

Journal
of
Near-Death Studies

Editor's Foreword • *Bruce Greyson, M.D.*

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Letters to the Editor • *Melvin Morse, M.D., and Charles T. Tart, Ph.D.*

Volume 19, Number 2, Winter 2000



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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 world-wide organization of scientists, scholars, 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' 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 health care 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 chapters are affiliated support groups in many cities for NDErs and their families and for health care and counseling professionals to network locally. Information about membership in IANDS can be obtained by writing to IANDS, P. O. Box 502, East Windsor Hill, CT 06028.

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Editor's Foreword

We lead off this issue of the Journal with a theoretical article by physician George Wettach, in which he proposes a medical basis for near-death experiences (NDEs) based on the continued functioning of the subcortical "reptilian" brain while the cortical "mammalian" brain is unconscious. Wettach illustrates his argument with a case report of an NDE precipitated by a hypoglycemic coma, and explains various components of NDEs in terms of an evolutionary brain model. He speculates that common transcendental experiences like NDEs may be responsible for the development of religion.

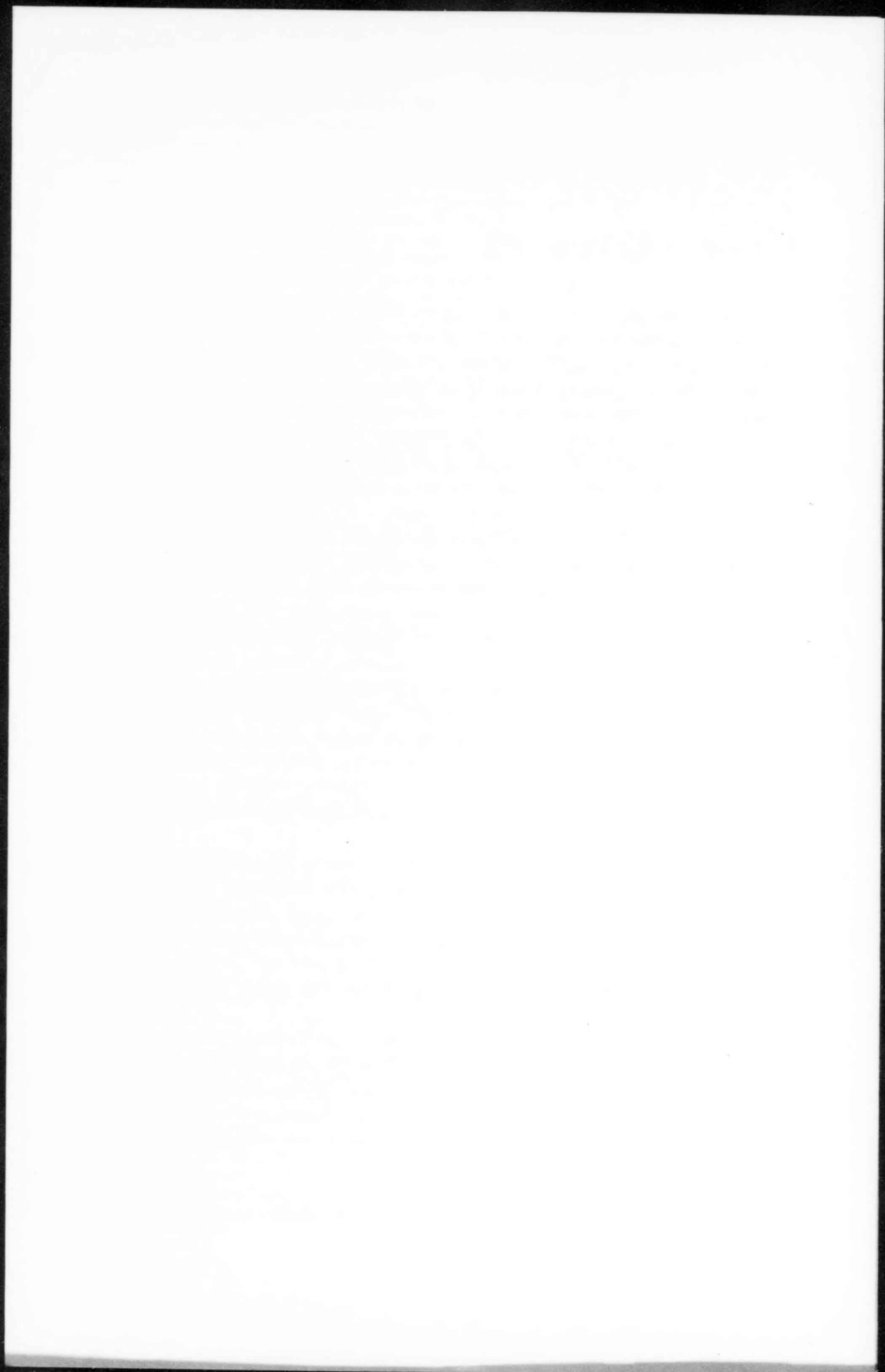
In our next article, English professor Brock Haussamen examines three popular short fictional works about death, all written in the past century but before the advent of modern near-death research. All three fictional accounts include some phenomenological features typical of NDEs, but no description of transcendence toward an afterlife. Haussamen argues that this comparison helps to define the cultural context that led to our current interest in near-death phenomena.

Next, retired medical researcher Richard Bonenfant describes a unique case of an apparent visitation by an "angel-like" figure who had first appeared to the experiencer 15 years earlier in an NDE. Bonenfant reviews other events from the experiencer's life that may be related to her NDE and subsequent "visitation," and reviews the role of "angel-like" beings in NDEs and other experiences.

This issue includes two book reviews. Philosopher Michael Grosso reviews *Lessons from the Light: What We Can Learn from the Near-Death Experience*, by transpersonal psychologist and near-death research pioneer Kenneth Ring and French near-death researcher Evelyn Elsaesser Valarino; and psychologist Emily Williams Kelly reviews Valarino's *On the Other Side of Life: Exploring the Phenomenon of the Near-Death Experience*.

We end this issue with two letters to the editor. Pediatrician Melvin Morse provides personal corroboration of two oft-repeated accounts of accurate out-of-body vision during NDEs, and argues that such cases demonstrate the expanded consciousness that occurs with death; and psychologist Charles Tart describes his Internet-based archives of scientists' transcendent experiences.

Bruce Greyson, M.D.



The Near Death Experience as a Product of Isolated Subcortical Brain Function

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ABSTRACT: This paper attempts to show that the sequence of a typical near death experience (NDE) is predictable and reproducible, enough to suggest that the NDE is a symptom of a specific altered mental state seen in a large number of medical and surgical conditions. I attempt to explain on an anatomical, physiologic, and psychological basis how NDEs might be caused, and suggest that NDEs might even be the basis of religion.

I also describe an NDE of a 38-year-old insulin-dependent diabetic who developed hypoglycemia secondary to a lack of caloric intake to support her daily insulin usage. She did not appear to be life-threatened from a cardiovascular standpoint. During the hypoglycemic spell, the patient appeared to be in rapid eye movement (REM) sleep. Following resuscitation with an intravenous injection of dextrose, the patient returned to a normal mental status, but recounted a typical NDE.

Unusual psychic experiences associated with life-threatening medical and surgical conditions, involving reversible near-death situations, have become commonplace in a number of popular books written over the past two decades. The first such book, Raymond Moody's best-seller, *Life After Life* (Moody, 1975), and *At the Hour of Death* (Osis and Haraldsson, 1977) by Karlis Osis and Erlendur Haraldsson, documented hundreds of medical cases involving patients who had been pronounced clinically dead following cardiac arrest or overwhelming trauma, but survived with the help of medical and surgical interventions. More recently, personal near-death experiences (NDEs) were chronicled in the bestsellers *Embraced by the Light* (Eadie and Taylor,

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1992) and *Saved by the Light* (Brinkley and Perry, 1994). Most of these individuals underwent unbelievable psychological and profound perceptual experiences of a religious, metaphysical, and/or parapsychological nature. They seemed to take a trip into a world of "nonordinary reality." In most instances, their psychic experiences followed a reasonably structured sequence, although the sequence may be slightly altered in its order for some individuals.

In his early works, Moody suggested that these trips justified the conclusion from a scientific standpoint that heaven, or a "life after," exist. However, in the practice of medicine, when a large series of patients report or experience signs and symptoms that are held in common, it is logical to conclude that such signs and symptoms are based on some physiological principle. Using scientific logic, could it be possible to develop a hypothesis centered in cerebral function or psychological processing within the brain that would explain the strange psychic experiences that many patients undergo as they come close to death?

The following case report describes an insulin-dependent, diabetic woman who underwent a typical "life after death" experience during a bout of hypoglycemic coma that was successfully treated with the use of an intravenous 50 percent dextrose injection. Of interest in the case is the fact that the physician and paramedics who evaluated the patient during a prehospital care episode at the patient's home never noted any evidence that her vital signs were abnormal, and the treating team could not justify the diagnosis of clinical death.

Case Report

Ms. B. is a 38-year-old African-American woman who was seen in her home by a local emergency medical service because her relatives had noted her to have a grand mal seizure. She remained unresponsive after the seizure.

Two years prior to that seizure, Ms. B. had been treated for a freshly diagnosed cardiac condition that had presented with frank angina pectoris, for which she took 10 milligrams of propranolol orally, four times per day. Also, according to the relatives, one year prior to this seizure, she had been taken to a hospital emergency room for a similar episode and "given a shot in her veins to bring her around."

When the paramedics and their "ride-along" medical director arrived, Ms. B. was lying quietly on her bed without evidence of trauma or airway obstruction. Her pulse was 88 beats/minute, full and regular; her blood pressure was 110/80; and her respiratory rate was 20/minute without

distress. Her pupils were normal, equal, and reactive to light. *Rapid eye movements were obvious to all observers.* Examination of the heart and lungs was normal, and all extremities were flaccid on neurologic exam.

Blood was drawn at the scene and a Dextrostix determination revealed an estimated blood sugar of 40 milligrams/100 milliliters of blood. An intravenous line with 250 cc of 5 percent dextrose and water was started and two ampules of 50 percent dextrose were pushed intravenously. Ms. B. recovered and became alert without observable complications. She was transferred to the emergency room of a large, urban, level I trauma center. The diagnosis of hypoglycemia secondary to insulin reaction and poor carbohydrate intake, masked by the use of propranolol, was established. Other than the threat to life that a bout of hypoglycemia poses to any patient, no signs of frank impending death were noted at any time.

At the hospital Ms. B. was asked if she had experienced any unusual events while she was comatose. To this questioning, she giggled and smiled shyly. The examiner then reassured her that it would be acceptable to discuss any strange perception she might have experienced, and that he would not judge her story crazy or mock her comments. With this reassurance, Ms. B. told the following story without being led by the physician:

I heard my relatives say that I was sick and I felt that I must be dying. I became very scared. I next felt as if I was being squeezed all over my body—maybe being squeezed out of some place. I looked up and saw a very bright light. I noted that I was very happy and began to sing right along with some very beautiful music. I saw a figure ahead of me. The figure looked like God, or maybe Jesus. Then I woke up.

Discussion

The Prototypical NDE

Moody (1975) presented a composite model of the NDE from a large series of experiencers, which includes the following features: the individual (1) experiences clinical death; (2) hears the voices of doctors or relatives as he or she departs; (3) hears an uncomfortable, loud, buzzing or ringing noise; (4) moves through a long dark tunnel toward a bright light; (5) experiences moving outside the normal, physical body, phenomena commonly termed "astral projection" in the metaphysical literature; (6) sees the physical body from an external vantagepoint; (7) experiences a state of emotional upheaval; (8) accommodates to a

new, strange nonphysical body and may discover the power of mental telepathy; (9) visualizes dead spirits or dead relatives, who may act as guides; (10) has a feeling of great warmth; (11) meets a "being of light," which may resemble God or Jesus and who desires to pass judgment on the individual; (12) perceives an instantaneous playback of the events of his or her life; (13) approaches some type of barrier between life and death; (14) finds he or she must return to life while being overcome with joy, love and peace; and (15) reunites with the physical body and becomes conscious.

An Evolutionary Brain Model

What does the above sequence represent? To Elisabeth Kübler-Ross, who wrote the forward to Moody's *Life After Life* (Moody, 1975, p. xi), it confirms 2,000 years of religious teaching. To a psychologist, it might represent a hypnagogic hallucination. But, could the near-death sequence be used to design a hypothetical physiologic model?

The human brain and spinal cord have slowly evolved over millions of years, and today, the central nervous system is a net result of anatomical contributions of each step in that progression. Simple, early reflex activities of the primitive spinal cord progressed to the medulla and the sophisticated respiratory and cardiac cycles seen in fish and amphibians. The next progression placed a pons and paleocortex in a reptile, a primitive brain with intuitive-cognitive powers. Soon to follow in mammals, a cerebral cortex with advanced analytical skills was functioning. From an energy standpoint the above evolution has progressed from neurologic structures such as peripheral nerves requiring low metabolic states for survival and function to the cerebral cortex, which begins to undergo dysfunction and clinical death if deprived of blood supply, rich in oxygen and essential nutrients, for more than 10 seconds. There is some evidence that cerebral ischemia alone can precipitate some features of NDEs. James Whinnery (1997) has described NDE-like experiences in healthy jet pilots who blacked out while undergoing high-acceleration centrifuge experiments. It is apparent that these young pilots do not die, but they probably experience short periods of cerebral ischemia that precipitates the NDE-like experience while they are unconscious.

The human nervous system is a result of fusion of the evolution of all brains from many phyla. Each phylum has a brain based on a given metabolic rate and ability to survive a given environmental range of

extremes. As a result of the fusion of brains from earlier phylogenetic forms, the cognitive portion of the human brain is made up of a "reptilian brain," consisting of the pons, geniculate bodies, and a portion of the occipital area (the so-called PGO area), and a "mammalian brain," consisting of the cerebral cortex. Reptiles, being cold blooded animals, can survive in hypothermic conditions that unprotected humans, the "naked apes," would find intolerable. Consistent with that distinction, the reptilian brain is more capable of surviving in an unbalanced physiological state than the mammalian brain. A reptilian brain might be able to function partially in bodily states of hypothermia, acidosis, hypoxia and/or hypoglycemia, while the higher cerebral centers require more metabolic energy to function correctly.

Another way to look at the relationship of the reptilian and mammalian brains would be to visualize two computers linked together. The mammalian computer or upper cerebral cortex is an advanced, large-volume storage system that can process massive amounts of information at moderate speed. This large-volume computer has one major weakness: it requires a steady, "high-voltage power supply" of glucose and oxygen, requiring 20 percent of the cardiac output at any given time. This design limitation means that in cardiac arrest the "mammalian computer" fails usually within 10 seconds of the cessation of blood flow to the brain.

The second or reptilian computer, located in the pons, geniculate bodies, and a portion of the occipital cortex, is a "prototype model" that requires a low-voltage power supply. The reptilian computer is quicker than the mammalian computer because it operates on instinct and less analysis of facts, but the reptilian computer is a bit inefficient in processing facts. The reptilian computer has a logic program that lacks clear concept processing, is ritualistic, and occasionally solves problems quickly with intuition rather than proven hard data. The reptilian computer printout is written in the language of "nonordinary reality" and is individualistic, nonconsensual, and dreamlike.

The mammalian and reptilian brains are interconnected and involved in joint projects most of the time. The mammalian brain, made up of the cerebral cortex, is the predominant computer producing an overall operative state of consciousness, which overrides the subconscious effects of the reptilian computer. During sleep, syncope, coma, psychotic episodes, and hypnotic trances, portions of the cerebral cortex can become dormant, allowing the reptilian brain to become the predominant computer.

The Near-Death Experience in Neurological and Psychological Terms

Can the above mammalian and reptilian brain model help us explain near-death experiences on a neurological, physiological, or psychological basis? Let us review Moody's typical 15 events of the NDE from this perspective:

1. *The individual experiences clinical death.* This is a rather simple physiological event. The heart stops and blood flow to the brain ceases. Within 10 to 30 seconds, the cerebral cortex is severely disturbed as its essential supply of oxygen and glucose is all but stopped, and the individual becomes unconscious. The mammalian computer is no longer "on-line" and can no longer override the reptilian computer. Unfortunately, the reptilian computer is also undergoing a "power failure." However, because of its ability to operate during a "brown-out," or in a poor metabolic environment of hypoxia, acidosis, hypercapnia, and hypoglycemia, the reptilian brain can still function in an altered mental state, prior to total brain death. Without the overriding influence of the cerebral cortex, the pons, geniculate bodies, and primitive occipital cortex are free to take charge of the perceptual and creative powers of the unconscious person.

If nothing is done for this individual to reverse the evolving biological death within four to six minutes, the cerebral cortex will fall into irreversible cellular death, and if a lack of cerebral blood flow continues for another estimated 15 to 60 minutes, the pons and brain stem will become functionless and die. At that point all diagnostic signs of death will be present and the individual will perceive nothing, as the black void of death ends his or her life; the individual will no longer perceive a near-death mental experience. However, if an effective, clinical intervention such as cardiopulmonary resuscitation (CPR) or advanced life support (ALS) is carried out prior to irreversible biological brain death, or if the heart and lungs spontaneously restart without clinical intervention, the individual will survive and experience an NDE, particularly if certain neurologic pathways, described below, are activated. Cerebral function and consciousness then return.

The current literature on near death events is based on the experiences of people who may have been clinically dead, but who did not undergo terminal biological brain death. We do not know for certain whether people who die and develop terminal biological death have NDEs prior to the time of their demise.

2. *The individual hears the voices of doctors or relatives as he or she departs.* It is well known to anesthesiologists that hearing is the last sense to be anesthetized prior to surgery and the first sense to return in the recovery room (Cherkin and Harroun, 1971; Levinson, 1965). Surgeons, anesthesiologists, and nurses have learned to be careful not to say any socially regrettable remarks about a patient while the patient is recovering from the effect of a general anesthetic.

B. W. Levinson (1965) falsely suggested into the ears of ten surgical patients who were in a deep plane of anesthesia that an anesthetic crisis was occurring. One month later these same patients were hypnotized and regressed to the time of the operation. Four patients remembered the exact words describing the crisis. Four others became very anxious, were brought out of the hypnosis, and reported remembering some words that were spoken at the time of surgery. Two patients remembered nothing. Arthur Cherkin and Phyllis Harroun (1971) noted that strong statements made around some patients while coming out of anesthesia produced unpleasant memory traces after the patient was fully alert. Both of these two studies suggest that hearing can be operational when the patient is in a subcortical state.

The use of anesthesia is a situation of controlled blunting of the intellect and senses. Anesthesia starts by making the cerebral cortex unconscious, and then progresses to the loss of many functions at stage II of anesthetic induction. Anesthesia finally leads to the total dysfunction of the medulla oblongata in stage IV, causing cessation of breathing and cardiovascular function and death of the individual. It might be said that the controlled use of anesthesia to stage III is very close to clinical death except that the heartbeat and respiratory pattern are retained.

When sudden syncope or unconsciousness occurs, usually because the heart stops secondary to some intrinsic cardiac arrhythmia, the cerebral cortex is the first brain structure to fail. Patients will usually have fixed and dilated pupils almost immediately after unconsciousness develops. The pupillary dilation mechanisms are tied to the third cranial nerve, which is derived from structures of the mesencephalon, or midbrain. Some agonal respiratory patterns noted in many dying patients suggest that the function of the medulla oblongata is still available for a short time after cerebral unconsciousness.

It is of considerable interest that the auditory nerve or cranial nerve VIII leaves the brain at the lower level of the pons. If we consider the sequence of brain death in most standard instances of sudden death, we might suggest the following order: first, cerebral-cortical dysfunction and clinical death of the mammalian brain, leading to

unconsciousness; second, midbrain dysfunction with failure of the oculomotor nerve (cranial nerve III) and resultant pupillary dilatation; third, dysfunction of the pons with failure of the cranial nerves V, VI, VII, and VIII, and cessation of hearing; and fourth, medullary dysfunction with loss of cranial nerves IX, X, XI, and XII, and cessation of all respiratory movements and cardiovascular reflex function.

This division of the central nervous system into these four sequentially impaired sections can be considered as parts of an evolutionary continuum. The division can also be considered to represent four separate computers with varying abilities to survive or function in a disordered neurological state, as occurs in anesthetic induction or sudden death. If hearing is the last sense to disappear during induction of anesthesia at stage II prior to medullary dysfunction, would it be possible, after sudden clinical death has struck a patient but before total biological brain death occurs, that structures in the pons would still function in a hypoxic state and without the overriding influence of higher cerebral functions? If that is the case, then a nearly dead person would still hear the doctors and nurses talking about his or her demise or a need to start emergency care.

3. *The individual hears an uncomfortable, loud buzzing or ringing noise.* At this stage further function and metabolic decay within the pons or failing cortical override might cause sound to be processed in an imperfect way, giving rise to uncomfortable or loud sound perception. It is important to remember at this point that the person who undergoes a near-death experience does not really die, except in the sense of passing into a state of clinical death. At some point in the near-death experience, adverse physiological states are reversed, and the body normalizes, causing consciousness to reappear. As consciousness reappears, some mechanism must be present to "re-light" the cerebral cortex.

On the other hand, if no physiological improvement occurs within six minutes, irreversible and permanent biological brain death occurs. Under these circumstances, if we were to take a purely mechanistic view of death, excluding religious concepts, death would be the end of all human perception, and a black void of nothingness would settle over the body. Thus, hearing conversation of people around the deathbed converts to imperfect, uncomfortable noises, which in turn converts to nothing as death is finalized.

It is of major religious interest that *The Tibetan Book of the Dead* (Evans-Wentz, 1957) described death in a very similar fashion to that suggested in the above paragraph. Tibetan monks are frequently summoned to perform chants and religious services while a dead person lies

in state in his or her home. Monks are taught that the dead person has a disturbed sense of hearing, and the monk must chant to soothe and encourage the dead person to relax and submit to death, so that he or she can pass down the right path in the afterlife for later rebirth.

4. *The individual moves through a long dark tunnel toward a bright light.* After the above three steps, we assume that a favorable therapeutic event occurs, either by physician intervention or by some spontaneous means, and the cerebral cortex returns to "on-line function." If we consider that the nearly dead human is now undergoing a physiological improvement and the cerebral cortex/computer is being repowered from a functional and metabolic standpoint, then the experience of passing through a dark tunnel might represent a stored memory.

Consider that the cerebral cortex is like a computer memory bank, which stores important information for the purpose of survival and must store those bits of information in some organized sequence. When power is cut off, well-designed computers have safeguards to prevent the total loss of stored data, so that when the silent computer is repowered, the bits of information are restored, the restoration following a certain electrical sequence that is inherent to the design of the computer or the working program.

Is it possible that as a cerebral cortex is "re-lit" during the near-death experience, previous memories (bits of stored information) are flashed before the individual, starting with the first memories stored in the cerebral cortex and moving toward newer memories? Educational psychologists have learned that human decisions under stress are conditioned to fall back on first learned behavior. When a threatening problem appears, appropriate analysis and action must be taken quickly for survival of the individual. Thus, first learned experiences stored in the brain may be strong motivators of perception and behavior.

It had been conjectured previously that the tunnel of darkness was a replay of the birth experience (Sagan, 1979): a newborn lives in a warm, comfortable, intrauterine environment for nine months and then, through a very traumatic experience, it is born into the light. It is also curious that many so-called "astral projectors" perceive that they are squeezed out of their bodies through the top of the head. Since most people are born with cephalic presentations, we might expect any sensations associated with astral projection to be through the head. What would be the perception of "out-of-body" projection for an individual who was delivered by Caesarean birth? Susan Blackmore (1983) collected a group of 22 people who were born by Caesarean section and who had also experienced an NDE later in their lives. The group was asked about the nature of the sensations noted during their NDEs, including the

presence of a "tunnel of light." Most individuals born by Caesarean section and free of the trauma of vaginal delivery described a "tunnel of light" sensation, very similar to those persons delivered by conventional vaginal presentations. Blackmore concluded that the birth experience analogy for NDEs was superficially appealing but unhelpful.

Thus it appears that the "tunnel of light" is not a repressed memory of vaginal birth. Could the darkness, a light at the end of the tunnel, vibrations, uncomfortable noises, and a sensation of rotation be a representation of intrauterine life? The fetus tumbles within the womb and is exposed to a variety of loud maternal sounds, such as bowel sounds or the pulsatile sounds of blood rushing through the placenta or the maternal aorta. In a liquid medium, such sounds would indeed be very loud as perceived by the fetus. Perhaps the light at the end of the tunnel is what the intrauterine fetus sees and is related to the stimulation of central vision in the retina. Such a hypothesis would explain why a child of a Caesarian birth experiences the same NDE as a child of a vaginal birth.

But there may be other ways to look at the tunnel of darkness and the bright light at the other end, particularly for those who actually die. Gurus in India, who for centuries have perfected transcendental meditation, see the tunnel and the "white light" as the great and divine energy called *kundalini*, which is found in every human being. Hindu religious scriptures teach that there is not just one human body, but four (Muktananda, 1995): the first is the familiar physical body; the second is the "subtle body" representing the state of mind called the "dream state"; the third is the "causal body" where deep sleep is found; and the fourth is the covering of the individual soul, called the "Blue Pearl" or the "supracausal body."

The goal of transcendental meditation is to move from the physical body through waking, dreaming, and deep-sleep states to the "Blue Pearl," where the meditator can enter a world of death, meeting ancestors and experiencing heaven or hell. The "Blue Pearl" sounds like a perfect description of a near-death experience. Master yogis can develop cardiac arrest or profound bradycardia while in very deep states of meditation (Kothari, Bordia, and Gupta, 1973a, 1973b). Do we become a pure soul when we meditate, project out of the body, or fall into a near-death experience, passing through a tunnel of light as a transitional state?

5. *The individual experiences moving outside the normal physical body.* Newborn infants are not able to say how it feels to be free to move about in a big, new world following delivery. It probably is not a

pleasant experience to be born and separated from the womb, which has served as a tightly adherent home for the fetus for nine months. A fetus might be conditioned during its intrauterine life to accept the lining of the womb as a part of its own body. Thus, the infant might perceive birth and separation from the womb as an out-of-body experience (OBE).

6. *The individual sees the physical body from an external vantage-point.* People who project out of the physical body sometimes see it from a distance and are frequently connected to the physical body by a cord. Adult astral projectors are sometimes fearful that if that connecting cord is severed there would be no way for the metaphysical body to reunite with the physical body, and death would follow. Are there any possible scientific explanations for out-of-body experiences?

Birth is likely an unpleasant experience for a newborn that has enjoyed nine months in a warm intrauterine environment: suddenly, there is intense pain, as the tight constricting squeeze of birth sets in, followed by separation from warmth into a cold, hostile environment, and severing of the umbilical cord. All these birth events represent a very traumatic introduction to worldly life. Is the birth experience so terrible that an early, conditioned, lifelong fear is placed in the minds of all human beings? Is this birth trauma stored in the brain as an important early primordial image that can be recovered during special mental conditions induced by meditation, hypnosis, astral projection, or NDEs, allowing early fears to surface without the rational control of the cerebral cortex?

During rapid eye movement (REM) sleep, which occurs in discrete periods several times a night, human beings experience two important neurological changes. The cerebral cortex falls asleep and the body is essentially paralyzed; spinal sensations from the entire body cease when the REM center, located in the pons, is stimulated and operational. We "toss and turn" in nonREM sleep; but during REM sleep, we have increased movement of the eyes, while the body holds a motionless, paralyzed posture.

Perhaps our arboreal ancestors, while dozing on the branch of a tree, used REM sleep to scan their environment by listening for predators. A motionless sleeper was able to listen better, was harder to detect, and was less likely to fall out of the tree. The idea that an animal can scan the environment for impending dangers while asleep is not a far-fetched hypothesis. Birds in dangerous situations can use what is called "unihemispheric slow-wave sleep" to remain vigilant for predators while one half of the brain sleeps, keeping one eye open in the direction from which a predator is likely to approach; ducks at the edge

of a sleeping group both oriented their one open eye away from the group's center and markedly increased unihemispheric slow-wave sleep compared with ducks in the center of the group (Rattenborg, Lima, and Amlaner, 1999). With this type of sleep a bird can "keep an eye out" for predators and decide to awaken the rest of the brain fully if a major survival response is needed.

Humans maintain an upright posture in a gravitational field, and the entire human neurological system has adjusted to the gravitational field of our environment. As we develop over the years, humans learn to interpret peripheral gravitational sensations into our spatial interpretation of the world. Using this spatial adjustment, we know up from down and right from left as we ambulate along the ground. In order to stay on path, we have to use our neurological system as part of our environmental awareness. During REM sleep, the reptilian brain is stimulated. Conscious cerebral awareness is blunted, and peripheral spinal sensations are gone. From a perceptual standpoint, we are only a midbrain, hooked to hearing, in a state of nonordinary reality. Neurologically, we have passed into a world without gravity. Our midbrains do their best to interpret this new disorienting state with a resultant OBE. In fact, our body is gone from a sensory standpoint because we have no spinal sensory ability, and our rational, conscious mind is also gone. Illusory free floating becomes possible, if not mandatory, because we have lost all our normal spatial clues.

Pilots experience many disturbing illusions while flying at night or in overcast weather. These flight environments also cause the pilots to lose many of their spatial cues, normally based on vision. For years, the U.S. Navy has placed their student pilots and flight surgeons in a dark room with a tiny red light fixed on a wall. The students are asked to focus on the light, and after a few minutes, they perceive the light as moving in an erratic, random way, a phenomenon called *autokinesis* (DeHart, 1996). Autokinesis occurs when visual cues are reduced; the movement is an illusion seen by the students because their eyes drift in an involuntary way as a response to visual deprivation. Is an OBE a nonordinary response to total tactile-sensory deprivation, as the midbrain becomes the only active mental operative during a NDE?

7. *The individual experiences a state of emotional upheaval.* As noted above, it is likely that the newborn infant undergoes a period of emotional upheaval once it is removed from the warm uterine vault that has conditioned it to a sense of emotional well-being during nine months of consistency and permanency. This emotional upheaval is

actually healthy at the time of birth, since it causes the child to cry, which in turn stimulates heavy breathing following the birth ordeal. Heavy respiratory efforts encourage oxygen delivery to the lungs and increase the partial pressure of oxygen in the arterial system, ensuring that all hemoglobin molecules in the red blood cells are saturated with oxygen for speedy, efficient delivery to the newly functional cerebral cortex.

In the NDE, a period of emotional upheaval may mean that the corpus callosum is becoming incompletely stimulated as cerebral perfusion is restored. Emotional upheaval may come from the interaction of a fully operational pons and a recovering but inefficient cerebral cortex—a heavy dose of “nonordinary reality” from the lower computer at a time when the refined upper computer is not fully able to analyze and function normally.

8. *The individual accommodates to a new, strange nonphysical body and may discover the power of mental telepathy.* What kind of human personality would arise if a primitive occipital cortex, corpus callosum, midbrain, and pons were the major functional brain components? There would be a combination of “nonordinary reality” with emotions. On top of this unique mental perceptual unit, there might be the addition of universal vibrations striking a free, but otherwise intact auditory apparatus. Would that produce a human capable of making instinctive survival decisions based on a “sixth sense?” Would pure animal intuition, unclogged by the overriding influence of the analytical, rational mind of the higher cerebral cortex, be the dominant, functional mental process during the NDE?

Animals thrown into a raging blizzard instinctively seek warmth and a protected place. Humans also are driven by instincts to seek protection, but a well-educated human can “think” his or her way through the same problem, make a poor cerebral decision and freeze to death, violating every good law of nature. *Intuition allows us to take action without recourse to reason.* Knowledge based on intuition is an innate, instinctive insight, frequently tied to an emotion, such as fear, joy, or hate. The insight and emotion are perceived as appropriate and achieved without the benefit of analytically derived data.

Moody (1975) described the case of a blind man who lost his vision in childhood, but who suddenly could see his surroundings accurately during his NDE. However, the patient found himself blind again when he returned to consciousness. The blind man accurately described his surroundings, the appearance of individuals, and the events that transpired, apparently perceived in a telepathic fashion

while comatose. Those apparent telepathic skills were lost when consciousness returned, and the man was again blind after his NDE was over.

Kenneth Ring and Madelaine Lawrence (1993) presented evidence for veridical out-of-body perception. They cited an anecdotal report by Kimberly Clark in which a heart attack victim admitted to a Seattle hospital had a sudden cardiac arrest and developed an NDE with an OBE. She drifted outside and noted an old tennis shoe on a ledge along the third floor of the hospital, which was not visible from her hospital room. The patient survived and later told Clark the location of the shoe, along with particular details about its condition and appearance. Being curious, Clark searched for the tennis shoe and found it in the exact location and physical appearance as the patient had described. Ring and Lawrence described comparable cases they collected of apparent accurate out-of-body perception during NDEs, which many skeptics would discount as coincidence.

Chance surprises seem to appear like magic. NDEs are strange, unbelievable events that happen when the brain is undergoing stress and confusion, but there is always the probability that some impressions seen in the NDE can later be connected to actual fact. Odds sometime favor believing that two facts are related when, in truth, they are not. If you believe that an NDE is a product of some portion of the subcortical brain and that OBEs and veridical perceptions are real, then only hearing would be available as a sensory input during the OBE.

If hearing is intact during NDEs and deep planes of anesthesia, could the *sense of hearing* become a prime collector of data for the intuitive mind and the mediator for many apparently telepathic and parapsychological phenomena? Hearing is processed initially in the pons, where various neural tracts can interconnect with other senses. Through these neurological pathways, could blind persons, particularly those who had adequate sight at some point, be taught to "see" through the sense of hearing?

Synaesthesia is a phenomenon in which one type of sensation evokes the perception of different sensation, as when the hearing of a sound results in the sensation of the visualization of a color. Some individuals perceive color when they hear spoken phrases, words or letters, phenomena respectively called *chromatic-lexical synaesthesia*, *chromatic-graphemic synaesthesia*, and *chromatic-phonemic synaesthesia*. There are case reports in the medical literature of individuals who see distinct colors with the striking of specific notes on a piano (Baron-Cohen, Harrison, Goldstein, and Wyke, 1993; Koike and Yoshino, 1990).

It is a common experience of elementary school children in music appreciation classes to be asked by a teacher to put their heads on their desk, relax, and shut their eyes while classical music is played. These children can very quickly have visual images appear in their heads through the power of imagination and the stimulation of music. This type of skill is called *eidetic imagery*, in which previously seen or imagined objects can be visualized, and it can be quite advanced in some people. A study by Joseph Glicksohn, Orna Salinger, and Anat Roychman (1992) evaluated ten subjects for possible eidetic and/or synaesthetic ability, and discovered that both structural and typographic eidetic imagery were correlated with synaesthesia, indicating that the two phenomena are related.

There may be another physiological mechanism besides synaesthesia or eidetic imagery to explain how a previous sighted but now blind individual could see during a period of abnormal brain function induced by an NDE. In primates, the retina is connected to multiple locations in the cerebral cortex by several parallel pathways. The largest pathway is the geniculo-striate pathway, which connects the geniculate nucleus to the striate cortex. If this pathway is damaged, blindness to part of the visual field is noted. However, other parallel visual pathways are left in place to function. Using behavioral forced-choice techniques, studies have shown that visual discrimination can be sustained through extrastriate pathways, an unusual ability called *blind-sight* (Weiskrantz, 1990). Such blind subjects are unaware of any visual stimuli, but are able to perform remarkable visual discriminations at very high levels of proficiency.

In the blind man reported by Moody (1975), major visual pathways had always been disabled by some disease process. However, the blind man's parallel visual pathway was intact and functional. One could speculate that during an NDE, the secondary parallel visual pathways are stimulated and allowed to function to produce a state of blind-sight, allowing blind persons to see their surroundings and report accurately what they truly "observe" during their NDE.

9. *The individual visualizes dead spirits or dead relatives, who may act as guides.* It is assumed that at this point some medical intervention has begun to improve the function of the lower portions of the brain where early childhood memories are stored about the care received from mother, father, grandmother, grandfather, aunts or uncles, people who may frequently be dead at the time the adult patient develops cardiac arrest. Primitive early childhood memories of infant care and guidance by caring adults, which are normally suppressed by the adult mind, are

now free to be recognized since the adult, cerebral mind is still not fully operational.

It is interesting to note that most people visualize dead people in NDEs; and that this is also true for small children who have had little experience with older relatives who have died. By contrast, delirious, obtunded patients usually hallucinate living people and not dead persons. Can the two-brain model explain why the near-death experiencers visualize the dead, while obtunded individuals hallucinate the living?

The upper cerebral cortex is designed for careful, critical analysis during conscious thought, while the subcortical brain, which deals in survival issues, is quick, instinctive, and reactive. If our brain wanted to store information about death, what would be the most efficient way to wire the brain? We would probably not place a heavy dose of death in the upper cerebral cortex; none of us would be very efficient in our daily life if we constantly rehashed thoughts of death in our conscious personality. Doing so might produce constant anxiety, as seen in post-traumatic stress disorder (PTSD).

The signs and symptoms of PTSD occur after unexpected, overwhelming disasters involving serious survival issues for the participant. The victim relives and rethinks the event, developing chronic anxiety, hyperalertness, memory impairment, and insomnia. Patients with PTSD may complain of numbness in their responsiveness to other people and begin to feel emotionally dead. Has the subcortical brain run amuck in PTSD, forcing the cerebral cortex to deal with survival issues that are normally withheld from repetitive higher brain analysis? It would seem more natural to store thoughts of death in a subcortical area where survival elements are handled during a crisis like an NDE.

If the concept of death has been stored in this way, that might explain the differences between delirium and NDEs. In delirium, an obtunded individual may be oriented to person and place, but not time. There is some upper cerebral functioning going on, even if this function involves active hallucinations. If the cerebral cortex deals mainly with memories of living experiences, a delirious mind might attempt to sort out thinking, which is non-emergency in nature. The delirious mind is still able to override the REM center and the subcortical brain. In delirium, the cerebral cortex may sense a state of confusion and irritation, but it does not experience a threat of death. Thus, in delirium, hallucinations involving death are less likely to arise.

In NDEs, the cerebral cortex has physiologically shut down, and the subcortical region of the brain is no longer balanced by upper cortical analysis. The subcortical brain senses that the individual is in a life-threatening situation and it functions freely to save the individual from

that impending death. NDEs may be very similar to hypnagogic and hypnopompic hallucinations that occur at the onset of sleep or upon awaking. Electroencephalographic recording during hypnagogic periods show the immediate onset of a low voltage, fast record of REM sleep (Berkow and Fletcher, 1992). For this reason, it is very likely that the brainwave pattern of REM sleep occurs during NDEs.

10. *The individual has a feeling of great warmth.* Well-nurtured, peaceful infants should feel warmth; and at that point, euphoria may be the prevailing emotional tone. The body of an NDEr may also experience a feeling of warmth as medical interventions effect a significant cardiac output, which, in turn, generates an adequate peripheral circulation, physically warming the body again.

11. *The individual meets a "being of light," which may resemble God or Jesus and who desires to pass judgment on the individual.* In the Christian faith children under the age of six are frequently taught a general religious philosophy as an accepted way to discipline them. There is no need for corporal punishment or lengthy academic reasons for good behavior if a parent merely has to say, "Jesus does not love a bad child." Prior to age six, children are not commonly taught many details about death. They are told that dead relatives have gone to sleep so they could travel to heaven to be with God. Thus, the early childhood mind has developed ethereal concepts of heaven and hell, good and bad, and the potential judgment of Jesus or God at the point of death. The areas of the brain where such early abstractions are stored is "on-line" during this phase of the NDE.

12. *The individual perceives an instantaneous playback of the events of his or her life.* The playback may be described in two ways: it may be rapidly sequential, where the order of events in the life of the individual progress from past memories to the present; or it may be one huge flash of all stored memories projected on the "screen of the mind" at once. This step in the NDE can be conceptualized as the "re-lighting" of the memory bits of information stored in the cerebral cortex. Wilder Penfield (1975) electrically stimulated various parts of the outer cerebral cortex that were surgically exposed during attempts to relieve the symptoms of epilepsy on conscious patients under local anesthesia; he reported that certain areas of cerebral cortex when stimulated reproduced a memory and an emotional response to the memory. In an analogous fashion, a person during an NDE perceives the instantaneous or sequential re-lighting of all past experiences as the cerebral cortex regains its function.

13-15. *The individual approaches some type of barrier between life and death; finds he or she must return to life while overcome with love, joy*

and peace; and reunites with the physical body and becomes conscious. These last three steps are the final stages of the "re-lighting" of the cerebral cortex and the return of conscious awareness.

Conclusion

Some near-death researchers have interpreted accounts of unusual near-death experiences as evidence for the existence of heaven—or the existence of hell, since some people have taken unpleasant trips into a dark abyss (Greyson and Bush, 1992)—on the assumption that NDEs could not be explained through accepted knowledge of physiology. However, this paper suggests that physiological explanations for NDEs are possible, particularly if creative, speculative, scientific fantasy is also allowed.

Millions of Christians worldwide believe in God, Jesus, the Bible, and the concept of heaven and hell—all accepted religious concepts in which these followers have found comfort over the centuries. Initial near-death research seemed to suggest there might be scientific observations that would reassure religious people everywhere of the existence of God and a beautiful afterlife. Many books on NDEs have become best-sellers because readers want to believe that a pleasant hereafter awaits them and that immortality is scientifically possible, thereby lessening and making humanly tolerable our fear of death.

Initially Moody (1975) did not believe that NDEs were merely medical symptoms associated with a sequence of mental dysfunction, which could result from physiological events such as cardiac arrest, fright-induced vagal bradycardia, hypothermia, hypoglycemia (as in the case report presented above), and cerebral metabolic aberrations. However, in his latest book, Moody (1999) has disavowed the idea that NDEs have anything to do with an afterlife. Hypoxia, cerebral ischemia, profound acidosis, or certain pharmacological agents such as ketamine are other causes of the NDE, which can be seen as a dissociative mental state (Jansen, 1990, 1997). This dissociative mental state can occur in a setting of potential death with obvious decay in cardiac function, and it can also occur when patients have altered mental function but are not in danger of dying. Justine Owens, Emily Cook, and Ian Stevenson (1990) examined the medical records of 58 patients who reported NDEs during a significant illness or injury, or whom 28 were truly facing death, while 30 were in no danger of dying (like the patient presented in this paper).

This paper suggests that there are enough physiological facts presently available to begin to unravel the mystery of NDEs along scientific

and psychiatric lines. Near-death experiences are not rare. They have frequently been estimated to occur to about a third of patients who are near death. Recent evidence suggests that the actual incidence is closer to half that (Greyson, 1998). A nationwide Gallup poll suggested that NDErs make up 5 percent of the entire adult American population (Gallup and Proctor, 1982).

Near-death experiences may even be the reason religion developed. Imagine a primitive, prehistoric tribe in which a medicine man has pronounced a tribal member dead, and the elders prepare a funeral ritual, certain of the mortal consequences. But the lifeless victim suddenly arises and, much to the astonishment of the tribal elders, begins to tell of mental travels to a strange and beautiful place. The elders cannot explain how this resurrection of the dead has occurred and, perhaps to insure their dominant position in the tribe, they invent the concept of God and an afterlife, and explain that only they can interpret God for the rest of the tribe. Thus, the children of the tribe are taught religious concepts to store in the primitive centers of their minds. If one of these children later becomes near dead, his or her mental trip to a beautiful place may be enriched by a spiritual visit with God, proving to the tribe that the elders were right and God exists. Over time, each NDE strengthens the human belief in God, while subsequent NDEs, enriched by that belief, become more sophisticated.

Allan Kellehear (1993) has suggested that NDEs may be culture-bound phenomena, confined largely to societies where historic religions are dominant; he found social and historical explanations even more persuasive in explaining near-death phenomena than biological explanations. Thus, we might ask which came first, God or the NDE? Is religion the product of an occasional physiological mental aberration that needed a social explanation, or have learned religious concepts produced the modern near-death experience? Is the near-death experience an example of spiritualism affecting abstraction, or of abstraction influencing spiritualism?

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Three Fictional Deaths Compared with the Near-Death Experience

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ABSTRACT: This study looks at three popular works of short fiction, by Leo Tolstoy, Ambrose Bierce, and Katherine Anne Porter, in which the main character dies at the end. Some similarities between these deaths and recent near-death experience (NDE) accounts are that the characters experience various kinds of distancing from their bodies, light and darkness play a role, and two of the stories include a final life review. The principal contrast is that dying in these stories is a lonely and mostly grim business, unsupported by a process that transcends the individual or by progress toward an afterlife or otherworld. The comparison helps define the modern sensibility about dying that is part of the cultural context for interest in NDEs.

In *Otherworld Journeys: Accounts of Near-Death Experience in Medieval and Modern Times*, Carol Zaleski (1987) traced the lineage of the modern near-death experience (NDE) accounts. She cited their recent roots in spiritualist and medical works from the mid-19th century on and described the otherworld narratives of other cultures and of the European Middle Ages in particular. Zaleski viewed these otherworldly and NDE accounts as a wave phenomenon, a mode of narration that resurges periodically "when the way society pictures itself and its surrounding universe is so changed as to threaten to dislocate the human being" (1987, p. 100). Under such conditions, otherworld narratives offer a reassuring vision.

The modern era of the late 19th and the 20th centuries seems to have been one of those dislocating periods. This study looks at three well-known works of short fiction from the past century, works that imagine the experiences of dying from illness, from hanging, and from

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old age, with no suggestion of an afterlife. As viewed through these three fictional windows, death is a lonely and tumultuous experience. The stories were written early in the period but their continued popularity in anthologies and their status as classic stories suggest that they remain very close to our modern sensibility about dying and that they thus form part of the cultural context that has fostered interest in the reassuring NDE accounts, in the manner suggested by Zaleski.

Their relationship to the NDE is not one of difference only. The stories contain interesting parallels to several elements of the typical NDE account. Though an otherworld experience is not part of these narratives, they include many of the devices of the NDE in different guises, including distancing from one's body, dark passages, warm lights, and life review. For the significance of these parallels, Zaleski is again helpful. She commented that one way to make sense of the enormous variety of NDE stories throughout history is as "works of narrative imagination" (1987, p. 7). By this, she did not mean that the survivors are merely making them up but that they are narratives created in part out of the specific images, language, and storytelling patterns of a culture and period. The NDE accounts from America differ in important details from those in India (Osis and Haraldsson, 1997) and both differ from medieval accounts. A look at the following stories suggests that some of the "vocabulary" of the modern NDE is not unique to an otherworldly view of death but is shared with these modern imaginings of dying itself.

Leo Tolstoy's "The Death of Ivan Ilych": The Life Review as Torment and Redemption

Leo Tolstoy's short novel was published in 1886, when the author was 58. The story of Ivan Ilych's pursuit of and crisis over the right way to live one's life reflects the themes that increasingly characterized the author's work during the latter part of his life.

The novel opens at Ivan Ilych's funeral and then flashes back to trace Ilych's life and his career in Russia's judicial system. From childhood, Ilych was good-natured, sociable, dutiful, attracted to success, and averse to human complexity and unpleasant emotions. As a prosecutor and then a judge, he delighted in the clean separation between the application of the law and human compassion. His family life was social and conformist, though he kept his distance from his wife because he could not tolerate her emotionality. His pleasure was playing bridge.

One day, as he obsessed over the hanging of a drape in his new home, he slipped on a ladder and bumped his side.

The resulting injury to his kidney became cancerous and finally killed him, at the age of 45. He encountered in doctors the same impersonality he had doled out as a magistrate, and the polite refusal of his friends and family to acknowledge his impending death agonized him. In his loneliness he found himself concluding that everything he had valued and worked for in his life had been false, and that he had suppressed the few true impulses he had felt. For the last three days of his life, lying at home, he screamed.

For three whole days, during which time did not exist for him, he struggled in that black sack into which he was being thrust by an invisible, resistless force. He struggled as a man condemned to death struggles in the hands of the executioner, knowing that he cannot save himself. And every moment he felt that despite all his efforts he was drawing nearer and nearer to what terrified him. He felt that his agony was due to his being thrust into that black hole and still more to his not being able to get right into it. He was hindered from getting into it by his conviction that his life had been a good one. That very justification of his life held him fast and prevented his moving forward, and it caused him the most torment of all.

Suddenly some force struck him in the chest and side, making it still harder to breathe, and he fell through the hole and there at the bottom was a light. What had happened to him was like the sensation one sometimes experiences in a railway carriage when one thinks one is going backwards while one is really going forward and suddenly becomes aware of the real direction.

"Yes, it was all not the right thing," he said to himself, "but that's no matter. It can be done. But what is the right thing?" he asked himself, and suddenly grew quiet (Tolstoy, 1960, p. 151).

His wife appeared at his bedside, and Ilych told her that he felt sorry for her and for his son and he mumbled a request for forgiveness. He understood for the first time that

he must act so as not to hurt them: release them and free himself from these sufferings. "How good and how simple!" he thought. "And the pain?" he asked himself. "What has become of it? Where are you, pain?"

He turned his attention to it.

"Yes, here it is. Well, what of it? Let the pain be."

"And death . . . where is it?"

He sought his former accustomed fear of death and did not find it. "Where is it? What death?" There was no fear because there was no death.

In place of death there was light.

"So that's what it is!" he suddenly exclaimed aloud. "What joy!"

To him all this happened in a single instant, and the meaning of that instant did not change. For those present his agony continued for another two hours. Something rattled in his throat, he emaciated body twitched, then the gasping and rattle became less and less frequent.

"It is finished!" said someone near him.

He heard these word and repeated them in his soul.

"Death is finished," he said to himself. "It is no more!"

He drew in a breath, stopped in the midst of a sigh, stretched out, and died. (1960, p. 152)

Ilych's experience of his death includes several features that bear a general though not exact resemblance to the NDE paradigm. He felt himself to be in a dark place and then a light place, although the dark sack in which Ilych struggled and the dark tunnel described in NDE reports are very different. More notably, in his final moments, Ilych experienced a distancing that parallels the out-of-body aspects of the NDE. He asked where the pain is, found it, and let it be; then asked where the fear of death was, only to discover that it was gone. Like the person undergoing an NDE, Ilych experienced his core being as separated from pain and fear. And lastly, he arrived at light and joy, although this vision remains unelaborated.

The principle difference between the story and the NDE paradigm is that Tolstoy's story retains the quality of a parable of redemption that characterized much traditional religious literature and that was often a model for Tolstoy's fiction. Its roots lie in Tolstoy's spiritual crisis that took him away from established religion at the same time that they strengthened his personal and individualized spirituality. The final encounter of the story recollects the haunting description, in an unfinished fictionalized work called "The Memoirs of a Madman," of Tolstoy's own attack of anxiety and despair while on a trip when he was younger, an episode referred to as the "Arzamas horror":

"But what folly this is!" I said to myself. "Why am I depressed? What am I afraid of?"

"Me!" answered the voice of Death, inaudibly. "I am here!" (Tolstoy, 1978, p. 658)

Years later, Tolstoy described his growing anguish at the meaninglessness of life in "A Confession." "I felt that what I had been standing on had collapsed and that I had nothing left under my feet. What I had lived on no longer existed, and there was nothing left" (1978, p. 677). The writer found his way back to a belief in God, with the difference that he now found God's will embodied not in the Orthodox Church

but in the humanity of people at large, especially the peasantry. The story of Ivan Ilych was written a few years after "A Confession." In it, Tolstoy seemed to compress the years of his own searching into the last hours of Ilych's life, a final silent vision of light built from grueling self-examination and deepening forgiveness.

Ambrose Bierce's "Occurrence at Owl Creek Bridge": A Near-Death Experience with a Twist

A few years after Tolstoy's story appeared in 1886, a very different type of writer in a very different country was treating the narrative of the dying moment more intricately. "Occurrence at Owl Creek Bridge," written in 1890 by Ambrose Bierce, describes the hanging of Peyton Farquhar, an Alabama planter captured by advancing Union soldiers for attempting to sabotage a railroad bridge. Bierce had served with an Indiana regiment for nearly three years during the Civil War and he knew from experience about guarding railway links in Alabama from local spies and guerrilla troops (Morris, 1995, pp. 43, 44). After setting the scene, the narrative describes the hanging:

As Peyton Farquhar fell straight downward through the bridge he lost consciousness and was as one already dead. From this state he was awakened—ages later, it seemed to him—by the pain of a sharp pressure upon his throat, followed by a sense of suffocation. Keen, poignant agonies seemed to shoot from his neck downward through every fiber of his body and limbs. (Bierce, 1946, p. 13)

But the rope broke:

Then all at once, with terrible suddenness, the light about him shot upward with the noise of a loud splash; a frightful roaring was in his ears, and all was cold and dark. The power of thought was restored; he knew that the rope had broken and he had fallen into the stream. There was no additional strangulation; the noose about his neck was already suffocating him and kept the water from his lungs. To die of hanging at the bottom of a river!—the idea seemed to him ludicrous. He opened his eyes in the darkness and saw above him a gleam of light, but how distant, how inaccessible! He was still sinking, for the light became fainter and fainter until it was a mere glimmer. Then it began to grow and brighten, and he knew that he was rising toward the surface—knew it with reluctance, for he was now very comfortable. "To be hanged and drowned," he thought, "that is not so bad; but I do not wish to be shot. No, I will not be shot, that is not fair." (1946, p. 13)

As he rose to the surface, Farquhar freed his hands and neck from the rope. Breaking the surface, he found that his senses were fully restored and alert. "Something in the awful disturbance of his organic system had so exalted and refined them that they made record of things never before perceived" (1946, p. 14). He escaped from the soldiers' bullets and even from the firing of a canon as he dove underwater and swam downstream. He found himself ashore and walked all day through the forest:

At last he found a road which led him in what he knew to be the right direction. It was wide and straight as a city street, yet it seemed untraveled. . . . The black bodies of the trees formed a straight wall on both sides, terminating on the horizon in a point, like a diagram in a lesson in perspective. (1946, p. 17)

Soon, at the conclusion of the story, he found himself before the gates of his home:

As he pushes open the gate and passes up the wide white walk, he sees a flutter of female garments; his wife, looking fresh and cool and sweet, steps down from the verandah to meet him. At the bottom of the steps she stands waiting, with a smile of ineffable joy, an attitude of matchless grace and dignity. Ah, how beautiful she is! He springs forward with extended arms. As he is about to clasp her, he feels a stunning blow upon the back of the neck; a blinding white light blazes all about him with a sound like the shock of a cannon—then all is darkness and silence!

Peyton Farquhar was dead; his body, with a broken neck, swung gently from side to side beneath the timbers of the Owl Creek Bridge. (1946, pp. 17, 18)

The story parallels the NDE paradigm principally in the way that the dying person experiences an extension of time and a fluidity in space. Here, distances were traveled, details were noticed, complex events transpired all within the fraction of a second that Farquhar dropped to his death. As in the NDE also, because events were compressed in time, they had the feel, not of being rushed, but of being slowed. Time passed in leisurely moments of acute perception and gradual motion.

The final stage of Farquhar's uncanny journey included some specific moments paralleled in the NDE narratives: the wall of dark trees is reminiscent of the tunnel, and the warm reception by a loved one in a bright setting echoes most NDE accounts. Bierce even gave us gates in front of this heaven. But he was playing with us here, foreshadowing his own joke by laying on the heavenly imagery. It is the cynicism of the story that distances it from the indelible warmth and security of the

NDE. Here, the life-saving journey, the escape from pain, was nothing more than an illusion. The story concludes almost as a mockery of the NDE itself, as if the patient returned from the light to the body on the operating table only in time to be declared dead.

The surreal quality of Farquhar's experience may have had some basis in the author's. Bierce's long war career ended on June 23, 1864, when he was shot in the head by a rebel sharpshooter. Except to complain of the headaches during his recovery, Bierce himself wrote nothing of the experience; the event was recorded by his commanding officer. But Bierce's stories, written long after the war was over and mostly an array of minor tales about the mysterious, the supernatural, and the war itself, frequently involved things happening to and within the head. One in particular may convey Bierce's state of mind after his nearly fatal wounding. In "The Other Lodgers," an officer, recovering from a wound to the head and wearied from hard railway travel, stopped for the night at a broken-down hotel where he shared a room with other prostrate figures, only to discover in the morning that they were all dead and that the hotel was in reality used as a hospital. Bierce biographer Roy Morris commented about the story:

The dreamy, confused state of the narrator is suggestive of Bierce's persistent dizziness in the aftermath of his wounding, a headachy netherworld somewhere between the daylight world of the living, and the dark, uncertain world of the dead. It is not uncommon for survivors of a major trauma—and a bullet wound to the head would certainly qualify—to feel themselves living a sort of posthumous existence, not entirely convinced of their own survival. (1995, p. 91)

But it was Bierce's way, in the story of the lodgers as in Farquhar's story, while showing death as the final reality, to show also the strength of life. Although the ending of "Occurrence at Owl Creek Bridge" makes it the antithesis of a gladdening NDE account, we find in it many of the same components that intrigue us in those accounts: the surprise of survival; the experience of being, if not out-of-body, at least out of danger; the hyperalertness; and the progress toward a light and a loving reception.

Katherine Anne Porter's "The Jilting of Granny Weatherall": Cheated by the Light

In 1918, when she was 28, the writer Katherine Anne Porter, living in Denver, contracted the influenza that was spreading around the world at that time. She ran a fever of 105 degrees for nine days;

the newspapers prepared her obituary; the family made arrangements (Givner, 1982, p. 125). She received an experimental shot of strychnine and recovered, and her account is familiar material to those who study NDEs:

It just simply divided my life, cut across it like that. . . . It was, I think, the fact that I really had participated in death, that I knew what death was, and had almost experienced it. I had what the Christians call the "beatific vision," and the Greeks called the "happy day," the happy vision just before death. (Givner, 1982, p. 126)

It was not until 20 years later that she captured this experience in her famous short novel "Pale Horse, Pale Rider," the story of the young Denver reporter Miranda, who, just as a relationship with a young soldier began to bud, contracted and nearly succumbed to influenza; Miranda recovered only to discover that her young man had himself died of it. Steve Straight wrote about that story and Porter's NDE in this Journal in 1984, documenting well the depth of the NDE that Porter evidently passed through, based on the description in the story, and the alienating effects of it afterwards that Porter struggled to overcome. I will look briefly here at another work written in the middle of that period, in 1929: "The Jilting of Granny Weatherall," an account of a dying unrelieved by any glimpse of an afterlife.

The story describes the last hours of 80-year-old Ellen Weatherall, who was succumbing to old age in bed at her daughter Cornelia's house. Weatherall had thought she was prepared for death:

While she was rummaging around she found death in her mind and it felt clammy and unfamiliar. She had spent so much time preparing for death there was no need for bringing it up again. Let it take care of itself now. (Porter, 1965, p. 82)

But uneasy memories and unfinished business pursued her and filled the stream of her consciousness. Decades before, George had left her standing alone at the altar.

Yes, she had changed her mind after 60 years and she would like to see George. I want you to find George. Find him and be sure to tell him I forget him. I want him to know I had my husband just the same and my children and my house like any other woman. A good house too and a good husband that I loved and fine children out of him. Better than I hoped for even. Tell him I was given back everything he took away and more. Oh, no, oh, God, no, there was something else besides the house and the man and the children. Oh, surely they were not all? What was it? Something not given back. (1965, p. 86)

Her children—Cornelia, Lydia, Jimmy—and Doctor Harry came and went in the room. Father Connolly administered last rites:

Light flashed on her closed eyelids, and a deep roaring shook her. Cornelia, is that lightning? I hear thunder. There's going to be a storm. Close all the windows. Call the children in. . . . "Mother, here we are, all of us." "Is that you, Hapsy?" "Oh, no, I'm Lydia. We drove as fast as we could." Their faces drifted above her, drifted away. The rosary fell out of her hands and Lydia put it back. Jimmy tried to help, their hands fumbled together, and Granny closed two fingers around Jimmy's thumb. Beads wouldn't do, it must be something alive. She was so amazed her thoughts ran round and round. So, my dear Lord, this is my death and I wasn't even thinking about it. My children have come to see me die. But I can't, it's not time. Oh, I always hated surprises. I wanted to give Cornelia the amethyst set—Cornelia, you're to have the amethyst set, but Hapsy's to wear it when she wants, and Doctor Harry, do shut up. Nobody sent for you. O, my dear Lord, do wait a minute. (1965, p. 88)

Weatherall searched for absent Hapsy, a woman whose identity is never explicit, either another daughter or a close friend. The story ends thus:

You'll see Hapsy again. What about her? "I thought you'd never come." Granny made a long journey outward, looking for Hapsy. What if I don't find her? What then? Her heart sank down and down, there was no bottom to death, she couldn't come to the end of it. The blue light from Cornelia's lampshade drew into a tiny point in the center of her brain, it flickered and winked like any eye, quietly it fluttered and dwindled. Granny lay curled down within herself, amazed and watchful, staring at the point of light that was herself; her body was now only a deeper mass of shadow in an endless darkness and this darkness would curl around the light and swallow it up. God, give a sign!

For the second time there was no sign. Again no bridegroom and the priest in the house. She could not remember any other sorrow because this grief wiped them all away. Oh, no, there's nothing more cruel than this—I'll never forgive it. She stretched herself with a deep breath and blew out the light. (1965, pp. 88, 89)

Some features of this ending also occur in the NDE paradigm. Her consciousness, persisting even as her body failed, separated briefly from it. The light became her being, "herself." Moreover, throughout the story we hear in Weatherall a kind of calm, amazed reflectiveness at what is occurring that also characterizes many NDE narratives. Here is not the purposeful, action-oriented alertness of Farquhar but a more passive, detached kind.

The striking difference, however, between the story and the NDE paradigm is that Weatherall's dying, right up to her last moment, is of a piece with the anxieties and anger that have filled her life. Throughout

the story, Weatherall's moods shifted among her irascibility, her defensiveness, her anger, and her anguish. We hear the full range of her personality and it was this personality which had to undergo the final separation from everything and everyone. Because of the memory of her first jilting, and the loss of Hapsy, and the struggle to find her direction through life without a clear "sign," she was not confident or content at the end.

She did not get the reprieve that Ivan Ilych was given by Tolstoy. Tolstoy, even in the unorthodoxy of his religious beliefs, cast the final reflective moments as redemptive ones. But Porter's vision is darker. Throughout her writing Porter expressed the anxieties of modern life, including a pessimism about world catastrophe, that characterized early-20th-century consciousness. And she expressed as well the struggle of women to define themselves with little help from a traditional relationship to a man. While her reactions to her own NDE may underlie a portion of the turmoil in the story, Porter, I think, was primarily interested in showing that Weatherall's death was the final moment of her life. There was no spiritual safety net in the story, only the existential claustrophobia of finding that one's self is nothing other than one's life.

Conclusion

These early modern classics of short fiction, although they include nothing about an afterlife and very little about transcendent spirituality, with the exception of Tolstoy's story, contain many other elements of the NDE paradigm. As in the NDE, the process of dying in these stories was a busy one. The consciousness of the protagonists was extremely active; either it was asking questions, as in Tolstoy's story, or fantasizing the ideal escape, as in Bierce's, or protesting and regretting, as in Porter's. This activity and intensity coincided with an experience of movement through space. Farquhar's escape most extremely, but Ilych's black hole and Weatherall's blue light and bottomless death as well, echoed the out-of-body episodes and the movement through tunnels of the NDE accounts. Another parallel is that the protagonists had concise but vivid experiences of light and darkness, the signs of awareness and oblivion. Finally, in all the stories, as in the NDE accounts, one or two beloved family members or friends played a prominent role, and two stories included the wish for reunion.

The stories of Ilych and Weatherall in particular bear many similarities to what Maggie Callanan and Patricia Kelley (1992) described

as "nearing death awareness" in patients dying gradually of illness. In their recent book *Final Gifts: Understanding the Special Awareness, Needs, and Communications of the Dying*, these hospice nurses distinguished between the "nearing death awareness" of those steadily dying patients they have observed and the "near-death experience" of those who have been resuscitated from a sudden trauma such as drowning. Their dying patients have known well that death is coming soon, and their struggles with emotions, spiritual questions, and family issues drive an intense effort to think and to communicate. Callanan and Kelley stressed that what appears to observers as rambling and incoherence in the dying is the process of a person trying to make sense of crucial issues at a very difficult time. While the conclusion of the process is often peaceful, it is not always so, and efforts to communicate often elude the bedside caregivers, to their own and the dying person's dismay. Such observations fit well with the deathbed portrayals of Ivan Ilych and Ellen Weatherall, especially in the sense of urgency, the misunderstood communications, and the importance of close relationship right to the end.

What distinguishes these three stories from the NDE paradigm, on the other hand, is not only the absence of an otherworldly journey but of a broader transcendent element as well. In the typical NDE account, a process takes over; a sequence of events having little to do with the dying person's individual history comes into play and leads him or her beyond pain and suffering. In all the stories, by contrast, death took place in terms of the life, the personal resources, and the moment at hand: Ilych found his revelation through the kind of questioning at which he was professionally skilled, Farquhar made his escape by imagining the scene of battle in which he was immersed, and Weatherall seemed stranded with the uncertainties with which she had always lived. Such an existential and psychological focus characterizes modern fiction in general. As successful works of art, the stories make a credible but grim case that when one dies, one has only one's own resources to draw on. The vision of dying in the NDE accounts, on the other hand, while to many people less credible, conveys reassurance not only by offering the prospect of an afterlife but also by showing that, throughout the course of the event, the dying person is embraced by a process.

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A Near-Death Experience Followed by the Visitation of an "Angel-Like" Being

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ABSTRACT: I describe a near-death experience (NDE) followed by a religious experience 15 years later in which the subject was visited by the same "angel-like" figure that she saw in the NDE. I describe details of the NDE and of the subsequent visitation; note transformational changes in behavior and associated aftereffects; examine childhood experiences possibly related to the NDE; review the presence of angels in Biblical and mystical literature and in contemporary media; and suggest a possible relationship between latent paranormal abilities and the occurrence of a variety of exceptional experiences.

The following case was brought to my attention while I was conducting research on the duration of aftereffects resulting from near-death experiences (NDEs). The case was self-reported in the "Remarks" section of a survey instrument by a 31-year-old white woman residing in Upstate New York. The subject is currently married and employed as a research manager for individuals with mentally retardation. I conducted several follow-up interviews with the subject to prepare this account for publication.

The Near-Death Experience

The initial event occurred during a house party held at the subject's home in the summer of 1981. At the time, the subject was swimming in a long "Florida-shaped" pool. Over a period of years she had trained herself to swim the entire length of the pool underwater. On this particular

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occasion, she had reached the deep end of the pool and kicked off the wall for her return lap just as a drunken partygoer jumped into the pool directly above her. In playfulness he grabbed the subject, dragging her to the bottom of the pool. Since the subject had just completed her first lap underwater, she had no reserve air in her lungs, and during the struggle to free herself from the man's grasp she quickly lost consciousness.

What followed was a classic NDE. The subject found herself slowly drifting upwards in a dark environment. Although still disoriented and confused, she no longer felt the fear, distress, and panic of drowning. She was now comfortable and fully alert in her new surroundings. The subject reported that she felt herself gently rising at an oblique angle, as if she were riding an invisible escalator. As she became accustomed to the darkness, she was able to perceive depth within that darkness. Next, she witnessed a childhood scene involving her still-living younger sister. The vision appeared briefly against a dark background, in vivid color, and was framed within a rectangular television-like format. In this scene, the younger sister was about 3 or 4 years old, had pigtails, and was playing with their family cat. That scene was immediately followed by another one involving a deceased family dog named Pepper. The second scene was described as being similar to the first one in appearance. Neither scene was accompanied by any sound. The subject then became aware of a distant light located slightly above and ahead of her. The light appeared small and distant at first but grew in brightness and size as she progressed toward it. While moving towards the light, the subject felt that she was passing through a dark tunnel, slowly at first, but later with great acceleration. As she moved within the light she was filled with awe, peace, and love.

The subject discerned, framed within the light, the figure of "a beautiful woman" with hands outstretched to receive her. This woman was described as being clothed in a white dress, and having long, dark-blond hair and blue eyes. The angelic being radiated a sense of "motherly love" to the subject. The subject remarked that her only desire was to reach the safety of those outstretched hands. But when she was nearly within reach, the figure withdrew her hands and told the subject, through her eyes, that it was not yet her time and that she would have to return.

Almost immediately, the subject found herself back in her physical body gasping for breath on the deck of the swimming pool. Apparently, she had been rescued and pulled out of the pool onto the deck while undergoing her NDE. A total of about two minutes had elapsed since

she had lost consciousness. No medical treatment was administered and she recovered without any evident physical harm from the drowning accident.

The Visitation

The second part of this account involves the return of the same angel-like entity 15 years later. On August 17, 1996, the subject's daughter was invited to attend a party at her friend's house. The host of this event owned a dog who had apparently been taunted over the years by spray from a garden hose. At one point during the event, the subject's daughter was standing near the garden hose when she accidentally tripped over it, causing the hose to flip up and strike the dog. The dog immediately reacted by attacking the subject's daughter, tearing a large section of flesh from the daughter's left cheek. Needless to say, the attack was extremely traumatic to both mother and daughter. Several major operations involving skin grafts were required to repair the damaged facial area.

After one such operation, the subject was comforting her daughter while they both rested in the mother's bed. The subject recalled that her daughter had been having nightmares and was thrashing about. To protect the newly grafted area, she cradled her daughter's face in her arms as they lay together. It was late at night and the room was dark. Then, suddenly, a subdued light appeared behind the subject's left shoulder. She immediately turned her head about to determine the source of the illumination. There was no evident explanation for the light, but when she returned her gaze toward her daughter, she saw the identical "beautiful woman" who had appeared to her during her NDE. The angel-like figure was only a couple of feet away. Her head was resting on her arms at the edge of the bed. Gazing at both mother and daughter, the angel communicated telepathically to the mother that she was not to worry because her daughter would be all right. The subject was awestruck by the encounter and briefly closed her eyes to refocus them upon the being, but when she reopened her eyes the figure was gone.

When questioned about the identity of this female entity, the subject was absolutely sure that it was the same angel-like being that she had observed during her earlier NDE. There was only one minor difference. In the visitation, the angel's hair was "up" about her head rather than falling down below her shoulders. The second appearance was very brief, lasting only several seconds, and the subject observed only

the head, shoulders and arms of the angelic figure. As a result of the visitation, the subject was not only comforted that her daughter would recover, but became convinced that "a personal relationship" existed between herself and the lady-in-white. To the subject, this being was her own special "guardian angel."

Discussion

The subject's NDE included the following prototypical core elements: (1) being in a dark environment, (2) feeling peaceful and calm, (3) passage through a dark tunnel toward a distant light, (4) encountering a being of light, (5) being overcome with a feeling of unconditional love while in the presence of the light, (6) being instructed to return, and (7) experiencing a reluctance to return. In addition, while a life review did not present itself, images did emerge from the subject's past life while in the dark void. The subject reported 13 of the 16 items on the NDE Scale (Greyson, 1983), with a total score of 26. Her subscale scores of the NDE Scale were 4 on the Cognitive Component, 8 on the Affective Component, 18 on the Paranormal Component, and 8 on the Transcendental Component, meeting the criteria for a Transcendental Type NDE (Greyson, 1985).

The images reported in this NDE differed from those of a prototypic life review. While the scenes were of real events that had happened in her past, they did not suggest any judgmental evaluation of the subject's life. Rather, they appeared to be random scenes without relation to her NDE situation. When asked about their significance, the subject responded that they failed to convey any sense or reason. She was not particularly attached either to her younger sister or to her dog Pepper. However, the scenes did reflect memories of events that had actually transpired in her past.

The subject characterized her NDE as a peak experience. It influenced her perception of death in the classical manner: she reported that she no longer had any fear of death or dying. The NDE caused her to become more loving towards others, and to replace interest in traditional worldly pursuits with a desire to provide service to those in need. Learning and formal education had always been important to the subject, but their importance intensified following her NDE. In general, the subject felt that changes in her attitudes and behavior resulting from her NDE were dynamic, and that they have become stronger with the passage of time.

The subject's religious background was unremarkable. She reported having been raised without religious affiliation by a Catholic mother and an atheist father. No religious propensities were evident prior to either the NDE or the visitation. The NDE confirmed her pre-existing beliefs in God and an afterlife, but it did not result in any increase in religious behavior. Her spirituality was expressed through care of the disadvantaged. During interviews, the subject gave numerous examples of how she was able to provide care and assistance to patients that far exceeded the boundaries of her professional responsibilities as a research manager. This service, coupled with an intuitive ability to recognize individuals in distress, have been hallmarks in her life since the NDE.

Several researchers, including Kenneth Ring and Christopher Rosing (1990) and William Serdahely (1993), have suggested that many NDErs report a history of childhood abuse. The subject of this report did not claim to have been abused, but did report having been emotionally neglected. While her parents were financially affluent, she had received little attention from them. She remembered feeling very lonely as a child and complained that her parents "didn't even know I existed." On several occasions she had hidden beneath her bed for hours hoping that her parents would become concerned over her absence and seek to find her; but they never did. When she attempted to capture her father's attention, he would avoid the occasion by giving her money to "go shopping." The subject characterized her childhood as one of emotional isolation and loneliness.

Changes in attitudes, values, and behavior resulting from the NDE have been persistent with one notable exception. The subject reported that her faith in the goodness of God had been severely tested by the dog attack upon her daughter. Following the attack, she questioned why a loving God would permit such a thing to happen to an innocent child. She recalled being angry over what seemed to be a terrible injustice. The subject felt that it was this very dilemma that precipitated the visitation by her guardian angel. The visitation reassured her that God was aware of her anguish, and that He had sent her guardian angel to affirm His concern and to restore her faith.

Many of these changes and aftereffects have become stronger over time. In this case, the exercise of intuition and service appeared to have achieved synergistic results. For example, success in the ability to recognize those in emotional need, coupled with dedication to provide service to such individuals, has intensified over the years. An example of this continuing concern for others was demonstrated by her recent efforts to speak to nursing care patients about her own near-death experience

in hopes of providing them with firsthand reassurance about what lies ahead.

She also reported several specific aftereffects previously described by P. M. H. Atwater (1988): (1) her wristwatch always runs too fast, (2) her eyes are extremely sensitive to sunlight and fluorescent lights, (3) light bulbs frequently dim or burn out in her presence, and (4) various psychic manifestation are very common in her life.

Our interviews uncovered a history of psychic experiences prior to her NDE. She reported having seen the spirits of two deceased women in her parents' house on many occasions during her childhood. These ghostly figures appeared to both the subject and her sister. The spirits apparently recognized each family member but never "haunted" them in a traditional sense. The subject claimed that the figures were easily distinguishable, one being a blonde and the other a brunette. They were dressed in late 19th century garb and appeared to be attached to the house they were living in. She reported that these visions only occurred in their parent's house and that no comparable visions appeared to her following her departure from that residence.

The existence of pre-NDE psychic talents raises the possibility that such abilities may predispose paranormally gifted individuals to undergo a variety of exceptional human experiences during their lifetimes, including both NDEs and religious or mystical experiences. The association between NDEs and spiritual experiences dates back to the foundation of near-death studies, with many researchers considering NDEs to be simply another form of spiritual experiences. Even if this view oversimplifies some aspects of NDE phenomenology, few would question the prominence of the spiritual component of NDEs. While the case reported above progresses in a sequence from paranormal to NDE to religious experiences, any combination of these events may prove to be equally valid. The occurrence of psychic experiences is well recognized following NDEs, but it would be interesting to review NDE accounts for the occurrence of such experiences prior to the reported NDEs.

The Presence of Angels in NDEs

Angels have played an important role in the religious traditions of Western society. The word "angel" is derived from the Greek word *angelos*, which literally means "messenger." They are considered to be spiritual beings, superior to humans in power and intelligence, who act as agents of God. Angels are portrayed in art as being human in form, with

long, white wings, clothed in white vestments, and often with a halo about their head. NDErs who have had encounters with angels report that they have a beautiful countenance, and radiate a sense of peace, serenity, trust, and love. Craig Lundahl (1992) discussed at length the function of angels during NDEs, concluding that they inform, guide, and protect human beings during their transition to the afterlife.

Angels are ubiquitous in the literature of many religions. They are acknowledged in the Jewish Talmud, the Christian Bible, and the Islamic Koran. More than two hundred references to angels can be found in the King James version of the Bible, divided evenly between the Old and New Testaments, although one quarter of those references are contained in the Book of Revelations. In addition, the presence of angels has frequently been reported in the visions of religious saints and mystics. Pierre Jovanovic (1993) has carefully documented many of these encounters in his review of Western historical records. The Swedish scientist and mystic Emanuel Swedenborg extensively discussed his own personal encounters with angels in many of his theological works; a summary of Swedenborg's views about angels has been recently published by Robert Kirven (1994). This long tradition of interaction with angels continues into recent times. The contemporary Greek Orthodox mystic Vassula Ryden (1992, 1995) has reported numerous conversations with her own guardian angel.

A resurgence of interest in angels during the past decade may be partially attributed to their popularity in contemporary media. Many recent books on angels have cascaded off of the popularity of Sophy Burnham's *Book of Angels* (Burnham, 1990); there are currently more than 1800 in print. In the visual media, television series such as *Highway to Heaven* and *Touched by an Angel*, and recent movies like *City of Angels* (Silberling, 1998) and *What Dreams May Come* (Ward, 1998) have served to maintain a focus on the topic of angels in the public's mind. This popularity was documented in a 1993 survey conducted by *Time* magazine (Gibbs and Chua-Eoan, 1993), which revealed that 69 percent of the 500 individuals polled believed in angels, 46 percent believed in the existence of personal guardian angels, and 32 percent reported having had some form of actual contact with angels.

By contrast, I was able to uncover only two articles in the professional literature on the topic of angels. In one, Lundahl (1992, p. 49) wrote that "the literature on near-death experiences (NDEs) contains no substantive discussion of angels in NDEs, even though there are references to angels in several studies of these experiences." Lundahl identified

references to angels in the works of Raymond Moody (Moody, 1975; Moody and Perry, 1988), Kenneth Ring (1982), and George Gallup and William Proctor (1982), as well as in his own work (Lundahl, 1982). There was one additional article on angels published in the nursing literature, describing three cases and suggesting helpful nursing interventions with patients who describe encounters with angels (Kennard, 1998).

Angel experiences occur to children and adults, males and females, and to those of nonreligious as well as religious backgrounds. Jovanovic (1993) noted that in his historic review of religious and mystical experiences 70 percent of the visions of angels occurred to women. A few sample quotes from the near-death literature will serve to illustrate what is being reported by NDErs in their encounters angels.

Following are two adult examples of angelic encounters. The first, reported by Brad Steiger (1994), reflected the experience of a woman named Gloria and described how an angel led her toward the light during a NDE. After hearing the sound of bells, she reported that her guardian angel came down through the ceiling for her. This angelic being accompanied Gloria toward a bright light that appeared to be shining in the center of a great expanse of darkness. According to this witness (Steiger, 1994, p. 49):

It was the most beautiful and compelling light that I had ever seen. My angel nodded at me as I hesitated to draw nearer. "Yes," the angelic being said. "We must now become One with the Light so that we may ascend higher."

The second adult account of an angel was reported by Maurice Rawlings (1978). In this account the witness's thoughts were examined by a bright angel (p. 69):

I knew I was dying. They had just gotten me to the hospital and then I felt this pain in my head and I saw a great light and everything was whizzing around and around. Then I felt free and at peace and just had an uncanny sense of well being. I looked down on the medical people working over me and it didn't bother me a bit. I wondered why.

Then I was suddenly enveloped in this black cloud and went through this tunnel. I emerged from the other end in a white light which had a soft glow. There was my brother who had died three years previously. I attempted to go through a doorway, but my brother was blocking my view and wouldn't let me see what was behind him.

Then I saw what was behind him. It was a bright angel. An angel of light. I felt encompassed by this force of love from this angel that was searching and probing my deepest thoughts. I was being searched and

then I seemed to be allowed to sense the presence of spirits of some other loved ones who died previously. Then my whole body jumped upward from the electric jolt they gave me, and I knew I was back on earth again.

Since I have recovered from this encounter with death, I am no longer afraid of death.

Among contemporary NDEs, many of the most touching accounts of angels have come from children. Melvin Morse has documented many such childhood accounts in *Closer to the Light* (Morse and Perry, 1990), including that of 9-year-old Katie, who encountered an angel named Elizabeth during her passage through a dark tunnel. Katie described Elizabeth as being tall and nice with bright golden hair. The angel accompanied Katie through the tunnel into the light where she met several deceased relatives and friends. Later, Elizabeth presented Katie to the Heavenly Father and to Jesus.

Mary Kennard (1998) reported a more recent encounter by another 9-year-old girl named Mallory who was diagnosed with terminal cancer (p. 50):

She knew she was dying and she was very afraid. One morning, she told her mother that three angels had come to her during the night. The angels had white wings and were very beautiful. They'd taken her on a trip to heaven. Mallory wasn't sick in the presence of the angels and even danced with them.

Nine days before she died, Mallory made a videotape for other terminally ill children. She described the angels and heaven so that the children would not be afraid of death. She told them, "Believe what I say because it's true. It really is."

To my knowledge, the question of how frequently NDErs report having encounters with angels has not been studied. Anecdotal accounts of angels do appear in the literature, but there has been no systematic evaluation of such reports to determine the relative frequency of angel encounters. Through examination of sporadic accounts in the professional literature, and from a limited sample of NDE accounts I have been collecting for a study of NDE aftereffects, I propose an incidence rate of about 4 percent. However, this rate may underestimate the number of angelic encounters in childhood NDEs.

Conclusion

The most interesting aspect of the account presented above is that it suggests the existence of a personal relationship between the NDEr

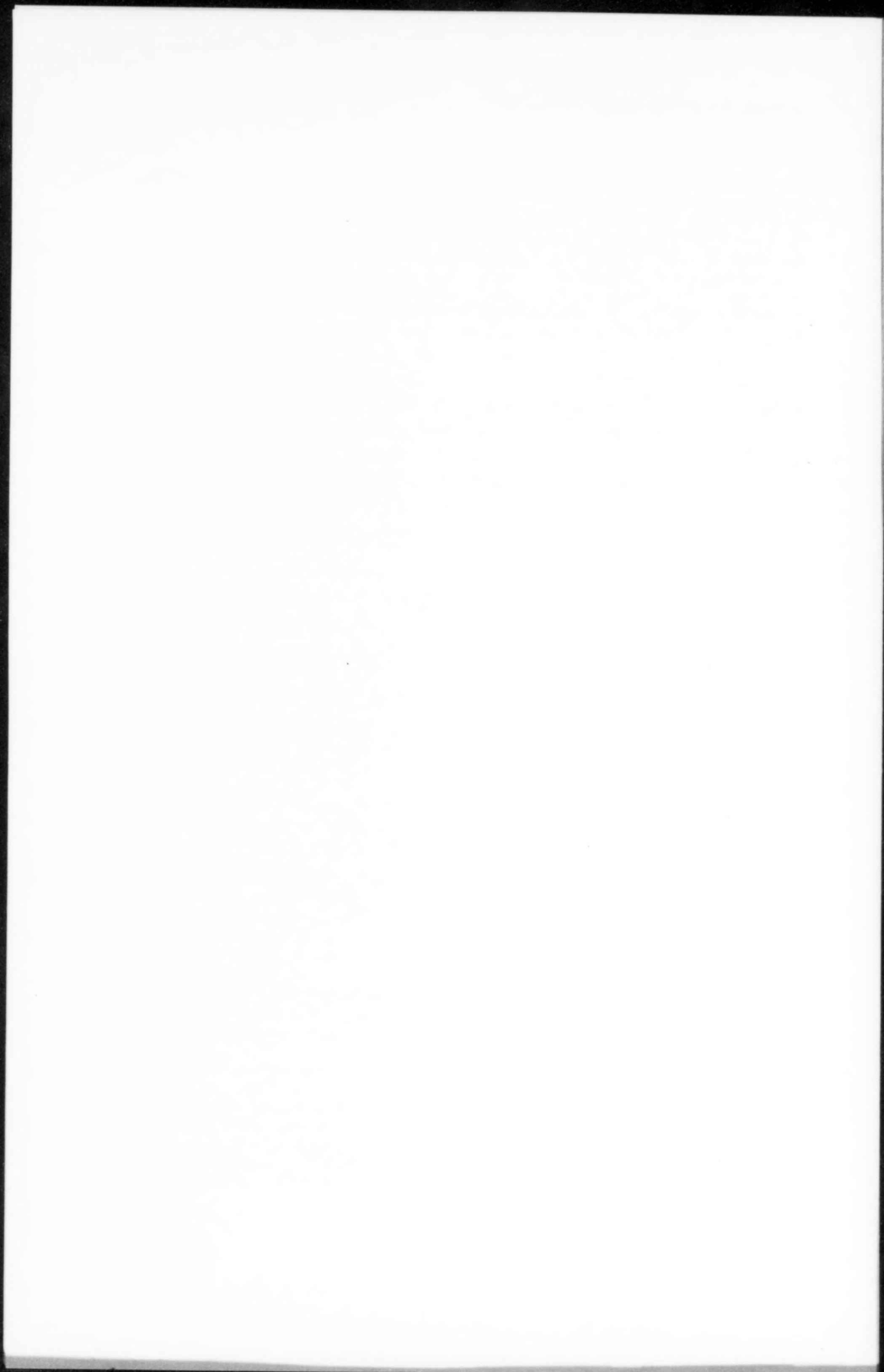
and an angel-like being. While only a single case, it tends to support the traditional concept of a guardian angel. A review of the literature revealed that in spite of the popularity of angels in current media, there is a paucity of professional information concerning angels in NDEs. The absence of an organized collection of observations on angelic encounters undermines attempts to draw conclusions about their nature or significance.

Is there a correlation between the existence of pre-NDE paranormal abilities and the likelihood of undergoing an NDE or other exceptional experiences? This subject's vision of spirit beings prior to both her NDE and her angel encounter suggests that psychic abilities may be a factor underlying these separate events. Examination of pre-NDE psychic experiences in future studies could shed light on the possibility that individuals with inherent paranormal talents are predisposed to having a variety of unusual human experiences.

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BOOK REVIEW

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Lessons from the Light: What We Can Learn from the Near-Death Experience, by Kenneth Ring and Evelyn Elsaesser Valarino. New York, NY: Insight/Plenum, 1998, \$29.95, hb; Portsmouth, NH: Moment Point Press, 2000, \$16.95, pb.

Kenneth Ring is no stranger to the pages of this Journal. As Bruce Greyson notes in his Preface to this capstone book, Ring more than any one person has been responsible for the near-death experience (NDE) growing into "a self-sustaining phenomenon." Ring's early work was the first to place the NDE under the spotlight of scientific and scholarly investigation, which evolved into what can only be called a near-death movement of popular and even global proportions.

With these credentials firmly in place, the present work shifts ground and moves us to a new perspective on the near-death phenomenon. While the early work focused on analyzing, modeling, and authenticating the NDE, studying its powerful aftereffects and relationships to other transformative experiences, *Lessons from The Light* takes on its spiritual meaning and soulmaking significance. At the same time, this lucid, friendly book reviews almost a quarter century of near-death research.

Ring's past publications argue that the NDE and related transformative experiences point to evolutionary potentials of human consciousness. In this book, which continues the early work, he takes a more active stand toward the developmental potential of the near-death experience when he states that "it is clearly not enough to wait passively for this evolution to occur" (p. 4). He tries to enable the reader who has never had a near-death experience to absorb its lessons and use them to catalyze personal growth "simply by reading and reflecting on the

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contents of this book" (p. 5). Ring believes that "we already have evidence that merely learning about the NDE has effects similar to those reported by NDErs." This deep learning from the near-death illumination is likened to catching a "benign virus." In a comparable vein, according to some spiritual traditions, direct transmission of spiritual insight is possible by grace of *darshan* or *charism*. Psychical research speaks of receiving "telepathic impressions" and psychedelic aficionados of the so-called "contact high." Or we might content ourselves with talking of imaginative or empathic or meditative reading. However we care to phrase it, the idea seems reasonable enough: the stunning potentials of the near-death transformation experience are latent within us all. If so, it is plausible that the words, images, and ideas that describe the NDE might serve to evoke and awaken their slumbering unconscious counterparts in our own minds. On the other hand, Ring is not selling a free ride to enlightenment; mere mouthing of ideas will not do the trick. It is only by actively applying the near-death lessons to everyday life that we can hope to taste their magic.

The first step toward real awakening is to remind ourselves of this marvelous experience by recounting fresh examples of it; Ring artfully devotes the first chapter to this task. Each story narrates an extraordinary transformation, an experience that changes the personality of a human being, that alters the gut sense of reality. Ring rightly attaches importance to these narratives: they are, to begin with, wise teachings; they also seem able to transmit a special kind of soul-energizing intensity. For me they are a kind of postmodern scripture that calls for a new art of imaginal reading—"scripture," in the sense of being verbal embodiments of a revelation that comes about through an extraordinary direct experience, an experience that furnishes a new perspective, that allows one to "see" things quite differently.

In my opinion, *Lessons from the Light* is an introduction to a new genre of writing. It shows us how to use these remarkable narratives to trigger our own life-transforming, enlightening experiences. There is an old Biblical prophecy that says one day we shall all see visions and dream great dreams, old and young, all of us, without class distinction; it is a vision of the democratization of higher consciousness. *Lessons from the Light* takes the lead from the prophet Joel who first had the idea.

Chapter 2 deals with the *authenticity* of near-death narratives. Ring provides a series of clear criteria for what he means by this. The first deals with a singular feature of the NDE: the veridical, objective, out-of-body experience (OBE) that sometimes accompanies it. People apparently "leave" their bodies when they come close to death. (Being near

death, of course, is not the sole condition for out-of-body flights of consciousness.) As an expression, "leaving the body" is ambiguous; it could mean "having an *experience* of being out of the body." In this sense, ordinary dreams are a type of OBE. The second sense relates to the authenticity factor. In this sense, one not only experiences oneself as out-of-body, but is able to demonstrate though verifiable actions or perceptions that one's conscious center really was located elsewhere than the physical body. This experience, if the real McCoy, is at odds with mainstream science and philosophy. It pries open the concept of death in unexpected ways. Suddenly, the "undiscovered country" changes its gestalt; from a black hole it morphs into a wormhole.

Another criterion for authenticity is introduced in Chapter 3, where Ring narrates the results of his investigation of *blind* people's NDEs. Rumors had been circulating for some years that blind persons, even those born blind, were suddenly *seeing* things: Blind people having visual experiences during near-death and out-of-body experiences? Ring, with the help of his research assistant Sharon Cooper, decided to track down the rumors. The result is an article in this Journal (Ring and Cooper, 1997) and a remarkable monograph (Ring and Cooper, 1999) on the blind vision of NDErs, which is summed up in a chapter of the present book—another "lesson" we are invited to assimilate. In a nutshell, Ring seems to have demonstrated the existence of William Blake's hyperphysical visionary capacity; it was Blake who said that we see *through*, not *with*, our eyes. Perhaps the most challenging lesson of assimilation is to activate, to awaken this superior, hyperphysical faculty of vision.

Stories of sight revealed for the first time in someone born blind well might irritate dogmatic materialists. Ring, of course, states his conclusions cautiously; he does, however, make a case for the reality of an extraordinary fact: that people who from birth have been blind, and people who became blind or nearly blind at some stage of their lives, suddenly acquire, or seem to possess, the capacity for visual experience during NDEs and OBEs. They report seeing colors, forms, light, being normally entirely destitute of such experiences. Other reported NDEs indicate this trend toward this hyperphysical modality of perceptual consciousness; people claim heightened and more subtle perceptive capacities during NDEs, such as the lucid awareness of every minute particle of lint on a light fixture observed from an out-of-body location near the ceiling.

The next chapter reviews another authentic mark of NDEs: children have NDEs. As pediatrician Melvin Morse has made it his business to show, children, often very young indeed, have the classic NDE, and

seem to zero in on what Morse and Ring agree is the essence of the experience: the light. Children's testimony is especially valuable; in a sense, it is purer, less likely to be deformed by acculturation. The raw basic experience pours through, with pristine intensity and beauty.

Ring applies the pragmatic principle of judging things by their fruits to authenticate near-death experiences. Chapter 5 looks at the after-effects of this remarkable experience. It is hard to regard as anything less than robustly authentic an experience that wipes out the fear of death, reveals the reality and central importance of unconditional love, awakens new empathic and perceptual sensitivities, sets into motion healing energies, acts like a catalyst for physiological development, and—maybe most important—sparks what Friedrich Nietzsche called a “transvaluation of values” or radical change of outlook.

The next chapters move from authenticity to Ring's central concern, which is to show how the reader can learn to assimilate the life-enhancing experiences of the near-death experience. Most of us, I suppose, are familiar with Charles Dickens' tale of soulful renewal, *A Christmas Carol* (Dickens, 1983/1843). Dickens was a student of psychical research. Now Scrooge, as we all know, was transformed from, well, being Scrooge the great grinch to a bubbly man who was “merry as a boy” and “light as a feather.” Scrooge pulled it off with the help of certain spirits who let him witness and review different stages of his own past life. In particular, he was forced to contemplate the effects of the cruelty he had heaped on others. To make matters worse, he had a vision of the darker possibilities of his own future, the karmic terrors that up until then he had been sowing for himself. Modeled after the authentic NDE, Ring suggests that we learn to recreate in ourselves this life-revising self-review. By mentally practicing the lessons of self-recollection, we can learn to see the effects we have on others, how unconsciously driven we often are as we stomp our way through life, all too often weaving the hell of our own existence. In passing I note that something similar was practiced by Pythagoras, who recommended that before retiring we summon up the events of the day before the mind's eye and observe and relive them on the plane of recollection.

This leads to the next lesson. I think it interesting that Ring, in Chapter 8, singled out *self-acceptance* as one of the key lessons to absorb into the bloodstream of our consciousness. So many are hobbled by life and are forced to nurse a low sense of self-esteem. The NDE helps us get over this. It puts us in touch with a richer, worthier sense of who we are and how we might see and treat others. Several thoughts occur to me. The first is Carl Jung's reminder that only by acknowledging our

weakness can we know our greatest strengths. It seems part of our constricted mode of existence that we shy away from our nullity and insignificance. We rebel against this—against, in a word, death. The NDE teaches the profound lesson of the acceptance of death—and hence of all our imperfections.

Self-acceptance becomes possible in a new way. For if we can accept our weakness in the face of death, we might accept the unknown strength that may be waiting for us. Perhaps the near-death experience, which rips open possibilities we might prefer not to think about, is meant to get us to accept the full girth of who we really are. It seems to be asking, "What is this little thing we cling to, compared to the immensity of our true identity?"

If Ring is right, the NDE is a deeply spiritual experience. Chapter 9 details the way our values, fundamental beliefs, and behaviors may be modified by ideals revealed in these experiences: how profound self-knowledge and self-acceptance lead to love, service, and reverence for life. Ring discusses the "benign virus" hypothesis, that "merely acquiring knowledge about NDEs can act rather like a 'benign virus'; that is, by exposing yourself to NDE-related information, you can 'catch it,' because the NDE appears to be 'contagious'" (p. 203). To support this view he describes his work teaching college students about NDEs, how they had been deeply moved and changed by exposure to these contagious near-death data. Remember, the emphasis of this book is to help non-experiencers, and so examples are stressed of people who have been changed merely by reading about NDEs. Ring is careful to point out that we cannot be sure how long-lasting these effects may be (p. 208); he thinks the depth of the change most likely depends on the degree of active effort one invests in internalizing the information. The same, I suppose, could be said about the impact of reading the world's great spiritual and inspirational literature, such as the Tao Te Ching, the Dhammapada, or the Gospels.

Chapter 10 zeros in on the healing gifts that reportedly result from NDEs. According to one study, which supports the idea touchingly illustrated in the movie *Resurrection* (Petrie, 1980), a significant percentage of NDErs develop "healing hands." Healing capacity assumes a variety of forms, in some cases, related to a distinct healing force that emanates from the NDEr's body, and that may be related to the "electrical sensitivities" (p. 222) often associated with near-death aftereffects. On the other hand, the newborn healing capacity may depend on a more subtle, charismatic change in the personality of the NDEr; in such cases the healing agency "mends lives" (p. 227), for example, by lifting a victim

from the depths of despair. According to Ring, "it is the Light itself that heals, and . . . the near-death experiencer who has received a direct transmission of this light is someone who in turn can mediate this healing force" (p. 223). This confirms the view of Morse: There is a light that people sometimes "see" on the threshold of death that heals the body and banishes despair and the fear of death.

These are extraordinary claims. All at once, we are catapulted from the realm of medical psychology to the heart of the world's spiritual traditions. This is important: the NDE is a piece of wild traffic crisscrossing between science and religion. The claim would seem less incredible once we suppose that in these near-death episodes ordinary people are experiencing something of the archetypal light repeatedly described in mystical and shamanic experience the world over. The pages of the literature of transcendence are splattered with images of an all-liberating, all-healing luminosity. If one looks at the effects of the light, it produces a consistent syndrome, across time, gender, and culture. Speaking for myself, I find this convergence of spirituality and medical science very exciting.

We come now to a crucial two chapters, 11 and 12, which address the question of death and dying. The lessons here are profound. Essentially, they change our image of death, our whole sense of what death may be; we move from the terror and vacuity of materialist death to a spiritual vision of death as the gateway to an across-the-board fullness of life. It is as if the near-death experience were invented by our unconscious evolutionary genius to help us cope with a situation that seemed to be getting out of hand, a poisonous view of life that threatens to kill the spirit.

Our *lightmeister* addresses a controversial question: What do NDEs tell us about our fate *after* death? The message is positive for *before* death; but what of the great after? Once again, Ring gives us a push in a heartening direction. On several grounds, near-death research advances the case for life after death—an idea that seems an outsider in an age of cloning. However, those verifiable OBEs and the evidence for "eyeless vision" at first blush speak to the independence of consciousness from the body, steps toward making the case for something *after* death. Of course, other important facts add to the picture: the powerful conviction of NDErs that they "know" there is life after death because, they say, they were there. Of course, they were not; not quite, anyway. At best, we can say they *may* have had a peek of what is coming.

Needless to say, as far as the therapeutic, life-enhancing effects of the NDE, the scruples of logic carry little weight. Still, as a matter of

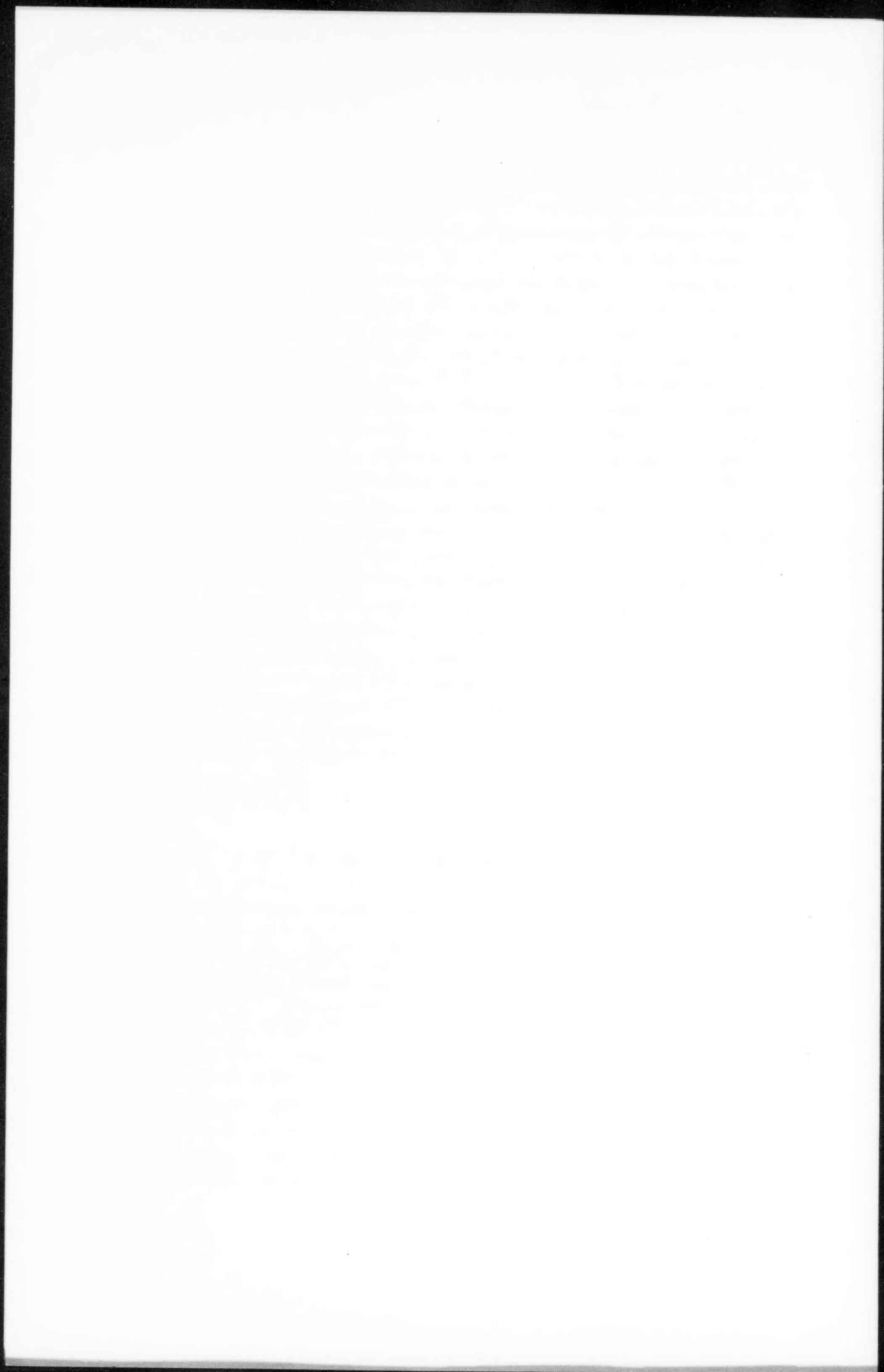
logic, the intensity of belief in itself lends nothing to a belief's veracity; if it did, fanatics would have a monopoly on truth. In the long run, the attempt to answer the question of life after death takes us in other directions, and Ring points toward one of these, referring to recent studies of apparitions of the dead. In fact, there is an extensive, old, and international literature on verifiable OBEs, deathbed visions (different but related to NDEs), ghosts, hauntings, all sorts of apparitions, mediumship, possession, poltergeists, psychic photography, and electronic voice phenomena. There is also an array of paranormal physical phenomena, which figure in the general picture of human potential, and therefore in the question of life after death.

Above and beyond the important question of rational evidence, the NDE offers something else to anyone curious about the great *after*. It offers models of states of consciousness we might emulate and recreate that could give us direct glimpses of the world beyond. The concluding chapters of this book take us deeper into vivid narratives of people who have been embraced and transformed by the light.

Ring's concluding message is that we ought not to waste the gift of the near-death experience—which, above all, is the gift of spiritual light. The good news is that we have a new paradigm of death—which, in effect, means a map of new possibilities. We have a weapon to strike back against soul-sucking materialism. The real challenge, concludes our gracious author, is “putting into practice what we have learned” (p. 304). It is possible to get closer to the light; there is a way to do it. This book will show you how.

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BOOK REVIEW

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On the Other Side of Life: Exploring the Phenomenon of the Near-Death Experience, by Evelyn Elsaesser Valarino. New York: Insight Books, 1997, 353 +xiv pp, \$29.95 hb.

Although this book was intended, as Kenneth Ring states in his Foreword, to be a "theoretical and philosophical examination of the NDE and its implications" (p. vii), the shaky empirical foundations on which it is built unfortunately make it a book of limited theoretical and philosophical value. The concept for the book was an excellent one: The author would present the text of her interviews with several leading scholars and scientists about near-death experiences and their implications for science, religion, and philosophy. The book falls short of its goal, however, because of an interviewer/author too prone to make unsubstantiated and often exaggerated statements about near-death experiences (NDEs) and a group of interviewees who seemed, for the most part, too uninformed about the phenomenon of NDEs to keep the discussions anchored in the reality of what we currently know about NDEs.

Evelyn Valarino opens with an introductory chapter that presents the basic phenomenology of NDEs, a brief history of near-death research, and her views about the importance of the near-death phenomenon. She believes that the study of NDEs provides an empirical means of confirming a belief in survival, that it "might lead to major discoveries that would confirm quantum theory" (p. 8), and that it suggests that death is a step in the evolution of human consciousness "toward a higher, more autonomous, and more efficient level of functioning" (p. 9).

In Chapter 2, Valarino provides a more detailed analysis of NDEs by listing 31 "stages," or features, of NDEs and then describing and

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providing an illustrative example of each. In Chapters 3 and 4, she interviews two people about their own NDEs: Jean-Pierre Girard, a professor of medicine in Geneva, whose experience occurred when he suffered a heart attack following a bee sting; and Henry H., a former drug addict whose experience resulted from an overdose of heroin and cocaine. In the remaining 6 chapters, Valarino interviews Ring, a psychologist and long-time NDE researcher; Louis-Marie Vincent, a biologist; Regis Dutheil, a physicist, and Brigitte Dutheil, a professor of classical literature; Paul Chauchard, a neurophysiologist; Monsignor Jean Vernet; and Michel Lefeuvre, a philosopher of science. In these chapters, Valarino questions these people about their views on NDEs and the implications of NDEs for their particular fields of interest and expertise.

One of the questions that arose in my mind almost immediately was why the author chose these particular people to interview. Virtually no introductory information is given about any of them other than an occasional mention, almost in passing, of a book the person wrote. Valarino clearly took care to choose people from different disciplines; but it is not so clear that she choose people with different philosophical orientations. Not only Monsignor Vernet, but Girard, Vincent, and Chauchard seem to be committed Christians to some degree. Perhaps more importantly, no information whatever is given about the familiarity or involvement of the interviewees with near-death research. Even the two experiencers interviewed seem odd choices, given the author's propensity to view the near-death phenomenon in grandiose ways, since neither of them had a particularly rich experience, phenomenologically speaking. It is clearer why Valarino chose to interview Ring, however: she apparently regards him as the pre-eminent authority among near-death researchers. If one may judge by her end-notes, her analysis of NDEs in Chapter 2 is based almost entirely on Ring's book *Heading Toward Omega* (Ring, 1984) [Melvin Morse's *Transformed by the Light* (Morse and Perry, 1992) and Raymond Moody's *Life after Life* (Moody, 1975) are the only other works cited]; and nearly a quarter of the entire volume (75 pages) is devoted to her interview with Ring.

I also found myself becoming increasingly uncertain and uneasy about the extent of Valarino's exposure to or knowledge about near-death research. Despite a long and for the most part good list of books about NDEs and related topics in her bibliography, not a single journal article is listed, indicating that her exposure to scientific, peer-reviewed literature may be minimal. Moreover, despite the many books listed in the bibliography, the few references to near-death literature in the

whole book are almost entirely confined to citations to the Ring, Morse, and Moody books that I mentioned above. Beginning on page 1 of the book, Valarino makes so many simplistic, exaggerated, even outrageous statements about NDEs that it quickly becomes obvious that her enthusiasm about the phenomenon has not been tempered by acquaintance with much empirical data or views conflicting with her own. For example, she perpetuates the popular belief that NDEs occur when a person is "clinically dead." She writes that when an NDE occurs, "life has left the physical body, all physiological functions are stopped, brain activity is nonexistent" (p. 172). She further claims that this has been confirmed by medical documentation: "During an NDE, brain activity is often observed by medical staff to be nonexistent" (p. 233). In fact, in practically no studies of NDEs have medical records been consulted to establish the person's physiological state; and the few that have show that people can be in a wide range of medical conditions when they have an NDE (Stevenson, Cook, and McClean-Rice, 1989-1990; Owens, Cook, and Stevenson, 1990). I know of only one case in the entire literature about NDEs—and that was published after Valarino's book (Sabom, 1998)—in which electroencephalographic (EEG) or other such monitoring has documented any cessation of brain activity.

Similarly, Valarino considers the life review to be "one of the most important elements of the NDE" (p. 38), and she writes that "during the life review, the experiencers understand, with the help of the 'being of light,' every one of their actions, both good and bad, and feel the pain they have caused others" (p. 136). Further, the life review is "a distressing exercise," but the person's "remorse and guilt feelings are eased by the kindness of the being of light, who points out mistakes in order to help him or her improve, not to punish" (p. 4). In fact, in our studies of the life review phenomenon (Stevenson and Cook, 1995), relatively few people (13 percent) experienced any revival of memories; and in other studies, the incidence has ranged from 3 to 29 percent. Less than half of the experiencers in our study reported that they saw their whole life; a quarter of them reported experiencing only one or a few memories. Less than half reported any sense of being judged, and most of these did the judging themselves; few of them had the life review experience in the presence of a "being of light."

Valarino also does a disservice to near-death research, in my opinion, when she claims that "all who have undergone a near-death experience" afterwards exhibit a "radical and lasting" transformation (pp. 10, 265; my emphasis). She even goes so far as to assert that "initially, these people are no different from you and me. But when they come back

to life, they are transformed into the precursors of a new race, with an expanded consciousness—mutants, so to speak” (p. 133). Clearly, NDEs have a profound effect on most experiencers, and many—though by no means “all”—are changed in more or less fundamental ways by the experience. But people with less messianic tendencies than Valarino are not likely to tell researchers or others about their experiences if they believe they are going to be labeled publicly as “mutant precursors of a new race.” Statements like this are likely to drive many experiencers underground, not out in the open.

Valarino is not alone in making unsubstantiated statements in this volume. Ring says that blood flow to the brain has been “monitored” in many instances (p. 111), and Chauchard says that neurophysiological experiments have “register[ed] flat EEGs” during an NDE (p. 231); he actually says that “*all* they’ve managed to do is register flat EEGs” [my emphasis], as if this were inconsequential! Chauchard even describes a case of a Russian physicist who was resuscitated, even though “he was truly clinically dead; there were no signs of life; and this had gone on for months” (p. 256), though he gives no source for his information about this case. Several people, including Valarino, apparently believe that the events witnessed during an out-of-body experience (OBE) have been “relatively easy to corroborate” (p. 7). Lefeuvre says that the “testimony is corroborated by those who were at the scene” (pp. 289, 290). Chauchard says that during OBEs and mystical states, “individuals leave their bodies, go visit others, and give them advice” (p. 252). Ring says that “in many instances when we’ve been able to look into this, people have made statements that could not have been made on the basis of ordinary perception and yet turn out to be true” (p. 89). In fact, although there are quite a few cases of apparently veridical perception during an NDE, in very rare instances has an outside investigator been able to corroborate the events independently (for a review of both the corroborated and uncorroborated OBE/NDE perceptions, see Cook, Greyson, and Stevenson, 1998).

Claims of other paranormal or unusual capacities are also referred to vaguely, without either substantiation or qualification. Valarino writes that an “altered perception of time [that] continues well beyond the NDE . . . seems to be one of the profound and lasting changes that characterizes experiencers” (p. 33). Ring says that after an NDE people “report consistent changes in their physiological, neurological, and brain functioning” (p. 159), and Valarino says that NDErs claim to have “direct control over their physical bodies, confirming current medical opinion, which largely acknowledges the importance of the mind-body relation in the healing process” (p. 14). Both Ring and Valarino

claim that a wide variety of paranormal phenomena occur among experiencers following an NDE (pp. 52, 143), including "frequent reports of experiencers who see apparitions of loved ones at the precise moment of the latter's death" (p. 52) or who are "often able to predict an accident or the death of a loved one" (p. 53), though again they provide no references to these "frequent" reports. As Ring acknowledges, none of these claims have been "tested" or corroborated; yet his conclusion is that this failure simply leaves us unable to decide whether such abilities develop only after an NDE or have been there all along but are not recognized until after an NDE. He does not mention the possibility that some or even many such claims might be erroneous, for one reason or another.

Statements such as these, and many others throughout the book, cry out for references or further clarification; but there are practically no references in the book. I would like to point out one further example illustrating the danger of making undocumented claims, often based only on a secondary or popular source. Valarino repeats the claim, made by Morse (Morse and Perry, 1990, pp. 102, 103) and others (Blackmore, 1993, pp. 212, 213), that Wilder Penfield's electrical stimulation of the brains of epileptic patients reproduced many of the phenomena of an NDE. According to Valarino, Penfield "found that electrical stimulation of the 'fissure of Sylvius,' located in the right temporal lobe just below the right ear, can produce an out-of-body experience, an encounter with deceased loved ones, and even a life review—hence, the main elements of a typical NDE" (p. 232). In the book by Morse cited by Valarino, he reported a "casual" discussion about NDEs with a colleague who claimed that Penfield had "one patient who experienced every trait of the near-death experience while Wilder Penfield poked an area of his brain with an electric probe" (Morse and Perry, 1990, p. 102); but Morse provides no other source for this claim. He later refers to "a forty-year-old textbook" that describes patient reports of out-of-body experiences while their brains were being electrically stimulated; but again he provides no reference to this textbook. The only reference to Penfield's work in Morse's bibliography is to a 1955 paper by Penfield in the *Journal of Mental Science*, also the only paper [along with Penfield's book *The Mystery of the Mind* (Penfield, 1975)] cited by Susan Blackmore. When one finally turns to this original source, however, one finds that there is no mention whatever of encounters with deceased loved ones or a life review. (Stimulation of one or a few isolated, random images that may or may not be actual memories does not constitute, in my opinion, a "life review," although it seems to be true, contrary to what Valarino and some others say about the life review, that more NDEs involve a Penfield-like revival

of one or a few images than a full-blown review of "everything that was experienced during mortal life" [p. 289].) Moreover, in the 1955 Penfield paper there was only a single, brief mention of what seems to resemble an OBE: One patient, on apparently one occasion, cried out (in fear, unlike most NDEs): "Oh God! I am leaving my body" (Penfield, 1955, p. 458). This is the *only* mention by Penfield in this paper of an experience remotely resembling an NDE feature. Until someone can provide references to other examples reported by Penfield, I have to insist that one single example of one feature that may not even be phenomenologically similar to what is reported in many NDEs hardly constitutes the basis for theories or conclusions or even speculations about the origin or nature of NDEs.

Ring complains that the cardiologist Maurice Rawlings has based his conclusions on

one case; he shows the same man over and over again. It is not clear how representative it is of the whole of people who report NDEs. The problem with Rawlings is that he has particular religious views that certainly influence his position. There has never been an independent replication of this work. . . . He may be right, but we have to wait for an independent investigator to come up with findings such as he reported. (p. 115)

This assessment captures some of the reasons for my dissatisfaction with this book. Valarino's objectives seem much more evangelical than scientific. She believes that "by listening to the near-death experiencers, the pieces of life's puzzle begin slowly but surely falling into place. Things take on their proper perspective, true values are revealed, and the meaning of life is implicitly understood" (p. 15). Her zeal too frequently results in blatantly leading questions to her interviewees, as when she asks Girard such questions about his NDE as "Do you think you have been transformed by this experience?" (p. 62), "Has your NDE changed your relationship to church? Do you now consider it to be more like an intermediary?" (p. 62), or "What do you think about the *fact* that the psychic abilities of those who have an NDE seem to increase *considerably* following this experience?" (p. 65; my emphasis). Similarly, Ring believes that people experiencing an NDE "have access to total knowledge" (p. 93); the NDE is "a revelation that occurs at the moment of death" (p. 117). Moreover, the NDE is not simply a personally meaningful experience; it is "a mass phenomenon [with] a lot of implications for planetary transformation" (p. 148), as well as evidence of "a higher orchestration . . . on the part of what I would call a planetary intelligence" concerned about the destruction of the earth (pp. 95, 96). Like

Rawlings (and like Chauchard and Vernet in this book), Valarino and Ring seem driven more by faith than wide observation.

I have gone on at some length in criticizing this book, not to single out Valarino or her interviewees particularly, but to plead for some restraint and caution among all those who write or speak about NDEs—scientists, popular writers, the media, and experiencers—and who go beyond the boundaries of what we currently know about this phenomenon in general and perpetuate what I can only characterize as myths and exaggerations. The reality of NDEs is far more complicated than the simplistic characterization of them as, say, universal revelations of those who were resuscitated after being clinically or “brain” dead. In my opinion, NDEs are fascinating enough, in all their complexity, and we should be eager to understand them with their entire range of precipitating conditions, differing makeup of features, and wide variety of aftereffects, as well as in the broader context of other experiences that resemble them in one or more ways. There are some interesting and provocative ideas expressed in this book. I found, for example, the speculations by Vincent and Regis Dutheil about superluminal particles (that is, hypothetical particles that travel faster than the speed of light) and their implications for theories of consciousness and matter to be intriguing. (On the other hand, I am also aware that I cannot be as critical about these discussions as I can about much of the rest of the book, because I know far less about physics than about NDEs, and no references to research supporting these speculations were provided.) The shortcomings of the book, however, far outweigh its merits. I can therefore recommend it only to people who already know a great deal about NDEs and can recognize that many of the ideas presented here as facts are not, but who are looking for stimuli for their own speculative musings about NDEs, consciousness, or death.

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Letters to the Editor

"Vision" in NDEs or Expanded Consciousness?

To the Editor:

Near-death experiences (NDEs) are commonly thought to address the question of the nature of the human soul and whether or not it can leave the physical body at death. One common theory is the "gaseous vapor theory of the soul," meaning that it drifts out of the body at death and sort of condenses on the ceiling, looking down. A recent Letter to the Editor of this Journal (Ellwood, 1998) presented two well known stories in support of this gaseous vapor theory of the soul: Kim Clark Sharp's story of seeing the tennis shoe on the ledge, and the NDE of Vicky Umipeg, who has been blind since birth.

Since we do not see anything with our eyes, I have always wondered as to the fascination with these two particular stories. Our eyes are not videocameras. Instead, we process electromagnetic patterns of energy through our visual system, and create a visual image in our brain that in some small way resembles the complex patterns of energy perceived through our retina. I do, however, have personal knowledge of both cases, and would like to contribute my input as to the significance of these stories and their authenticity.

When I first heard Sharp's story of a patient who told her that during her NDE she saw a tennis shoe on a ledge outside the window, I thought Sharp had crawled out on the ledge to see the shoe. In telling her story, I inadvertently added that detail when I retold it; so it is with human beings when they tell stories.

I have recently read opinions that perhaps this story did not happen at all, that the entire story is an embellishment. This is not true. I have heard virtually the same story Sharp reported about Maria's NDE from an independent source, the respiratory therapist who attended Maria's resuscitation. The fact that Maria has been lost to follow-up is not at all unusual at Harborview Hospital. Sharp's story is, as she tells it, accurate.

The controversy over Umipeg's near-death experience is more difficult to sort out. Believers in the gaseous vapor theory feel that her experience contains elements that she could have seen only visually,

instead of creating it as a mental image from hearing and touch. My research assistant interviewed Umipeg. She did not describe for my research assistant any uniquely visual elements. I have put a detailed summary of Umipeg's interview on my website (www.melvinmorse.com) as a download, with her permission. Any person can read it and make his or her own judgment.

Ultimately, in my view, these experiences simply demonstrate the expanded sense of awareness and consciousness that occurs with death. Something more important than simply seeing with the eyes is going on: a communication with a loving, interactive universe.

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The Archives of Scientists' Transcendent Experiences (TASTE)

To the Editor:

Over the years many scientists, once they have realized I am a safe person to talk to, have told me about unusual and transcendent experiences they have had. Too often I am the first and only person they have ever spoken to about their experiences, for fear of ridicule from their colleagues and adverse, prejudicial effects on their career. Such fears have, unfortunately, too much of a basis in fact. It is not that there are a lot of scientists with nasty intentions deliberately trying to suppress their colleagues; it is just the social conditioning of our times.

I want to change that, and I ask your help in doing so. Scientists today often occupy a social role like that of "high priests," telling laypeople and each other what is and is not "real," and consequently what is and is not valuable and sane. Unfortunately, the dominant materialistic and reductionistic psychosocial climate of contemporary science

(what sociologists long ago named *scientism*, an attitude different from the essential process of science), rejects and suppresses *a priori* both having and sharing transcendent, transpersonal, and altered states (or "spiritual" and "psychic," to use common words, in spite of their too vague connotations) experiences.

From my perspective as a psychologist, though, this prejudicial suppression and rejection psychologically harms and distorts the transcendent (and other) potentials of both scientists and laypersons, and also inhibits the development of a genuine scientific understanding of the full spectrum of consciousness. Denial of any aspects of our nature, whatever their ultimate ontological status, is never psychologically or socially healthy.

The Archives of Scientists' Transcendent Experiences (TASTE), which I have recently opened, is intended to help change this restricted and pathological climate through the operation of a World Wide Web site in journal form that allows scientists from all fields—from anthropology through botany through mathematics through physics through psychology through zoology, to name just a few—to share their personal transcendent experiences in a safe, anonymous (if they wish), but quality-controlled space to which many people have ready access.

Specifically TASTE, to various degrees, (a) allows individual psychological growth in the contributing scientists by providing a safe means of expression of vital experiences; (b) leads toward a more receptive climate to the full range of our humanity in the scientific professions, which, in turn, will benefit our world culture at large; (c) provides research data on transcendent experiences in a highly articulate and conscientious population (scientists); (d) facilitates the development of a full spectrum science of consciousness by providing both data and psychological support for the study of transcendent experiences; and (e) helps bridge the unfortunate gaps between science and the rest of culture by illustrating the humanity of scientists.


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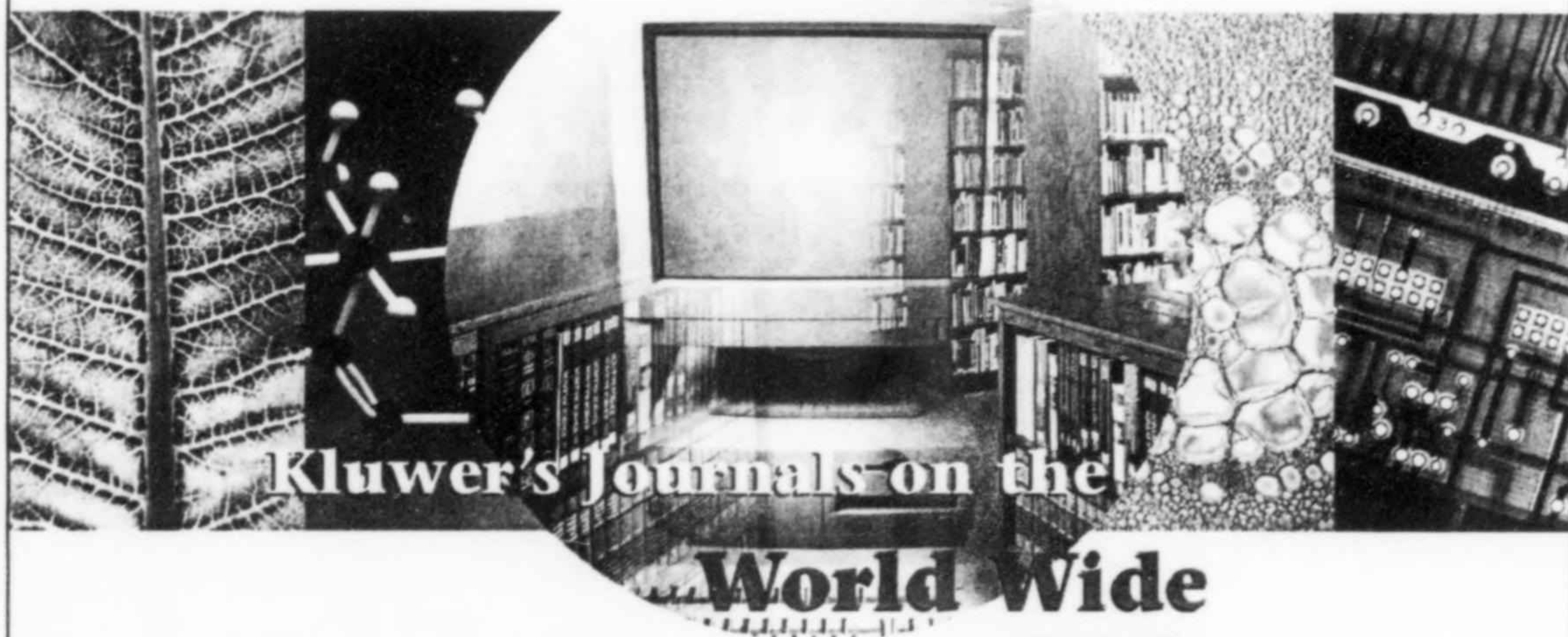
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