonds” (1749–1756/1872, n4413). However, as Swedenborg noted himself, such out-of-body experiences were rare.

Despite not often undergoing out-of-body experiences, Swedenborg often referred to returning “home” at the end of a vision, when he left the spiritual state and re-entered his physical body (Benz, 2002). Benz stated that, for Swedenborg, “the experience of being ‘outside of oneself’ and ‘in the spirit’ is therefore linked with the specific movements and spatial impressions of leaving and returning to his earthly standpoint” (p. 297). Elsewhere, Swedenborg reported occasions in which angels “descended, and invited me up to them” (1771/1883, n76). Thus, Swedenborg appeared to experience some sense of spatial movement away from the body, although the phenomenology of how he actually experienced his transition remains hard to establish. We propose that Swedenborg should not be scored at 2 on this item, for which he would have to be said clearly to have left the body and existed outside of it. He can, however, be said to have lost awareness of his body to some degree, and we hence allocate a score of 1 on this item.

The final four items on the NDE Scale address transcendental aspects of the experience. Items 13 and 14 address whether the individual felt they entered some other, unearthly realm, and whether they encountered there a mystical being or presence. This was certainly the case for Swedenborg, as his experiences typically involved entering a “spiritual world” (e.g., 1771/1883, n280) in which he encountered “things of another life” (1749–1756/1872, n1619) as well as mystical beings such as spirits, angels, and demons. Swedenborg’s experiences hence score 2 for both these items, meeting Greyson’s (1985) criteria of involving a “clearly mystical or unearthly realm” and a “definite being, or voice clearly of other-worldly origin.”
Item 15 involves the individual seeing deceased spirits or religious figures. Consistent with this phenomenon, Swedenborg claimed to have "conversed almost with all with whom I was acquainted during their life in the body" (1749–1756/1872, n1636) during his experiences. Furthermore, he also claimed to meet and speak with well-known figures including Aristotle, Descartes, and Leibniz (1771/1883, n696). Thus, we found Swedenborg's experiences meet the criteria for a score of 2 on this item.

Finally, item 16 involves assessing whether the individual came to a border or point of no return. Going through doors or across limits during NDEs is commonly interpreted as entering into heaven, and many individuals turn back at this point. For example, one individual reported hearing a voice during an NDE saying, "[G]o back. Your work on earth has not yet been completed" (Moody, 1975, p. 72). Swedenborg reported similar experiences, although they did not appear frequently in his reports. As noted above, he understood that after death individuals entered a spiritual realm that was a form of holding zone between heaven and hell. The transfer from this holding zone to Heaven and Hell occurred through "gates and doors" (1758/1931, n429). The gates and doors to hell appeared "dusky and as it were sooty caverns, tending obliquely downwards to the deep, where again there are several doors" (n429). However, these phenomena do not really constitute barriers that Swedenborg was forbidden to cross. It seems fairer to rate Swedenborg as scoring 1 on this item, as his experiences did involve a return to the body, as we described previously.

In conclusion, as Table 1 shows, a conservative approach to Swedenborg's typical day-to-day experiences can be seen to result in a score of 16 on the NDE Scale. This score is well above the cut-off point of 7 required for classification as an NDE (Greyson, 1985). In addition to the experiences identified on the NDE Scale, it is also worth considering whether Swedenborg did—or did not—experience any other common facets of NDEs.

Other Aspects of NDEs

One notable feature of the NDE Scale is that Greyson (1985) did not include in it a number of items Moody (1975) considered integral to NDEs, such as the experience of passing through a dark tunnel. Greyson (1985) noted that, in the case of the dark tunnel experience,
he excluded the phenomenon because, in a preliminary version of the NDE Scale, this item failed to correlate with the other Scale items. This finding suggests that the dark tunnel experience may not be specific to the NDE experience and instead may be experienced in a wide variety of altered states of consciousness (Greyson, 1985). We note in passing that Swedenborg did not report any such dark tunnel experiences. However, it is likely to prove fruitful to compare Swedenborg's experiences with other aspects of NDEs that Moody and others identified.

Ineffability. Moody (1975) claimed that individuals who undergo NDEs “uniformly characterize their experiences as ineffable, that is, inexpressible” (p. 25). Such comments are typically of the form, “there are no words to express what I am trying to say” (p. 25). Some, though not all, of Swedenborg’s experiences had this characteristic. As noted above, Swedenborg’s theological topography consisted of a heaven, a hell, and an intermediate holding realm into which humans pass after death. Swedenborg found the speech of what he referred to as angelic spirits, whom he understood to reside in heaven, typically to be “incomprehensible” (1749–1756/1872, n1643). Furthermore, in a passage with similarities to Moody’s own phrasing, Swedenborg reported that “the speech of the celestial angels ... is ... ineffable and inexpressible” (n1647). Rhodes (1996) also noted this element of ineffability in Swedenborg’s experiences.

However, by no means does ineffability characterize all of Swedenborg’s communications or descriptions of NDEs (Moody & Perry, 1988). As noted above, Swedenborg occasionally reported that he had “been let into the state in which the angels are ... and then I understood all that was said” (1758/1931, n239). Furthermore, when communicating with non-angelic spirits who he claimed to inhabit the realm between heaven and hell, Swedenborg typically found such spirits’ voices clearly understandable. For example, Swedenborg reported that he heard other spirits’ voices “as sonorously as the speech of man” (1749–1756/1872, n4652). Indeed, the dominant form of Swedenborg’s experiences appears to be comprehensible, didactic conversations (Benz, 2002).

The noise. Moody (1975) reported that NDErs describe having heard during their NDEs “various unusual auditory sensations” (p. 29) that may have taken the forms of “a loud click, a roaring, a banging, and ... a ‘whistling sound like the wind’” (p. 29). In line with this description,
some of Swedenborg's visions began with such auditory experiences (see Benz, 2002, p. 310). For example, before one vision, Swedenborg reported hearing "a noise like the roaring of the sea under my feet" (1771/1883, n71), and on another occasion, a "gurgling sound, like that of bubbles" (n332) preceded a vision. A noise also occurred during what Toksvig (1948) argued to be the key transformational experience in Swedenborg's life, his 1744 vision of Jesus. During this experience, Swedenborg "heard a noise under my head ... [and] a thundering noise as if many winds beat together" (Dream Diary, n51–52). However, noises preceding Swedenborg's experiences were not typical of his experiences.

Telling others. Moody (1975) noted that individuals who had undergone an NDE typically had "no doubt whatsoever as to its reality," reporting that the experience was "nothing like a hallucination" or was "so real" (p. 80). Furthermore, such individuals realized that contemporary society would not be sympathetic to such experiences and would be likely to treat experiencers as mentally unstable. Reports such as "I don't like telling people about it. People just kind of look at you like you're crazy" (p. 81) were common. Moody further noted that such individuals were reticent to share their experiences, stating, "no one in my experience has built himself a portable lectern and gone out to preach about his experiences on a full-time basis" (p. 84).

Swedenborg's attitude towards his experiences had much in common with these reported attitudes of NDErs. First, he was acutely aware that he might have been considered mad, writing of individuals who "persuaded others that I was insane" (1746–1765/1883, n2772). Similarly, he wrote that he was "well aware that many will say that no one can possibly speak with spirits and angels ... and many will say that it is all fancy, others that I relate such things in order to gain credence, and others will make other objections. But by all this I am not deterred, for I have seen, I have heard, I have felt" (1749–1756/1872, n68). Swedenborg vigorously denied that his visions were hallucinations, or "phantasy" as he termed it (e.g., 1746–1747/1928, n7386).

Effects on lives. Moody (1975) noted that many individuals say their NDEs have caused their lives to be broadened or deepened and that they have become more concerned with ultimate philosophical issues. In the words of Melvin Morse and Perry's (1992) book title, people who
have experienced NDEs are "transformed by the light." Swedenborg's experiences led to a radical reappraisal of his life and a shift away from scientific towards spiritual investigations. Moody also noted that a small number of individuals who have undergone NDEs claim to have developed psychic abilities as a consequence of the experiences. Swedenborg certainly claimed such abilities (Benz, 2002).

New views of death. Moody (1975) noted that nearly all individuals who experience NDEs report that they are subsequently no longer afraid of death. Swedenborg appears to have had a positive view of death, coming to view it as a "continuation of life" (1749–1756/1872, n70). When Swedenborg died at age 84, one of his contemporaries reported that "he was pleased, as if he was going to have a holiday, to go on some merry-making" (Toksvig, 1948, p. 361).

Associated anomalous experiences. In addition to the 15 features Moody (1975) highlighted, Swedenborg's reports show parallels with anomalous experiences NDErs reported having occurred before and/or after, but not during, their NDEs. One example is automatic writing. As noted above, Swedenborg produced much of The Word Explained, as well as his Spiritual Diary, through automatic writing. For example, he claimed that in the process of writing The Word Explained, he had "written entire pages, and the spirits did not dictate the words but absolutely guided my hand, so that it was they who were doing the writing" (1746–1747/1928, n1150). In the passages in which Swedenborg claims his hand was being guided, his handwriting differs from his normal hand, having an angular, slashing style (Toksvig, 1948). In this regard, his reports resemble the reports of two individuals Leister (1998) interviewed who also described experiences of automatic writing after their NDEs. One individual reported that at times she "finds herself writing notes to herself, although she has no conscious awareness of this process" (p. 242), and another claimed that "words will flow through me onto paper" (p. 239).

Another research finding is that both before and after their NDEs, experiencers commonly report having hallucinatory experiences during clear consciousness (Leister, 1998). For example, in a sample of individuals who had experienced an NDE 10 or more years ago, Morse and Perry (1992) found that 12% continued to have regular contact with the same angels they saw during their NDEs, and more than 10% reported seeing "ghosts or other apparitions" (p. 164) following their
NDEs. Consistent with such findings, Swedenborg experienced a whole range of anomalous hallucination experiences (Jones & Fernyhough, 2008).

Conclusions

What can be concluded from the above review? Using Greyson's (1985) NDE Scale, Swedenborg's experiences may be identified as meeting the criteria for an NDE. The affective and transcendental components of the NDE Scale show strong parallels with Swedenborg's experiences. Swedenborg's experiences can also be seen to have much in common with other facets of NDEs that Moody (1975) identified. Furthermore, Swedenborg described other anomalous experiences that NDErs also have described. However the cognitive and paranormal components of the NDE Scale are less applicable to his experiences. Swedenborg's cognitive faculties while in the 'spiritual world' appear to have remained broadly consistent with his normal functioning, save for the perceived ability to communicate via thought transfer rather than speech. Similarly, a number of Moody's (1975) facets of NDEs, such as the dark tunnel, do not appear in Swedenborg's descriptions of his experiences. Likewise, the physical transition between the material world and the 'spiritual realm', which NDErs have commonly reported (e.g., Greyson & Stevenson, 1980), does not figure strongly in Swedenborg's reports.

However, overall, the extensive parallels between Swedenborg's experiences and NDEs arguably suggest a potential common causal factor behind both. This speculation brings us to our second main question, which concerns common mechanisms that may underlie Swedenborg's experiences and NDEs.

Mechanisms Underlying Swedenborg's Experiences and NDEs

Cerebral Hypoxia

One factor that has been argued to play a causal role in NDEs, as well as being prominent in Swedenborg's life, is cerebral hypoxia. We first discuss what cerebral hypoxia is, and then examine its potential to have a causative role in NDEs, before turning to an examination of its occurrence in Swedenborg.
Hypoxia and NDEs. Cerebral hypoxia, a decreased oxygen supply to the brain, may occur for a variety of reasons. First, reduced atmospheric oxygen or obstruction of the airways can result in an insufficient concentration of oxygen in the blood. Second, in conditions such as anemia and carbon monoxide poisoning, although ample oxygen is available, the blood is unable to transport it efficiently. Finally, in conditions such as strokes, cardiac arrest, or extreme g-forces, despite ample oxygen in the blood, its supply to the brain may be interrupted.

Many researchers have found that hypoxia can cause hallucinatory experiences with some phenomenological parallels to NDEs. First, a reduction in respiration rate can induce altered states of consciousness, including hallucinatory experiences (Vaitl et al., 2005). In such experiences, slow breathing — hypoventilation — can cause increases in carbon dioxide ($\text{CO}_2$) concentrations in the blood, termed hypercapnia (Vaitl et al.). A simple method of inducing hypercapnia experimentally is through inhaling $\text{CO}_2$-enriched air. Using this technique, Laszlo von Meduna (1950) found that hypercapnia can result in experiences with some parallels to NDEs, such as bodily detachment and the perception of being drawn toward a bright light. Although Pavel Terekhin (1996) failed to replicate this finding, Dieter Vaitl et al. (2005) argued that the failure was due to methodological differences in the amount and duration of $\text{CO}_2$ used to induce hypercapnia. Based on work with pilots who have experienced ischemic hypoxia due to the presence of extreme g-forces, James Whinnery (1997) has also proposed that hypoxia may cause hallucinatory experiences with parallels to NDEs. Pilots reported a range of experiences including seeing bright lights and experiencing vivid semi-conscious "dreamlets" (p. 244) involving encounters with family and close friends. However, it has been argued that the experiences research participants described in both Whinnery's (1997) and Meduna's (1950) studies do not parallel NDEs very closely. For example, Edward Kelly, Emily Kelly, Adam Crabtree, Alan Gauld, Michael Grosso, and Greyson (2006) argued that in Whinnery's (1997) study, the parallels to NDEs were limited, including as they did convulsions and seeing living—as opposed to deceased—individuals.

More convincing evidence for the potential of hypoxia to result in NDEs comes from a number of experimental studies in which researchers empirically investigated the effects of cerebral hypoxia on cognition. For example, Thomas Lempert, Martin Bauer, and
Dieter Schmidt (1994) caused 42 healthy young adults to reach the stage of fainting (syncope) by having them hyperventilate and perform the Valsalva maneuver. This maneuver involves forcibly exhaling while the mouth is closed and nose is pinched to prevent air from escaping from these orifices. During syncope, participants reported visual hallucinations, such as seeing colours and lights that sometimes intensified to a glaring brightness. They also reported more complex visual hallucinations, including those of landscapes and familiar people; auditory hallucinations ranging from roaring noises to screaming or unintelligible human voices; and out-of-body experiences. They described the emotional valence of the experience as pleasant, detached, and peaceful, making participants unwilling to return.

Lempert et al. (1994) noted that not only did their procedure evoke hallucinatory experiences but that these experiences took the form of NDEs. Specifically, the researchers stated that “our experiment confirms the potency of cerebral hypoxia to induce near-death experiences” (p. 830). Indeed, two participants reported parallels with NDEs they had earlier experienced as a result of traumatic events. However, a number of differences between such experiences and NDEs still remain. First, the short duration of such events meant that the visions research participants experienced were only fragmentary and were not of the coherent narrative form typically found in NDEs. Second, the visions were not interactive: Participants did not report interacting with the figures in their visions to any significant degree, which is a notable feature of NDEs.

Even if cerebral hypoxia were able to cause NDEs, it may not be a necessary cause of them (Blackmore, 1998). For example, Pim van Lommel, Ruud van Wees, Vincent Meyers, and Ingrid Elfferich (2001) found that only 18% of cardiac arrest survivors—who had been clinically dead—reported NDEs. Furthermore, in a study of blood gases in a patient during an NDE, results showed normal levels (Sabom, 1982). In a later study Sam Parnia, Derek Waller, Rebecca Yeates, and Peter Fenwick (2001) also examined blood oxygen and carbon dioxide levels during cardiac arrest and compared levels in those who had NDEs \((N = 4)\) and those who had not. They found blood oxygen levels to be higher—not lower—in the NDE group. In addition to the small sample sizes, one weakness of such studies is the researchers’ inability to match the time of taking blood with the exact time at which the NDE occurred. Furthermore, as cardiac arrest involves the cessation of blood being pumped to the brain, as well as
the rest of the body, actual oxygen levels in the blood should be of only minimal relevance. Once equilibration has taken place between the oxygen levels in the cerebral blood and those in cerebral tissue, no more will be delivered until blood flow resumes.

A further criticism of the proposed causal role for hypoxia in the generation of NDEs comes from Greyson (2006). He claimed that hypoxia generally produces "idiosyncratic, frightening hallucinations and leads to agitation and belligerence, quite unlike the peaceful NDE with consistent, universal features" (p. 397). However, Lempert et al.'s (1994) study demonstrated that hypoxia-induced hallucinations are not necessarily associated with negatively valenced experiences. Likewise, NDE hallucinations associated with non-life-threatening reflex anoxia seizures in children are also of various valences (Blackmore, 1998). It thus may be only when an uncontrollable traumatic event causes hypoxia that ensuing hallucinations are negative. We speculate that when the hypoxia is a controlled event, the lack of state anxiety associated with the event may have a corresponding influence on the emotional valence of the experience.

In conclusion, it appears that hypoxia may be able to create experiences with some parallels to NDEs. However, researchers have investigated only brief, single hypoxic episodes. In such studies, hypoxia typically results in only superficial resemblances to NDEs, with visions not being interactive, being of living (as well as dead) people, and being more fragmentary than the coherent narrative type experiences of NDEs. It remains for future research to determine why some hypoxic states may have similarities with NDEs and not others, and to examine how more frequent hypoxic events may alter the phenomenology of the hypoxic episodes, or the probability of NDEs occurring. One way to investigate this question could be to examine the prevalence of NDEs and NDE-like experiences in high-altitude mountaineers in whom researchers have found hypoxic states cause numerous permanent neural changes (e.g., Garrido, Castello, Ventura, Capdevila, & Rodriguez, 1993). Indeed, Shahar Arzy, Moshe Idel, Theodor Landis, and Olaf Blanke (2005) have speculated that Biblical and other mystical experiences (although not specifically NDEs) that people experienced on mountains may have resulted from hypoxia preferentially affecting areas of the cerebral cortex that researchers have linked to disturbed own-body perceptions and mystical experiences. Factors such as the context of the hypoxic state and the personality of the sufferer, in conjunction with their life history and
temporal lobe reactivity (discussed further below), may need to be considered. In summary, although other factors are likely to be involved in many cases of NDEs, there is evidence that hypoxia may play a contributory role in some such cases. We now turn to address how and why Swedenborg came to be exposed to hypoxic states.

_Hypoxia as a proximal cause of Swedenborg's experiences._ The cause of Swedenborg's experiences may lie in a phenomenon that Swedenborg himself reported: his ability to slow his rate of respiration. Swedenborg noted that ever since his childhood he had been able to breathe in a "scarcely perceptible" way (Benz, 2002, p. 158). This breathing technique appears to have consisted of suppression of his breathing in order to focus thought (p. 158). Such a technique has parallels in contemporary Zen and Yoga practices in which focused attention on breathing allows slow and shallow respiration as part of the meditative process (Vaitl et al., 2005). For example, members of the Japanese Zen sect of Rinzai give special emphasis to the skill of breath control, and their training in very slow and quiet breathing can result in respiration rates less than 1 breath/min (Lehrer, Sasaki, & Saito, 1999).

It is unclear whether Swedenborg's reduction of his respiration rate was wholly, partly, or not at all under his conscious control. Partial control appears the most probable option. Evidence that he suffered from a form of sleep apnea, where breathing intermittently stops during sleep (Banno & Kryger, 2007), suggests that it was not entirely under his conscious control. For example, Swedenborg reported that he "repeatedly noticed that I stopped breathing after I had fallen asleep, and gasped for air when I awoke" (Swedenborg cited in Benz, 2002, p. 158). He also spoke of awaking one night and believing that spirits that "conspired against me with the purpose of suffocating me" (1746-1765/1883, n458). Swedenborg reported such reduced respiration rates also during the day. He noted that when such incidents occurred, his heart rate and breathing sometimes coincided. For example, he stated that "the terminations of the heart's time closed in the pulmonic beats, and were related to each other" (ibid, n1615).

After Swedenborg had been having anomalous experiences for some years, he made the direct link between his controlled breathing and his spiritual experiences, claiming that "my respiration was so formed by the Lord that I could respire inwardly for a considerable time, without the aid of external air... in order that I may be with spirits and speak with them" (1746-1765/1883, n3317). He stated that "when
heaven was opened to me, and I was enabled to converse with spirits, I
sometimes scarcely breathed” (n3464). It hence appears likely that
Swedenborg’s hypoventilation is a likely candidate for a proximal
cause of his experiences. Indeed, Benz (2002) has already noted that
“one cannot dismiss the possibility that Swedenborg’s varied visionary
experiences... are related to this phenomenon” (p. 159). However,
Benz has not considered in any detail the contemporary scientific
evidence that might support or refute the involvement of such a
mechanism, and how it may have acted as both a proximal and distal
cause.

**Distal Causes of Swedenborg’s Experiences**

Although it seems plausible that hypoxia may have been a proximal
cause of Swedenborg’s experiences, the question of distal causation, or
etiology, remains. In this section, we consider two possible distal
causes. The first is that a single traumatic event led to Swedenborg
undergoing ongoing anomalous experiences. The second is that
hypoxia over a long period of time, existing in Swedenborg’s case
since childhood, led to a developmental trajectory in which individual
hypoxic events came to be more likely to result in unusual experiences
than they would in the general population. We deal with these
possibilities in turn.

**A one-time traumatic event.** Several researchers have found that
traumatic experiences, such as war (Butler, Mueser, Sprock, & Braff,
1996) and childhood abuse (e.g., Read & Argyle, 1999), as well as
NDEs (Greyson & Leister, 2004; Leister, 1998), appear to serve as
kindling events whereby, in their aftermath, people have continuing
anomalous experiences such as hallucinations. With regard to
Swedenborg, the major problem with this ‘kindling event’ dynamic is
that it is hard to pinpoint such an event in Swedenborg’s life. The most
likely event would be the April 1744 nighttime experience of seeing
Jesus. However, as noted above, the form and content of Swedenborg’s
experiences evolved over his lifetime, from early vivid dreams and
hypnagogia pre-1744, to his later visions. It hence appears more
probable that some more incremental process contributed to Sweden-
borg’s experiences.

**A gradualistic account of Swedenborg’s experiences.** As noted
earlier, since childhood, Swedenborg had been able to control his
breathing. It is thus possible that Swedenborg's developmental trajectory could have been affected by his early and continued hypoventilation. It is already known that both schizophrenia (e.g., Zornberg, Buka, & Tsuang, 2000) and epilepsy (Bergamasco, Benna, Ferrero, & Gavinelli, 1984) are associated with fetal hypoxia and hypoxia due to obstetric complications. It would, therefore, appear plausible that proneness to NDEs may also be increased by early hypoxia. Animal studies have shown that early hypoxia can lower future seizure thresholds (Koh, Tibayan, Simpson, & Jensen, 2004; Owens, Robbins, Wenzel, & Schwartzkroin, 1997) as well as lead to greater neural excitability (Jensen & Baram, 2000). It is also known that intermittent hypoxia selectively activates certain genes, down-regulating some while upregulating others (Prabhakar, 2001). In particular, hypoxia appears to regulate a number of genes associated with schizophrenia (Schmidt-Kastner, van Os, Steinbusch, & Schmitz, 2006). Although this process is still not understood in detail, it appears plausible that Swedenborg's neural activity may have been influenced by such genetic activity. Similarly, researchers have found that the hypoxia, hypercapnia, and brief blood pressure elevations resulting from sleep apnea cause changes in the temporal lobe (Macey et al., 2002). This finding supports proposals that hypoxia can hypersensitize neurons and lower seizure thresholds, particularly in the temporal lobe (e.g., Benveniste, Brejer, Achouseboe, & Diemer, 1984) where a high prevalence of interictal temporal lobe epileptiform EEG activity is found in people who have had NDEs (Britton & Bootzin, 2004).

We hence propose that Swedenborg's experiences resulted from an atypical developmental trajectory shaped by hypoxia resulting from hypoventilation. This developmental trajectory led to the evolution of Swedenborg's experiences over a period of decades, from unusual dreams and brief experiences in the hypnagogic state, to much more substantial experiences in the hypnagogic state and hallucinations in clear consciousness with form and content paralleling NDEs. We propose that the development of these experiences could have been caused by the continuing hypersensitizing of neurons and lowering of seizure thresholds, especially in the temporal lobe. This development would account not only for the NDE-like experiences that Swedenborg came to have but also other of his experiences that do show parallels to epileptic seizures (Jones & Fernyhough, 2008); for example, unusual olfactory and tactile experiences.
Some critics might object that if this hypoxic process were the case, then Swedenborg should have manifested other significant, long-term neurocognitive effects, such as memory impairment (Yonelinas et al., 2002). However, as Fenella Kirkham and Avijit Datta (2006) noted, an individual's reaction to hypoxia depends on "genetic factors and on the timing, degree and duration of exposure" (p. 414), and some evidence indicates that hypoxia and hypercapnia do not necessarily lead to pervasive developmental changes (McCray, Crockett, Wagener, & Thies, 1988). Similarly, even if Swedenborg's hypoventilation did lead to an alternative developmental trajectory, this process would presumably still have resulted in the development of unimpaired cognitive abilities, albeit potentially through atypical developmental pathways (Karmiloff-Smith, 1998).

The observation that many contemporary Zen practitioners do not report parallels to Swedenborg's experiences, even though they have undergone extensive breath-control training, suggests that such continued hypoxia may not be a sufficient cause of Swedenborg's experiences. Therefore, he likely had some predisposition to such experiences. One possibility is that he inherited a tendency to lower seizure thresholds in the temporal lobe. Although little evidence exists for this hypothesis, some signs of hypergraphia and an intense religiosity in his father, which have been associated with epilepsy, could be considered supportive of it. To be clear, we are not claiming that Swedenborg suffered from epilepsy, as Swedenborg's experiences are not consistent with the hallucinatory experiences sometimes associated with epilepsy (Jones & Fernyhough, 2008). Rather, our proposal is that a predisposition to temporal lobe seizures, in conjunction with neural changes due to long-term hypoventilation since childhood, led to his experiences.

Such an account offers a developmental explanation for the dilemma of how Swedenborg was able to have NDE-like experiences in clear consciousness. Repeated experiences of hypoxia throughout his childhood may have sensitized his temporal lobe neurons such that hypoxia that would facilitate an NDE in most adults only as they lost consciousness facilitated NDE-like experiences in Swedenborg during conscious states as well.

**Hypnagogia**

As part of the above model, we have proposed that Swedenborg's hypnagogic experiences were a step in the developmental progression
to a qualitatively different type of hallucinatory experience that had parallels to NDEs. Critics might object that all Swedenborg's experiences, and potentially many aspects of NDEs (e.g., Nelson, Mattingly, Lee, & Schmitt, 2006), were simply a form of hypnagogic hallucinations, in that they were intrusions from REM sleep into waking consciousness. In a related proposal, J. Allan Hobson (1999, 2002) has suggested that Swedenborg's experiences resulted from "keeping himself awake all night then letting himself sleep fitfully by day" (p. 131) and undertaking "intentional sleep deprivation" (2002, p. 95). This, Hobson claimed, caused an imbalance in Swedenborg's aminergic-cholinergic system that, in turn, facilitated the impulsive firing of vision neurons, resulting in his hallucinations. In order to examine this proposition, we will examine briefly the parallels between Swedenborg's experiences and hypnagogic phenomena as well as his sleeping patterns.

Hobson (1999, 2002) did not provide details about the source of his claims that Swedenborg kept himself awake all night and slept fitfully during the day and that he undertook intentional sleep deprivation. One possible source for this claim is a text that William White (1867) wrote almost 100 years after Swedenborg's death in which he noted that Swedenborg paid little regard to night and day "sometimes sleeping through the one and working through the other" (p. 341, italics added). However, the basis for White's claim is the report of Swedenborg's friend and contemporary, Carl Robsahm, the treasurer of a Stockholm bank. Robsahm's (1782, as cited in Tafel, 1875a) account indeed related that Swedenborg "never had any definite time for sleeping" (p. 33), but he also noted that Swedenborg told him, "When I am sleepy, I go to bed" (p. 32). This practice is very different from the practice of intentional sleep deprivation. At other points in his life, Swedenborg seems to have practiced more fixed sleeping patterns. For example, Swedenborg noted in his Dream Diary that around the time of his first significant visions in 1744–1745, he usually went to bed around 9:00 p.m. and slept for 10–12 hours. Consistent with this report, one of his friends observed that Swedenborg slept "pretty long, and thirteen hours are not too much" (Tafel, 1875b, p. 482). In his later years, Swedenborg's housekeeper noted that "every evening he goes to bed at [7:00], and gets up in the morning at [8:00]" (Tafel, 1875b, p. 446). The available evidence hence does not appear to support Hobson's claims of a nocturnal lifestyle, fitful sleep, and intentional sleep deprivation.
The second question is whether Swedenborg's experiences showed phenomenological parallels to hypnagogic phenomena. One property of such experiences, such as faces seen during this state, is that they are often more vivid than a normal face seen in the waking state (Leaning, 1925; Schacter, 1976). For example, Mavromatis (1988) noted that "[hypnagogic images] are so sharp and detailed, as one subject put it in respect to faces, 'I could see the grain of the skin'" (p. 29). Similarly, hypnagogic scenes of landscapes and buildings very often possess qualities of unusual color, grandeur, and beauty (Leaning, 1925; Mavromatis, 1988). All these facets show parallels with Swedenborg's experiences and would lead to the endorsement of item 9 on Greyson's (1985) NDE Scale (see Table 1). Similarly, hypnagogic images can be associated with the presence of intense light that experiencers describe as mystical, having "a strange luminosity" or being like "liquid fire" (Leaning, 1925, p. 339). Such experiences would lead to endorsement of item 8 on the NDE Scale. Furthermore, the finding that meditative breathing practices may induce hypnagogic imagery (Mavromatis, 1988) again suggests that Swedenborg's experiences may have been a form of hypnagogic phenomenon.

As some of Swedenborg's experiences occurred in the hypnagogic state, such parallels should not be surprising. However, Swedenborg's visions often exhibited a number of features very unusual for hypnagogic phenomena but common in NDEs. Indeed, Swedenborg's experiences represent more differences than commonalities with hypnagogic phenomena. First, Andreas Mavromatis (1988) noted that "not only are strong emotions rare in [the hypnagogic] state but also that their occurrence is not conductive to ... hypnagogia," and that "most subjects report that they experience 'relaxed numbness'" or are merely "disinterested" (p. 62). This emotional quality is in stark contrast to the strong affective states that Swedenborg often reported in association with his experiences. Second, hypnagogic scenes containing people typically have no beginning or end (Mavromatis). As noted above, Swedenborg's typical visions often involved him being invited somewhere and then returning 'home.' Third, speech in the hypnagogic state consists of "on the whole ... apparently nonsensical or irrelevant statements" (Mavromatis, p. 42). This description does not fit with Swedenborg's experiences. On a related point, like Wilson Van Dusen (1972), Daniel Schacter (1975) noted that "as one moves deeper into the hypnagogic state, thought and ideation become
increasingly bizarre [and] less amenable to conscious control" (p. 466). In contrast, Swedenborg portrayed his experiences as rational and clear. Fourth, hypnagogic hallucinations may involve encounters, through various modalities, with both the living and dead (Mavromatinis, 1988); however, like the vast majority of NDErs, Swedenborg reported encountering only individuals whom he knew to be dead. Furthermore, most hypnagogic imagery is later understood to be illusory and not reality-based, which contrasts with the conviction of reality Swedenborg had of his experiences—and most NDErs have of theirs. Although, as noted earlier, Swedenborg claimed he could have understood his pre-1744 experiences as “phantasy,” this was not the case with his post-1744 experiences.

It therefore appears that even if some of Swedenborg’s experiences were a form of hypnagogia, his experiences evolved into something very unlike typical hypnagogic hallucinations, instead having marked parallels with NDEs. This perspective is consistent with the wider argument that hypnagogic hallucinations are “qualitatively different” from NDEs (Long & Holden, 2007, p. 164).

Having established that the phenomenology of Swedenborg’s experiences was actually rather different from hypnagogic experiences, it is worth examining a testable implication of our model: that although NDEs are a separate class of phenomenon to hypnagogic experiences, hypnagogia may precede or act as a vulnerability marker for NDEs. Swedenborg’s case seems to support the hypothesis that people who report having had an NDE during a close brush with death will report higher rates of hypnagogia in the years preceding the NDE than those who do not report an NDE during a close brush with death. As Jeffrey Long and Janice Holden (2007) noted, the claim that hypnagogic phenomena may act as a vulnerability marker within a diathesis-stress model of NDEs is already to be found in the work of Kevin Nelson et al. (2006). Nelson et al. found hypnagogic phenomena to be more common in people who had experienced NDEs than in control participants, and they went on to propose that people who experience NDEs have arousal systems that predispose them to hypnagogic hallucinations (REM intrusions). However, Nelson et al. did not establish whether the hypnagogic hallucinations preceded or post-dated the occurrence of the NDEs. Long and Holden (2007) noted a number of other limitations of Nelson et al.’s research, and further empirical and theoretical research remains to be performed into the relationship between these two sets of phenomena.
Conclusions

In this article we examined the commonalities, as well as the differences, between Swedenborg's experiences and NDEs. By employing Greyson's (1985) Near-Death Experience Scale, we concluded that Swedenborg's experiences could be identified as NDEs. In particular, the affective and transcendental components of this scale clearly resonate with the phenomenology of Swedenborg's experiences. We also found in Swedenborg's visions other facets of NDEs that Moody (1975) had identified, such as the sometimes ineffable nature of his experiences and the effect of them on his life. Furthermore, Swedenborg experienced a range of other anomalous experiences similar to those that individuals who have undergone NDEs have reported. Contrastingly, we found that the cognitive and paranormal components of the NDE Scale were less applicable to Swedenborg's experiences, as his cognitive faculties remained broadly consistent with his normal functioning. A number of Moody's (1975) facets of NDEs, such as the dark tunnel, also do not appear in Swedenborg's writings. A lack of emphasis on the physical transition between the material world and the spiritual realm also differentiates Swedenborg's reports from some contemporary NDEs. That said, Swedenborg's experiences can broadly be seen as NDE-like experiences. We have proposed that the parallels between Swedenborg's experiences and NDEs suggest potential common contributory pathways behind both.

After reviewing evidence suggesting that hypoxia may contribute to some, but by no means all, NDEs, we have argued that a proximal cause of Swedenborg's experiences was cerebral hypoxia. In terms of distal causation of Swedenborg's experiences, we have argued that the existence of his altered patterns of respiration since childhood, possibly in conjunction with a predisposition to temporal lobe seizures, contributed to a proneness to such experiences.

However, we want to emphasize that we do not mean to claim that an account of Swedenborg's experiences at the physiological level is a sufficient or complete explanation of them. Attention must be paid to the context of his experiences, occurring as they did in a profound spiritual crisis. This crisis involved the clash of his orthodox Lutheran background with his scientific self, and a painful inability to believe without reasoning (Toksvig, 1948). Seen in this context, Swedenborg's experiences are consistent with what John Watkins (2008) has termed
hallucinations stemming from a psychospiritual crisis and can be seen as an idiosyncratic attempt to solve the questions arising from his crisis. However, Silvano Arieti (1979) has noted that an individual undergoing hallucinatory experiences would “probably not attempt to solve his problems in this abnormal way if he were not inclined to do so by a biological predisposition, or an unusual conglomeration of psychological factors, or a mixture of psychological and physical factors” (p. 46). In line with this reasoning, we would argue that Swedenborg's experiences are best understood as being an idiosyncratic response to an intense psychospiritual crisis that took the form it did due to his prior hypoxic developmental experiences in conjunction with a predisposition to temporal lobe seizures.

Critics might observe that some of the arguments we advanced in this article are, due to the historical nature of the subject, necessarily speculative. That said, we have also pointed to a number of directions for future empirical work. First, it would be interesting to examine whether there is a greater prevalence of NDEs in those who have had a lifetime of exposure to hypoxic states, such as those involved in meditative breathing practices or high altitude mountaineering. Second, are early hypoxic experiences (such as fetal hypoxia) and events associated with these experiences (e.g., birth complications) associated with the tendency to experience NDEs? Similarly, what developmental factors associated with the sensitization of the temporal lobe correlate with prevalence of NDEs? Such a developmental approach to NDEs may prove fruitful in furthering an understanding of their causes.

Finally, some readers may wonder what our account of the development of Swedenborg's experiences might reveal about their theological or spiritual dimensions. If the occurrence of such experiences is seen as resulting from internally generated neural events, this dynamic would appear to argue against theological interpretations of such experiences as being influxes from an external, supernatural entity with an objective ontological status. However, others (e.g., Fenwick, 2004; van Lommel, 2004) have argued that the dependency of psychological processes on brain function is an unproved assumption; people holding this perspective would consider the neural argument incomplete. We would argue that the potential role for biological processes in Swedenborg's experiences in no way detracts from the novelty, insight, aliveness, and moral revelations that may characterize such experiences. Perhaps Swedenborg's
ultimate legacy may not be what he tells us about a Divine Being but his illustration of the richness of what may lie within us all.

References


BOOK REVIEW

Jeffrey Mishlove, Ph.D.
University of Philosophical Research


On the positive side, as best as I can ascertain, this book probably is the most comprehensive presentation of knowledge concerning near-death experiences (NDEs) yet assembled in a single volume. Almost 500 pages in length, the book is composed of five sections containing 26 chapters and an additional five appendices. In addition, the book is laid out with numerous side boxes highlighting helpful hints and tips for the reader. This latter feature shows that author P. M. H. Atwater, a multi-talented journalist, near-death experiencer, and researcher herself, organized the book with sensitivity to the varied motives of readers.

In 2000, Atwater published an earlier version of this same book: The Complete Idiot's Guide to Near-Death Experiences. The present volume is her expansion and refinement of that earlier version. Atwater is, unquestionably, devoted to furthering scientific understanding in this area. She proclaims in her acknowledgments page that “half of every royalty check on sales for this book will go to the International Association for Near-Death Studies.” Then she adds, “At the end of five years, they will inherit full ownership and I will bow out.” Such generosity is to be applauded.

Jeffrey Mishlove, Ph.D., is dean of transformational psychology at the University of Philosophical Research in Los Angeles, CA, where he also teaches parapsychology. His 1980 doctoral diploma in “parapsychology” from the University of California, Berkeley, is the only such diploma ever awarded by an accredited, American University. Correspondence should be addressed to Dr. Mishlove at 8270 W. Charleston Blvd, Las Vegas, NV 89117; e-mail: jmishlove@tmius.com.
The book's five sections include descriptions of NDEs, descriptions of the aftereffects of NDEs, and discussion of controversies surrounding NDE research, metaphysical and spiritual implications of NDEs, and the implications of NDEs for science and society. There is no doubt in my mind that this book represents a significant accomplishment. In one back-cover blurb, a leading NDE researcher, Kenneth Ring, maintained the book "stands somewhere between being a Bible for the field and an encyclopedia of it."

Still, I found the subtitle, "the ultimate guide to what happens when we die," to be a misleading hyperbole. Thanatology and eschatology are two important academic areas in which scholars address the question of "what happens when we die." Yet, neither word even appears in the 11-page index of The Big Book. Simply put, The Big Book, in spite of its length and comprehensiveness, was never intended to meet the needs of serious researchers or scholars. In fact, my biggest complaint is simply that the book lacks specific bibliographic references — although it does contain a 10-page appendix listing relevant publications. From a research perspective, the relatively simple addition of either numbered footnote references or American Psychological Association (2001) style citations would have improved this book immeasurably.

One particularly frustrating example of this absence occurs in a side box on page six that lists 10 publications from the 19th century that address the question of NDEs. The sidebox lists the author and year of publication only. No further references were included — even in the Appendix C, titled "Further Reading." Perhaps in the future, when IANDS inherits the rights to this book, it can use the royalties collected to remedy the shortcomings concerning bibliographical citations in a future edition. However, it's unfortunate that the author herself did not undertake this job, through two editions of the book, because it will be much harder for a research assistant to piece this information together at a later date.

At one point, Atwater herself addressed the question of scientific qualifications in the NDE field:

Who had the right to do such work? Who had the research expertise necessary for a field that would straddle religion and mysticism, science and biology, consciousness and the supernatural? It was never the credentials I lacked that was the real question, but the credentials almost all of us lacked. Our struggle for the recognition of our findings ran counter to how modern science regards the practice of research. (pp. 350–351)
Yes, of course, NDE researchers – like those in parapsychology and related disciplines – have had to struggle for recognition from mainstream scientists predisposed toward marginalization. Yes, the task of understanding and integrating the various areas of human inquiry that intersect with the NDE is an enormous one. Few are equipped. However, with regard to an objective evaluation of The Big Book, I think that Atwater’s lack of standard academic consideration does become a real and valid question.

For example, Atwater made a bold (and I think significant) research claim that seems to lack the kind of careful support I would like to have read:

The most striking feature of a near-death experience is that while a human’s brain can be seriously, even permanently, damaged in three to five minutes without sufficient oxygen, no matter how long a person is dead [during the NDE state], there’s usually little or no brain damage. On the contrary, there’s brain enhancement once the person revives ... this condition is one of the ways to know that what happened was indeed a genuine near-death experience. (p. 9)

I think that this is a very important claim. If substantiated, it would add significantly to our knowledge of the NDE. But, without such substantiation – and I did not find adequate substantiation for the claim in The Big Book – the claim must be relegated, in my mind, to the level of folklore.

There are other interesting claims in The Big Book. In fact, in one memorable passage, Atwater shares from the passionate depth of her own NDEs:

As a researcher, I can assure you that any type of near-death experience can be life-changing. But, as an experiencer, I can positively affirm that being bathed in The Light on the other side of death is more than life-changing. That light is the very essence, the heart and soul, the all-consuming consummation of ecstasy. It is a million suns of compressed love dissolving everything unto itself, annihilating thought and cell, vaporizing humanness and history, into one great brilliance of all that is and all that ever was and all that ever will be.

You know it’s God. No one has to tell you. You know. You no longer believe in God, for belief implies doubt. None. You now know God. And you know that you know. And you’re never the same again. And you know who you are – a child of God, a cell in The Greater Body, an extension of The One Force, an expression from The One Mind. No more can you forget your identity, or deny or ignore or pretend it away. There is One, and you are of The One. One. The Light does that to you.
While not every experincer speaks of God as I have here, the majority do. And almost to a person they gravitate toward a more spiritual viewpoint, preferring to recognize that which is sacred as an integral part of their everyday lives. (p. 95)

This claim, if true, I think would be of the utmost importance to both the research community and the general public. And, I have no doubt that the claim is true if taken as a description of the beliefs of the author herself and (no doubt) many others. However, from a philosophical point of view such claims of religious certainty are problematic. The noted British philosopher, Anthony Flew, has achieved great acclaim in recent years for his conversion from a philosophical atheist to a deist position. In describing his conversion, Flew (2007) insisted that he was swayed by reason alone — and not personal experience. Tellingly, he added, “it is impossible to infer from a religious [and, therefore, I imagine any other personal] experience that it had as its object a transcendent divine being” (p. 49).

Flew’s argument is very similar to that of Immanuel Kant in his classic book, A Critique of Pure Reason. Kant, however, allowed for one, and only one, theoretical exception: that mystics might attain such knowledge not through logical inference but through direct experience.

If we trust Atwater’s simple sincerity — and I do — when she described so eloquently her inner experience of transcendental realms, then we come down on the side of Kant — and then some. Notably, Kant never claimed to have personally known a mystic who could testify from direct knowledge concerning the reality of God. Nor did he ever claim that particular historical mystics had convinced him of the authenticity of their experiences. Kant merely maintained that such direct knowledge was, in principle, possible.

Atwater’s Big Book exemplifies the exciting idea that the field of near-death studies, along with other related fields such as parapsychology and transpersonal psychology, are slowly but surely helping to usher in a new day. In this new era, discourse concerning the nature of reality, or of first principles, is rigorously informed not only by an understanding of the external world but also by the ability to methodically understand and communicate about inner experience. In my estimation, this strength greatly outweighs the weaknesses of The Big Book to which I previously referred. Therefore, I highly recommend this book to all readers.
References


Letter to the Editor

On the Scope of Analysis for the AWARE Study

To the Editor:

Sam Parnia (2008a) recently announced the AWARE study (AWAreness during REsuscitation) which will be conducted by the Human Consciousness ProjectSM, an international multidisciplinary collaboration of scientists and physicians to study the relationship between the mind and the brain during clinical death. The researchers will examine prospectively 1,500 survivors of cardiac arrest across 25 participating hospitals in Europe and North America for 36 to 60 months. The study organizers expect as many as 300 of the cardiac arrest survivors to report a near-death experience (NDE), of whom perhaps 30 to 60 patients will also report an out-of-body experience (OBE) with perceptions of the physical surroundings.

One major objective of the study is to test whether the perceptions reported by the OBE patients during the cardiac arrest episode are veridical (verified as accurate). The study team will place complex images on shelves above the heads of 50 to 100 hospital beds in the participating hospitals. These images will be visible only from the ceiling. In addition, each patient's brain oxygen level will be measured during resuscitation using a cerebral oximeter that measures changes in regional saturation of oxygen in the cerebral cortex using infrared sensors placed on the patient's forehead. If the initial results include some positive cases, the study team may install tablet computers to show random images and video recording cameras to record both the resuscitation and the images to allow verification of perceptions of the resuscitation procedure, including idiosyncratic events such as the doctor knocking over a bucket of instruments.

What are the Criteria for Evaluation?

Parnia (2008b) stated the criteria for evaluation of possible veridical perception as follows:
If after 36 months, hundreds of patients report being 'out of body' yet no one can report seeing the images, then we must consider these reports to be nothing more than illusions. If on the other hand there are hundreds of positive reports, then we will have to redefine our understanding of the mind and brain during clinical death.

Parnia (personal communication December 29, 2008) clarified,

In terms of seeing an image we will have to wait to get a large enough sample and see if they claim to have been in the direct area above the images before considering whether they could or could not have seen them. At any rate all results will be positive in terms of the overall study whether the images are identified or not.

He further clarified the last sentence (personal communication February 24, 2009), “we will document all experiences from the cardiac arrest period.”

We are excited that Parnia and his collaborators are planning the AWARE study because it presents an excellent opportunity for systematic analysis of cases to assess whether NDE OBE perceptions are veridical. The focus of the study is on perceptions of the hidden images. We suggest that near-death experiencers (NDErs) are likely also to report other veridical perceptions and that the study’s researchers should give equal emphasis to these other perceptions for verification. For example, suppose a patient gives the response, “No, I didn’t notice any shelf in the room – I was looking down at my body. But I noticed an odd shaped birthmark on the back of the doctor’s neck when she put the paddles on my chest,” and on further investigation, the patient’s drawing of the birthmark matches the mark on the neck of a doctor who had treated the patient only while the patient was unconscious. We suggest that this case would be as strong a case of corroborated veridical perception as a verified perception of the hidden image.

**Experimental Conditions Can’t be Controlled**

A major difficulty with the study’s experimental design is that the experimental conditions can’t be controlled. First, the experiment can’t control where the NDEr is “located” in the room (usually reported at the ceiling in a corner opposite the bed) or where the NDEr “looks.” In a similar prospective study with hidden images, Penny
Sartori (2004) reported some NDE OBE patients did not rise high enough to view the hidden image and some reported viewing the scene from a position opposite from where the image was located. Other NDE OBE patients have reported focusing their attention on their body or on the actions of the resuscitation personnel, to the exclusion of everything else. Thus, the hidden image on a shelf above the patient's head may frequently be out of the NDEr's area of visual focus.

Second, the experiment can't control how long the OBE component of the NDE lasts and therefore how much opportunity the NDEr has to look around and "see" the hidden image. The OBE may be interrupted by some other aspect of the NDE (for example, being drawn into a tunnel) and the NDEr "leaves" the material environment, or it may be interrupted by the resuscitation and the patient's consciousness is brought back to the physical body. With increasing improvements in resuscitation technology, the latter scenario may become more common. In either case, the OBE portion of the experience may be so brief the NDEr may not see much at all, and because their attention did not have time to focus, what they report seeing may be incomplete or inaccurate.

Third, an accurate report of a hidden image will not, in itself, establish the timing of the perception. Skeptics will be able to argue that the perception was made by some other means such as extrasensory perception or a lucky guess, either before the cardiac arrest or after resuscitation. However, an accurate perception of the hidden image that is reported in the context of other verified perceptions of the resuscitation will establish the time of the perception, which then can be correlated with other information about the physiological condition of the patient.

In the five prior prospective studies of NDEs involving the detection of remote visual targets, the researchers used a variety of different targets and placements in the room. In no study did the researchers report that any NDEr had identified a target (Augustine, 2007, pp. 230–234). All of these studies were small; in three of them the researchers reported no NDEs. In the other two studies, they reported NDEs with an OBE component but the patients either reported only the early stages of an OBE (Lawrence, 1997, p. 159), did not rise high enough to view the hidden image, or were viewing from the wrong location (Sartori, 2004). Increasing the number of patients in the present study will provide more OBE cases, but even with 30 to 60
cases, it is possible that no patient will perceive the hidden image. However, patients might report other veridical perceptions.

**Veridical Perceptions Do Occur**

Indeed, a number of cases of veridical perceptions have occurred during cardiac arrest resuscitation and were verified, at least informally. In the Sartori prospective study, a patient reported seeing the physiotherapist peeking around the curtains during the resuscitation to check on him, and the researchers verified those perceptions (Sartori, Badham, & Fenwick, 2006). Kimberly Clark Sharp (1995; 2007) reported that patient Maria's perceptions of a tennis shoe on a ledge outside a third story window in the hospital during her resuscitation were accurate, that Sharp recovered the shoe, and that Maria recounted the story to a number of hospital workers at the time. Rudolf Smit (2008) reported that a patient later recognized the nurse who had removed his dentures during resuscitation and accurately described the wooden tray where they were placed and other features of the hospital room, even though he was completely unconscious. Other cases occurring during resuscitation include a patient who saw a penny out of normal sight on top of one of the cabinets in the room, which a nurse later found (Morris & Knafl, 2003, p. 155), a patient who saw a nurse unsafely opening a glass vial in another room (Moody & Perry, 1988, pp. 19–20), and three cases that Kenneth Ring and Madelaine Lawrence (1993) reported: a red shoe on the roof of the hospital that a patient saw and a doctor later recovered, plaid shoelaces that a patient saw and that the nurse who had worn them later confirmed, and a yellow smock that a patient saw and that the nurse who had worn it later confirmed.

We suggest that all perceptions of physical reality reported by the OBE patients in this study should be investigated and verified. The fact that a patient can accurately describe in detail the unique sequence of events during their resuscitation is evidence of veridical perception and helps to establish when those perceptions occurred. If all or most of the patients with extensive OBE perceptions can do this, it would constitute a strong case for veridical perception. However, other explanations are possible; for example, the perceptions could have been imagined, mentally constructed, or inferred from subliminal sensory awareness, from prior general knowledge, from expectations derived from earlier experiences, from information that others
supplied, from physical aftereffects (for example, soreness from defibrillation), or from lucky guesses (Blackmore, 1993).

Therefore, detailed verification should focus on cases where other possible explanations can be eliminated unambiguously. To eliminate the possibility of subliminal sensory awareness, the perceptions should be purely visual information (that is, not involving other senses) which was out of the patient's physical line of sight. To eliminate the possibility of inference from prior general knowledge, from expectations, from information that others supplied, from physical aftereffects, and from lucky guesses, the visual information should be unusual or idiosyncratic, for example, a penny on top of a cabinet, plaid shoelaces, or a nurse unsafely opening a vial in another room. To eliminate the possibility that the patient could have obtained information from others after the fact, the patient and other witnesses should be interviewed separately and as quickly as possible, and hospital staff should be instructed not to discuss the details of the resuscitation with the patient until after the patient interview. To increase the strength of corroboration and reduce the chance of lucky guesses, the interviewers should attempt to obtain as many details from the patient and witnesses as possible. These details could include drawings or sketches, for example, a drawing of the position and orientation of the penny on the cabinet or of how the nurse held the glass vial in her hands.

The hidden images, of course, would be among the possible idiosyncratic, purely visual perceptions the NDEr could "see," and the researchers should apply the same detailed verification to them, including having the patient sketch the image and its orientation. By verifying all other such unusual visual perceptions, the researchers can reduce the effects of uncontrolled experimental factors, such as where the NDEr is "located" and where and how long the NDEr "looks". Detailed verification of all cases of OBE perceptions of the sequence of the resuscitation will help establish when the perceptions occurred and will strengthen the case that veridical perceptions do occur.

**Recommendations**

We recommend that the AWARE researchers collect and verify in detail all NDE OBE perceptions using a prescribed investigative protocol (1) to establish where the patient was "located" in the room,
how long the patient was "present," and where the patient's "attention" was focused during the resuscitation; (2) to record and verify all aspects of the patient's perceptions during the OBE portion in detail, especially purely visual, idiosyncratic perceptions, including the hidden images; (3) to collect independent detailed accounts from other relevant witnesses; and (4) to collect ancillary evidence from NDErs and witnesses, like drawings and photographs of the relevant aspects of the experience.

We also recommend that the study focus verification on any idiosyncratic, purely visual perceptions that were out of the patient's physical line of sight, but include all perceptions during the NDE OBE, since verified details of the perceived events of the resuscitation will help to establish when the perceptions occurred, which cannot be done from isolated reports of perceptions. This information can then be correlated with other information about the patient's physiological condition.

We would also expect a small percentage of NDE OBE perceptions to be non-veridical (Holden, 2009, in press), for example, "seeing" the hidden image but giving a vague or inaccurate description. In some cases, NDE OB Ethre have perceptions but the content appears to be distorted, to be dream-like, or to have more symbolic than veridical content. It is important to analyze these cases, as well, to develop a complete understanding of the phenomenon.

References

LETTERS TO THE EDITOR


Robert G. Mays, B.Sc.
Suzanne B. Mays
Chapel Hill, NC
e-mail: mays@ieee.org
The world's strongest NDE search tool!

Near-Death Experiences:  
Index to the Periodical Literature  
1877 through 2005

The NDE Index is an invaluable tool for finding almost every article about NDEs published in English between 1877 and 2005. The Index does not contain the actual text of the articles; rather, it shows what has been written and where to find it. Many of the actual articles will soon become available on the International Association for Near-Death Studies (IANDS) website, and other reprints can be obtained from libraries and the publishers.

With the Index you'll find:

- Complete search information for nearly 900 articles (author, title, year of publication, journal title, issue number, page numbers)
- Thorough listing and topic analysis of virtually all scholarly articles—and many popular articles—from the first 128 years of the field of near-death studies
- Search function by author, keyword, or year
- Abstracts (article summaries) for scholarly journal articles where available
- Categorization of articles by 135 NDE-related topics in three separate listings:
  - Under each citation: a listing of each NDE-related topic addressed in the article
  - Under each topic: a listing of citations of all articles that addressed the topic
  - Under each author name: a listing of citations of all articles by that author (sole or co-author)
- Periodic updates

To examine sample pages from the Index, free of charge, visit:

http://www.iands.org/bibcd.html

Years in the making, this Index is available as a free benefit to members of IANDS at the Supporting, Professional, and higher membership levels. If you are not an IANDS member, please contact IANDS at office@iands.org.
INSTRUCTIONS TO AUTHORS

JOURNAL OF NEAR-DEATH STUDIES encourages submission of articles in the following categories: research reports; theoretical or conceptual statements; papers expressing a particular scientific, philosophic, religious, or historical perspective on the study of near-death experiences; cross-cultural studies; individual case histories with instructive unusual features; and personal accounts of near-death experiences or related phenomena.

GENERAL REQUIREMENTS: Logical organization is essential. Although headings help to structure the content, titles and headings within the manuscript should be as short as possible. Do not use the generic masculine pronoun or other sexist terminology.

MANUSCRIPTS may be submitted in electronic format (preferred) or hard copy. Electronic manuscripts may be submitted by e-mail to the Editor, Janice Holden, at jan.holden@unt.edu, or by mailing a computer diskette or CD-ROM to the Editor at the address below. Please clearly designate the name of the file containing the manuscript and the hardware and software used. Macintosh files are preferred in Microsoft Word, but other programs for IBM-compatible or Macintosh computers are acceptable. Except for title page (see below), manuscripts should be formatted according to the American Psychological Association Publications Manual, 5th edition: double spaced throughout, with a margin of at least one inch on all four sides, and all pages numbered. Manuscripts submitted as hard copy should be typed on only one side of the page. There are no absolute limits on length of articles, but authors should strive for conciseness.

Send manuscripts and/or computer diskettes or CD-ROMs to: Janice Holden, Ed.D., Department of Counseling and Higher Education, University of North Texas, 1155 Union Circle #310829, Denton, Texas 76203-5017, USA.

TITLE PAGE should contain the names of the authors, as well as their academic degrees, institutional affiliations, titles, and telephone number, fax number, and e-mail address for the senior author. Include a name, postal address, and e-mail address for reprint requests.

ABSTRACTS: Abstracts of 100-200 words are required with all articles. Abstracts should include the major premises of the article, intent, hypotheses, research design, results, and conclusions. For research reports, include the purpose, hypotheses, method, major results, and conclusions. For review or discussion articles, identify the main themes and conclusions and reflect them in a balanced fashion; if sources are important (for example, previous research), include these. For other types of articles, including replies to other authors' articles or case histories, refer briefly to the main themes and conclusions and cross-reference if necessary. Abstracts should be nonevaluative in tone and should include as much information as possible within the constraints of space.

KEY WORDS: Articles should include two to five key words, listed after the abstract, which will be printed in the Journal and used by abstracting services for indexing the article. Key words are unnecessary for book reviews and letters to the editor.

FOOTNOTES AND ENDNOTES are strongly discouraged.

REFERENCES should be listed in alphabetical order (and chronologically for each author) at the end of the article and referred to in the text by author(s) and year of publication. Only items cited in the text should be listed as references. Personal communications and Internet websites may be cited in the text but should not be included in the list of references. Include all authors in references with multiple authors. Do not abbreviate journal titles. Capitalize principal words in journal titles, but only the first word in a book title or subtitle. Page numbers must be provided for direct quotations.

ILLUSTRATIONS should be self-explanatory and used sparingly. Tables and figures must be in camera-ready condition and include captions. Electronic artwork submitted on disk should be in TIFF, EPS, or PDF format (1200 dpi for line and 300 dpi for halftones and grayscale art). Color art should be in the CMYK color space. Artwork should be on a separate disk from the text, and hard copy must accompany the disk.