

*Journal*  
*of*  
Near-Death Studies

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

**Near-Death Studies and Modern Physics** • *Craig R. Lundahl, Ph.D.*  
*and Arvin S. Gibson*

**The Induction of After-Death Communications Utilizing  
Eye-Movement Desensitization and Reprocessing:  
A New Discovery** • *Allan L. Botkin, Psy.D.*

**Volume 18, Number 3, Spring 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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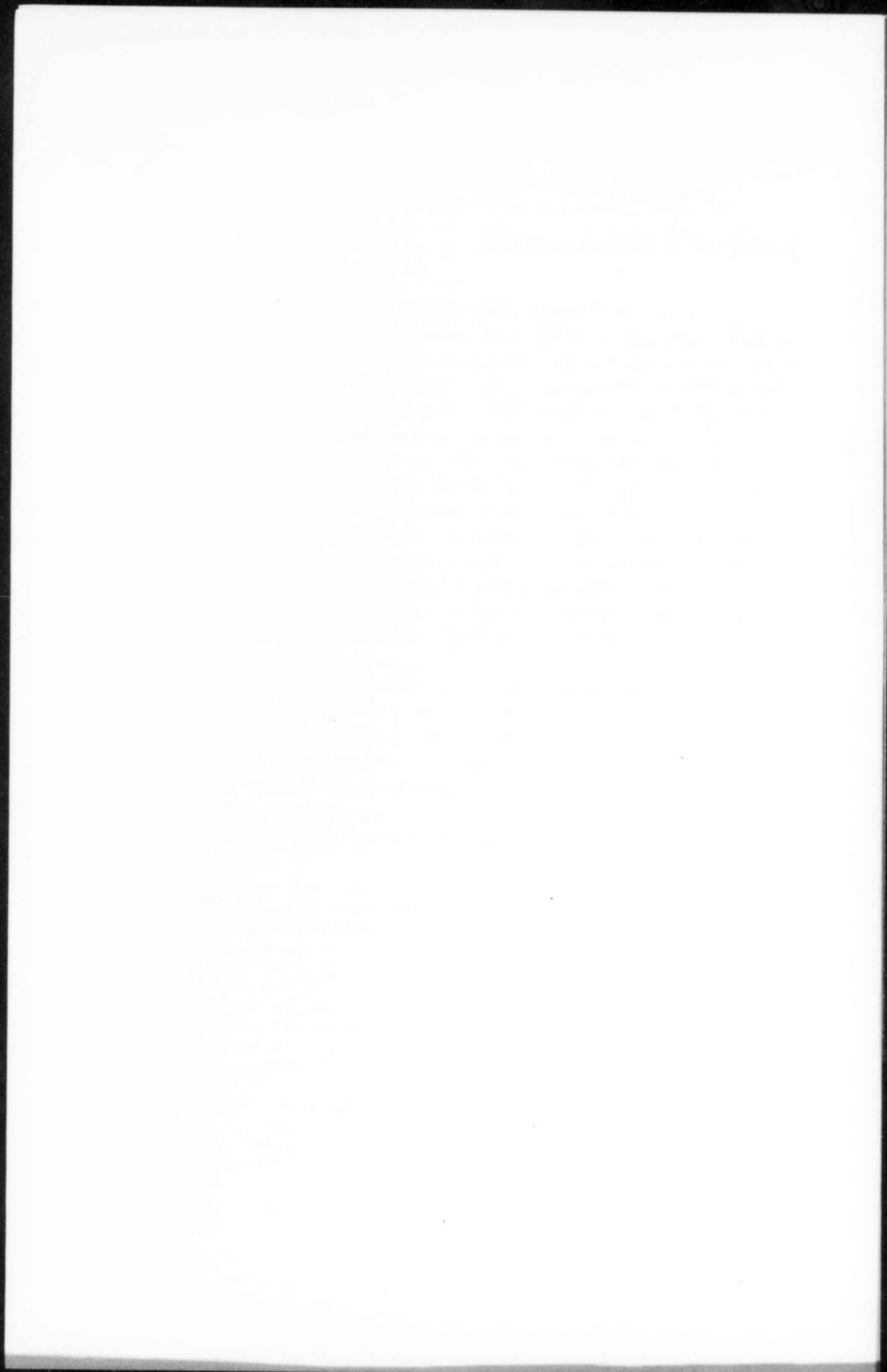
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## Editor's Foreword

This issue of the Journal contains two major articles proposing innovative approaches to the perennial question of how spiritual existence can be understood in relation to our familiar physical reality. In our lead article, sociologist Craig Lundahl and nuclear engineer Arvin Gibson collaborate to explore the possible role of contemporary physics in near-death research. Noting that both near-death studies and modern physics address phenomena that are difficult to understand using purely mechanistic concepts, Lundahl and Gibson suggest that collaboration between the two fields might lead to a better understanding of both. They illustrate this potential cross-fertilization by comparing near-death experiencers' accounts of spiritual or otherworldly events with descriptions of anomalous phenomena in contemporary physics, and suggest that both fields need to incorporate a nonmaterial reality and/or guiding intelligence into their explanatory models.

In our second major article, clinical psychologist Allan Botkin describes a novel therapeutic technique through which bereaved persons can achieve what they believe is actual spiritual contact with the deceased. Botkin claims that these rapidly produced therapeutic encounters are similar to encounters with deceased loved ones in spontaneous near-death experiences, and can greatly facilitate the grieving process. His success with this technique suggests that communication between the spiritual realm and our material reality can be induced reliably under controlled conditions.

Bruce Greyson, M.D.



# Near-Death Studies and Modern Physics

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**ABSTRACT:** The fields of near-death studies and modern physics face common dilemmas: namely, how to account for the corroborative nature of many near-death experiences or of the anthropic disposition of the universe without allowing for some otherworldly existence and/or some guiding intelligence. Extreme efforts in both fields to explain various phenomena by contemporary scientific methods and theories have been largely unsuccessful. This paper exposes some of the principal problem areas and suggests a greater collaboration between the two fields. Specific illustrations are given where collaborative effort might be fruitful. The paper also suggests a broader perspective in performing the research, one that places greater emphasis on an otherworldly thrust in future research.

Efforts to explain the near-death experience (NDE) have tended to focus on theories to explain the NDE as a biological, mental, psychological or social phenomena and theories that explain it as a real occurrence. These attempts have been proposed by researchers and theorists from a number of different fields. They tend to fall into a number of categories of explanation that include cultural, pharmacological, physiological, neurological, psychological, and religious.

These many attempts at explanation include such factors as prior social or cultural conditioning (Rodin, 1980), drugs and sensory deprivation (Grof and Halifax, 1977; Palmer, 1978; Siegel, 1980), cerebral anoxia or hypoxia, temporal lobe seizures, and altered states of

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consciousness (Blacher, 1979; McHarg, 1978; Schnaper, 1980), temporal lobe dysfunction, hypoxia/ischemia, stress, and neuropeptide/neurotransmitter imbalance (Saavedra-Aguilar and Gómez-Jeria, 1989a) sigma receptors and excitatory amino acid receptors (Saavedra-Aguilar and Gómez-Jeria, 1989b), NMDA-PCP receptor, the sigma receptor, and the endopsychosins (Jansen, 1989, 1990), serotonergic mechanisms (Morse, Venecia, and Milstein, 1989), brain-stem function (Cook, 1989), endorphin release (Blackmore, 1993; Thomas, 1976), stress-induced limbic lobe dysfunction (Carr, 1982), autoscopic hallucinations (Lukianowicz, 1958), the replay of the birth experience (Sagan, 1979), the depersonalization syndrome occurring in the face of life-threatening danger (Noyes and Kletti, 1976), altered state triggered by the threat of imminent physical death (Quimby, 1989), protective functions to conserve energy and provide necessary brain stimuli (Krishnan, 1981), hallucinations (Gibbs, 1987; Menz, 1984; Siegel, 1980); the denial of death (Ehrenwald, 1978), regression in the face of death (Lowental, 1981), stress induced psychological phenomena (Appleby, 1989), fulfillment of prior personal expectations of death (Schnaper, 1980), multiple personality disorder (Serdahely, 1992), psychological transition (Tien, 1988), hypnagogic sleep (Counts, 1983), and religious expectations (Palmer, 1978).

To an increasing extent recent NDE literature has described cases where the most likely explanation is that the human personality exists as both a physical body and a spiritual, or otherworldly, body. In many of these cases the out-of-body nature of the experience is demonstrated where the individual saw things that could not have been seen from the physical body, either because of position or because of the physical state of the body, and the things that the individual claimed to have seen are later verified by the individual or others. We choose to call these types of experiences *corroborative NDEs*. In a letter to the editor of this Journal, the Board of Directors of the Utah chapter of the International Association for Near-Death Studies described four such corroborative NDEs, and concluded:

These four experiences are by no means exhaustive of what can be found in the literature. They should be sufficient, however, to demonstrate that at least in some NDEs, and probably in most of them, the dualistic nature of human beings plays a major role in the experience. (Tanner, English, Durham, Bolaris, Bloomfield, Miller, Beckett, Cherry, Gibson, and Gibson, 1998, p. 63)

Other theories that explain the near-death experience as a real occurrence where some aspect of the human personality, whether it be

a soul, a spirit, or a consciousness, can detach itself from the physical body at death tend to fall into the categories of religious and psychological. These explanations include such factors as chakras that connect interpenetrating bodies to one another that eventually provides access to nonphysical bodies (Ring, 1981), a shift of consciousness from this world to another domain where a person is reunited with his or her total self (Ring, 1980), and an element of human personality capable of surviving death (Grosso, 1981). Other explanations include the Mormon theological explanation of the NDE as a real occurrence that is described by common elements in typical near-death experiences (Lundahl and Widdison, 1983), a systematic theory that describes the NDE as a developmental process (Lundahl, 1993), and the use of attribution theory for explaining the causes of NDEs (Norton and Sahlman, 1995).

The biological, mental, psychological, and social explanations have been concerned with explaining the NDE as a phenomenon caused by factors subject to scientific study and analysis, while the real-occurrence explanations have tended to concentrate more on factors that do not lend themselves to easy scientific analysis. Corroborative NDEs tend to fall in a middle ground where some scientific work is possible. The biological, mental, psychological, and social explanations have received considerable attention from the scientific community, while the real-occurrence explanations have been largely ignored, probably because they are considered anecdotal and cannot be repeatable experiments, they are difficult to measure and test, and they are not in the mainstream of materialist natural science. To this point corroborative NDEs have not received much attention from the scientific community. As their cumulative evidence becomes more obvious they will undoubtedly receive increased research effort from various groups.

The attempts to explain the NDE as a biological, mental, psychological or social phenomenon have failed to do so. These explanations either fit only a minute proportion of the reported near-death experiences or else they describe experiences other than true NDEs (Becker, 1982; Gabbard and Twemlow, 1986; Grosso, 1981; Moody, 1975; Osis and Haraldsson, 1977; Ring, 1980; Sabom, 1982; Sabom and Kreutziger, 1978; Woodhouse, 1983). The explanations of the NDE as a real occurrence other than possibly Grosso's (1982) *archetype of death* have received scant notice or serious evaluation.

Today, the NDE still lacks a scientific explanation acceptable to the scientific community despite the fact that considerable data have been accumulated on the phenomenon for almost a quarter of a century. Physicians and others continue to generate what they hope will be a

model or explanation of the NDE that will stand up to scientific scrutiny, so far unsuccessfully. An interesting case in point was exhibited in the Fall, 1997, issue of this Journal. The entire edition was devoted to an article by Karl Jansen (1997a) entitled "The Ketamine Model of the Near-Death Experience: A Central Role for the N-Methyl-D-Aspartate Receptor," and to the responses by other medical practitioners and researchers to his article. In his article and in his response to the commentaries of others, Jansen (1997b) argued that his ketamine theory might explain NDEs and eliminate the need to ascribe NDEs to some spiritual out-of-body event. Most of his respondents were favorably impressed with Jansen's work. Then, just before publication of that issue of the Journal, Jansen forwarded a postscript which was added as the last note in the publication, in which he wrote:

I am no longer as opposed to spiritual explanations of near-death phenomena as my article and this response to the commentaries on it would appear to suggest. . . .

My forthcoming book *Ketamine* will consider mystical issues from quite a different perspective, and will give a much stronger voice to those who see drugs as just another door to a space, and not as actually producing that space. After 12 years of studying ketamine, I now believe that there most definitely is a soul that is independent of experience. It exists when we begin, and may persist when we end. Ketamine is a door to a place we cannot normally get to; it is definitely not evidence that such a place does not exist. (1997b, pp. 94-95)

A striking example of near-death research oriented to possible NDEs of a corroborative nature is the recent work of Kenneth Ring with the blind. In this research, Ring, together with his collaborator, Sharon Cooper, interviewed thirty-one blind persons who had undergone an NDE or an out-of-body experience (OBE). His research is of extreme importance to the near-death research community, and many of his conclusions bear directly on the premise of this paper. Some of his research is reported in the Winter, 1997, issue of this Journal (Ring and Cooper, 1997), in which he wrote:

Our findings revealed that blind persons, including those blind from birth, do report classic NDEs of the kind common to sighted persons; that the great preponderance of blind persons claim to see during NDEs and OBEs; and that occasionally claims of visually-based knowledge that could not have been obtained by normal means can be independently corroborated. (p. 101)

Ring and Cooper have since elaborated on this work in a book concerning persons who were blind and had NDEs (1999).

The major problem with the majority of scientific explanations of the NDE in the past has been their attempt to use a material cause to describe what may, in fact, be a spiritual phenomenon. This has caused "hard science" investigators to rely on techniques that work fairly well in describing our physical universe, but seem unable to explain adequately what may be a different kind of world or universe.

### **The Dilemmas of NDE and Physics Research**

Those involved in NDE research, as noted above, continue to come up against the dilemma of how to explain the NDE in terms of physically known factors when spiritual or "otherworldly" factors keep intruding. The other research field where this is also true is in the area of modern physics. Using the available tools of modern physics and astronomy—such as atom smashers, earth based telescopes, the Hubble space telescope, radio telescopes, space probes, electron microscopes, and computers in conjunction with advanced mathematics—physicists and cosmologists have done a remarkable job of explaining much of what we know about the earth and the surrounding universe. As their knowledge increases, however, so do their questions. The most troublesome of these are questions of ultimate cause.

This dilemma of the physicists was expressed by Stephen Hawking in this manner: "The whole history of science has been the gradual realization that events do not happen in an arbitrary manner, but that they reflect a certain underlying order, which may or may not be divinely inspired" (1988, p. 122). Physicists call this characteristic of the universe, that seems delicately tuned to support life, the *anthropic principle*. The dilemma posed for physicists by the anthropic principle can be illustrated by a few examples.

To explain many of the known phenomena in the universe the mathematics of physics has determined that there are numerous fundamental constants in nature, which if they were slightly different, would eliminate the possibility of life. Paul Davies (1984) pointed out that if, for example, the nuclear forces which bind neutrons, protons, and electrons together were two or three percentage points different, then during the big bang the chemistry would have been altered, and stars and our sun as we know them could not exist. Similarly, if the gravitational constant—which describes the force of gravity—were stronger, then planets would light up and become stars, or they would further collapse, and no life would be possible. If the gravitational constant

were weaker cosmic expansion would have dissipated the primordial materials before gravity could gather them together into planets, stars, and galaxies (Ferris, 1997).

The fundamental building block of all life is carbon. Our bodies are mostly carbon and water. A problem for physicists is how the carbon got here. During the big bang, the primary elements in existence were hydrogen and helium. Ultimately, as the universe cooled during expansion, the hydrogen and helium were compressed by gravity into spiral matter and then into spherical balls. As gravity played its role, the compressed gases in the spheres heated up until they reached the temperature at which atomic fusion takes place. This started with hydrogen nuclei combining to form more helium.

Under certain circumstances three helium nuclei can fuse to form carbon, though the simultaneous reaction of three helium atoms is extremely unlikely. It turns out, though, that there is a resonant energy at which they will react, and this energy is precisely tuned to match the thermal energy at which most stars burn. Though the carbon would be expected to be converted by collision with another helium nucleus to form oxygen, thus eating up all the carbon, there is another resonance, which again is precisely tuned to the thermal energy of most stars, that prevents the carbon from turning into oxygen.

However, this carbon is trapped in distant stars, leading to the question of how it got to our earth. Fortunately, over the life of stars, as they ultimately burn up their fuel, many of them explode and scatter their dust throughout the universe. This stellar dust ultimately reached our stellar system where it was gathered by the gravity of our sun to form our earth; hence the necessary carbon for life (Davies, 1995). This kind of serendipitous chain of events led one physicist, Fred Hoyle, to state: "The universe is a put-up job" (Davies, 1995, p. 118).

Examples of this type could be expanded almost indefinitely (Schroeder, 1992). For example, if the earth were a little closer to the sun it would scorch all life, whereas if it were a little farther away it would freeze all life. The earth's orbit around the sun is nearly circular, unlike that of Mars which is elliptical. The annual variation of the earth's distance from the sun is only three percent of the total distance; hence its temperature is stable. Our modest temperature variation, further moderated by the 23-degree tilt of the earth in its rotation, is just right to keep water liquid under most conditions required for life. If the ratio of nitrogen to oxygen in our atmosphere were significantly less, then most lightning strikes would result in essentially unstoppable conflagrations. If the ratio were significantly greater, then life as

we know it would not be possible. If the density of ice were greater than water, as happens with most other materials when they change from liquid to solid, then it would sink in water and the oceans would become largely ice.

The physicist's dilemma, then, is how to explain these multiple and rare circumstances which point to an anthropic universe and earth. It is similar to the dilemma of near-death researchers who keep trying to explain the phenomenon without giving credence to otherworldly explanations. Physicists, like near-death researchers, try desperately to describe ways in which the universe came to be without relying on some guiding intelligence. They are equally inventive to those scientists laboring with the NDE dilemma, and most of their arguments and theories are equally deficient. The purpose of this article is to explore these two analogous dilemmas and to consider some possibilities for cooperation in the two fields that places greater emphasis on otherworldly answers.

### **The Nature of the Essence or Spirit Body**

One investigator who has attempted a marriage between some of the principles of modern physics and the findings of near-death researchers is Kenneth Arnette. In 1992 he proposed a theory, drawing upon some possible parallels with modern physics, that lent support for the idea that humans beings are composed of both a physical body and an "essence" that survives death. In 1995 he expanded upon his theory of essence, proposing an electromagnetic essence and suggesting other parallels between NDE observations and theories regarding the nature of the universe. More recently he extended his model to include neuroanatomic and neurophysiologic aspects of the interaction between essence and the brain (Arnette, 1999).

In 1983, Craig Lundahl and Harold Widdison outlined an explanation of the NDE based on theological theory. This explanation described the two bodies, or duality of the individual, as a person consisting of a physical body and a spirit body, or essence. The explanation stated that upon death the spirit that contains the human personality disengages from the physical body and lives and moves immediately from this universe to a spirit world (another universe), or from one sphere of existence to another. The next sphere is invisible or imperceptible to those in physical form. The spirit body is composed of refined matter that is not tangible to the coarser matter on the earth. Among the qualities of the

spirit body or essence is the ability to move at "the speed of lightning" (Widtsoe, 1954). Arnette's theory of essence is a partial reiteration of this theological theory but phrased in scientific terminology.

### **The Nature of Matter as Defined by Modern Physics**

In order to speculate on the nature of an essence or spirit body in terms of physically known phenomena it is necessary to consider briefly the nature of matter, as understood by modern physics. Physicists have long known that all matter consists of atoms, which in turn consist of neutrons, with no charge; protons, with a positive charge; and electrons, with a negative charge. In stable atoms the neutrons and protons, which constitute the nucleus of an atom, are held together by a strong nuclear force and are difficult to separate. The massless electrons are held to the nucleus with a weak nuclear force and may be readily stripped from the atom by high temperature and by chemical reactions.

With the advent of high energy particle accelerators it became possible to break the strong nuclear force by accelerating nuclear particles to high energies and forcing them to collide with target atoms. The resulting collision broke the target atoms apart and allowed physicists to study the particles emanating from the parent atom.

In 1960, physicist Murray Gell-Mann theorized that neutrons and protons are each composed of three particles, which he called *quarks*. He theorized the existence of these quarks and three others, for a total of six, as a result of certain symmetries of nature predicted by advanced mathematics. Initially Gell-Mann's theory was viewed with skepticism, but as particle accelerators got more energetic they were able to show that quarks did indeed exist. Protons and neutrons turned out to be made of what were called *up* and *down* quarks, with the proton consisting of two up quarks and one down quark, and the neutron consisting of two down and one up quark. In 1995 the last of the six quarks that Gell-Mann's theory predicted was identified (Ferris, 1997, pp. 213-14).

Quarks reside at different quantum energy levels and can become excited to higher energy levels by eating energy. Quarks are held together by the strong nuclear force. The weak nuclear force works upon a family of particles called *leptons*. Included in the lepton family are the lighter particles such as muons, electrons, taus, and neutrinos. The weak nuclear force is also responsible for causing certain unstable nuclear particles to decay (Davies, 1984).

The general and special theories of relativity, proposed by Albert Einstein in 1905 and in 1915, treated light as a particle, and as such it would be subject to the influence of gravity. This was later proved to be true by observing the bending of light rays from distant stars as they passed a massive body (Hawking, 1988). Contemporary with Einstein, Max Planck proposed that light, X-rays, and other waves could only be emitted in packets called quanta (Hawking, 1988); Werner Heisenberg formulated the famous uncertainty principle (Hawking, 1988); and Niels Bohr generated the mathematics that allowed the development of quantum mechanics (Davies, 1984). Paul Dirac, in the 1920s, worked out the mathematics for an electron that incorporated both quantum mechanics and special relativity (Ferris, 1997). In recent years Richard Feynman developed a set of computations that simplify the mathematics of quantum mechanics. The Feynman method of explaining and computing quantum mechanical reactions schematically showed how, at the subatomic level, the electromagnetic forces between two charged particles can be understood as the exchange or transfer of photons. As two charged electrons approach each other, for example, a photon is discharged from one of the electrons to the other and they scatter apart as a consequence (Davies, 1984).

In Einstein's model, light could be thought of as if it were a particle, and predictive computations made on that basis. In quantum mechanics, light could be thought of as if it were a wave, and predictive computations made on that basis. Both situations are true, but under different circumstances. Indeed, quantum theory makes the definition of matter equally contradictory. Matter behaves as if its properties depend in part on the indivisible quantum links with its surroundings. The question of whether a given object, such as an electron, acts more like a wave or more like a particle is therefore not determined entirely by the electron itself but depends partly on the environment of the electron (Bohm, 1989).

Another theory that has recently come into fashion, and which seeks to explain how various fundamental particles interrelate, is known as *superstring theory*. This theory was developed as a result of computations involving the symmetry of particles and the quantum theoretical mathematics of particle spin. In superstring theory, particles are nothing more than infinitesimally small pieces of space vibrating with different frequencies. These strings of space particles interact in various ways forming loops and crosses. The resulting attributes give rise to the characteristics of all known particles, as well as many currently unknown particles.

In 1974, John Schwarz and Joel Scherk completed some calculations that showed that string theory *might* be the way to a fully unified account of all particles and forces, *including* a term that linked gravity inextricably to the theory (Hawking, 1988). This was the first hint that a method might be found that included gravity as a part of quantum theory. Physicist Edward Witten, when he heard of their work, said that "this was the greatest intellectual thrill of my life" (Ferris, 1997, p. 221).

In 1984, Schwarz and Michael Green further advanced the mathematics of strings by using some calculations known as supersymmetry, which eliminated many anomalies that had plagued superstring theory to that point. Their work was sufficiently compelling that Witten joined them in writing a book (Green, Witten, and Schwartz, 1988) that attracted many other researchers to this work (Ferris, 1997).

Superstring theory comes mainly in two varieties, one with twenty-six dimensions, and one with ten dimensions. The mathematics is very complex, and most scientists work on the ten-dimensional variety, since its mathematics is simpler. One of the complexities of the theory is that it predicts literally hundreds of particles, most of which have not yet been discovered, and probably will not be for years, since the energies required to find them experimentally are enormous, exceeding the capabilities of presently existing particle accelerators. One of the strongest objections to the theory is that we will never be able to demonstrate experimentally whether or not it is true. It is hypothesized that many of the predicted particles are indicative of the universe in its first few microseconds of life, while the energy levels were extremely high, before most of the energy froze into mass of the type we know today. If this is true, then string theory gives us a glimpse of how the universe evolved from the big bang. This is, of course, if the universe, as is now widely accepted, did originate in a big bang that occurred in a *singularity*, a term coined by physicists to explain a state where the current laws of physics do not apply.

One of the major efforts of researchers is to explain how the supposedly ten dimensions (or twenty-six), which superstring theory suggests the universe started out as, were compressed down to the four that we now know. Although the mathematics suggests a large number of initial dimensions, it is difficult to describe any physical processes that would reduce them to our present three spacial dimensions and one dimension of time. A number of theories have been proposed, but definitive work has yet to be agreed upon in the physics community.

From these various depictions of particle physics, it is clear that any attempt to define essence or spirit matter in terms of one of the particle descriptions would be premature at best. One might suggest, for example, that the spirit or essence of living beings consists of quarks. Then one would have to explain how the quarks are maintained as stable entities. Perhaps essence or spirit might be described as leptons, since leptons are only bound by weak neutron forces. Again, one is faced with the problem of how their stability is maintained as independent entities in our environment. Or, they might be described as photons of light acting as some type of energy field; but how do the photons retain themselves in a confined boundary such as a living body? We can suppose that essence or spirit might be particles of space vibrating in a manner specified by superstring theory; but what particular type of particles? Even more speculative, one could suppose that the essence or spirit body incorporates dark matter (Kazanis, 1995), a concept we will discuss further below.

Under these circumstances it would seem sufficient to point out that there are a number of possibilities that might lead to a better understanding of the essence or spirit described by those having an NDE. It would be useful for scientists working in the field of NDE research and for scientists working in the field of modern physics to combine their knowledge and effort in a search for answers posed by the dilemmas in their respective fields.

### **The Nature of Essence or Spirit as Described by Those Having an NDE**

Let us now examine how those having had an NDE explained what their otherworldly bodies consisted of. The near-death experiencers quoted below described their spirit bodies or essences as a body of matter or energy, using such terms as a body of energy, a body of light and fine matter or material, a body transmitting light, and a body that is a source of energy or power for the physical body.

#### *A Body of Light*

*Description 1:* Then I felt a surge of energy. It was almost as if I felt a pop or release inside me, and my spirit was suddenly drawn out through my chest and pulled upward, as if by a giant magnet. (Eadie and Taylor, 1992, p. 29)

*Description 2:* "What did it [spirit body] feel like?" Margaret thought for a moment. "It didn't feel like air either . . . energy!" (Gibson, 1992, p. 228)

*Description 3:* I was still in a body—not a physical body, but something I can best describe as an energy pattern. If I had to put it into words, I would say that it was transparent, a spiritual as opposed to a material being. (Moody, 1975, p. 45)

*Description 4:* All the emotional pain that I had been feeling was gone. I looked at my hand, and I saw a hand, but . . . it had an aura around it. It wasn't the same hand as an earthly hand. There was an energy field that defined its shape. (Gibson, 1992, p. 228)

*Description 5:* Looking at my hands I could see that they were white and they glowed—and I was dressed in a glowing white garment. I could feel the energy coming from me. It was coming from every part of my body. (Lundahl and Widdison, 1997, p. 108)

### *A Body of Light or Fine Matter*

*Description 6:* I felt myself going—separating from my heavy sluggish body. (Fenimore, 1995, p. 89)

*Description 7:* I had the sense of becoming less dense, as though I had lost twenty or thirty pounds. (Brinkley and Perry, 1994, p. 9)

*Description 8:* I looked at my hand. It was translucent and shimmering and moved with fluidity, like the water in the ocean. I look down my chest. It, too, had the translucence and flow of fine silk in a light breeze. (Brinkley and Perry, 1994, p. 9)

*Description 9:* My new body was weightless and extremely mobile. (Eadie and Taylor, 1992, p. 30)

*Description 10:* [My spirit body was] very thin, very delicate. Very light. Very very light. (Top and Top, 1993, p. 39)

### *A Body Transmitting Light*

*Description 11:* There was a bright beam of light around my spirit body. (Gibson, 1994, p. 136)

*Description 12:* [He saw his hands] to be composed of light with tiny structures in them. He could see the delicate whorls of his fingerprints and tubes of light up his arms. (Moody and Perry, 1988, p. 10)

*Description 13:* But it was without the bulk I normally felt in my earthly body. I felt light, and I also felt as though I had light around me. When He placed me back in my body, it was as if this light transparent something was entering a bulky body. (Gibson, 1994, p. 180)

### *A Source of Energy or Power for the Physical Body*

*Description 14:* I was a dual personality; on the bed lay my dead body of flesh and bones absolutely lifeless and dead. But my spirit in the same image stood before that bed, freed from all pains filled with new life and ambitions and new hope to live. Now I understood that it is the spirit that gives the power to the mortal body of flesh and bones to function and keep alive. (Lundahl and Widdison, 1997, p. 107)

*Description 15:* [The spirit] is the energy that gives the body life and power. (Eadie and Taylor, 1992, p. 66)

Other NDErs have used the terms of electricity, waves, charge, or vibrations. They also give descriptions that demonstrate elasticity and porosity of the spirit body or essence. The following are examples of NDE descriptions that use these terms:

#### *Electricity*

*Description 16:* The body's cumbersome weight and coldness were abhorrent. I started jerking around inside it as though many volts of electricity were pulsing through me. I felt the pain and sickness of my body again. . . . I had become a prisoner to the flesh again. (Eadie and Taylor, 1992, p. 124)

#### *Waves or Charge*

*Description 17:* [My "being"] felt as if it had a density to it, almost, but not a physical density—kind of like, I don't know, waves or something, I guess: Nothing really physical, almost as if it were charged, if you'd like to call it that. (Moody, 1975, p. 48)

#### *Vibrations*

*Description 18:* We began to move upward. I could hear a hum as my body began to vibrate at a higher rate of speed. We moved up from one level to the next, like an airplane climbing gently into the sky. (Brinkley and Perry, 1994, p. 25)

*Description 19:* Several times during the recuperation time, it seemed that I started to leave my body again. There was vibration, and I could feel myself leaving. (Gibson, 1994, p. 136)

*Description 20:* My soul was disconnecting from my body with a hum that kept growing louder, rising to a whine as the vibration of death pulled me deeper. (Fenimore, 1995, p. 90)

### *Elastic or Porous Spirit Body or Essence*

*Description 21:* Then I discovered that I had become larger than in earth life. . . . I am somewhat smaller in body than I like to be, but in the next life, I am to be as I desire. (Lundahl and Widdison, 1997, p. 113)

*Description 22:* The "body" leaving me was not exactly in vapor form, yet it seemed to expand very slightly once I was clear of me. It was somewhat transparent, for I could see my "other" body through it. (Rogo, 1989, p. 71)

*Description 23:* . . . she became fascinated by a strange sensation in her hands. They were expanding, painlessly, beyond their normal size. (Harris and Bascom, 1990, p. 20)

*Description 24:* Again, I reentered through the top of the head, feeling the need to shrink and then squeeze back into the tight form [my] body offered. (Atwater, 1988, p. 37)

The forgoing NDEr descriptions suggest that the spirit body or essence is characterized as a very fine substance that has elasticity and porosity and consists of a form of energy and displays light. It is also associated with electricity, waves, charge, and vibrations. These descriptions give some indication of a body or essence that results from a physical change at death and has the special properties of matter, although it is a different substance with a different set of properties than those of the physical body. From the General Theory of Relativity, it is known that matter and energy are interchangeable. Although the precise nature of a spirit or essence cannot be guessed at in terms of modern physics, the NDE descriptions quoted above do provide a crude understanding that the spirit or essence consists of some form of matter/energy. Further research in this important area is very much called for.

### **The NDE Tunnel**

Nothing is as pervasive in the near-death literature as the descriptions of the "tunnel." Although the descriptions vary somewhat, the idea that the spirit bodies of NDErs traveled at great speed to some distant place through some kind of a tunnel begs comparison with the *black holes*, *multiple universes*, and *wormholes* of the physicists. Before we show a sampling of the NDE descriptions of the tunnel it is useful to review the history and evidence for black holes, multiple universes and wormholes.

### *Black Holes*

Using Einstein's model for light it is possible to postulate a black hole. As stars burn their fuel—the fusing of hydrogen and later helium—the fuel becomes depleted, over the millennia, and the stars burn less energetically and the temperature drops. As the temperature drops, gravity begins to take over and the stars shrink in size. Under certain conditions the star-furnace sputters and gravity causes the remaining mass to collapse on itself in a giant implosion. During the collapse of what was a star, the density of the remaining mass gets ever greater as if it were being squeezed by a giant vise. Depending upon the initial mass of the star, the density may become sufficiently great that the speed of light is less than the escape velocity of light from the remaining mass, which by this time would have been squeezed from the size of a sun essentially to a mere point. Under these conditions light could not escape and a black hole would have been created.

These initial ideas on a black hole grew out of the work of many physicists, starting with the work of the Swiss-American astronomer Fritz Zwicky 1930s and 1940s, when he first identified exploding stars or *supernovae*, and then neutron stars. The hypothetical neutron stars were massive spheres of neutrons pressed in upon themselves by enormous gravity (Thorne, 1994). Lev Davidovich Landau, working in Moscow between arrests, smuggled a paper out of Russia in 1937 that gave credence to the neutron star theory and started Robert Oppenheimer working on the neutron star theory. Oppenheimer showed that stars that began with a mass between 1.5 and 3.0 times the mass of our sun could, as their fuel burned up, collapse and become neutron stars, with a radius of a few miles (Thorne, 1994). In 1956 John Archibald Wheeler began work on neutron stars that led ultimately to mathematical proof that, for stars starting with a mass much larger than that required for a neutron star, gravity collapse would result in what he termed a black hole (Thorne, 1994).

Initially it was thought that nothing could escape from a black hole, including light; thus it could never be detected, but only theorized. In the 1970s Hawking and other scientists showed, through calculations based on the second law of thermodynamics, that black holes, in fact, are not totally black (Hawking, 1988), but rather emit certain forms of radiation such as gamma rays. Unfortunately those emissions are not strong enough to be detected for distant black holes. Black holes might be deduced by observing otherwise unexplained gravitational effects on distant stars, but this was also very speculative.

After Hawking's original computations on the leakiness of black holes, in a brilliant expansion of that idea, he demonstrated that, given enough time, the mass of black holes would also gradually decrease through the loss of radiation. If no further mass were fed into the hole, eventually the mass would be insufficient to keep space-time wrapped around itself, and the hole would explode in a puff of x-rays (Ferris, 1997).

In 1975 Hawking identified a star, Cygnus X-1, that because of its rotational effects seemed to be rotating around a massive object that could not be seen (Hawking, 1988). It was also emitting large amounts of x-rays. Both of these phenomena suggested a black hole. Black holes, then, which started as theoretical constructs, are well accepted today in the scientific community, and astronomers appear to be gathering experimental evidence of their existence.

### *Multiple Universes*

The multiple universe theory was developed by physicists to rebut the argument that our universe is so uniquely arranged for life that God must have had a hand in it. According to this point of view, there is an infinite number of universes, of which ours is but one. Each of these universes is unique in its own way, having characteristics different from ours. Although most of these universes would not sustain life, since there are an infinite number of them, a few would, ours being one. Thus, life in our universe is not the result of design by God, but is merely the result of happenstance. An infinity of universes would, by definition, include one with the characteristics that ours has. Although what we know of our universe seems highly selective and unusual, if we could see all of the universes we would recognize that ours is not that unusual, given the many different ones that exist (Davies, 1984).

A variation on this theme was produced by physicist Hugh Everett in 1957 as a result of his work in quantum physics (Davies, 1984). He theorized that whenever a quantum transition takes place in the universe, another universe is formed. When uncertainty is involved, for example, and a measurement is performed to determine, as in a famous hypothetical example, whether Erwin Schrödinger's cat is alive or dead, the universe divides in two, one holding a live cat and the other a dead cat. This occurs throughout the universe countless times each second. Thus there are numerous universes with copies of each of us living in it, each copy of us assuming that he or she is unique.

Another variation came out of Andrei Linde's recent work on quantum genesis. Linde described a process called *chaotic inflation*, which

suggests that our universe began as a bubble that ballooned out of the space-time of a pre-existing universe (Ferris, 1997).

Since all we can see and measure is our own universe, the multiple universe theory must remain just a theory. There may, indeed, be more than one universe, but it can never be proven one way or another. More to the point, it is just as logical to argue that God created other universes that have purpose, order, and design, just as ours does, as it is to argue that an infinity of universes were created by happenstance with no input from any creative agency.

### *Wormholes*

Wormhole theory was built upon the back of black holes and multiple universes. In effect it was speculation built upon speculation. The theory started almost as a science fiction writer's dream of connecting two black holes together from different universes, or from different space-time bubbles in the same universe. By means of this imagined connection, space travelers could travel almost instantly from one universe to another.

In the mid-1980s Kip Thorne proposed that it might be possible to hold wormholes open in such a way as to make them accommodating to travelers (Thorne, 1994). He postulated the existence of "exotic" material that would, his calculations showed, have negative energy in the wormhole's frame of reference, which would keep the wormhole dilated.

In early 1988, as the result of a phone call from Carl Sagan, Thorne further speculated that an advanced civilization might create wormholes through which travelers could travel through both space and time (Thorne, 1994). Working with Mike Morris and Tom Roman, he postulated a wormhole in which people could "travel over interstellar distances far faster than light" (Thorne, 1994). This type of thinking leads to a paradox illustrated by Timothy Ferris in this hypothetical story:

A space man could thus enter a worm hole in his living room and return earlier than he had departed. In the process the traveler would have created a copy of himself. In this type of speculation, the copy of the traveler could stop the initial version of the traveler from entering the worm hole, in which case the version of the traveler that stopped the other version would not have shown up to intervene—in which case he would. (Ferris, 1997, p. 101)

Thorne recognized this type of paradox, and he put it this way: "If I have a time machine (worm hole-based or otherwise), I should be able

to use it to go back in time and kill my mother before I was conceived, thereby preventing myself from being born and killing my mother" (1994, p. 109).

Despite these paradoxes, Thorne and others, including Hawking, kept working on the mathematics of wormholes and time machines. The result of that effort may be summarized by a quotation from Hawking:

Whenever one tries to make a time machine, and no matter what kind of device one uses in one's attempt (a wormhole, a spinning cylinder, a "cosmic ring," or whatever), just before one's device becomes a time machine, a beam of vacuum fluctuations will circulate through the device and destroy it. (Thorne, 1994, p. 521)

In time, Thorne came to agree with Hawking (Thorne, 1994). Most other scientists also reject such versions of time travel. Hawking joked that evidence of the improbability of time travel is demonstrated by "the fact that we have not been invaded by hordes of tourists from the future" (Ferris, 1997, p. 101).

### Comparison with NDE Descriptions

From the above it is clear that, aside from black holes, the theory of multiple universes and worm holes is highly speculative. Current theories suggest that if traveler entered a black hole, his or her body, regardless of its particle composition, would implode into other minute particles and be trapped in the enormous gravity of the hole. Since a wormhole is merely a hypothetical expansion of a black hole, a similar fate would befall any traveler brave enough to enter it.

Despite these formidable obstacles, some physicists continue to speculate about the possibility of travel from one universe or one galaxy to another. To tie this speculation to NDEs, let us hear what some of those travelers to another world have to say about their experience:

*Description 25:* Then I saw this darkness; I felt as though I were traveling through the darkness in . . . in sort of a tunnel. (Gibson, 1993, p. 40)

*Description 26:* There was a tunnel that went down and off to the right, and that's where the light was coming from. (Gibson, 1993, p. 92)

*Description 27:* I found myself being drawn toward a bright light that was down the tunnel. (Gibson, 1993, p. 121)

*Description 28:* There was no fear, and there was a light at the end of the tunnel. The sides of the tunnel, though, had some light, I could see the walls. (Gibson, 1993, p. 172)

*Description 29:* As I traveled along I remember seeing a light at the end of a large hole, which looked something like an irrigation culvert, but much bigger. (Nelson and Nelson, 1994, p. 155)

*Description 30:* Suddenly I was aware of a dark tunnel, like a doorway leaving the operating room. . . . I entered the tunnel and found myself traveling very fast towards the far end. . . . There was a light at the end of the tunnel. It wasn't blue light, but a warm golden light, very bright. (Nelson and Nelson, 1994, p. 113)

*Description 31:* I suddenly awakened to the startling realization that I had left my body and was traveling in a giant, dark tunnel or corridor towards a very bright light, brighter than any light I had ever seen. (Nelson and Nelson, 1994, p. 165)

*Description 32:* I saw a pinpoint of light in the distance. The black mass around me began to take on more of the shape of a tunnel, and I felt myself traveling through it at an even greater speed, rushing toward the light. (Eadie and Taylor, 1992, p. 40)

*Description 33:* In the darkness a tunnel opened. The walls of this tunnel were grooved like furrows in a freshly plowed field. These furrows ran the length of the tunnel toward the bright light at the end. (Brinkley and Perry, 1994, p. 147)

*Description 34:* My first memory after losing consciousness was to awaken and realize that I was speeding down a dark tunnel. There was a light at the end of the tunnel, and I was moving toward it. Suddenly I came to the end of the tunnel. (Gibson, 1993, p. 185)

### **NDEs and Dark Matter**

The majority of NDEs are euphorically pleasant experiences, but not all of them. Some are terribly frightening and are every bit as realistic to those experiencing them as are pleasant NDEs. And just as pleasant NDEs seem tailored to the needs of individuals having them, so also do unpleasant NDEs. Some unpleasant NDEs commence in a fearsome manner, and then become more pleasant as the experience unfolds. Others remain fearsome throughout. The most terrifying NDEs appear to be those in which the individuals are exposed to darkness, or NDEs in which the experiencer is attacked by evil-appearing otherworldly beings who seem intent on destroying the intruder into their realm (Gibson, 1996). Let us now consider those NDEs who experience darkness; but before we explore statements concerning travel to the dark world of the frightening NDE, let us review what science knows about dark matter.

The Russian scientist Alexander Friedmann, in 1920, set about explaining Einstein's prediction of a nonstatic universe. He showed that, from far away, the universe looked so similar in all directions as to be nearly homogeneous, and that it was expanding and would continue expanding, or it would collapse on itself according to the total mass of the universe (Hawking, 1988).

In 1929 Edwin Hubble proposed the *Hubble law*, which stated that the farther away a star or galaxy is, the greater will be the red shift displayed in its spectrum (Ferris, 1997). He also developed the *Hubble constant*, which established the rate of expansion of the universe. Later, the Hubble constant was combined with the *deceleration parameter*, which measures the rate at which cosmic expansion slows down, to yield the factor *omega*. If *omega* is less than one, the universe is destined to expand forever; if it is more than one, it is destined to collapse. If *omega* is exactly one, the universe is at critical density and will expand forever, at a rate of acceleration that approaches but never quite reaches zero (Ferris, 1997).

Hubble's findings led to the desire to measure the rate of expansion of the universe and attempt to determine *omega*. This proved to be very difficult, among other reasons, because it required a reasonably accurate account of the total mass in the universe. Cosmologists, therefore, took upon themselves the formidable task of estimating the total mass of the universe (Hawking, 1988), by adding up the masses of all the stars we can see in our galaxy and other galaxies. Simultaneous with this work, other scientists were measuring the rate of expansion by the red shift and brightness of stars. Still others were measuring gravitational effects that stars had on each other, by observing their orbits in the galaxies. The gravitational effects turned out to be greater than expected from the calculated masses of the observed stars, and the total estimated mass of the visible universe turned out to be much less than required to agree with the estimated value of *omega*. As the result of such observations, and similar ones concerning galaxies themselves, it was concluded that there must be a large amount of matter in the universe that cannot be observed directly. Calculations showed that the visible universe contained only about ten percent of that required to reach an *omega* approaching the critical value of unity, which many physicists at that time estimated was its value (Ferris, 1997).

In 1933, Zwicky discovered that the outlying galaxies in the Coma cluster were moving much faster than they would be if its mass were limited to that of the visible galaxies in it. From these gravitational effects, Zwicky calculated that Coma would need ten times as much

matter as had been observed. To account for this anomaly he coined the term *dark matter* (Ferris, 1997). In the late 1950s, Vera Rubin studied the rotational and gravitational effects of large spiral galaxies, and found that stars near the outer disks of galaxies were traveling faster than the gravitational effects of the visible mass would allow (Ferris, 1997). The only way to account for this faster-than-expected rotation was if unseen mass were included in the galaxy. Many other similar findings followed Zwicky's and Rubin's initial work, and physicists then estimated that the universe must be 90 percent dark matter (Ferris, 1997).

Recent work by astronomers has concluded that dark matter is much less than 90 percent, based on observations of distant exploding stars, or supernovae, which showed that galaxies about halfway back in cosmic time were receding at velocities comparable to objects of more recent epochs. This led to the conclusion that the universe is not slowing its expansion, as would be the case if it contained enough mass to have an omega of 1 or greater. Based on these findings, some estimates place the mass of the universe as only 20 to 30 percent of the amount required for an omega of 1. Saul Perlmutter reported in the 1998 meeting of the American Astronomical Society that there is not enough mass in the universe for its gravity to slow the expansion, which started with the Big Bang, to a halt; and that therefore the universe, instead of being about eight billion years old, may be as old as fifteen billion years (Matthews, 1998).

The next question after determining that the universe contains dark matter was what dark matter is made of. The only dark matter of significance that physicists had confidence in were black holes and neutron stars, but these did not seem sufficient to add up to the amount needed. Postulated candidates included baryonic matter, such as neutrons and protons, and massive cold gas clouds. In addition, physicists speculated that nonbaryonic matter such as leptons might be dark matter (Ferris, 1997). The problem with leptons, such as electrons and neutrinos, is that they are thought to have no mass. The fact that a neutrino has no mass has never been proven, however, so physicists have been theorizing that these ghostly particles, which are extremely difficult to detect, may have mass and are therefore candidates for dark matter (Ferris, 1997).

To further define what dark matter consists of, physicists have speculated that there may be *hot dark matter* and *cold dark matter*. The hot dark matter are particles that at the time of the big bang were moving at velocities close to the speed of light, while the cold dark matter are particles that were moving more slowly. The leading hot dark matter

candidate is the neutrino. One group of physicists has proposed that the universe might contain a mixture of 30 percent hot and 70 percent cold dark matter (Ferris, 1997). These estimates and theories about the types and mixtures of dark matter will undoubtedly change as the result of the new astronomical findings concerning the rate of expansion of the universe. Malcolm Longair put our current ignorance about dark matter in perspective:

Most of the matter in the universe is probably in the form of dark matter and thus this matter is likely to have a profound impact upon the formation of galaxies.

... I would caution, [however], that the whole story must be regarded as provisional because the basic physics is far from secure. (1989, p. 199)

From the above discussion, it seems clear that the majority of physicists agree that dark matter exists, but they are very uncertain as to what it consists of. For these reasons any assignment of dark matter as an explanation for certain aspects of the NDE must be considered highly speculative. Nevertheless, the continual reference to some type of a dark world seen by many of those having an NDE warrants exploration. Ring (1980) labeled the third stage of the near-death experience *entering the darkness*. Ring described the darkness as typically characterized as a completely black or dark dimensionless space, usually described by NDErs as a space before reaching the external world of light. NDErs describe this space as dark, darkness, blackness, fog, or totally black (see particularly Descriptions 35–40, 42–44, and 47), and lacking light (Descriptions 40 and 43) but having mass, energy, and negative energy and intelligence (Descriptions 40, 41, and 43). Some describe it as a space on a different level (Description 39), or as occupied by numerous beings who are gray and filled with darkness (Descriptions 42–47). We present the following descriptions to provide the reader with illustrations of a world of darkness as seen through the eyes of those who experienced it. These descriptions of another world are no more irresolute as to their reality or unreality than is the world of the physicist trying to explain dark matter; indeed, one could argue that, since they are first-hand experiences, they may be more authentic.

### *Darkness, Blackness, or Fog*

*Description 35:* I looked ahead into the darkness. (Brinkley and Perry, 1994, p. 8)

*Description 36:* I saw, off in the darkness somewhere, . . . (Gibson, 1992, p. 225)

*Description 37:* . . . a darkness, it was a very darkness . . . (Ring, 1980, p. 55)

*Description 38:* Immense blackness flooded over me like a rapid, dense fog. The darkness was so absolute that nothing was visible, and it seemed that nothing ever could be visible in it. (Wallace and Taylor, 1994, p. 90)

*Description 39:* There was . . . I can only describe it as total black. There was a changing level, it was like going from one level to another. (Sutherland, 1992, p. 7)

*Description 40:* I was immersed in darkness. . . . The darkness continued in all directions and seemed to have no end, but it wasn't just blackness, it was an endless void, an absence of light. . . . [later] In the final split second before my feet touched down, I got only a lightning glimpse of my destination—of crowds, of what looked like thousands upon thousands of other people massed below. I landed on the edge of a shadowy plane suspended in the darkness, extending to the limits of my sight. . . . The place was charged with a crackling energy . . . The foglike mist had mass—it seemed to be formed of molecules of intense darkness—and it could be handled and shaped. It had life, this darkness, some kind of intelligence that was purely negative, even evil. (Fenimore, 1995, pp. 103, 105–107)

*Description 41:* Positive energy is basically just what we would think it is: light, goodness, kindness, love, patience, charity, hope, and so on. And negative energy is just what we would think it is: darkness, hatred, fear (Satan's greatest tool), unkindness, intolerance, selfishness, despair, discouragement, and so on. (Eadie and Taylor, 1992, p. 57)

### *Beings in the Darkness*

*Description 42:* It's a dusky, dark, dreary area, and you realize that the area is filled with a lot of lost souls, or beings . . . (Flynn, 1986, pp. 82–83)

*Description 43:* The darkness was more than a lack of light; it was a dense blackness unlike anything I had known before. . . . When I was in the black mass before moving towards the light, I felt the presence of such lingering spirits. (Eadie and Taylor, 1992, pp. 38, 84–85)

*Description 44:* As I looked around, there seemed to be an endless sea of agonized souls floating in the fog. As some of them passed close by me, I could hear them moaning and groaning. The fog was so thick I could only make out their dim outlines. (Tooley, 1997, p. 8)

*Description 45:* I don't know what they were, but they looked washed out, dull, gray. (Moody, 1977, p. 19)

*Description 46:* All whom I saw seemed Caucasian, but there was a visible darkness about them that wasn't an exterior element, like skin color. The darkness emanated from deep within and radiated from them in an aura I could feel. (Fenimore, 1995, p. 107)

*Description 47:* During this period I became aware that I was conscious, but I was enveloped in total darkness. It was pitch black all around, yet there was a feeling of movement. My conscious self assured me that I was in the form of a spiritual body.

A male voice spoke to me . . . [and] said: "You have a choice. You can stay here, or you can go back. If you stay here, your punishment will be just as it is, right now. You will not have a body, you will not be able to see, touch, or have other sensation. You will only have this darkness and your thoughts, for eternity." (Gibson, 1993, p. 133).

### Cities of Light

There are numerous examples in the literature of people having a near-death experience who traveled to some distant place and saw a beautiful world which many of them characterized as *cities of light*. In most instances those NDE travelers were under the impression that when they reached this glorious place, they were in a different dimension.

We have already discussed the various multiple universe theories of the physics community. Although it is not possible to make close parallels between the cities of light described in NDEs and the physicists' multiple universes and travel between universes or galaxies, still, there are sufficient similarities to warrant examining some of the NDE descriptions. Certainly the NDE descriptions are less bizarre than are the physicists' descriptions of an infinite number of universes with replicate copies of each of us.

As illustrated in the passages quoted below, NDErs have described other cities of light, kingdoms, realms, planes, levels, or dimensions. At the end of the dark tunnel is another universe or dimension usually reflected by the light and beauty at its entrance.

#### *Cities of Light*

*Description 48:* I moved closer to the lights and realized they were cities—the cities were built of light. (Ring, 1985, p. 72)

### *Kingdoms*

*Description 49:* He [a personage] then took me to the next kingdom which was far more beautiful in glory and order than the former two. (Lundahl and Widdison, 1997, p. 167)

### *Realms*

*Description 50:* Our spirits slip from the body and move to a spiritual realm. (Eadie and Taylor, 1992, p. 83)

*Description 51:* First He [Jesus] had shown me a hellish realm, filled with beings trapped in some form of self-attention. Now behind, beyond, through all this I began to perceive a whole new realm! (Ritchie and Sherrill, 1978, p. 68)

### *Planes*

*Description 52:* I was halfway between two planes of existence, and could see both. (Nelson, 1994, p. 120)

### *Levels*

*Description 53:* We moved up from one level to the next, like an airplane climbing gently into the sky. (Brinkley and Perry, 1994, p. 25)

*Description 54:* My guide would not permit me to pause much by the way, but rather hurried me on through this place to another still higher but connected with it. It was still more beautiful and glorious than anything I had before seen. To me its extent and magnificence were incomprehensible. (Lundahl and Widdison, 1997, p. 166)

### *Dimensions*

*Description 55:* It was as if I was in a different dimension or time zone. (Nelson, 1994, p. 153)

*Description 56:* My spiritual eyes were opened to another dimension in the darkness. (Fenimore, 1995, p. 89)

*Description 57:* Suddenly I started going through dimensions. There is no way to describe what happened. I was moving through our physical dimension into another one. (Sorensen and Willmore, 1988, p. 90)

NDE descriptions suggest that the level of the universe or dimension a person travels to upon death is dependent upon the amount of energy

levels and frequencies of light in the individual spirit, which NDE descriptions indicate are based on human behaviors while on earth. That individuals have different levels of light is suggested by the following NDEr descriptions:

*Description 58:* When I first entered the dark prison, my vision took in only the things and the people in the realm of darkness. But once I had taken enough light in from God and Jesus, my spiritual eyes were opened to another dimension in the darkness. Now I could see that beings of light were all around me. (Fenimore, 1995, p. 143)

*Description 59:* My feet and hand were perfect and whole. They radiated this glistening, beaming light, and I looked at my grandmother and saw that her light was brighter than mine. (Wallace and Taylor, 1994, p. 99)

### Space-time and Speed of Travel

Perhaps the area of apparent closest correlation between those experiencing NDEs and the study of physics has to do with the measurement of time. Almost universally among those who say they traveled to another world is the thought that time does not work the way it does in our everyday world. Another area which has some similarities, as well as some difficulties, involves the speed of travel to these other worlds.

Let us first consider the physicists' understanding of space-time and speed of travel. Science is still guided by the general theory of relativity, and Einstein's equation  $E = mc^2$  is the basis, along with quantum theory, for most of what occurs in nature. By Einstein's equation of the equivalency of mass and energy, it is known that the maximum speed achievable in the universe is a constant  $c$ , equal to 299,792 kilometers/second or 186,282 miles/second. According to the theory, nothing can exceed that value. Imagine, for example, a spaceship traveling ever faster. As it approaches the speed of light, its mass increases and its length, measured along the axis of its direction of travel, shrinks. The passage of time on board slows. The amount of energy required increases enormously, approaching infinity as it gets nearer to the speed of light. Meanwhile the mass of the ship approaches infinity, its length shrinks to zero, and time on board comes to a stop (Ferris, 1997). For a traveler through space approaching the speed of light, time passes slower than for those remaining on earth.

Einstein demonstrated that time is, in fact, elastic and can be stretched and shrunk by motion. Each observer carries around his or her

own personal scale of time, and it does not generally agree with anybody else's. In our own frame, time never appears distorted, but relative to another observer who is moving differently, our time can be wrenched out of step with his or her time (Davies, 1984).

Equally extraordinary effects afflict space, which is also elastic. When time is stretched, space is shrunk. The mutual distortions of space and time can be regarded as a conversion of space, which shrinks, into time, which stretches; and vice versa (Davies, 1984). Just as time scales change from place to place in a gravitational field, so do the length scales. Rulers change lengths as one moves around. It is impossible with space and time so intimately mixed to have something happen with time that is not in some way reflected in space (Feynman, 1997).

The above discussion should be sufficient to demonstrate that as very high speeds are realized, approaching the speed of light, time does not behave in the same manner as we usually think of it behaving. It is stretchable, depending upon where it is observed, as is space. One could argue, therefore, that someone having an NDE and traveling to a distant location in space could do so with very little time as observed by him- or herself. There are two difficulties with this argument. The first is that when the NDE travelers returned to earth, everyone with whom they came in contact would be very much older. The second difficulty has to do with the distance traveled. Although many of those having an NDE felt that they traveled to a distant location, according to the theory of relativity they could not have traveled faster than the speed of light. The nearest star to us, Proxima Centauri, is about four light-years away. To an observer on earth, therefore, the NDE traveler must have taken four years to travel to the closest star. Many stars, of course, are thousands or millions of light years distant.

There are at least two peculiar circumstances in which science recognizes velocities in excess of the speed of light. One circumstance has to do with the space of the universe, which, since the big bang, has been expanding. It is true that in static space nothing can exceed the speed of light. However, in the cosmological model that many physicists accept, the universe began its expansion with a velocity much greater than that of light (Ferris, 1997). The recent astronomical findings concerning the expansion of the universe will undoubtedly change this model, but the possibility of a velocity greater than light is, at least in some models, an acceptable theory.

A second peculiar situation derives from some of the characteristics of quantum theory and the uncertainty principle. It can be illustrated by a hypothetical experiment in which one particle decays into two particles.

Of the remaining two particles, one has a spin of  $+1$  and the other has a spin of  $-1$ . Let us remove one of the particles far away, say two light-years. A physicist measures the spin of the particle near him and finds that it is  $-1$  and he knows, therefore, that the distant particle has a spin of  $+1$ . If somehow the near particle has its spin reversed to  $+1$ , then the distant particle *instantly* has a spin of  $-1$ . For that to occur logic would demand that some sort of signal be exchanged, traveling *instantly* from the near point to the distant point, so that the far particle *knows* that it must reverse its spin. This is one of the paradoxes of science (Ferris, 1997) that Einstein called "spooky action at a distance."

Scientists recently reported a striking example of the experimental verification of this remote spooky action, in two experiments on what was called *quantum teleportation*. Teleportation is a way of transferring the state of one particle to a second using "entanglement," a mysterious connection between objects separated by arbitrary distances. An Austrian group succeeded in teleporting photons of light (Bouwmeester, Pan, Mattle, Eibl, Weinfurter and Zeilinger, 1997), while an Italian group teleported the photons' polarization states (Sudbery, 1997). The state of an object, whether it be an atom, electron, photon, or other entity, is defined by both its quantum characteristics and its classical characteristics. In order to replicate the object both sets of characteristics are needed. The problem in the past, concerning determining the quantum characteristics, was that the measurement itself, by the uncertainty principle, changed the characteristics of the particle.

In the Austrian laboratory, bits of light in one place were destroyed and duplicated in a perfect replica some distance away. This was done by using "entangled" photons, with one photon at the point of origin and the other entangled photon at a distance. A "message" photon was used to transfer information about a crucial physical characteristic of the original light bits or photons. The necessary quantum information was picked up *instantly* by other, distant entangled photons. The classical information required to complete the necessary data for duplication was transferred by a classical channel at the speed of light. Thus, the distant light photons took upon themselves the identical characteristics of the original photons and became perfect replicas. These are the first clearly demonstrated experiments that show the distant spooky action predicted by quantum mechanics. A possible practical application will be in future generations of even faster computers.

Despite these strange instances of something exceeding the speed of light, scientists still insist that in general nothing can travel faster than the speed of light. To do so would violate the principles of relativity.

In the above experiments the distant replica cannot be created faster than the speed of light, since the required classical information travels at that speed, even though quantum information is communicated instantly. Scientists are still at a loss to explain how entanglement works. Nevertheless they do accept that in some magic way quantum information is being transmitted instantly over arbitrary, and in theory enormous, distances, clearly in excess of the speed of light. In wrestling with the quantum theory paradoxes, Ferris postulated that if some of the physicists' theories are true, then:

We live in a universe that presents two complementary aspects. One obeys locality and is large, old, expanding, and in some sense mechanical. The other is non-local, is built on forms of space and time unfamiliar to us and is everywhere interconnected. We peer through the keyhole of quantum weirdness and see a little of this ancient, original side of the cosmos. (1997, p. 287).

Thus the commentaries of NDErs who claim that time was different and that they traveled at speeds exceeding the speed of light are no more weird than the commentaries of the scientists speaking of the weirdness of quantum theory. Perhaps the NDE travelers are expressing, in their limited understanding, a phenomenon that we shall all someday come to know as the normal part of a new reality. Admittedly, when those having an NDE say that they traveled at speeds close to or exceeding the speed of light, their statements are merely their subjective understanding of a feeling of great speed.

The first feature of the NDE spirit body or essence that we shall discuss is its speed of movement when separated from the physical body. At the point of separation, those having an NDE describe a spirit body that is no longer constricted in movement by the denser or coarser physical world and can travel at great speeds. The following descriptions refer to this feature:

*Description 60:* [I] found myself traveling very fast towards the far end. I wasn't walking or running, just floating along very fast. (Nelson, 1994, p. 113)

*Description 61:* I began moving at tremendous speed, . . . (Eadie and Taylor, 1992, p. 66)

*Description 62:* We left the hospital room by rising straight up through the roof and then we headed over the surface of the Earth at a very rapid speed. (Ritchie, 1991, p. 21)

*Description 63:* My speed was tremendous—indescribable. Nothing on earth has ever gone that fast, nothing could. (Wallace and Taylor, 1994, p. 91)

*Description 64:* I felt as if I was being propelled forward at the speed of light or faster. (Grey, 1987, p. 43)

*Description 65:* We started off on our journey through space, seemingly with the rapidity of lightning (For I can make no other comparison). (Heinerman, 1978, p. 109)

*Description 66:* Gradually, you realize . . . you're going [at] at least the speed of light. It might possibly be the speed of light or possibly even faster than the speed of light. You realize that you're going just so fast and you're covering vast, vast distances in just hundredths of a second. (Ring, 1985, p. 57)

The second feature of the NDE related to space-time are descriptions by NDErs of the lack of precise time units such as those found in the physical world. The following passages describe this timelessness:

*Description 67:* I knew somehow that they were on a time scale different than earth's. (Eadie and Taylor, 1992, p. 31)

*Description 68:* I have no idea what the time parameters were to this experience. (Nelson, 1988, p. 45)

*Description 69:* I don't know. I didn't really have a sense of time. (Gibson, 1993, p. 274)

*Description 70:* You could say it [NDE] lasted one second or that it lasted ten thousand years and it wouldn't make any difference how you put it. (Moody and Perry, 1988, p. 14)

*Description 71:* It was a different sphere . . . one in which the concept of time is meaningless. (Brown, 1997, p. 202)

*Description 72:* For what seemed to be endless time, . . . (Ring, 1980, p. 98)

*Description 73:* I found myself in a space, in a period of time, I would say, where all space and time was negated. (Ring, 1980, p. 98)

### **Visions of Knowledge**

We have already discussed the paradoxes associated with time travel and the skepticism accorded the concept. But while most physicists regard the idea of time travel as fiction, some have advanced the notion as a serious idea, which opens the door to vistas of knowledge from the past, present, and future.

One of the most fascinating aspects of some NDEs is the descriptions of those who said they had almost total knowledge of the universe. They often describe a situation in which they were able to visit different time

periods visually and emotionally much like they do in the life review, and they report this experience was as real to them as life itself, though not necessarily as travel to a past or physical entity such as earth (see Description 76 below). Often these travelers saw both personal and global events in that context. Upon return and recovery from their near-death state most of them forgot much of what they knew in this other world; they remembered only that they had a remarkable experience of complete knowledge.

In Ring's study of blind people who had NDEs he also found individuals who expressed complete knowledge of many things. One of those is quoted below in Description 79. In addition to having knowledge extension beyond earthly experience, many of the blind explained their sight as more than just ocular vision. It was as if they could see in every direction simultaneously and had knowledge or complete awareness in great detail of their surroundings. Ring identified this as a "consciousness that may and indeed must sometimes function independently of the brain." He called this *transcendental awareness*, and he verified that some sighted persons who had undergone NDEs also experienced a similar phenomenon (Ring and Cooper, 1997, pp. 143-146).

A brief sampling of the comments of some of those who said they had extraordinary knowledge follows:

*Description 74:* I was also aware of pure knowledge. Things went quickly through my mind. I could understand many things. (Nelson, 1989, p. 118)

*Description 75:* About this time I had an experience that I'll never forget . . . a feeling of total, total knowledge without asking. . . . This feeling I had of total knowledge was just that, I knew everything without asking. It was an incredible feeling. (Gibson, 1992, p. 218)

*Description 76:* Scene after scene of living truth passed through me: history on earth, history of our existence before earth, principles, facts, things that I had had no conception of. I saw them. I experienced them, literally becoming part of each scene. (Wallace and Taylor, 1997, p. 106)

*Description 77:* I can describe the experience as only ecstasy of a contemporaneous state in which present, past and future are one. (Top and Top, 1993, p. 132)

*Description 78:* The past, present, and future seemed accessible on demand. (Brown, 1997, p. 202)

*Description 79:* I had a feeling like I knew everything . . . and like everything made sense. . . . I don't know beans about math and science. . . . I all of a sudden understood intuitively almost things about calculus,

and about the way planets were made. And I don't know anything about that....I felt there was nothing I didn't know. (Ring, 1997, p. 111)

### Conclusions

Research about near-death experiences and research in the field of modern physics have increasingly encountered analogous dilemmas. These dilemmas have to do with how to explain experimental results and theories in the respective fields without accounting for some spiritual, otherworldly guiding force. Indeed, in the near-death research community attempts to arrive at some scientifically rational explanation that accounts for all of the events known to occur with those having an NDE, and which avoids otherworldly explanations, are nearing exhaustion. Although not as obvious in modern physics, perhaps because of the remarkable accomplishments of physicists and their deserved respect, the search for answers to questions of ultimate cause has sometimes reached bizarre limits.

As research continues in the field of near-death studies, corroborative types of NDEs in which those undergoing the incident see events impossible to be explained in any other way than an out-of-body experience, later verified by others not involved in the NDE, are becoming more numerous in the literature. This type of corroborative experience is forcing a reassessment of research methods and goals. Ring's study of blind persons who had near-death or out-of-body experiences, for example, deliberately sought corroborative evidence concerning the realities of the experiences (Ring and Cooper, 1997, pp. 119-124).

It has become popular in the media and in science-fiction novels to speak of travel through wormholes to distant universes, sometimes going backward or forward in time. There are even those in the near-death research community who speculate on the efficacy of such possibilities. Many of the ideas in these published works derive their origin from some of the theories of modern physics. The concept of multiple universes, as pointed out above, was developed in an attempt to explain the uniqueness of our own universe without accepting the idea that a purposeful force, or a supreme being, provided the guidance and energy to fine-tune many of the fundamental parameters and constants that make life in our universe possible. Other physicists, using some of the ideas from quantum theory, hypothesized an infinity of universes with multiple copies of each of us in many of them.

Wormholes were an extension of the rather abundant data substantiating the existence of black holes. Unfortunately, similar abundant data on wormholes have not been forthcoming, and their existence remains highly speculative. The prospects for time travel, while also hypothesized by some physicists, are best summed up by Hawking, who observed that history is secure for historians since it is very unlikely that any time travelers will be able to change it. Much is known about the fundamental particles that make up our visible universe. Dark, invisible (to us) matter, however, continues to be an important mystery currently plaguing physicists, along with the related problem of the rate of expansion of the universe. Indeed, recent observations of the rapid rate of expansion of the universe has forced theoretical physicists to reconsider Einstein's "cosmological constant," a form of antigravity that Einstein later discarded (Krauss, 1999).

There are numerous other mysteries remaining to be explained, many relating to the nature of still undiscovered particles theorized by superstring theory. "Quantum weirdness," which by symmetry illustrates instant reaction of a distant particle in response to some action by its twin, is, as Einstein characterized it, "spooky action at a distance." The greatest mystery of all, though, persists as an uncertainty as to whether the universe and all that is in it can be explained solely by "natural" forces working their magic by chance, or whether there is a guiding and intelligent force acting as creator. Physicists continue to struggle with the idea of an intelligently created anthropic universe.

Because of the ubiquitous presence of unique constants and phenomena that allow existence of life on this planet, some physicists, like their NDE researcher counterparts, are turning to nonmaterialistic answers to the difficult questions raised by their research. As Hawking put it, "The question remains, however: How or why were the laws and the initial state of the universe chosen?" (Hawking, 1988, p. 173). Knowledgeable science writers are increasingly facing the question posed by Hawking. Gerald Schroeder (1992) compared some of the findings of modern physics with the writings in the Old Testament. Davies (1995) examined many of the dilemmas of science, and pointed out that one of the greatest dilemmas was how to explain the awesome ability of humans, in some mysterious way, to observe and mathematically describe much of what we see. To summarize this point he quoted Freeman Dyson who said: "I do not feel like an alien in this universe. The more I examine the universe and study the details of its architecture the more evidence I find that the universe in some sense must have known we were coming" (Davies, 1995, p. 128).

In this article we have considered these dilemmas of modern science, and we have pointed out key uncertainties in the fields of near-death studies and modern physics. Through illustration of various NDE phenomena we have identified areas of potential overlap between the two fields. As scientists continue to encounter questions of ultimate cause, it would appear that their research could be fruitfully enhanced by a cross fertilization of ideas. It would further seem appropriate to emphasize research with an otherworldly thrust. There is now sufficient evidence in both of the fields to justify more effort in this regard. Perhaps with an openminded sharing of ideas we can ultimately come to a better understanding of our universe and our position in it. We might even begin to make progress with the ultimate questions: Is there some influence beyond the physical world? Is there a purpose to the universe? How did the universe get started? Why are we here? Where did we come from? Where are we going?

### References

- Appleby, L. (1989). Near-death experience: Analogous to other stress induced psychological phenomena. *British Medical Journal*, 298, 976-977.
- Arnette, J. K. (1992). On the mind/body problem: The theory of essence. *Journal of Near-Death Studies*, 11, 5-18.
- Arnette, J. K. (1995). The theory of essence. II. An electromagnetic-quantum mechanical model of interaction. *Journal of Near-Death Studies*, 14, 77-89.
- Arnette, J. K. (1999). The theory of essence. III. Neuroanatomic and neurophysiological aspects of interactionism. *Journal of Near-Death Studies*, 18.
- Atwater, P. M. H. (1988). *Coming back to life: The after-effects of the near-death experience*. New York, NY: Dodd, Mead.
- Becker, C. B. (1982). The failure of Saganomics: Why birth models cannot explain near-death phenomena. *Anabiosis: The Journal of Near-Death Studies*, 2, 102-109.
- Blacher, R. S. (1979). To sleep, perchance to dream . . . *Journal of the American Medical Association*, 242, 2291.
- Blackmore, S. (1993). *Dying to live: Near-death experiences*. Buffalo, NY: Prometheus.
- Bohm, D. (1989). *Quantum theory*. Minola, NY: Dover.
- Bouwmeester, D., Pan, J.-W., Mattle, K., Eibl, M., Weinfurter, H., and Zeilinger, A. (1997). Experimental quantum teleportation. *Nature*, 390, 575-79.
- Brinkley, D., and Perry, P. (1994). *Saved by the light: The true story of a man who died twice and the profound revelations he received*. New York, NY: Villard.
- Brown, J. H. (1997). *Heavenly answers for earthly challenges*. Pasadena, CA: Jemstar.
- Carr, D. B. (1982). Pathophysiology of stress-induced limbic lobe dysfunction: A hypothesis for near-death experiences. *Anabiosis: The Journal of Near-Death Studies*, 2, 75-89.
- Cook, R. B. (1989). A theory of death [Guest editorial]. *Journal of Near-Death Studies*, 8, 5-14.
- Counts, D. A. (1983). Near-death and out-of-body experiences in a Melanesian society. *Anabiosis: The Journal of Near-Death Studies*, 3, 115-135.
- Davies, P. (1984). *God and the new physics*. New York, NY: Touchstone.
- Davies, P. (1995). *Are we alone?* New York, NY: Basic Books.

- Eadie, B. J., and Taylor, C. (1992). *Embraced by the light*. Placerville, CA: Gold Leaf Press.
- Ehrenwald, J. (1978). *The ESP experience: A psychiatric validation*. New York, NY: Basic Books.
- Fenimore, A. (1995). *Beyond the darkness: My near-death journey to the edge of hell and back*. New York, NY: Bantam.
- Ferris, T. (1997). *The whole shebang*. New York, NY: Simon and Schuster.
- Feynman, R. P. (1997). *Six not-so-easy pieces*. New York, NY: Addison-Wesley.
- Flynn, C. P. (1986). *After the beyond: Human transformation and the near-death experience*. Englewood Cliffs, NJ: Prentice-Hall.
- Gabbard, G. O. and Twemlow, S. W. (1986). An overview of altered mind/body perception. *Bulletin of the Menninger Clinic*, 50, 351-366.
- Gibbs, J. C. (1987). Moody's versus Siegel's interpretation of the near-death experience: An evaluation based on recent research. *Anabiosis: The Journal of Near-Death Studies*, 5(2), 67-82.
- Gibson, A. S. (1992). *Glimpses of eternity: New near-death experiences examined*. Bountiful, UT: Horizon.
- Gibson, A. S. (1993). *Echoes from eternity: New near-death experiences examined*. Bountiful, UT: Horizon.
- Gibson, A. S. (1994). *Journeys beyond life: True accounts of next-world experiences*. Bountiful, UT: Horizon.
- Gibson, A. S. (1996). Commentary on "Frightening near-death experiences." *Journal of Near-Death Studies*, 15, 141-148.
- Green, M. B., Witten, E., and Schwartz, J. H. (1988). *Superstring theory: Introduction (Cambridge monographs on mathematical physics, Vol. 1)*. New York, NY: Cambridge University Press.
- Grey, M. (1987). *Return from death: An exploration of the near-death experience*. London, England: Arkana.
- Grof, S., and Halifax, J. (1977). *The human encounter with death*. New York, NY: Dutton.
- Grosso, M. (1981). Toward an explanation of near-death phenomena. *Anabiosis: The Journal of Near-Death Studies*, 1, 3-26.
- Harris, B., and Bascom, L. C. (1990). *Full circle: The near-death experience and beyond*. New York, NY: Pocket Books.
- Hawking, S. W. (1988). *A brief history of time: From the big bang to black holes*. New York, NY: Bantam.
- Heinerman J. (1978). *Spirit world manifestations*. Salt Lake City, UT: Magazine Printing and Publishing.
- Jansen, K. L. R. (1989). Near-death experience and the NMDA receptor [Letter]. *British Medical Journal*, 298, 1708.
- Jansen, K. L. R. (1990). Neuroscience and the near-death experience: Roles for the NMDA-PCP receptor, the sigma receptor and the endopsychosins. *Medical Hypotheses*, 31, 25-29.
- Jansen, K. L. R. (1997a). The ketamine model of the near-death experience: A central role for the N-methyl-D-aspartate receptor. *Journal of Near-Death Studies*, 16, 5-26.
- Jansen, K. L. R. (1997b). Response to commentaries on "The ketamine model of the near-death experience." *Journal of Near-Death Studies*, 16, 79-95.
- Kazanis, D. (1995). The physical basis of subtle bodies and near-death experiences. *Journal of Near-Death Studies*, 14, 101-116.
- Krauss, L. M. (1999, January). Cosmological antigravity. *Scientific American*, 280(1), 52-58.
- Krishnan, V. (1981). Near-death experiences: Reassessment urged. *Parapsychology Review*, 12, 10-11.
- Longair, M. (1989). The new astrophysics. In P. Davies (Ed.), *The new physics* (pp. 94-208). Cambridge, England: Cambridge University Press.
- Lowental, U. (1981). Dying, regression, and the death instinct. *Psychoanalytic Review*, 68, 363-370.

- Lukianowicz, A. (1958). Autoscopic phenomena. *A.M.A. Archives of Neurology and Psychiatry*, 80, 199-220.
- Lundahl, C. R. (1993). The near-death experience: A theoretical summarization. *Journal of Near-Death Studies*, 2, 105-118.
- Lundahl, C. R., and Widdison, H. A. (1983). The Mormon explanation of near-death experiences. *Anabiosis: Journal of Near-Death Studies*, 3, 97-106.
- Lundahl, C. R. and Widdison, H. A. (1997). *The eternal journey: How near-death experiences illuminate our earthly lives*. New York, NY: Warner.
- Matthews, R. (1998, April 11). To infinity and beyond. *New Scientist*, 158(2129), 27-30.
- McHarg, J. F. (1978). [Review of *At the hour of death*, by K. Osis and E. Haraldsson]. *Journal of the Society for Psychical Research*, 49, 885-887.
- Menz, R. L. (1984). The denial of death and the out-of-body experience. *Journal of Religion and Health*, 23, 317-329.
- Moody, R. A. (1975). *Life after life*. Covington, GA: Mockingbird Books.
- Moody, R. A. (1977). *Reflections on life after life*. St. Simon's Island, GA: Mockingbird Books.
- Moody, R. A., and Perry, P. (1988). *The light beyond*. New York, NY: Bantam.
- Morse, M. L., Venecia, D., and Milstein, J. (1989). Near-death experiences: A neurophysiological explanatory model. *Journal of Near-Death Studies*, 8, 45-53.
- Nelson, L. (1988). *Beyond the veil. Volume I*. Orem, UT: Cedar Fort.
- Nelson, L. (1989). *Beyond the veil. Volume II*. Orem, UT: Cedar Fort.
- Nelson, L., and Nelson, R. (1994). *NDE: Near death experiences*. Springville, UT: Cedar Fort.
- Norton, M. C., and Sahlman, J. M. (1995). Describing the light: Attribution theory as an explanation of the near-death experience. *Journal of Near-Death Studies*, 13, 167-184.
- Noyes, R., and Kletti, R. (1976). Depersonalization in the face of life-threatening danger: A description. *Psychiatry*, 39, 19-27.
- Osis, K., and Haraldsson, E. (1977). *At the hour of death*. New York, NY: Avon.
- Palmer, J. (1978). Deathbed apparitions and the survival hypothesis [Letter]. *Journal of the American Society for Psychical Research*, 72, 392-395.
- Quimby, S. L. (1989). The near-death experience as an event in consciousness. *Journal of Humanistic Psychology*, 29, 87-108.
- Ring, K. (1980). *Life at death: A scientific investigation of the near-death experience*. New York, NY: Coward, McCann and Geoghegan.
- Ring, K. (1981). Paranormal and other non-ordinary aspects of near-death experiences: Implications for a new paradigm. *Essence*, 5(1), 33-51.
- Ring, K. (1984). *Heading toward omega: In search of the meaning of the near-death experience*. New York, NY: Morrow.
- Ring, K., and Cooper, S. (1997). Near-death and out-of-body experiences in the blind: a study of apparent eyeless vision. *Journal of Near-Death Studies*, 16, 141-147.
- Ring, K., and Cooper, S. (1999). *Mindsight: Near-death and out-of-body experiences in the blind*. Palo Alto, CA: Institute of Transpersonal Psychology/William James Center for Consciousness Studies.
- Ritchie, G. G. (1991). *My life after dying: Becoming alive to universal love*. Norfolk, VA: Hampton Roads.
- Ritchie, G. G., and Sherrill, E. (1978). *Return from tomorrow*. Waco, TX: Chosen Books.
- Rodin, E. A. (1980). The reality of death experiences: A personal perspective. *Journal of Nervous and Mental Disease*, 168, 259-263.
- Rogo, D. S. (1989). *The return from silence: A study of near-death experiences*. Wellingborough, England: Aquarian Press.
- Saavedra-Aguilar, J. C., and Gómez-Jeria, J. S. (1989a). A neurobiological model for near-death experiences. *Journal of Near-Death Studies*, 7, 205-222.
- Saavedra-Aguilar, J. C. and Gómez-Jeria, J. S. (1989b). Response to commentaries on "A neurobiological model for near-death experiences." *Journal of Near-Death Studies*, 7, 265-272.

- Sabom, M. B. (1982). *Recollections of death: A medical investigation*. New York, NY: Harper and Row.
- Sabom, M. B., and Kreutziger, S. A. (1978). Physicians evaluate the near-death experience. *Theta*, 6(4), 1-6.
- Sagan, C. (1979). *Broca's brain: Reflections on the romance of science*. New York, NY: Random House.
- Schnaper, N. (1980). Comments germane to the paper entitled "The reality of death experiences," by Ernst Rodin. *Journal of Nervous and Mental Disease*, 168, 269.
- Schroeder, G. L. (1992). *Genesis and the big bang*. New York, NY: Bantam.
- Serdahely, W. J. (1992). Similarities between near-death experiences and multiple personality disorder. *Journal of Near-Death Studies*, 11, 19-38.
- Siegel, R. K. (1980). The psychology of life after death. *American Psychologist*, 35, 911-931.
- Sorensen, M. R., and Willmore, D. R. (1988). *The journey beyond life. Volume I*. Orem, UT: Family Affair Books.
- Sudbery, T. (1997). The fastest way from A to B. *Nature*, 390, 551-552.
- Sutherland, C. (1992). *Transformed by the light: Life after near-death experiences*. Sidney, Australia: Bantam.
- Tanner, M., English, B., Durham, E., Bolaris, D., Bloomfield, C., Miller, C., Beckett, F., Cherry, S., Gibson, C., and Gibson, A. S. (1998). On "Evolution and the relationship between brain and mind states" [Letter]. *Journal of Near-Death Studies*, 17, 59-65.
- Thomas, L. (1976). A meliorist view of disease and dying. *Journal of Medicine and Philosophy*, 1, 212-221.
- Thorne, K. S. (1994). *Black holes and time warps*. New York, NY: Norton.
- Tien, S. S. (1988). Thanatoperience. *Journal of Near-Death Studies*, 7, 32-27.
- Tooley, L. E. (1997). *I saw heaven! A remarkable visit to the spirit world*. Bountiful, UT: Horizon.
- Top, B. L., and Top, W. C. (1993). *Beyond death's door: Understanding near-death experiences in light of the restored gospel*. Salt Lake City, UT: Bookcraft.
- Wallace, R., and Taylor, C. (1994). *The burning within*. Carson City, NV: Gold Leaf.
- Widtsoe, J. A. (Ed.). (1954). *Discourses of Brigham Young*. Salt Lake City, UT: Deseret.
- Woodhouse, M. B. (1983). Five arguments regarding the objectivity of NDEs. *Anabiosis: The Journal of Near-Death Studies*, 3, 63-75.



# The Induction of After-Death Communications Utilizing Eye-Movement Desensitization and Reprocessing: A New Discovery

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**ABSTRACT:** A number of authors have described after-death communications (ADCs), in which bereaved individuals experience what they believe is actual spiritual contact with the deceased. ADCs are consistently reported as profoundly loving experiences that greatly assist the grieving process. Although most researchers have argued that ADCs can occur only spontaneously, Raymond Moody's research has indicated that we do have some control over the production of the experience. In this paper I describe a new induction technique that produces ADCs in a more reliable, rapid, and efficient manner. ADCs induced by this new technique provide a more elaborated experience that often fosters complete resolution of grief. These induced ADCs also appear to be much more like near-death experiences (NDEs) than do spontaneous ADCs, which strongly suggests that NDEs and ADCs may be essentially the same phenomenon.

Since earning my Doctor of Psychology degree from Baylor University in 1983, I have worked in private practice and on a specialized inpatient psychiatric trauma unit. My area of specialty has been the diagnosis and treatment of posttraumatic stress disorder (PTSD) and grief. About two years ago, I began to use a relatively new and very powerful psychological treatment in a different way. My intent was simply to make an already very powerful method more efficient. However, something very strange began to happen. A good number of my patients reported to me that they had actually made spiritual contact with the deceased person they were grieving. Moreover, when patients had this

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kind of experience, their grief suddenly and completely resolved. I immediately became curious about whatever it was that was producing these experiences. I retraced the steps taken in each case the experience occurred, as well as in each case the experience did not occur. I was able to identify the essential psychotherapeutic components that produced the experience. By combining these components and further refining the procedure, I discovered that I could induce the experience in nearly all of my patients.

This kind of experience is not rare for people who grieve, and they have been recorded throughout history. The phenomenon has been recently described by a few authors who have either conducted surveys, or worked directly with grieving patients. The experience is now commonly referred to as an "after-death communication," or ADC. However, the current thinking in the field is that ADCs are always spontaneous, and cannot be willfully or purposefully produced. In fact, one author speculated that we will never be able to induce ADCs (LaGrand, 1997). The current belief is that some people are just fortunate enough to have an ADC and experience its therapeutic benefits, while others, for some unknown reason, are not.

### Spontaneous ADCs

At least four books have been recently published on ADCs. The first of these was *Hello From Heaven!* (1996), by Bill and Judy Guggenheim. They presented the results of an extensive survey of generally normal and healthy individuals who reported spontaneous spiritual encounters with deceased friends and loved ones. They labeled these experiences "after-death communications," or ADCs. The authors collected first hand accounts of ADCs from 2,000 people. They estimated that as many as 20 percent of the population in the United States have experienced ADCs. Since an estimated 4 percent of the population has experienced near-death experiences (NDEs), the occurrence of ADCs is about five times greater than that of NDEs. The percentage of ADCs for parents who have lost children to death and for widows is even higher.

The most remarkable aspect of this survey, for me, was that the 353 personal accounts of ADCs reported in the book were identical in many ways to the experiences my patients have been reporting to me, both in terms of the content of the experience and its overwhelmingly positive psychological consequences. I was immediately convinced that, in essence, we were dealing with the same phenomenon. One

major difference, however, is that the Guggenheims made the argument that ADCs can only occur spontaneously, and that they cannot be purposefully produced. Other ADC researchers generally make the same claim.

The Guggenheims described 12 types of spontaneous ADCs: sentient ADCs, one of the most common types, involve sensing or feeling the presence of the deceased; auditory ADCs, also common, involving hearing the voice of the deceased or receiving a verbal message; tactile ADCs, involving feeling a physical touch by the deceased; olfactory ADCs, involving smelling a fragrance that is associated with the deceased; visual ADCs involving seeing the deceased; ADC visions that include some form of two-way telepathic communication, distinguished from visual ADCs in that they involve "bright, vivid colors, that radiate their own inner light"; twilight ADCs, occurring just as people are falling asleep or waking up; sleep-state ADCs, occurring when a person is asleep, but experienced as very different from dreams; out-of-body ADCs, involving contact with the deceased while the survivor is in an out-of-body state, which may be comparable to NDEs and include going through a tunnel and towards a light before meeting the deceased; telephone ADCs, the least common form of ADC, in which people have reported actually receiving a phone call from the deceased when awake; ADCs of physical phenomena, involving unusual physical events perceived as a message from the deceased, such as a light being turned on or off, or a door being opened or closed; and symbolic ADCs, involving something in the physical environment that survivors interpret as a sign from the deceased, such as butterflies or rainbows.

The experiential quality and content of the various sensory components of spontaneous and induced ADCs are essentially identical. People who have had either a spontaneous or an induced ADC describe the sensory components of their experience in the same way. All indications are that the two are the same phenomenon. There is, however, one major difference. Induced ADCs, as opposed to spontaneous ADCs, are almost always multisensory in nature, and typically involve at least the visual and auditory components, and frequently the radiant quality of the ADC vision as well. The tactile and the olfactory components are also sometimes reported in induced ADCs. The NDE-like qualities of some out-of-body ADCs are also included in many induced ADCs; however, none of my patients ever reported an out-of-body experience concurrent with his or her ADC. It appears that, in general, that the more multisensory and elaborated ADCs are, the more similar they are to NDEs. That is why induced ADCs are actually more similar to

NDEs, than to spontaneous ADCs. This also appears to explain why spontaneous ADC researchers have apparently not considered ADCs and NDEs to be the same phenomenon.

The reason that induced ADCs are more multisensory and elaborated is that the induction procedure allows much greater control of the experience, both in terms of initiating the experience and developing the different aspects of it. The main reason this difference is important is that increased control and elaboration clearly enhances the therapeutic value of the experience, which is consistent with my reading of the available case material. To offer an analogy, in many cases, the spontaneous ADC is like recognizing an old friend by chance passing in a car going the opposite direction on a highway, whereas the induced ADC is like driving to your friend's house so you can sit down and talk for a while.

I am also not convinced that all 12 types of spontaneous ADCs listed above are true ADCs, which are clearly identifiable by their universal quality and content. It appears that some of the above categories of spontaneous ADCs are very different in this respect, and could possibly be explained by known psychological mechanisms. I am not arguing that some of these experiences are not of therapeutic value, but only that they may be a different phenomenon. "Sensing" the presence of the deceased, for example, may be very comforting, but it could simply be an activation of the memory of what it felt like to be with the deceased before death. Twilight ADCs may be simply hypnagogic or hypnopompic phenomena. ADCs of physical phenomena and symbolic ADCs, which also do not involve a direct sensory experience, may have more to do with the healing powers of imagination or intuition. With ADC inductions, these experiences would only be a starting point, in terms of creating a receptive mode, so that a direct and fully elaborated multisensory experience can occur, which will not just assist the survivor in the grieving process, but most likely provide complete resolution.

Since the Guggenheims published the results of their survey, three other books on spontaneous ADCs have been published by different authors. Edie Devers, a practicing psychotherapist, published *Goodbye Again* in 1997, based upon her research for her M.S.N. and Ph.D. degrees. As the other books described here on spontaneous ADCs, she provided actual case material that illustrated the loving content of ADCs and the personal convictions of experiencers in the spiritual reality of ADCs. Devers believes, as I do, that the therapeutic value of ADCs is due to establishing the feeling of reconnection with the deceased.

With regard to the psychological state necessary to experience an ADC she wrote:

Most who have had ADC believe that certain states of consciousness are more conducive to it than others. . . . Some people believe that being in a state of quiet is the only way to experience the deceased. Others said that because they were so exhausted physically and emotionally by grief, their defenses were down; thus they were in a receptive state to experience the deceased. . . . Others believe that one only needs to be receptive to the idea of ADC to be capable of experiencing it. (Devers, 1997, pp. 19–21)

Devers continued:

However, having a receptive mind-set alone does not guarantee an experience for everyone. Some people who want to have experiences do not have them, and others have them, unexpectedly. In most cases the experience is initiated by the deceased. . . . People who try to contact the deceased are generally unsuccessful. (1997, p. 22)

Devers reported that not all experiencers are immediately helped by an ADC, and that for some, ADCs leave people with a negative feeling because they either reexperience an old conflict with the deceased, or because they feel they lose the deceased all over again when the ADC ends. Devers also pointed out that "Though [ADC] communication is usually brief and simple, it can be complicated and ongoing. When it is extended, it often not only leads to grief resolution but also helps heal the relationship between the living and the deceased" (1997, p. 29). Thus, because of the brief nature of many spontaneous ADCs, sometimes not only is resolution not possible, they can at times intensify the unresolved negative feelings associated with the loss.

I believe that Devers correctly identified the receptive mode as the psychological state necessary to achieve an ADC. The only ingredient missing here is a method to increase or maximize the receptive mode. Of course, that is exactly what my induction technique provides. Also, because of the reliability and control in ADC inductions, all induced ADC experiences can be rather easily extended and elaborated, thereby allowing resolution of all grief and relationship issues.

Alexandra Kennedy published *Your Loved One Lives On Within You* in 1997. Kennedy focused on the problem of unfinished business for the bereaved that frequently accompanies unresolved grief. Although her goal was to help people establish a reconnection to deceased loved ones, she did so by helping survivors develop their powers of imagination. By strengthening imaginational skills and focusing on the deceased

through such techniques as internal communication, letter writing, dialogue, and imagery, the bereaved are assisted in working through a variety of unresolved issues. Whether these experiences are actual contacts with the dead is less an issue for Kennedy than helping those who suffer. She purposefully did not attempt to make a distinction between purely psychological products of imagination and the more universal content of ADC experiences. Some of the experiences of her clients are suggestive of true ADCs, while others are clearly products of imagination. For example, she instructed her clients to carry on internal conversations not only with the deceased, which sometimes triggers an ADC, but also with living family members and friends. Although internal conversations in general appear to be psychotherapeutically helpful, they tend to be highly individualized and do not offer the sudden and dramatic psychotherapeutic shifts of true ADCs. ADCs that do occur in the course of Kennedy's treatment were therefore somewhat inadvertent, which makes it significantly different from the approach to ADC induction described below.

Another recently published book, *After-Death Communication: Final Farewells* (1997) was written by Louis LaGrand, a Distinguished Service Professor Emeritus at the State University of New York. His conclusions were based upon 15 years of experience with the bereaved, and generally support the findings of Guggenheim and Guggenheim. LaGrand, as many other professionals who have worked closely with grieving patients, appears to have come to believe in the spiritual authenticity of ADCs, and made a strong argument for his case.

LaGrand began his analysis of ADCs by stating: "It is important to emphasize that the living person is not actively seeking to make contact with the deceased. . . . Instead it is the deceased . . . who seems to reach out" (1997, p. xiii). LaGrand later in his book offered some speculation as to why all mourners do not experience ADCs. He wrote:

What I am getting at is that it may well be impossible to obtain scientific evidence to say unequivocally that the contact experience is, beyond a shadow of a doubt, true. Unfortunately, but undeniably, the evasiveness of the contact experience is another reason mainstream scientists have shunned investigation of the phenomena. Who is ever going to pull off an apparition in a laboratory setting? Who will be able to obtain the cooperation of a deceased husband to talk to his widow with researchers standing by in white coats with pencils poised? . . . I regret to say at this time that such a demand cannot be met, and probably never will be. (1997, p. 164)

It will be clear below that LaGrand's beliefs about the importance of who

initiates the contact, and his related pessimism about the possibility of scientific study, are no longer warranted.

In summary, then, these authors, who have had considerable experience in working with or researching individuals who have had spontaneous ADCs, come to some similar conclusions. They uniformly recognize, for example, that spontaneous ADCs significantly assist survivors in the grieving process. Yet, the process or mechanism that produces the spontaneous ADC is viewed as either a matter of speculation, or as even beyond what is knowable. It should be clearly pointed out, however, that I am not the first to induce ADCs with any consistent success. Raymond Moody began experimentation with inducing ADCs some years ago and wrote a book on the topic a few years before these more recent books on spontaneous ADCs were published.

### Moody's Induced ADCs

In 1992, Moody published a report in this Journal, followed by his book *Reunions* in 1993, in which he described the experiences that subjects in his study had with departed loved ones. He induced ADCs in his subjects by utilizing the method of mirror gazing, which was developed by the ancient Greeks. In his initial study, he gathered ten emotionally healthy, professional people. Moody spent nearly an entire day with each subject individually, generally talking about the departed loved one and assisting the subject in getting into a relaxed state. At dusk the subject would sit in front of a mirror in a setting designed to promote the experience. Of the ten subjects, five experienced ADCs. Moody reported that he has been able to increase the odds of inducing ADCs since his original study, but he did not provide any additional numbers.

Moody therefore demonstrated that not all ADCs are purely spontaneous, and that we do have some control over their production. I strongly suspect, however, that the mirror gazing itself had less to do with the production of ADCs in his study, than did his rather involved and prolonged preparation for the experience, which assisted his subjects in achieving a relaxed and receptive state. It would not be surprising if a number of different induction procedures would work if a person were in the right frame of mind. After all, ADCs occur spontaneously under a variety of circumstances, when a person quite by chance happens to be in the appropriate receptive mode.

The main advantages of using the induction procedure described below are that it is faster, more efficient, and more under the control of

both the therapist and the experiencer. It is faster because this technique has the power to induce rapidly the psychological state necessary to achieve the experience; it literally takes only a few minutes. Also, the success rate of the method provided here is 98 percent for first attempts, which points to the greater efficiency of this method. It offers greater control of the experience because if certain issues are left unaddressed and unresolved after an initial ADC, which happens rather frequently, it is a simple matter to induce the experience again and proceed until all issues are sufficiently resolved.

### **The Discovery of the Induction Technique**

Perhaps the most startling aspect of the discovery presented here is that these experiences are actually rather easy to produce. It does not matter if the loss is traumatic, such as the death of a child or battlefield buddy, or if the death is the more usual variety, such as the death of a grandparent. It does not matter if the death was recent, or if it occurred many decades in the past. It also does not matter what a person's religious or spiritual beliefs are prior to the experience. It works for people with deep religious convictions and atheists as well. In fact, it appears to work for anyone who is willing and able to participate in the procedure, and individual factors beyond that seem to be of no consequence. Also, interested colleagues have been able to achieve nearly identical results after being provided some instruction. In short, the technique appears to be very robust and the outcomes do not appear to be restricted by any identifiable patient or therapist variables.

The most difficult part of losing a friend, comrade, or loved one is the deep and painful feeling of loss or disconnection. The goal of current grief therapies is to help survivors achieve a level of acceptance of the loss that allows them to move on and learn to enjoy life, in spite of some continuing pain. The prevailing belief among grief therapists is that grief is never fully resolved. The approach to treating grief, which is provided here, is radically different. The goal with ADC inductions is psychological reconnection and resolution.

In the simplest, but not necessarily least profound of these induced ADC experiences, the individual "sees" the deceased as happy and at peace, and still very much alive, although in a different place. Usually some form of communication also occurs. As a result of the experience, the pain of disconnection vanishes, and is replaced by a loving reconnection. The experience dramatically erases any doubts about a belief in an afterlife. Just as people who have had a near-death experience

(NDE) no longer believe death is final, people who experience an ADC no longer believe their friend or loved one is really gone. Griefwork from this perspective, therefore, is not a matter of saying good-bye, but hello.

### *General Considerations in the Standard Treatment of Grief*

Grief is a very individual process that involves a variety of psychological reactions to the perception of loss. It is a natural and spontaneous response, and typically a wide variety of emotions are involved, most prominent of which are feelings of loss, guilt, and anger. Mourning involves the sharing of the feelings of grief with others, and therefore involves the social and cultural meaning of the loss. Bereavement is the objective state of having suffered a loss.

Post-traumatic stress disorder, or PTSD, develops from an exposure to an event that involved either actual or threatened death, physical injury, or violation of physical integrity. The three clusters of symptoms are the re-experiencing of the traumatic event, such as intrusive recollections, nightmares, and feelings of reliving the event through flashbacks; the persistent avoidance of reminders of the incident; and the persistent feelings of increased physiological arousal.

Grief and PTSD are similar in some very important ways. The core issue of both grief and PTSD is loss, although in either case, the loss does not necessarily involve a death. In situations of overwhelming threat in which no death occurred, for example, the core issue of PTSD is often the loss of a sense of invulnerability to harm. Grief can be associated with any loss, such as loss of a job or a marriage. In this paper, the loss always involves the death of another person; therefore, the induction procedure I describe is not appropriate for cases of grief and PTSD that do not involve a death. Since the core issues and dynamics of grief and PTSD are nearly identical when a death is involved, I make no further diagnostic distinctions between the two here. However, it should be made clear that PTSD is a complex disorder, and although ADC inductions provide resolution of feelings of loss, guilt, anger, and directly related intrusive symptoms, just as they do with grief, they have less of an impact on other symptoms, such as those associated with avoidance and physiological arousal. This is especially true of cases in which the PTSD is chronic and involve multiple traumas. Therefore, although ADC inductions address the most painful aspect of trauma when a death is involved, they are not appropriate for all traumas, and they do not directly address all of the PTSD symptoms, even when death is the primary issue.

Grief is a very individual matter, and is influenced by such factors as the age of both the deceased and the survivor, the survivor's support system, the survivor's relationship to the deceased, and the cause of death. Moreover, grief usually never fully resolves. Most grief counselors would agree that it generally takes people from one to two years to reconcile a loss to the degree that they can again find enjoyment in a life without their loved one. It takes even longer than that in cases which involve the death of a child or a spouse after many years of marriage. Moreover, reminders of the loss can continue to trigger any unresolved aspects of grief for a lifetime. The primary emotional components of grief are generally recognized as the feelings of loss, guilt, and anger.

The bond between the living is love, but when a loved one dies, the bond is pain. Helping a client work through the pain and achieve acceptance is complicated by guilt and fears of complete disconnection with the deceased. Guilt can also be associated with a wide variety of issues, but most commonly for having "unfinished business" with the deceased. Examples of unfinished business include never having said "I love you," having unresolved interpersonal difficulties with the deceased, or feeling responsible in some way for the death of the deceased. Generally, those who grieve also feel intense anger, because someone very important has been taken away. Both guilt and anger can be related to issues of blame and responsibility.

The overall goal in standard grief therapy, therefore, is to help survivors achieve a level of acceptance of their loss that allows them to learn to enjoy life again, in spite of these ongoing difficulties. The approach provided here is radically different from this perspective. The psychotherapeutic procedure that I will describe below, instead of promoting acceptance of the perceived disconnection, actually provides complete psychological resolution through establishing an experiential reconnection with the deceased.

### *Some Insights and Breakthroughs*

People who experience normal grief, and especially those who suffer a traumatic loss, generally experience a variety of intense emotions. Feelings frequently vacillate between anger, guilt, and deep sadness or loss. A person who grieves, for example, may be crying one moment, and full of anger or even rage the next. A large portion of the job of a psychotherapist is to provide a supportive psychological environment in which these feelings can be openly expressed. Patients are told that these feelings

are completely normal and they are encouraged to express them. By working through or processing these feelings, patients are usually able eventually to achieve some level of acceptance of their loss and an improved capacity to get on with their lives. Generally, however, the loss is never fully resolved, and stimuli or reminders of the loss can trigger periods of sadness, guilt, or anger for a lifetime. Over time these episodes usually decrease somewhat in both frequency and intensity.

I have learned some important lessons over the years while treating people who suffer from loss. One insight is that feelings generally come in layers, or in a predictable order, both in terms of psychological importance and a patient's readiness to address them. Attributions of blame and responsibility, which are related to feelings of guilt and anger, can be very important from a legal point of view, but psychologically, these issues are peripheral to the core and more painful feelings of loss. Some level of acceptance can be achieved only when the feelings of loss are worked through to some degree. In psychotherapy, therefore, the expression of feelings of guilt and anger should be encouraged, so they can be processed or worked through, which in turn allows the issue of loss to be directly addressed.

This was the general state of the art of griefwork, with some of my own clinical insights included, when a major breakthrough in psychological treatment was discovered in the late 1980s by Francine Shapiro, who, while walking through a park one day and feeling upset about some troubling and recurring thoughts, found herself spontaneously shifting her eyes back and forth. She noticed that the shifting of her eyes greatly reduced the negative emotional charge and intrusive nature of her thoughts. She then tried the technique on friends and colleagues, and surprisingly, got the same results. She went on to conduct controlled scientific studies on subjects diagnosed with PTSD, and found that the technique produced psychotherapeutic outcomes unprecedented in the field of mental health.

My colleagues and I, who had been treating patients with PTSD for many years, were initially very skeptical about what appeared to be a very simplistic procedure that produced such unbelievable psychotherapeutic results. We were open-minded enough, however, to at least give it a try. I will never forget our first application of the new procedure. One of our PTSD patients, who had been in ongoing psychotherapy with us for over three years, gave us informed consent to attempt the new and experimental procedure. With myself and another psychologist observing, our colleague accomplished in 30 minutes what the patient had been unable to do in three years. It was as if somebody had just turned

on a lightbulb for the first time. For the next few years, psychologists across the country, myself included, began to publish scientific studies in mainstream psychological journals which supported Shapiro's findings (Lipke and Botkin, 1992). The technique is now known as eye-movement desensitization and reprocessing, or EMDR.

The EMDR technique involves getting the patient to move his or her eyes in a particular rhythmic fashion while at the same time attending to a particular aspect of the traumatic memory. The therapeutic results, to those familiar with the treatment of PTSD and grief, are nothing less than astonishing. For many patients, significant desensitization of the intrusive images and feelings associated with a particular loss can occur within a single session. Similarly, EMDR also results in a rapid cognitive restructuring of the traumatic event. We are thus in many instances able to achieve in one session of EMDR what we had been unable to accomplish after years of traditional psychotherapy.

How EMDR works is still a matter of some debate. However, most psychologists familiar with the procedure would agree that it somehow greatly increases the brain's ability to process information. Shapiro's "Accelerated Information Processing" model is consistent with clinical observations. It has been known for some time that the shifting of the eyes is associated with increased brain processing. The most familiar example is that of rapid eye movement (REM) sleep, which occurs when we dream. It is generally agreed that the increased processing that occurs during dreaming causes the eyes to shift back and forth. With EMDR it appears that the reverse is also true, that a purposeful shifting of the eyes causes an increase in the brain's ability to process information.

Since one can literally accomplish in a single session with EMDR what used to take years with more traditional therapies, some rather amazing events began to occur in my psychotherapy sessions. I found, for example, that EMDR allowed such a rapid processing through the layers of anger and guilt, that patients were frequently ready to access their feelings of loss in the first session. But even more than that, I found that if the patient could access the feeling of loss, to any degree and at any time, in spite of concurrent feelings of anger and guilt, and focus on it with EMDR, a clinically significant level of acceptance was imminent. When the feeling of loss is rapidly processed in this manner with EMDR, one will also usually find that all of the associated anger and guilt have vanished, without even being directly addressed. This clinical observation supports the hypothesis that anger and guilt serve a protective or defensive function against the more painful feelings of loss. When the loss is directly and successfully processed, and some level

of acceptance is achieved, there is simply little reason for the patient to continue to feel anger or guilt.

With these thoughts in mind, I began to use EMDR in an even more focused way on the core issue of loss. When I did, something else very unusual began to occur. Some of my patients reported that during EMDR they made what they believed to be a spiritual connection to the deceased person they were grieving. But even more than that, they also claimed that they "saw" and "talked to" their deceased friend or loved one! Remarkably, whenever this occurred, not only did the patients immediately achieve a significant level of acceptance of the loss, they in nearly all cases also experienced a complete resolution of the loss, and all related symptoms, such as anger, guilt, and intrusive images. Many patients literally began the session in despair, and left feeling joyous. At first I believed that the EMDR had produced some sort of hallucinatory event, and that the results would not last. However, my attempts to obtain follow-up data indicated that the results did indeed last, and in fact, the results appeared to hold up over time in every case. Other clinicians have reported the production of similar spontaneous ADCs during standard EMDR treatment, with similar therapeutic results (Parnell, 1996).

After these experiences occurred a number of times in a more or less unexpected fashion, I wanted to understand why it was that some of my patients had this experience, while others did not. I went back and examined each case in which the experience occurred, and each case in which it did not. I was then able to discern a particular sequence of psychotherapeutic events that led to the experience. When I then applied these principles with other patients, I found that it appeared that I could induce the experience in all of them. The most remarkable aspect of this whole endeavor was that I found that it was actually very easy to do.

### **ADC Induction Procedure**

It is important to emphasize to the reader that one must already be trained in EMDR in order to be able to use the ADC induction technique described here. For mental health professionals to obtain a "certificate of completion," they must successfully complete Shapiro's level I and level II workshops. All mental health professionals recognized by state or federal licensing authorities as independent providers of mental health services are eligible for EMDR training.

Shapiro has created some controversy in the field by maintaining strict control over the teaching of EMDR. Mental health professionals can learn the technique only by attending her two officially sanctioned

workshops, which are now provided on a regular basis throughout the United States and in a few other countries. She has proceeded in this manner because EMDR is so powerful that misuse and harm to patients is a real possibility. I received both level I and level II training several years ago, and have served as a facilitator at her workshops.

Clearly, all clients or patients considered for an ADC induction should be thoroughly screened. Although I never had a patient who got worse as a result of an ADC induction, the possibility certainly exists. Theoretically, an ADC could trigger a psychotic reaction in those with a history of severe mental disorders. The most important consideration in screening patients is the potential adverse reaction to EMDR. Psychological decompensation could occur in those with a history of severe abuse. As any adequately trained EMDR therapist is aware, there exists the possibility of inadvertently uncovering repressed or partially repressed traumatic material. A good history is therefore essential. Current factors I routinely assess are overall psychological health, concurrent stressors, medications, substance abuse, suicide potential, and available social and professional support systems.

A good psychotherapeutic relationship is essential, as are warmth, empathy, and genuineness on the part of the therapist. It simply will not work if the patient does not trust the therapist and withholds valuable information. Prior to the induction, it is important that the patient talk about his or her relationship to the deceased and the circumstances of the death. This not only assists the patient in achieving an appropriate focus, it also alerts the therapist to the potential issues that might arise during the induction. The therapist also needs to be aware of how the ADC is unfolding, so that the experience can be properly guided.

When inducing ADCs, it is important to keep the principles described in the prior section in mind. It is also my belief, that in any application of EMDR, that the psychotherapeutic process proceeds much more efficiently if the most distressing issue is addressed first. If the memory with the greatest emotional charge is not addressed first, it can unexpectedly intrude into consciousness while one is attempting to deal with a memory that is less emotionally charged. When this occurs, no further progress can be achieved unless the more distressing memory is addressed with EMDR. If the patient is unwilling to address the more distressing memory, then all progress is halted, and the patient frequently feels worse as a result of uncovering two memories, for which further working through is no longer possible. I therefore routinely have patients rank order their issues prior to the application of EMDR. I have found that this allows psychotherapy to proceed more efficiently, more rapidly, and with fewer complications.

Inducing ADCs works better when there is a cooperative effort between therapist and patient. Some of my colleagues, when they first attempted to induce ADCs and were unsure of the technique and their own skills, introduced the procedure to their patient in a subtle fashion. Risk of failure was therefore avoided because the patient was not quite sure what the therapist was trying to do. With this approach ADCs did occur, but the results were variable. I begin, therefore, in setting up a cooperative endeavor by explaining the procedure and inquiring about the patient's religious or spiritual beliefs.

For patients who do not believe in an afterlife, I ask them simply whether they believe that an afterlife is even possible. Since almost all patients will admit that there is no way to know for sure, the procedure is then offered as a cooperative experiment. The expectation that the procedure may not work appears to have no effect on the production of the experience. The patient needs only to be willing to give it a try. If the patient professes a belief in an afterlife, a different route is taken. Although these patients might initially see some potential value in the procedure, it is essential that they be instructed not to project their own beliefs into the experience. Sometimes patients need to be reminded of this more than once during the course of the ADC induction. Since ADCs appear to be universal experiences, and unrelated to a patient's particular beliefs, any attempts by the patient to create an experience consistent with his or her religious beliefs will prevent an ADC from occurring. Some patients, for example, expect to see the deceased burning in hell or floating around in the clouds in a spiritual body. In such cases, the production of an ADC is blocked and essentially nothing happens. Therefore, whether the patient has religious beliefs or not, the critical factor in ADC inductions is that the patient is open to the experience, and in a receptive mode. I sometimes tell my patients to let the deceased do the work of finding them, and that their only job is to "open the door" to let them in.

Prior to the first set of EMDR, patients are instructed that they are to think about where their deceased friend or loved one is right now, while at the same time receiving the first set of EMDR. I use the phrase "right now" in order to discourage the patient from attempting to bring up a memory of the deceased, which is a rather common tendency. At the same time, I encourage the patient not to attempt to create the experience but just to be open to whatever happens. My co-therapist presents the technique in a more neutral manner by simply instructing the patient to "hold the thought" of the deceased person while receiving EMDR. The advantage of this approach is that it decreases patients' attempts to project an expectation of "where" the deceased is "right

now." However, this approach also increases the likelihood of the patient bringing up a memory of the deceased. Both approaches seem to work equally well, and these minor differences therefore appear to be of no consequence. My co-therapist's technique provides a better argument that the patient's experience is not influenced by the therapist's suggestion. However, I continue to use my approach for reasons of clinical expediency. In either case, whether the patient attempts to construct the experience, or bring up a memory, it is almost always sufficient simply to remind the patient to put his or her expectations on hold, and just go with the experience.

Patients are also instructed beforehand to close their eyes for a period of time following each set of EMDR in order to allow the experience to unfold. They are also told, however, that if a negative intrusion occurs, such as a bloody scene or an image of the deceased in a casket, they are to open their eyes and inform the therapist. Besides expectations and projected beliefs, negative intrusions can also block the ADC experience. Intrusions can take many forms besides distressing images, such as negative feelings or thoughts, or uncomfortable physical sensations. If intrusions occur, the therapist simply applies EMDR to whatever is intruding, and an ADC induction is attempted again. Intrusions do not have to be desensitized completely, but only enough to allow the ADC to develop, because once an ADC is achieved, all associated negative symptoms generally disappear. It is important to point out that if the patient's loss is traumatic and severe intrusive symptoms are part of the overall clinical picture, it is better to desensitize these intrusive symptoms to some degree before attempting the induction. If the intrusions are mild to moderate, the therapist can go ahead and attempt an ADC induction, and provide EMDR on any intrusions that arise during the course of induction.

Frequently, not all issues associated with the loss are resolved with a single ADC induction. For this reason, it is essential to evaluate the patient after each experience. If an issue is left unresolved, simply instruct the patient to bring that issue ("to have it in mind") and induce another ADC. It is important, however, that the patient maintain a receptive mode and not attempt to recreate the image he or she had in the preceding ADC.

Patients are generally surprised, and even somewhat shocked, by their ADC experience. In my experience this has never been a very serious issue and most people readily change their beliefs to assimilate their experience. In fact, nearly all patients seem to like their new way of thinking more than the old. Nevertheless, some time should be taken to

evaluate this aspect, and to assist patients in framing their experience in any way that is comfortable for them.

### *Additional Clinical Observations*

Although the following are not frequently observed during ADC inductions, they occur with enough regularity to merit some attention. First, although going through a tunnel or passageway and towards light is one of the universal elements of the experience, it is at times associated with the patient not being fully relaxed, usually because the patient is trying too hard. If the patient experiences some frustration getting through the tunnel, inquire whether the patient is indeed feeling this way, provide a set of EMDR to promote relaxation, and then induce the ADC again. Frequently, the patient will then immediately experience the deceased. In general, any time the patient appears to be trying too hard and is unable to achieve an ADC, it is helpful to use a paradoxical approach by instructing the patient not to attempt an ADC during a set of eye movements, but just to focus on relaxation. An ADC frequently then develops because the patient gives up his or her attempts to create the experience, which then allows the ADC to occur naturally.

Second, the ADC experience typically lasts only as long as it needs to from a psychological point of view. When all issues have been resolved, sometimes patients want to linger in the experience, but these patients frequently report that the experience rapidly fades. It can be supportive to point out to these patients that this is a common experience. Usually this is only a minor issue because of the overwhelmingly positive nature of the experience that has just ensued.

Third, a few patients have expressed a concern prior to the experience that the deceased, for whatever reason, will be seen in hell. Again, simply instruct the patient to withhold all expectations about the experience. No one has yet reported a hellish scene. It is also interesting to note that even when the deceased did clearly live a life of low moral character, which has even included murder, they are nevertheless experienced as peaceful and happy, as having learned from their mistakes, and as having taken responsibility for their actions. They are also experienced as concerned about whatever pain or suffering they caused other people in life. The issue of unfinished business, then, is experienced by survivors as important to the deceased as well.

Fourth, when I first began doing ADC inductions, I was somewhat surprised that a successful ADC induction with the death of one person

did not seem to generalize to other deaths. Even though ADC experiencers, in almost all cases, are subsequently convinced of the reality of an afterlife, a successful resolution appears to have little or no effect on the grief associated with other losses. This observation suggests that it is the experience itself, and not any subsequent changes in beliefs, that is responsible for psychological resolution. This hypothesis is further supported by the finding that even those who do not believe in the spiritual authenticity of their experience, nevertheless report full resolution of grief.

### Data Summary

Out of 84 patients for whom an ADC induction was offered, 83 (99%) were willing to participate in an induction. Of the 83 patients who participated in an ADC induction, 81 (98%) achieved an ADC, defined as any perceived sensory contact with the deceased. Of the 81 patients who achieved an ADC, 78 (96%) reported full resolution of grief following the ADC, and 76 (94%) believed their ADC was an actual spiritual contact. Of those 76 patients who believed their ADC was an actual spiritual contact, only 6 (8%) had believed prior to the ADC that actual contact was possible.

This summary is based upon the first 84 patients to whom I offered an ADC induction. Although an overwhelming majority of patients who achieved an ADC chose to do additional ADCs with other deceased individuals, only first attempts are represented here. The total number of all ADC inductions I was involved in, including a few conducted by my co-therapist, whom I supervised, exceeds 400. In general, ADCs become even easier to induce with practice. It is clear from these numbers that patients or clients are very willing to attempt an induction for the first time, even though they generally believe beforehand that such an experience is not possible. This, of course, depends upon the trust your patient has in your ability as a therapist and his or her willingness to try something different, something that might even sound a little "crazy" at first. If your patient is then willing and able to participate in the procedure, an ADC will usually occur. It is also clear that people who experience induced ADCs, in almost all cases, believe that their experience was actual contact with the deceased. The foregoing was the only information I recorded on a regular basis, other than the verbal reports of my patients. Although I initially had some interest in the potential effects of varying prior belief systems on ADC induction outcomes, I did not keep a record of those data. However, I have worked

with many patients who described themselves as atheists, many who were unsure about their beliefs, and many who professed strong religious convictions. The fact that 98 percent of patients achieve ADCs no matter what they believe, as long as they are able and willing to participate in the procedure, strongly suggests that the difference in subjects' prior beliefs systems is of little consequence.

### Cases

I provide here brief summaries of a few actual psychotherapy sessions in which ADCs were induced. In none of these cases did the patient come to psychotherapy seeking an ADC, and therefore, the ADC procedure was introduced during the course of psychotherapy. Identifying information in all cases has been altered to maintain confidentiality. Although some of these patients sought psychotherapy for help in dealing with the loss of a friend or family member, for others, the issue of loss was identified somewhat later in therapy as a contributing factor to their primary problem. For most patients, after they had successfully experienced an initial ADC, they became interested in contacting other deceased family or friends. In these cases, the loss frequently had nothing to do with the primary problem.

The cases presented here were chosen for inclusion primarily because they exemplify a particular aspect of ADC experiences that has occurred with some regularity. These particular cases were further selected for inclusion in this article because they illustrate the similarities between ADCs induced by EMDR and NDEs; it should be understood that many ADCs induced by EMDR do not include these NDE-like features. My goal in all of these cases was to help people with real and sometimes very difficult problems. This was not a research project, and therefore a standard set of questions was not asked in every case, other than the ones listed in the Data Summary above.

#### *Bob*

Bob and his unit had set up camp for the night in Vietnam. He and two buddies had guard duty and they were ordered to shoot anything that moved outside of their perimeter. Later that night, they detected movement in the bush not too far from their position. All three opened fire, and it appeared that they hit whoever or whatever it was. They had to wait for daylight, however, to go out and see what it was. The next morning they all went out and found that they had shot and killed

a Vietnamese woman and her infant child. The woman was unarmed and for some unknown reason had wandered close to their camp. At the time, Bob was enraged at the senselessness of what had happened. For many years since the incident Bob has suffered from intrusive images of their dead bodies. When he presented this memory in psychotherapy, his primary feeling was overwhelming sadness.

The usual induction procedure was provided. However, in Bob's ADC he spontaneously went back in time to the moment the woman and child died. Although during the incident he did not see the bodies until the next morning, in his ADC he saw what looked like the spirits of the mother and child rise out of their bodies at the moment of death. The mother then held the child in her arms, turned, and proceeded to drift through a large tunnel and towards a bright light. They had a very peaceful look on their faces and they appeared to move with a sense of purpose. Bob's feeling of sadness was replaced by a feeling of happiness, which he experienced during his ADC. He was also comforted by his knowledge that the mother and child had maintained their loving relationship. He believed that his experience proved that there is life after death. Bob was somewhat confused, however, by the appearance of the bright light in his ADC, because at the time of the incident it was completely dark. Bob was unaware of NDE reports, which I offered as one of the possible interpretations. A month later, after Bob successfully completed work on some other issues, he terminated psychotherapy. At that time, he no longer felt sad about this incident and all associated intrusive images had disappeared.

Experiencing the NDEs of others during an ADC is not rare, and occurs most frequently when there was no relationship between the deceased and the ADC experiencer. It is also noteworthy that Bob knew nothing about NDEs prior to his ADC experience.

### *Nancy*

Nancy's pregnancy was uneventful until the ninth month. She began vomiting and could no longer feel her baby's movement. An ultrasound revealed no fetal heart beat. Labor was therefore induced, but Nancy went into a hypertensive crisis and her baby was delivered dead. Nancy was near death herself for the next three days. At some time during those three days, Nancy experienced an NDE in which she saw her baby and her mother, who had died a few years earlier, standing together, holding hands, and looking very happy. Her baby was looking up at his grandmother. Her mother then said to her, "It's

okay." Behind them was "a bright comforting light." Nancy was somewhat surprised that her baby was standing, even though he looked like a newborn. Because Nancy was so critically ill herself, her NDE provided some comfort to her only after her own physical condition had improved. These events happened six years prior to our meeting. In spite of her NDE, she continued to experience some grief over the death of her baby, especially at the time of the year that the loss occurred.

Nancy was enthusiastic about the ADC procedure because her NDE had convinced her that such experiences were possible. During Nancy's ADC, she again saw her son with her mother, and they both looked happy and peaceful. There were some differences, however, between her NDE and her ADC experience. This time her son looked older and much healthier than he did before, and instead of looking at his grandmother, he was looking at Nancy and reaching out with both hands towards her. Overall, Nancy had the sense in her ADC that they were moving toward her, and not away, which she felt during her NDE. There was also no bright light behind them as there was in her NDE. After her ADC, Nancy explained that her ADC was "much clearer and more focused" than her NDE, although that may have been due to her being heavily medicated at the time of her NDE. She experienced her ADC as more comforting though, because of her sense that her mother and son were moving towards her and not away. At the end of the session, Nancy reported a much stronger connection with both her son and mother, and she believed her grief had fully resolved. A follow-up visit seven months later supported her belief. I also further questioned Nancy about her evaluation of her two experiences. She was convinced that her ADC was not merely an activation of the memory of her NDE. She was sure that they were two separate experiences that both tapped into the same spiritual reality.

This case provides an example of how people who have had both an induced ADC and an NDE subjectively experience the two as the same phenomenon. People who have had an NDE and an induced ADC where the same deceased person is not involved in both experiences are similarly convinced.

### *Pam*

Pam's mother died nearly 30 years ago when Pam was 14 years old. She and her mother, as the only females in the family, developed a close relationship. Her mother lived only three months after being

diagnosed with breast cancer. Her father and three brothers grieved her death, but Pam believed it was her job to take her mother's place as the strong one in the family, and as a result, never fully addressed her own issues regarding her mother's death. A brother also blamed Pam for their mother's rapid demise because the mother remained active in Pam's life until her death. Pam has been and continues to be a successful physician; however, she maintains an extremely demanding professional schedule that brings her, at times, to the point of exhaustion. After a year and a half of psychotherapy with another therapist, she had made some progress in terms of allowing herself to express her grief, and she had come to realize that her overly responsible caretaking role was tied in many ways to her response to her mother's death. However, these improvements had done little to help her make any significant changes in her routine, and she continued to experience significant guilt and loss over her mother's death.

In the first ADC attempt Pam found herself going through a tunnel and towards a bright light, but she found herself getting frustrated because she could not get to the end of the tunnel. She was unaware of the significance of the tunnel and light, and therefore it was reassuring for her to hear that it meant that the experience was beginning to unfold. After some EMDR to promote relaxation, another induction was performed. This time her mother was there. During her relatively long ADC, a few tears rolled down Pam's face while she kept her eyes closed. When it was over, she opened her eyes and was very excited about what had happened. She stated, "I saw my mother very clearly. . . . She looked younger and thinner. . . . My mother had put on weight the last ten years of her life. . . . She looked healthy, happy, peaceful, and she had a spark in her eyes that seemed to emanate a glow around her." Pam then laughed and said, "My mother was sitting on a large rock by the beach in one of those old-style bathing suits, but the surroundings were more beautiful than any beach scene I've ever seen." Pam's mother communicated to her that she was very proud of what she had accomplished in her life, and that there was no reason for her to feel guilty about anything. Pam experienced "a warm connectedness that we used to have." Pam also pointed out that when her mother was alive "there was always a touch of sadness in her smile, but that was gone and she appeared to be genuinely happy." Pam then stated, "I can't believe how peaceful I feel, like there's been a tremendous burden lifted off of me. . . . and I have the sense that she is not gone and will always be with me." Pam felt that all her issues related to the death of her mother had completely resolved. She emphasized more than once how unexpected her experience was.

Ten months later she reported that she continued to feel much better, and that she could still experience that same peaceful feeling when she took the time to think about it. Although she had made plans to cut back on her rigorous schedule, it was too soon to evaluate her success in that area.

### *Gary*

When Gary was a medic in Vietnam, he had an ongoing difficult relationship with his commanding officer. At one point, someone had stolen Gary's rifle, and his officer, not believing his story, ordered Gary to go out on the next mission unarmed, even though other weapons were available. Although Gary survived the mission, he felt anger and rage towards the officer for putting his life in jeopardy. His anger never subsided. Gary believed for the last 30 years that if ever saw the officer again, he would kill him.

Although Gary had experienced an ADC in a prior session, for this issue, standard EMDR was provided in order to decrease his fear associated with that mission, which he continued to reexperience, and to decrease his anger towards the officer. After the fear was desensitized significantly, the anger was addressed. During the next set of EMDR, Gary spontaneously saw the officer standing in front of him with a concerned and caring look on his face. He told Gary that he was very sorry for what he had done, and for all the problems that Gary's ongoing anger has caused him in his life. The officer appeared to Gary to be very sincere. Gary's anger completely resolved, and he said that he forgave the officer. Since Gary had previously experienced an ADC and believed that it was actual spiritual contact, he was very surprised that person still living would appear in an ADC. After his ADC, he went to the book that lists the names of everyone who died in Vietnam. He discovered that his officer's name was in the book, and that he was killed soon after Gary left Vietnam.

It is significant that each time someone who was thought to be alive appeared in an ADC, we were later able to verify that the person had in fact died. It appears that only the deceased are experienced in ADCs.

### *Mark*

Mark was involved in a very serious car accident nearly 25 years prior to our session. Although Mark was uninjured, two adults and a 12-year-old girl, who were in the other car, were killed. He reported that

he knew nothing else about the victims because he was taken away in a different ambulance, and he subsequently avoided all television and newspaper reports of the incident. The accident had been Mark's fault and he was found guilty of negligent homicide. This incident completely changed Mark's life. Although he had been a good student and had plans for a professional career, his deep sadness and severe guilt resulted in a dysfunctional life, which included recurring major depressions, two suicide attempts, failed marriages, drug abuse, and employment difficulties. Mark believed that since there was no way to undo what had happened, he was destined to suffer for the rest of his life.

After some preliminary EMDR to alleviate anxiety, an ADC was induced. Mark saw all three of the victims "standing together and smiling with a look of joy, peace, and contentment." They seemed "very happy being together and liked very much were they were." Although he had never seen these people before, he was sure it was they. He could see each one very clearly, and especially the girl, who was standing in front of the two adults. She had short red hair, freckles, and a distinctive smile. Mark also somehow got the clear impression that the male adult, who began to walk around in the scene, was communicating to him that he had multiple sclerosis before he died, and that he was happy about the fact that he was now able to move around freely. Mark privately told all three that he was very sorry about what had happened and that he felt very sad about the whole thing. Mark reported that they gave him the message that they had been waiting to hear what he had to say, and that they then forgave him.

Mark was astonished by his experience. He said, "I didn't picture all of this; it came to me, as clear as I'm looking at you right now. . . . I didn't imagine it; I couldn't have imagined it." His feelings of sadness and guilt appeared to have fully resolved. He felt as though "a huge burden has been lifted off of me." He had some concern that I would think he was "crazy," but I reassured him that was not the case. Mark left the session "feeling great." The next day, however, I received a frantic phone call from Mark. He had to see me right away. He was in my office within an hour. He explained that since he was feeling so much better, he stopped by his sister's house the night before, and asked her to get out the old newspaper clippings on the accident, which he knew she had kept in her attic. He "nearly freaked out" when he saw a picture of the girl with short red hair, freckles, and the same distinctive smile. The newspaper articles also reported that the man had severe multiple sclerosis and had been wheelchair-bound for a number of years prior to his death.

Although the day before Mark believed that his experience was real, the newspaper clippings "proved beyond any doubt that it was real." His primary concern was that the spirits of these three people might change their minds and come back to punish him in the future. I was able to reassure him that, although I had considerable experience in inducing ADCs and had read hundreds of first hand accounts, I had never heard of a single case in which an ADC was either punitive or negative. I also explained to him that it was clear the day before that all issues between the three people and him had been resolved. He left my office feeling reassured and better again. Mark continued in therapy for about two months, during which time he addressed a different issue. During that time, all issues pertaining to the accident remained resolved, and he denied any further concern about a possible negative ADC in the future.

Only infrequently is it possible to obtain independent evidence which has some bearing on the validity of ADC content. For that reason, when it does occur, it is of interest. Of course, in this case, we must rely on the reliability of Mark's reports. Although the newspaper clippings "proved" to Mark that his experience was real, they do not constitute proof for the rest of us. Even if he had shown me the newspaper articles, one could argue either that Mark was lying about having not seen them, or that he repressed the fact that he had seen them because it was psychologically too painful for him to remember. Yet, I do not believe Mark was lying, and repressing that material appears very unlikely given his age at the time of the accident and his psychological history.

This case also illustrates a frequent observation that some deceased people appear to have not aged, even though they died at a relatively young age. After 25 years, the 12-year-old girl still looked like a 12-year-old. It is also noteworthy that Mark reported that the three victims of the accident were waiting to hear what Mark had to say. Although the victims were ultimately experienced as forgiving, it appears here that the resolution of unfinished business needed to occur first.

### **Comparison of NDEs and Induced ADCs**

It has been 30 years since Elisabeth Kübler-Ross wrote *On Death and Dying* (1969), and a quarter century since Moody wrote *Life After Life* (1975). These two individuals, more than anyone else, sparked the public's interest in the experiences of those who come close to death.

It is now commonly accepted that roughly one-third of all people who come close to death, upon regaining consciousness, report having had a wonderful and life-changing spiritual experience. Moody labeled these experiences "near-death experiences," or NDEs. He pointed out that as a result of medical advances in resuscitation techniques, many more people were being brought back from the brink of death than in the past.

The many books on NDEs that followed Moody's *Life After Life* generally support his observations regarding the content of the experience. The general sequence of events that occur when a person is at a point close to death includes floating out of one's physical body, a feeling of indescribable peace and happiness, going through a tunnel or passageway towards a light, meeting with friends and relatives who have previously died, seeing beautiful landscapes with bright and rich colors, experiencing a life review, meeting a loving being of light, and returning to one's physical body. It should be noted that the sequence is not invariant, and frequently only one or a few of the elements are reported.

The more I became aware of the content of my patients' ADC experiences, the more I realized that they were consistently reporting almost all of same elements of NDEs, but from a very different perspective. Whereas NDEs occur as one approaches death, in ADCs one experiences another who has already died. Aside from this obvious difference, the two experiences are essentially identical.

During ADCs the experiencer sometimes sees the whole body of the deceased, and sometimes only the face. In either case, they often appear radiant or surrounded by light. Children who die very young are usually seen as older, unlike the 12-year-old girl in Mark's ADC. People who were very old or ill prior to death are always experienced as younger and healthy. A face that was "worry-worn" in life will always appear peaceful and serene. Since the deceased are usually not experienced as in their more familiar physical form, therefore, they can be considered to be out-of-body, or perceived as not attached to the same physical body they left behind.

I have not had a single ADC case where the deceased did not look peaceful, serene, content, or happy. Almost all those who have had NDEs described a similar feeling of peace. The feeling is so pleasant that some NDE experiencers have difficulty expressing it in words. For the ADC experiencer, perceiving the deceased in such a profoundly positive emotional state greatly expedites the resolution of grief. In many instances, the person who has the ADC experiences the same feeling, as though it was somehow transmitted from the deceased. When

this occurs, the feeling of peace, in most instances, immediately and completely replaces whatever feelings of loss or pain that the person brought to the experience.

ADC experiencers sometimes go through a tunnel or passageway before they get to the deceased. There is usually a bright light at the end of the tunnel, and experiencers somehow know during the experience that the deceased is somewhere in the light. People who have NDEs sometimes report the identical experience, and they too report meeting deceased loved ones in the light.

Meeting the deceased in both ADCs and NDEs is essentially identical. They are always loving encounters. The only difference is that, in NDEs, the conversation often involves the issue of whether the NDE experiencer is to remain there or go back to his or her body, whereas in ADCs, the focus is almost always related to the grief, issues, or concerns of the experiencer, and is sometimes perceived as related to the issues and concerns of the deceased as well.

Beautiful landscapes are common in the reports of both NDEs and ADCs. Beautiful trees, hills, bushes, grass, and streams are frequently reported. Colors are typically brighter and richer, and sometimes even radiant in appearance. As one ADC patient said, "It was the greenest green I've ever seen." But even more than appearance, some NDE and ADC experiencers have reported the scenery itself exudes a feeling of peace and tranquillity, which is then transmitted to the experiencer.

Although survivors do not directly experience any portion of their own life review or that of the deceased in induced ADCs, the deceased consistently appear as if they have been through a life review. In the life review portion of NDEs, the person near death experiences his or her whole life in a few brief moments. The content of the experience generally includes a special focus on feelings that were experienced at different moments in life. However, the person near death not only experiences his or her own feelings, but also those of the other people in the experiencer's life at different moments. Thus, an important part of the life review appears to be the experience of the feelings that one caused in others, some of which are positive, and some negative. Those who have experienced life reviews report that it is a profound and life changing learning experience. People who experience life reviews generally develop an increased sense of empathy and an interest in serving others. In induced ADCs, the deceased are consistently experienced as having learned from their mistakes, and as having taken responsibility for how they treated other people in life. They also appear to be very concerned about any negative feelings that they caused in others during

life. This is particularly evident in those cases in which the deceased lived troubled or even violent lives. With the above considerations in mind, NDEs and induced ADCs are actually very consistent in terms of the life review.

None of my patients ever reported seeing a being of light, nor has there been any indirect evidence that the deceased had such an experience. In NDEs, this experience frequently occurs in conjunction with the life review, and the being of light usually assists people in the evaluation of their lives. The being of light, however, is consistently reported as loving and compassionate, and any negative judgments which occur during the life review are generated by experiencers themselves, when they realize the pain or hurt that they caused in others at different times during their lives.

The relationship between NDEs and ADCs is further supported by the observation that a number of my patients, usually those who did not know the deceased personally, actually witnessed the NDE of the deceased during their own ADC. This kind of experience has been associated primarily with battlefield and hospital deaths. In these ADC experiences, a perceived two-way direct communication between the patient and the deceased usually does not occur; however, important information is nevertheless received by the patient which, so far, has resolved whatever issues the patient brought to the experience. Typically, during this kind of ADC, the experiencer sees a translucent body or spirit rise from the physical body at the point of death, usually with a very peaceful or serene appearance, and sometimes then proceed through a tunnel and towards light. Grief is resolved for the patient as a result of experiencing the other person's peaceful continuation of life at the point of death. Interestingly, none of my patients who had this kind of experience had been aware beforehand of NDE content, and all were very surprised, and some even a little confused, by the experience. Bob, for example, was initially confused because he did not understand how the deceased could have moved towards a bright light, because the death had occurred at night in the jungle.

A final argument that NDEs and ADCs are essentially the same phenomenon experienced from different perspectives is that those patients who have had both NDEs and induced ADCs all reported that both the quality and the psychological impact of the two experiences were essentially the same. These patients also believed, with certainty, that the two experiences tapped into the same spiritual reality.

In short, the remarkable similarities and overlap between NDEs and ADCs would lead one to conclude that they are at least closely related

phenomena, whatever the mechanism might be. Perhaps, however, as experiencers have argued, they are the same spiritual phenomenon experienced from different perspectives, the NDE being from the point of view of a person approaching death, and the ADC from the point of view of an alive person contacting one who is already dead. Both suggest something about what the experience of death may be like, and remarkably, reports of both experiences are strikingly similar. If it turns out that they are both a connection to the same spiritual reality, then NDEs are not just transitory experiences that occur before one dies, because the deceased are experienced as having continued in the same general mode during ADCs.

### References

- Devers, E. (1997). *Goodbye again: Experiences with departed loved ones*. Kansas City, MO: Andrews and McMeel.
- Guggenheim, B., and Guggenheim, J. (1996). *Hello from heaven! A new field of research confirms that life and love are eternal*. New York, NY: Bantam.
- Kennedy, A. (1997). *Your loved one lives on within you*. New York, NY: Berkley.
- Kübler-Ross, E. (1969). *On death and dying*. New York, NY: Macmillan.
- LaGrand, L. E. (1997). *After-death communication: Final farewells*. St. Paul, MN: Llewellyn.
- Lipke, H. J., and Botkin, A. L. (1992). Case studies of eye movement desensitization and reprocessing (EMDR) with chronic post-traumatic stress disorder. *Psychotherapy, 29*, 591-595, 1992.
- Moody, R. A. (1975). *Life after life*. Covington, GA: Mockingbird Books.
- Moody, R. A. (1992). Family reunions: visionary encounters with the departed in a modern-day psychomanteum. *Journal of Near-Death Studies, 11*, 83-121.
- Moody, R. A., and Perry, P. (1993). *Reunions: Visionary encounters with departed loved ones*. New York, NY: Villard.
- Parnell, L. (1996). Eye movement desensitization and reprocessing (EMDR) and spiritual unfolding. *Journal of Transpersonal Psychology, 28*, 129-153.
- Shapiro, F. (1995). *Eye movement desensitization and reprocessing: Principles, processes, and procedures*. New York, NY: Guilford.



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