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Journal
of
Near-Death Studies

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

Six Studies of Out-of-Body Experiences • *Charles T. Tart, Ph.D.*

The Meaning and Intensity of the Near-Death Experience • *James M. Sahlman, Ph.D., and Max C. Norton, Ph.D.*

Experiences of Anoxia: Do Reflex Anoxic Seizures Resemble Near-Death Experiences? • *Susan Blackmore, Ph.D.*

Book Reviews:

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Letters to the Editor • *Gracia Fay Ellwood, V. Krishnan, P. M. H. Atwater, Beverly Brodsky, and Jim W. Knittweis*

Volume 17, Number 2, Winter 1998

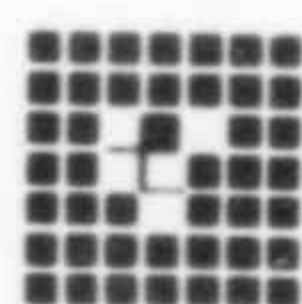


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JOURNAL OF NEAR-DEATH STUDIES (formerly ANABIOSIS) is sponsored by the International Association for Near-Death Studies (IANDS). The Journal publishes articles on near-death experiences and on the empirical effects and theoretical implications of such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

The **INTERNATIONAL ASSOCIATION FOR NEAR-DEATH STUDIES** (IANDS) is a world-wide organization of scientists, scholars, near-death experiencers, and the general public, dedicated to the exploration of near-death experiences (NDEs) and their implications. Incorporated as a nonprofit educational and research organization in 1981, IANDS' objectives are to encourage and support research into NDEs and related phenomena; to disseminate knowledge concerning NDEs and their implications; to further the utilization of near-death research by health care and counseling professionals; to form local chapters of near-death experiencers and interested others; to sponsor symposia and conferences on NDEs and related phenomena; and to maintain a library and archives of near-death-related material. Friends of IANDS chapters are affiliated support groups in many cities for NDErs and their families and for health care and counseling professionals to network locally. Information about membership in IANDS can be obtained by writing to IANDS, P. O. Box 502, East Windsor Hill, CT 06028.

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Editor's Foreword

In this issue's lead article, transpersonal psychology pioneer Charles Tart looks back on six studies of out-of-body experiences that he carried out over the past four decades. The results of this series of studies, demonstrating distinctive physiological correlates and veridical paranormal perceptions while subjects were apparently "out of the body," collectively led Tart to suggest that our perception of being "in the body" is only a simulation, a "biopsychological virtual reality." Tart also highlights in this essay the important distinction between *science*, a logical process of questioning, expanding, and revising our understanding of the universe, and *scientism*, a dogmatic commitment to materialist philosophy that prevents us from exploring the possibility of a spiritual or nonmaterial reality.

Next, communications professors James Sahlman and Max Norton describe an empirical test of their hypothesis, presented in the Spring 1995 issue of the *Journal*, that near-death experiencers assign meaning to their NDEs through causal and semantic attributions. In their analysis of spontaneous NDE accounts, Sahlman and Norton identify the attributions that appear to provide meaning and intensity to NDEs, and argue that those qualities are a function of how experiencers assign causation and affective significance to the NDE.

In another empirical article, British psychologist Susan Blackmore compares with NDEs the experiences of children during reflex anoxic seizures. While most of these children had no recollection of their seizures, a few did report tunnels, lights, and out-of-body experiences. Blackmore argues that these similarities support the hypothesis that NDEs are due to cortical inhibition, which can be triggered by cerebral anoxia.

This issue contains two book reviews. Counselor educator Janice Miner Holden reviews *A Farther Shore*, by two Canadian kundalini researchers: family physician and NDEr Yvonne Kason and author Teri Degler; this practical guide unites near-death and other transpersonal experiences within the framework of the kundalini hypothesis and explores their role in spiritual development. And near-death research pioneer Kenneth Ring reviews Australian sociologist and

NDEr Cheri Sutherland's *Children of the Light*, an examination of children's NDEs and their meaning for bereaved parents.

We conclude this issue with five letters to the editor. Religious scholar Gracia Fay Ellwood argues that reductionistic neural models of NDEs fail to deal with experiencers' paranormal knowledge. Indian scholar V. Krishnan argues that accurate out-of-body perceptions by blind persons and encounters with the light need not compel a belief in mind/body dualism. NDEr P. M. H. Atwater counters Kenneth Ring's suggestion in the Fall 1996 issue of the Journal that anesthesiologically-induced frightening experiences may be nothing more than drug effects. NDEr Beverly Brodsky reinforces my warning in the Summer 1996 issue about casual psychomanteum ventures with three cases of severe emotional and family trauma apparently related to experiences with a home-made psychomanteum. Finally, nurse Jim Knittweis raises questions about the hypothesis of Mexican neuroscientists Patricia Guevara and Julio Sotelo's hypothesis in the Spring 1997 issue of the Journal that endorphins may induce NDEs.

Bruce Greyson, M.D.

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Six Studies of Out-of-Body Experiences

Charles T. Tart, Ph.D.

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ABSTRACT: Because of confusion between science and *scientism*, many people react negatively to the idea of scientific investigation of near-death experiences (NDEs), but genuine science can contribute a great deal to understanding NDEs and helping experiencers integrate their experiences with everyday life. After noting how scientific investigation of certain parapsychological phenomena has established a wider world view that must take NDEs seriously, I review six studies of a basic component of the NDE, the out-of-body experience (OBE). Three of these studies found distinctive physiological correlates of OBEs in the two talented persons investigated, and one found strong evidence for veridical, paranormal perception of the OBE location. The studies using hypnosis to try to produce OBEs demonstrated the complexity of a simple model that a person's mind is actually at an out-of-body location versus merely hallucinating being out, and require us to look at how even our perception of being in our bodies is actually a complex simulation, a biopsychological virtual reality.

Many people who hear about near-death experiences (NDEs) wish they could have that experience and that knowledge—without wanting to have the hard part of coming close to death, of course! As P. M. H. Atwater (1988) and others have documented, however, it is often not a simple matter of starting out “ordinary,” having an “extraordinary experience,” and then “living happily ever after.” Years

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of confusion, conflict, and struggle may be necessary as experiencers try to make sense of the NDE and its aftermaths, and to integrate this new understanding into their lives. Part of that struggle and integration takes place on transpersonal levels that are very difficult to put into words, part on a more ordinary level of questioning, changing, and expanding one's world view. I shall use the term "transpersonal" rather than "spiritual," as it has a more open connotation to it, whereas spiritual is usually associated with particular, codified belief systems.

As I have worked primarily as a scientist for the last 35 years, I will start by discriminating between genuine science and scientism, and then describe six studies of out-of-body experiences (OBEs) I have carried out and some of the conclusions I have come to that may be helpful in furthering understanding and integration.

Science and Scientism in the Modern World

We live in a world that has been miraculously transformed by science and technology. This is very good in some ways, not in others. One negative aspect of particular concern is that this material progress has been accompanied by a shift in our belief systems that is unhealthy in many ways, including a partial crushing of the human spirit by *scientism*. Note carefully that I said *scientism*, not science. I am a scientist, which I consider a noble calling that demands the best from me, and I am very much in favor of using *genuine* science to help our understanding in all areas of life, including the spiritual. Scientism, on the other hand, is a perversion of genuine science. Scientism in our time consists of a dogmatic commitment to a materialist philosophy that "explains away" the spiritual rather than actually examining it carefully and trying to understand it (Wellmuth, 1944). Since scientism never recognizes itself as a belief system, but always thinks of itself as true science, confusion between the two is pernicious.

Genuine science is a four part, continuing process that is *always* subject to questioning, expansion, and revision. It is a process that begins with a commitment to observe things as carefully and honestly as you can. Then you think about what your observations mean; that is, you devise theories and explanations, trying to be as logical as possible in the process. The next, third step is very important. Our minds are wonderfully clever, so clever that they can "make sense"

out of almost anything with hindsight, that is, come up with some sort of plausible interpretation of why things happened the way we observed them to. But just because our theories and explanations seem brilliant and logical does not mean that we really understand the world we observed; we could have a wonderful *post hoc* rationalization. The third part of the genuine scientific process is a requirement that you keep logically working with, refining, and expanding your theories, your explanations, and then make predictions about new areas of reality that you have not yet observed. You have observed the results of conditions A, B, and C, for example, and come up with a satisfying explanation as to why they happened. Now develop your theory to predict what will happen under conditions D, E, and F, and then go out and set up those conditions and see what actually happens. If you have successfully predicted the outcomes, then you keep developing your theories. But if your predictions do not come true, your theories may need substantial revision or need to be thrown out altogether.

It does not matter how logical or brilliant or elegant or emotionally satisfying your theories are; they are always subject to this empirical test with new observations. Indeed, a theory that has no empirical, testable consequences may be philosophy or religion or personal belief, but it is not a scientific theory. Thus science has a built-in rule to help us overcome our normal human tendency to get emotionally committed to our beliefs. This is where scientism corrupts the genuine scientific process. Because people caught in scientism have an emotional attachment to a totally materialistic view of the world, they will not really look at data like NDEs that imply a spiritual, nonmaterial side to reality. They do not recognize that their *belief* that everything can be explained in purely material terms should be treated like any scientific theory; that is, it should be subject to continual test and modified or rejected when found wanting.

This requirement of continual testing, refinement, and expansion is part of the fourth process of genuine science, namely open, full, and honest communication about all the other three aspects. You share your observations, theories, and predictions so that colleagues can test and extend them. You as an individual may have blind spots and prejudices, but it is unlikely *all* your colleagues have the same ones; so that a gradual process of refinement, correction, and expansion takes place and scientific knowledge progresses. While this process is genuine science, it is also a quite sensible way of proceeding in most areas of life.

Inadequacy of Scientism in Dealing with NDEs

Now let us apply these thoughts about science and scientism to NDEs. Scientism, a dogmatic materialism masquerading as science, dismisses the NDE from the outset as something that cannot be what it seems to be, namely, a mind or soul traveling outside the physical body, either in the physical world or in some nonphysical world. So the NDE is automatically dismissed as a hallucination or, more likely, as some kind of psychopathology. But what if we practice actual science and look, with a view as objective as possible, at experiences like the NDE without prejudging them as impossible?

First, there are the data from a hundred years of scientific parapsychological research that, using the best kind of scientific methodology, show us that we cannot simply dismiss the NDE out of hand as impossible. A world view that countenances such dismissal is ignorant, prejudiced, or both.

Hundreds of experiments have shown that the human mind can sometimes do things that are *paraconceptual* to our understanding of physical reality; that is, they make no sense given our current understanding of physics and reasonable extensions of it, but they happen anyway. They are empirical realities. The four major psychic phenomena, collectively referred to as *psi* phenomena, that are well established are telepathy, clairvoyance, precognition, and psychokinesis (PK). Sometimes a person can detect what is happening in another's mind (telepathy), detect what is happening at a distance in the physical world when it is not currently known to another mind (clairvoyance), predict the future when in principle it is not predictable (precognition), or affect physical processes just by willing them to be changed (PK). The reality of these psi phenomena requires us to expand our world view from a world that is *only* material to one that also has mind as some kind of independent reality in itself, capable sometimes of doing things that transcend ordinary physical limits (Tart, 1977a). So if in an NDE a person feels outside her or his body, or claims to have acquired information about distant events, for example, it *may* be an illusion in a particular case, but you cannot scientifically say it *must* be illusion. You have to examine the actual experience, the data, not ignore it or prejudicially "explain it away" without really paying attention or being logical. Thus psi phenomena give us a wider view of reality that calls for a careful look at NDEs, rather than dismissal out of hand.

Out-of-Body Experiences: Definition

Since the beginning of my career, I have been fascinated by what used to be a very little known phenomenon, the out-of-body experience (OBE). While the term OBE is sometimes used rather sloppily, I defined more than two decades ago what I called the *classical* out-of-body experience, or d-OBE—the “discrete out-of-body experience.” This is the experience where subjects perceive themselves as experientially located at some other location than where they know their physical body to be. In addition, they generally feel that they are in their ordinary state of consciousness, so that the concepts of space, time, and location make sense. Further, there is a feeling of no contact with the physical body, a feeling of temporary disconnection from it.

An NDE, on the other hand, usually has, speaking in an oversimplified way, two major aspects. First is the locational component, the OBE component: you find yourself located somewhere outside your physical body. Second is the *noetic* and *altered state of consciousness* (ASC) component: you know things not knowable in ordinary ways and your state of consciousness functions in quite a different way as part of this knowing. I separate these components as they do not always go together. You can have an OBE while feeling that your consciousness remains in its ordinary mode or state of functioning. If right this minute, for example, your perceptions showed you that you were someplace else than where you know your body is, but your consciousness was functioning basically like it is right now, that is what a classic OBE feels like. The OBE also seems as real or “realer” than ordinary experience. Reality is more complex than this, but this distinction between “pure” OBEs and typical NDEs will be useful for our discussion.

Out-of-Body Experiences: First Study

I conducted my first parapsychological experiment in 1957 while I was still a sophomore at the Massachusetts Institute of Technology, studying electrical engineering. It was an attempt to produce OBEs with the aid of hypnosis, inspired by several old articles, especially one by Hornell Hart (1953), a sociologist turned parapsychologist. I trained several fellow students to be moderately good hypnotic subjects and then guided them in individual hypnotic sessions, in which

I suggested that the participant's mind would leave his body and go to the basement of a house several miles away, a place in a suburb of Boston he had never physically been to, and then describe what he saw in that basement.

The target house was the home of two parapsychologists, Fraser Nicol and Betty Humphrey, who had deliberately arranged a very unusual collection of objects in a corner of the basement. I reasoned that if any one of the subjects gave a good description of these unusual objects, I would know his mind had been there while out-of-body. Note the implicit model I had of OBEs, that it was equivalent to moving your sense organs, especially your eyes, to a distant physical location; I will question this simple model below. I had also placed a capacitance relay beside the target location to detect and record any disturbance in the electrical properties of the space around the targets, hoping that my hypnotized OBE participants might physically perturb the properties of space while they traveled to the targets, providing further evidence that the mind could actually leave the body. I installed the capacitance relay before Nicol and Humphrey placed any target materials on the table: I did not want to know what the targets were, so that I could not inadvertently give away any cues about them.

While I would not call the experiment a failure—I learned a lot from it—it did not work out as planned. The capacitance relay device had to be abandoned, as it went on and off every time the house furnace did. My participants' descriptions of the target had occasional resemblances to the target materials, but the similarities were much too vague for me to put any reliance upon them. A "side trip" by one of the participants who was asked to describe my home in New Jersey, which he had never been to, was similarly suggestive, but not sufficiently so to convince me his mind had indeed left his body and traveled south. I had not yet learned how essential objective ways of evaluating results in parapsychology were.

Out-of-Body Experiences: Second Study

My next study of OBEs in the mid-1960s happened synchronistically (Tart, 1981). While chatting about various things with a young woman who babysat for us, I found out that, ever since early childhood, it was an ordinary part of her sleep experience occasionally to feel she had awakened from sleep mentally, but was floating near

the ceiling, looking down on her physical body. This experience was clearly different from her dreams and usually only lasted a few seconds. As a child, not knowing better, she thought this was a normal part of sleeping. After mentioning it once or twice as a teenager she found it was not normal and she ceased talking about it! She had never read anything about OBEs, as this was long before Raymond Moody's *Life After Life* (1975), and had no idea what to make of it. I was quite interested, as she said she still had the experience occasionally.

I told her there were two theories about OBEs, one that they were what they seemed to be, namely, the mind temporarily leaving the physical body, and the other that OBEs were just some sort of hallucination. I suggested she could tell the difference by writing the numbers one to ten on slips of paper, putting them in a box on a bedside table, randomly selecting one to turn up without looking at it before going to sleep and then, if she had an OBE during the night, looking at and memorizing the number and then checking the accuracy of her memory in the morning. I saw her a few weeks later and she reported that she had tried the experiment seven times. She was always right about the number, so it seemed to her that she was really "out" during these experiences.

Miss Z, as I called her in my primary report on our work (Tart, 1968), had interrupted her college work to earn needed funds and was moving from the area in a few weeks, but before she left I was able to have her spend four nights in my sleep research laboratory. Each night I recorded her electroencephalogram (EEG) in a typical fashion used in dream research that allowed me to distinguish waking, drowsiness, and the various stages of sleep: two channels, frontal-to-vertex and vertex-to-occipital on the right side of the head, recording continuously through the night on a Grass Model VII Polygraph at a speed of 10 millimeters per second. I measured eye movements with a flexible strain gauge taped over one eye and I also measured the electrical resistance of her skin using electrodes taped to her right palm and forearm. On two of the four nights I also measured heart rate and relative blood pressure with an optical plethysmograph on her finger.

To ascertain whether she was, in some sense, really "out" of her body during her OBEs, I used the following procedure:

Each laboratory night, after the subject was lying in bed, the physiological recordings were running satisfactorily, and she was ready to go to sleep, I went into my office down the hall, opened a table

of random numbers at random, threw a coin onto the table as a means of random entry into the page, and copied off the first five digits immediately above where the coin landed. These were copied with a black marking pen, in figures approximately two inches high, onto a small piece of paper. Thus they were quite discrete visually. This five-digit random number constituted the parapsychological target for the evening. I then slipped it into an opaque folder, entered the subject's room, and slipped the piece of paper onto the shelf without at any time exposing it to the subject. This now provided a target which would be clearly visible to anyone whose eyes were located approximately six and a half feet off the floor or higher, but was otherwise not visible to the subject.

The subject was instructed to sleep well, to try and have an [out-of-body] experience, and if she did so, to try to wake up immediately afterwards and tell me about it, so I could note on the polygraph records when it had occurred. She was also told that if she floated high enough to read the five-digit number she should memorize it and wake up immediately afterwards to tell me what it was. (Tart, 1968, p. 8)

Over her four laboratory nights, Miss Z reported three clear cut incidents of "floating" experiences, in which she felt that she might have partly gotten out of her body but the experience did not fully develop, and two full OBEs. My general impression of the physiological patterns accompanying her floating and full OBE experiences is that she was in no way near death. There were no major heart rate or blood pressure changes and no particular activity in the autonomic nervous system.

Furthermore, floating and full OBEs occurred in an EEG stage of poorly developed stage 1 sleep, mixed with transitory periods of brief wakefulness. Stage 1 normally accompanies the descent into sleep, the hypnagogic period, and later dreaming during the night, but these were not like those ordinary stage 1 periods because they were often dominated by alphoid activity, a distinctly slower version of the ordinary waking alpha rhythm, and there were no rapid eye movements (REMs) accompanying these stage 1 periods, as almost always happens in normal dreaming. As to what this poorly developed stage 1 with dominant alphoid and no REMs meant, that remains something of a mystery. I showed the recordings to one of the world's leading authorities on sleep research, William Dement, and he agreed with me that it was a distinctive pattern, but we had no idea what it meant. But it has left an idea with me that I have never been able to follow up, but which might prove fruitful. If you could teach someone to produce a drowsy state and slowed alpha rhythms, for

example, through biofeedback training, would such a psychological procedure then make it easier to have an OBE? Indeed I found a report of a sensory deprivation study that reported alphoid rhythms occurring and also reported some subjects feeling as if they had left their bodies (Heron, 1957). I wrote to the researcher asking if these two things were associated, but never received a reply; perhaps the question was too controversial.

On the first three laboratory nights Miss Z reported that in spite of occasionally being "out," she had not been able to control her experiences enough to be in position to see the target number (which was different each night). On the fourth night, at 5:57 AM, there was a seven minute period of somewhat ambiguous EEG activity, sometimes looking like stage 1, sometimes like brief wakings. Then Miss Z awakened and called out over the intercom that the target number was 25132, which I wrote on the EEG recording. After she slept a few more minutes I woke her so she could go to work and she reported on the previous awakening that:

I woke up; it was stifling in the room. Awake for about five minutes. I kept waking up and drifting off, having floating feelings over and over. I needed to go higher because the number was lying down. Between 5:50 and 6:00 A.M. that did it. . . . I wanted to go read the number in the next room, but I couldn't leave the room, open the door, or float through the door. . . . I couldn't turn off the air conditioner! (Tart, 1968, p. 17)

The number 25132 was indeed the correct target number. I had learned something about designing experiments since my first OBE experiment and precise evaluation was possible here. The odds against guessing a 5-digit number by chance alone are 100,000 to 1, so this was a remarkable event! Note also that Miss Z had apparently expected me to have propped the target number up against the wall behind the shelf, but she correctly reported that it was lying flat.

Whenever striking parapsychological results occur, both skeptics and other parapsychologists worry that they might have been fraudulently produced, or happened through some normal sensory channel, for such things have happened historically. With the help of Arthur Hastings, who is a skilled amateur magician as well as a parapsychologist, I carefully inspected the laboratory later to see if there was any chance of this. We let our eyes dark adapt to see if there was any chance the number might be reflected in the plastic casing of the clock on the wall above the number, but nothing could be seen unless we shone a bright flashlight directly on the numbers. Unless

Miss Z, unknown to us, had employed concealed apparatus to illuminate and/or inspect the target number, which we had no reason to suspect, there was no normal way that anyone lying in bed, and having only very limited movement due to the attached electrodes, could see it.

I was cautious in my original write-up of these results, however, writing that "Miss Z's reading of the target number cannot be considered as providing conclusive evidence for a parapsychological effect" (Tart, 1968, p. 18). I thought I was just making a standard statement of caution, as no one experiment is ever absolutely conclusive about anything, but overzealous critics have pounced on this statement as saying that I did not think there were any parapsychological effects in this study. I have always thought that some form of ESP was the best explanation of the results.

The most interesting criticism I have repeatedly received when describing this study comes from believers, rather than skeptics. Someone usually asks me whether I knew what the target number was. When I reply that I did, the criticism is that perhaps Miss Z was not really out of her body, but was merely using telepathy to read the number from my mind! I admit, with pleasure, that this first study of this type was indeed too crude to rule out the counter explanation of "mere telepathy."

As you can imagine, I was quite pleased with the outcome of this study. An unusual experience, the OBE, was accompanied by an unusual EEG pattern, and there was strong evidence that Miss Z was correctly able to perceive the world from her out-of-body location. I was also greatly pleased at demonstrating that an exotic phenomenon like the OBE could be studied in the laboratory and have light cast on it, and the publication of this study stimulated other parapsychologists to think about doing research along these lines. My only regret was that Miss Z moved away and I was never able to track her down and do further work while I had laboratory facilities available. People who can have an OBE almost on demand are, to put it mildly, very, very rare.

Out-of-Body Experiences: Third Study

Some of the most interesting studies I have been able to do on OBEs have been with my dear friend the late Robert A. Monroe, the author of the classic book *Journeys Out of the Body* (1971), as well

as his subsequent *Far Journeys* (1985) and *Ultimate Journey* (1994). Monroe was an archetypally "normal" American businessman who was "drafted" quite involuntarily into the world of OBEs and psychic matters as a result of a series of strange "attacks" of "vibrations" in the late 1950s, culminating in a classic OBE. Bayard Stockton's biography (1989) provided full background material on Monroe's life. I quote his account of his first OBE:

Spring, 1958: If I thought I faced incongruities at this point, it was because I did not know what was yet to come. Some four weeks later, when the vibrations came again, I was duly cautious about attempting to move an arm or leg. It was late at night, and I was lying in bed before sleep. My wife had fallen asleep beside me. There was a surge that seemed to be in my head, and quickly the condition spread through my body. It all seemed the same. As I lay there trying to decide how to analyze the thing in another way, I just happened to think how nice it would be to take a glider up and fly the next afternoon (my hobby at that time). Without considering any consequences—not knowing there would be any—I thought of the pleasure it would bring.

After a moment, I became aware of something pressing against my shoulder. Half-curious, I reached back and up to feel what it was. My hand encountered a smooth wall. I moved my hand along the wall the length of my arm and it continued smooth and unbroken.

My senses fully alert, I tried to see in the dim light. It was a wall, and I was lying against it with my shoulder. I immediately reasoned that I had gone to sleep and fallen out of bed. (I had never done so before, but all sorts of strange things were happening, and falling out of bed was quite possible.)

Then I looked again. Something was wrong. This wall had no windows, no furniture against it, no doors. It was not a wall in my bedroom. Yet somehow it was familiar. Identification came instantly. It wasn't a wall, it was the ceiling. I was floating against the ceiling, bouncing gently with any movement I made. I rolled in the air, startled, and looked down. There, in the dim light below me, was the bed. There were two figures lying in the bed. To the right was my wife. Beside her was someone else. Both seemed asleep.

This was a strange dream, I thought. I was curious. Whom would I dream to be in bed with my wife? I looked more closely, and the shock was intense. I was the someone on the bed!

My reaction was almost instantaneous. Here I was, there was my body. I was dying, this was death, and I wasn't ready to die. Somehow, the vibrations were killing me. Desperately, like a diver, I swooped down to my body and dove in. I then felt the bed and the covers, and when I opened my eyes, I was looking at the room from the perspective of my bed.

What had happened? Had I truly almost died? My heart was beat-

ing rapidly, but not unusually so. I moved my arms and legs. Everything seemed normal. The vibrations had faded away. I got up and walked around the room, looked out the window, and smoked a cigarette. (Monroe, 1971, pp. 27-28)

Monroe consulted his doctor to see what was wrong, but his health was fine. Fortunately he eventually spoke to a psychologist friend who told him that yogis had experiences like this and he should explore them, rather than worry. He did not find this advice particularly reassuring, but he had no choice in the matter as the vibrations and subsequent OBEs continued to occur.

I met Monroe in the fall of 1965 when I took a research position at the University of Virginia Medical School in Charlottesville. He was having OBEs regularly by then, although he had not yet developed the HemiSync© techniques he later used to train others. Monroe was as curious about the nature of OBEs as I was and also able and eager to question his own experiences, rather than be dogmatically swept up in them. He was fascinated by what I had found out in working with Miss Z. Did his own body show similar brain wave changes or any death-like changes? Could we test whether he was "really" at the OBE location, rather than just hallucinating it? While he had had some experiences of being at a distant location where he was able to confirm the events later, there were too many others where such confirmation was only partial or even negative, even though the experiences felt perfectly real. Too, if there were distinctive physiological changes during an OBE, then if we could learn to produce these same changes in people we might have a way of helping them to have OBEs. Monroe was as curious about the answers to these questions as I was.

I was able to have Monroe come in for eight late night sessions (his OBEs usually began from sleep) from December 1965 to August 1966 at the hospital's EEG laboratory while he tried to get out of his body. This laboratory was not really equipped for sleep work, so much of the time Monroe was not completely comfortable on the cot we brought in and was unable to have an OBE. On his eighth night, however, things got interesting. Here are Monroe's notes, written the next morning.

After some time spent in attempting to ease ear electrode-discomfort, concentrated on ear to 'numb' it, with partial success. Then went into fractional relaxation technique again. Halfway through the second time around in the pattern the sense of warmth appeared, with full consciousness (or so it seemed) remaining. I de-

cided to try the 'roll-out' method (i.e., start to turn over gently, just as if you were turning over in bed using the physical body). I started to feel as if I were turning, and at first thought I truly was moving the physical body. I felt myself roll off the edge of the cot, and braced for the fall to the floor. When I didn't hit immediately, I knew that I had disassociated. I moved away from the physical and through a darkened area, then came upon two men and a woman. The 'seeing' wasn't too good, but better as I came closer. The woman, tall, dark-haired, in her forties (?) was sitting on a loveseat or couch. Seated to the right of her was one man. In front of her, and to her left slightly was the second man. They all were strangers to me, and were in conversation which I could not hear. I tried to get their attention, but could not. Finally, I reached over, and pinched (very gently!) the woman on her left side just below the rib carriage. It seemed to get a reaction, but still no communication. I decided to return to the physical for orientation and start again.

Back into the physical was achieved simply, by thought of return. Opened physical eyes, all was fine, swallowed to wet my dry throat, closed my eyes, let the warmth surge up, then used the same roll-out technique. This time, I let myself float to the floor beside the cot. I fell slowly, and could feel myself passing through the various EEG wires on the way down. I touched the floor lightly, then could 'see' the light coming through the open doorway to the outer EEG rooms. Careful to keep 'local,' I went under the cot, keeping in slight touch with the floor, and floating in a horizontal position, fingertips touching the floor to keep in position. I went slowly through the doorway. I was looking for the technician, but could not find her. She was not in the room to the right (control console room), and I went out into the brightly lighted outer room. I looked in all directions, and suddenly, there she was. However, she was not alone. A man was with her, standing to her left as she faced me. I tried to attract her attention, and was almost immediately rewarded with a burst of warm joy and happiness that I had finally achieved the thing we had been working for. She was truly excited, and happily and excitedly embraced me. I responded, and only slight sexual overtones were present which I was about 90% able to disregard. After a moment, I pulled back, and gently put my hands on her face, one on each cheek, and thanked her for her help. However, there was no direct intelligent objective communication with her other than the above. None was tried, as I was too excited at finally achieving the disassociation—and staying 'local.'

I then turned to the man, who was about her height, curly haired, some of which dropped over the side of his forehead. I tried to attract his attention, but was unable to do so. Again, reluctantly, I decided to pinch him gently, which I did. It did not evoke any response that I noticed. Feeling something calling for a return to the physical, I swung around and went through the door, and slipped easily back into the physical. Reason for discomfort: dry throat and throbbing ear.

After checking to see that the integration was complete, that I 'felt' normal in all parts of the body, I opened my eyes, sat up, and called to the technician. She came in, and I told her that I had made it finally, and that I had seen her, however, with a man. She replied that it was her husband. I asked if he was outside, and she replied that he was, that he came to stay with her during these late hours. I asked why I hadn't seen him before, and she replied that it was 'policy' for no outsiders to see subjects or patients. I expressed the desire to meet him, to which she acceded.

The technician removed the electrodes, and I went outside with her and met her husband. He was about her height, curly haired, and after several conversational amenities, I left. I did not query the technician or her husband as to anything they saw, noticed, or felt. However, my impression was that he definitely was the man I had observed with her during the non-physical activity. My second impression was that she was not in the control console room when I visited them, but was in another room, standing up, with him. This may be hard to determine, if there is a first rule that the technician is supposed to always stay at the console. If she can be convinced that the truth is more important in this case, perhaps this second aspect can be validated. The only supporting evidence other than what might have appeared on the EEG lies in the presence of the husband, of which I was unaware prior to the experiment. This latter fact can be verified by the technician, I am sure. (Tart, 1967, pp. 254-255)

As with Miss Z, Monroe's physiological changes were interesting but not medically exciting. He was not at all near death, just showing the relaxed body characteristics of sleep and relaxation. This fits the general pattern that emerged from many later studies that while being physiologically close to death may facilitate the occurrence of an NDE, it is not necessary for either NDEs or OBEs. As to exactly what was Monroe's state during OBEs, there was some general similarity to Miss Z's, in that both involved a stage 1 EEG pattern that was somewhat like, but not identical to, ordinary dreaming, but the two patterns, in the limited sampling of these two studies, were not identical. Monroe had some alphoid activity, but not the large amount Miss Z showed. He also showed REMs in his second OBE where he reported seeing a stranger with the technician. Too, in the all-night study we also did with Monroe to get a baseline of normal sleep, when he was not trying for OBEs, he showed a normal pattern, and did not call the stage 1 REM periods that occurred there OBEs. He sharply distinguished the states of consciousness of his dreams and his OBEs.

We must remember too that while there is a strong *correlation* between EEG stage 1 REM pattern and the *psychological* experience of dreaming, correlation is not causality or identity with the *physiological* state of stage 1. We can think of stage 1 REM as a physiological state that has evolved during the sleep of mammals. In humans the psychological activity of dreaming can use this physiological pattern to manifest itself readily, although psychological states very like dreaming may sometimes occur in other physiological conditions. Too, the *lucid dream*, a dream state in which consciousness "wakes up" and feels in full possession of its waking faculties, also occurs in the physiological state of stage 1 REM (LaBerge, 1991). Perhaps an OBE is also facilitated in this same physiological state.

Was Monroe really "out" when he saw the technician away from her machine and speaking with a strange man? In her notes, my technician reported:

. . . In the second sleep the patient saw me [the tech] and he said I had a visitor, which I did. However, it is possible that Mr. Monroe may have heard the visitor cough during his [cigarette] break between sleeps. Mr. Monroe states that he patted the visitor on the cheeks and tried to take his hand but that the visitor avoided. Mr. Monroe recalls that he left the cot, went under it and out the door into the recording room and then into the hallway. . . . Mr. Monroe did not see the number.

Thus we have only weak evidence that Monroe was actually "out" on this occasion, a result he found as unsatisfactory as I did.

I left the University of Virginia post after a year there to take up a new position at the University of California at Davis, so our work ended for the time being on a note both encouraging and frustrating. The scientific world had doubled its knowledge about EEG patterns during OBEs, since there were now two studies instead of one, but a common pattern had not emerged, and the parapsychological aspects of Monroe's OBEs had not been confirmed in this study.

Out-of-Body Experiences: Fourth Study

Several months later, after moving to California, I wanted to have more data about whether Monroe was really "out" in his OBEs, so I decided to try an experiment in which my wife Judy and I would, for a short period, try to create a sort of "psychic beacon" by concentrating on him, to try to help Monroe have an OBE and travel to

our home. If he could describe our home accurately, this would be good evidence for a psi component in his OBEs, because he had no idea what our new home was like. As in my first study using hypnosis to try to produce OBEs, I was hoping for a big effect that would be obvious evidence of ESP.

I telephoned Monroe and told him that we would try to guide him across the country to our home at some unspecified time during the night of the experiment. That was all I told him. That evening I randomly selected a time to begin concentrating; the only restriction I put on my choice was that it would be some time after I thought Monroe had been asleep for a while. The time turned out to be 11:00 PM California time, 2:00 AM where Monroe lived in Virginia. At 11:00, my wife and I began our concentration; but at 11:05, the telephone rang. We never get calls late at night, so this was rather surprising and disturbing, but we did not answer the phone, nor did we have an answering machine so we did not know who had called. We tried to continue concentrating and did so until 11:30 PM.

The following day, I telephoned Monroe and noncommittally told him that the results had been encouraging, but that I was not going to say anything more about it until he had mailed me his written account of what he had experienced. His account was as follows:

The evening passed uneventfully, and I finally got into bed about 1:40 am, still very much wide awake. The cat was lying in bed with me. After a long period of calming mind, a sense of warmth swept over body, no break in consciousness, no pre-sleep. Almost immediately felt something (or someone) rocking my body from side to side, then tugging at my feet! (Heard cat let out complaining yowl.) I recognized immediately that this had something to do with Charley's experiment, and with full trust, did not feel my usual caution with strangers (!) The tugging at my legs continued, and I finally managed to separate one second body arm and hold it up, feeling around in the dark. After a moment, the tugging stopped and a hand took my wrist, first gently, then very, very firmly and pulled me out of the physical (body) easily. Still trusting, and a little excited, I expressed feeling to go to Charley, if that was where he (it) wanted to lead me. The answer came back affirmatively (although there was no sense of personality, very businesslike). With the hand around my wrist very firmly, I could feel a part of the arm belonging to the hand (slightly hairy, muscular male). But could not "see" who belonged to the arm. Also heard my name called. Then we started to move, with the familiar feeling of something like air rushing around my body. After a short trip (seemed around 5 seconds in duration), we stopped, and the hand released my wrist. There was complete

silence and darkness. When I drifted down into what seemed to be a room. . . . (Tart, 1977a, pp. 190-191)

When Monroe finished his brief OBE he got out of bed to telephone me: it was 11:05 PM, our time. Thus he experienced a tug pulling him from his body within one or two minutes of the time we started concentrating. The portion of his account that I have omitted, on the other hand, his description of our home and what my wife and I were doing, was quite inaccurate. He perceived too many people in the room, and perceived my wife and me performing actions that we did not do. Looking at the description, I would conclude that nothing psychic had happened. Thinking about the precise timing, though, I cannot help but wonder whether one can have an OBE in which one is really "out" in some sense, yet have grossly mistaken (extrasensory) perceptions of the location one has gone to. Whether or not that was the case in this experiment, after years of researching how much perception is a semi-arbitrary construction, often badly distorted, even in our normal state (Tart 1986, 1994), I have no doubt that this is possible for OBEs. I will return to this question later.

Out-of-Body Experiences: Fifth Study

In 1968 I was able to do one further study with Monroe when he briefly visited California. I had a functioning sleep laboratory at the University of California at Davis, more comfortable than the University of Virginia EEG lab, and he spent an afternoon with me and my assistants (Tart, 1969). In the course of a two-hour session, Monroe had two brief OBEs, and reported awakening within a few seconds after each, allowing correlation of physiological recordings with the OBEs. EEG, eye movements, and peripheral blood flow (plethysmograph) were again recorded, and he was monitored via closed circuit TV for the first OBE. The television monitoring equipment was already set up for other purposes, and I had vague hopes of seeing something ghost-like emerge from Monroe's body if he had an OBE; but nothing unusual was seen and we turned it off after the first reported OBE as Monroe felt uncomfortable being watched.

Monroe was asked to try to produce an OBE, then to travel into the equipment room where my assistants and I were, and to read a five-digit target number in that equipment room. In his first OBE, he reported finding himself in the hall connecting the rooms for a

period of eight to ten seconds at most, but then being forced to return to his body because of breathing difficulties. In his second OBE, he reported trying to follow the EEG cable through the wall to the equipment room but, to his amazement, found himself outside the building and facing the wall of another building, still following a cable. He later recognized a courtyard on the inside of the building, which had a three story wall and was 180 degrees opposite the equipment room, as the place he had experienced himself. Although he had no memory of ever having seen this courtyard, it is possible that he could have seen it while in my office earlier in the afternoon. There was no cable in the courtyard, at least not on the surface, although there may have been buried electrical cables under the surface connecting the wings of the building, and there were some cables from the laboratory room to my office, going most of the way toward the courtyard. Again we have that frustrating pattern of my research with Monroe of no ESP results clear enough to be conclusive, but not results so clearly inaccurate that I would feel comfortable saying nothing at all happened.

The EEG prior to Monroe's reported OBE may be classified roughly as a borderline or hypnagogic state, a stage 1 pattern containing instances of alphoid activity rhythm (indicative of drowsiness) and theta activity (a normal sleeping pattern, part of stage 1). This pattern persisted through the first OBE, but was accompanied by a sudden fall of systolic blood pressure lasting seven seconds, this being roughly equivalent to Monroe's estimated length of his OBE. There was REM activity of an ambiguous nature during this period. The second OBE was reported after a period of EEG shifting between stage 1 and stage 2 sleep. This second OBE's exact duration is unknown, but appears to have been accompanied by a similar stage 1 pattern, and only two instances of isolated REM activity near the end. No clear-cut cardiac changes were seen on the plethysmographic recording. Monroe reported having used a different technique for producing the OBE this second time.

In general, then, Monroe's OBEs seem to occur in conjunction with a prolonged, deliberately produced hypnagogic state (stage 1 EEG). Such prolonged states are not normally seen in the laboratory. The preponderance of theta rhythms and the occasional slowed alpha show an intriguing parallel with EEG states reported for advanced Zen masters during meditation (Kasamatsu, 1966). Modern EEG feedback techniques have shown that subjects can learn to produce increased alpha rhythm, and to slow the frequency of their alpha

rhythm. If I were still actively researching this area, I would try training people to produce theta and slowed alpha rhythms, controlled drowsiness, as it were, and see if this helped them have OBEs. This is the sort of thing that Monroe worked on developing with his HemiSync© procedures at the Monroe Institute, which Monroe often conceptualized as putting the body to sleep while keeping the mind awake. While I have been very intrigued and impressed with some of these results, I have not followed them closely enough to give a professional analysis of them, though reports have been circulated privately (F. H. Atwater and J. Owens, personal communication, 1995).

Out-of-Body Experiences: Sixth Study

The final OBE study I carried out in 1970 was like the first one in 1957, an attempt to use hypnosis to produce OBEs, but on a much more sophisticated level. I had done hypnosis research for more than a decade by this time, especially investigating the use of posthypnotic suggestion to influence the content and process of nocturnal, stage 1-REM dreaming. I had a small group of highly selected and trained participants at the University of California at Davis (Tart and Dick, 1970), all in the upper 10% of hypnotic susceptibility. Besides being adept at having their nocturnal dreams influenced posthypnotically, they had explored deep hypnotic states and were quite comfortable in the laboratory.

About seven of the participants had individual hypnotic sessions where they reached very deep hypnotic states, confirmed by their self-reports of hypnotic depth (Tart, 1970, 1972a, 1979). They then received a suggestion that, while the hypnotist remained quiet for 10 minutes so as to not disturb them or keep them connected to his or her body, their consciousness would leave their physical body and cross the hall into a second, locked laboratory room where some special target materials were on a table. They were to observe these materials carefully; then they could wander about out of body at will for a while, then return and report on their OBE to the experimenter, one of my graduate student assistants.

All the participants reported vivid OBEs that seemed like real experiences to them. They included journeys to places they knew, like downtown Davis, that were vividly experienced, as well as vivid experiences of journeying to the target room. None of their reports of

what they saw on the target table bore any clear resemblance to the targets. A formal analysis was not worth the trouble.

Conclusion

So what is an OBE? Does the mind or soul really leave the body and go somewhere else, "out," or is the OBE just a special altered state of consciousness that is basically hallucinatory in nature? That is, is the feeling and conviction that you are elsewhere than your physical body's location an illusion? After decades of reflection on the results of my own and others' research (Alvarado, 1982a, 1982b, 1984, 1986, 1989; Blackmore, 1984, 1994; Gabbard and Twemlow, 1984; Gackenbach, 1991; Green, 1968; Grosso, 1976; Irwin, 1985, 1988; Krippner, 1994; McCreery and Claridge, 1995; Morris, 1974; Osis and McCormick, 1980; Osis and Mitchell, 1977; Palmer, 1994; Palmer and Vassar, 1974; Rogo, 1978; Stanford, 1987; Walsh, 1989), particularly in the light of my studies on the nature of consciousness and altered states, I have a more complex view of OBEs that includes both of these possibilities at different times and more.

I believe that in some OBEs, the mind may, at least partially, really be located elsewhere than the physical body; this may have been the case with Miss Z. At the opposite extreme, as with my virtuoso hypnotic subjects whose experience was vivid and perfectly real to them but whose perception of the target room was only illusory, I believe an OBE can be a *simulation* of being out of the body, with the mind as much "in" the physical body as it ever is. In between these two extremes, I believe we can have OBEs that are basically a simulation of being out, but which are informed by information gathered by ESP such that the simulation of the OBE location is accurate and veridical. This is a messy situation in some ways, especially because all three of these types of OBEs may seem experientially identical to the person having them, at least at rough levels of description. While I would prefer reality to fall into simple, clear cut categories, I have learned in life that reality is often complex.

Simulation of Reality

We all have a model, a theory, about the nature of consciousness and of the world, although it is usually implicit, so that we do not

consciously know we hold a theory. The theory is that space and time are real and pretty much what they seem to be and that things have a definite location in time and space; that consciousness is "in" the head, and that from that spatial position we directly perceive the outside world through our physical senses. As a working model, this theory works quite well most of the time: if someone throws a rock toward you, for example, an automated part of this model that has been called the *ecological self* (Neisser, 1988) instantly calculates the trajectory of the rock, compares it to where you are, and makes you duck if the trajectory intersects your position. In terms of biological survival, it is usually quite useful to identify psychologically with this ecological self and give very high priority to protecting your physical body. Indeed, it is very difficult not to identify automatically with this ecological self process.

Looking at this in more detail, we now know, through decades of psychological and neurophysiological research, that this naive view of perception—that consciousness just perceives the external world in a straightforward way—is quite inadequate. Almost all perception is really a kind of rapid, implicit, and automated *thinking*, a set of judgments and analyses about what is happening and its relevance to you. When something moves in the periphery of your visual field, for example, you will generally actually see a threatening person ducking behind a tree, rather than experience an ambiguous movement in the unfocused part of your visual field, leading to a thought of "What might it be?," leading to searches of memory for possible candidates that show some fit to the ambiguous perceptual data available, leading to a conclusion that a threatening person ducking behind a tree has a 45 percent chance of fitting the perceptual data while, for example, a branch blowing in the wind has only a 30 percent chance of fitting, and so on, so that it would probably be best to get ready for action. If it really was a threatening figure, the person who sees it that way *instantly* has a better chance of survival by reacting faster than the one who goes through a long sequential analysis process. It is as if there is a distinct evolutionary advantage for the organism that has instant readiness to fight or flee even at the price of some false alarms, compared to the organism that takes too long to get ready to flee or fight.

It is useful, therefore, to see our ordinary consciousness as a process that creates an ongoing, dynamic simulation of reality, a world model, an inner theater of the mind, a *biopsychological virtual reality* (Tart, 1991, 1993), "in" which consciousness dwells. The most obvious

example of this process is the nocturnal dream. There we live in a complete world, set in dimensions of space and time, with actors, plots, and an environment. Indeed, most of the brain mechanisms that construct the dream world are probably by and large the same mechanisms that construct our waking world *with the very important difference* that in the waking state this world simulation process must constantly deal with sensory input in a way that protects us and furthers our ends. Thus I have defined the reality we ordinarily live in as *consensus reality* (Tart, 1973), to remind us that, even though we implicitly think we perceive reality as it is, it is actually a complex construction, strongly determined by the social consensus of our particular society about what is important and our own psychodynamics and conditioning.

Applying this perspective to the study of OBEs and NDEs, we should first realize that the ordinary feeling that we are "in" our bodies (usually our heads), is a construction, a world *simulation*, that happens to be the optimal way to ensure survival most of the time, but that it is not necessarily true in any ultimate sense. It is helpful to remember that, just as a person using a high quality computer-generated virtual reality simulator forgets where his or her physical body actually is, and becomes experientially located "in" the computer-generated world, it might be that our "souls" are actually located on some other planet, but we are so immersed in the biopsychological virtual reality our brains generate, and to which we are telepathically and psychokinetically connected (Tart, 1993), that we think we are here in our bodies. This far-fetched analogy helps to remind us that the experience of where we are is not a simple matter of just perceiving reality as it is.

A Scientific Model of Mind That Opens to Noetic Knowledge

Those who have had OBEs and NDEs know, on some very deep level, that mind or soul is something more than your physical body. The automatic psychological identification of who you are with the physical body, with the simulation constructed by the ecological self, is a very useful working tool, but not the final answer. As I noted at the beginning of this paper, integrating this experiential knowledge with your everyday self in the everyday world is not always easy, especially when the dominant climate of scientism constantly

tells you that your deeper knowledge is wrong and that you are crazy to take it seriously.

My small contribution toward integration is the message that, using the best of scientific method rather than scientism, looking factually at *all* the data rather than just what fits into a philosophy of physicalism, the facts of reality require a model or theory of who we are and what reality is that takes OBEs and NDEs and noetic knowledge seriously. You are not deluded or crazy to try to integrate your NDE knowledge with the rest of your life. You are engaged in a real and important process!

I can schematize my best scientific and personal understanding of our nature at this point with the diagram shown in Figure 1.

Being a product of my culture, at the top of the figure I have put the transpersonal or spiritual realm, shown as unbounded in extent. A part of that transpersonal realm, designated as mind in Figure 1, is in intimate relation with our particular body, brain, and nervous

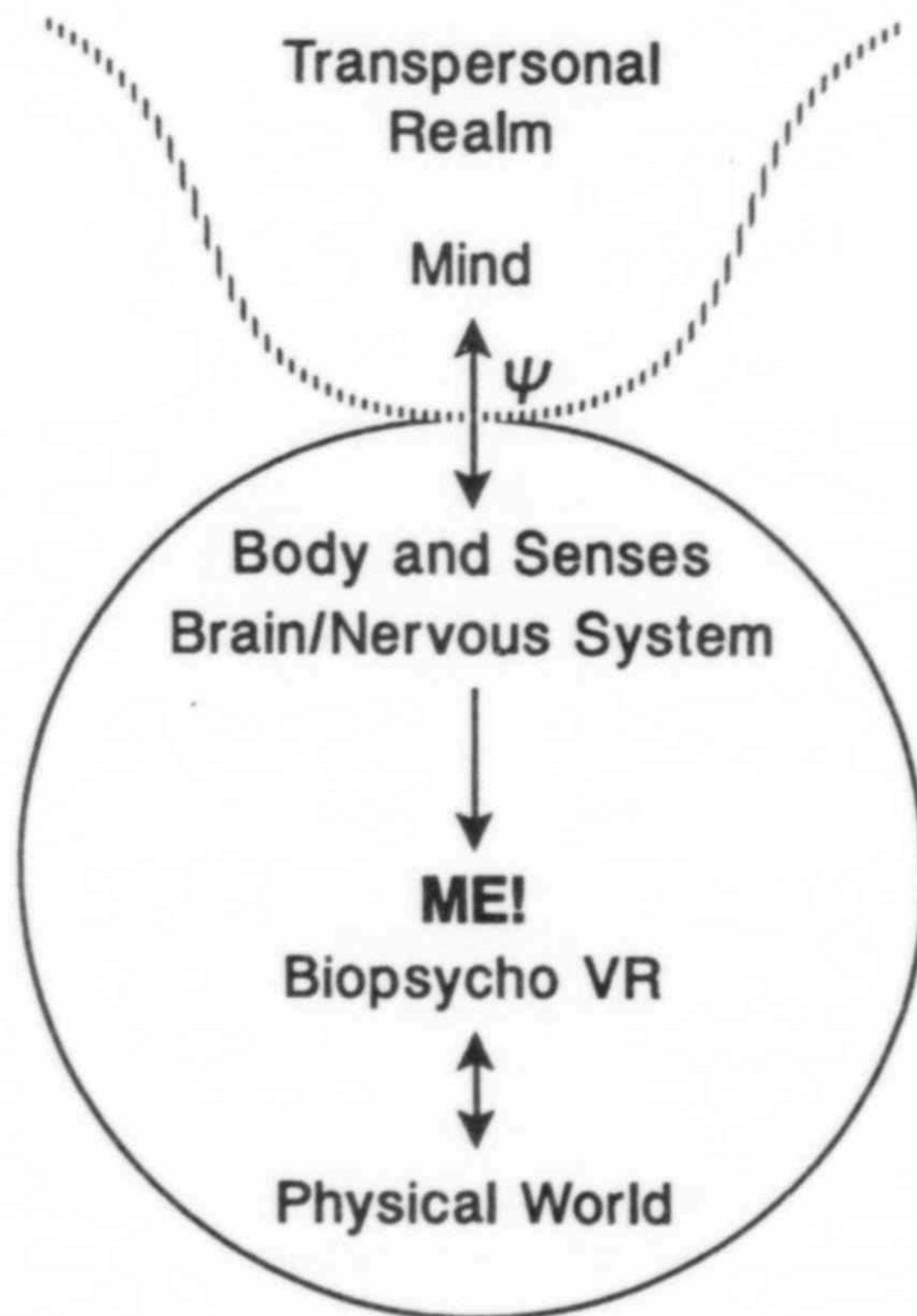


Fig. 1

system. As I mentioned briefly above, although this mind is of a different nature from ordinary matter, psi phenomena like clairvoyance and PK are the means that link the transpersonal and the physical; that is, our mind has an intimate and ongoing relationship with our body, brain, and nervous system through what I have termed *auto-clairvoyance*, where mind reads the physical state of the brain, and *auto-PK*, where mind uses psychokinesis to affect the operation of the physical brain.

The result of this interaction is the creation of a biopsychological virtual reality that I have labeled **ME!** in the figure, to stand for Mind Embodied, with the boldness of the type and the exclamation point added to remind us of the intensity of our identification with and attachment to **ME!** This **ME!** is a simulation of our ultimate, transpersonal nature, our physical nature, and the external physical world around us. We ordinarily live inside this simulation and take it for the direct perception of reality and our selves, but, as noted above, our ordinary self is indeed just a limited point of view, not the whole of reality. There is an immense amount of research needed to fill in the details of this general outline, but I think this conveys a useful general picture.

Summing Up

Let me close with some of the key points of this wider, higher-fidelity model. First, there is no doubt that the physics and chemistry of body, brain, and nervous system are important in affecting our experience. Further research on these areas is vitally important, especially if it is done without the traditional scientific arrogance that physical findings automatically "explain away" psychological and experiential data.

Second, the findings of scientific parapsychology force us pragmatically to accept that mind can conduct information-gathering processes like telepathy, clairvoyance, and precognition, and can directly affect the physical world with PK—processes that cannot be reduced to physical explanations with current scientific knowledge or reasonable extensions of it. Therefore, it is vitally important to investigate what mind can do *in terms of mind*, rather wait for these processes to be "explained away" someday in terms of brain functioning, a form of faith that philosophers have aptly called *promissory materialism*, since it cannot be scientifically refuted. You can never prove that

someday everything will not be explained in terms of a greatly advanced physics—or a greatly advanced knowledge of angels or dowsing or stock market movements. Recall that if there is no way of *disproving* an idea or theory, then you may like it or dislike it, believe it or disbelieve it, but it is not a scientific theory.

Third, the kind of research on the nature of mind called for above is vitally important, because most forms of scientism have a psychopathological effect on people by denying and invalidating their transpersonal experiences. This produces not just unnecessary individual suffering, but also attitudes of isolation and cynicism that worsen the state of the world.

Fourth, two of the most important kinds of transpersonal experiences people can have are OBEs and NDEs. They have major effects on experiencers' attitudes toward life. Both seem to constitute a revelation of a more ultimate or higher understanding of who we really are. While this is important, it is also important to investigate these phenomena extensively, as they themselves may be, at least partially, simulations of even higher-order truths. The genuine scientific approach to them, then, is to take them seriously indeed, but, with humility and dedication: (a) try to get clearer data on their exact nature; (b) develop theories and understandings of them, both in our ordinary state and in appropriate altered states of consciousness, along the lines of state-specific sciences that I have proposed elsewhere (Tart, 1972b); (c) predict and test consequences of these theories; and (d) honestly and fully communicate all parts of this process of investigation, theorizing, and prediction. Genuine and open scientific inquiry has a lot to contribute to our understanding of our nature.

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The Meaning and Intensity of the Near-Death Experience

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ABSTRACT: This is the second in a three-part study exploring the hypothesis that near-death experiencers (NDErs) assign the meaning of the NDE by using causal (effect) and semantic (affect) attributions. To test this hypothesis, 32 spontaneous verbal accounts of NDEs were analyzed. Each statement comprising the account was coded and classified according to the six attributional types in the Norton-Sahlman matrices of attributional classification. On the bases of these findings, we conclude that NDErs abstract the most significant aspects of meaning from their experiences by the use of attributions expressing the purposes of the experience and the intentions of the participants. Second, the meaning and intensity of the experience derives from attributions of both effect (causality) and affective significance: the assignment of subjective meaning to objects and events (affect). Third, the findings demonstrate that there are significant changes in NDErs' overt and affective states, reinforcing our argument that meaning and intensity of the NDE is a function of how the experiencer assigns causation, in addition to the affective significance that the experiencer places on the events constituting the NDE.

The purpose of the present study is to explore through attributional analysis the process by which individuals assign the meaning of the near-death experience (NDE), and how NDErs communicate these cogitations to other people (Norton and Sahlman, 1995).

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The study will explore the hypothesis that the experiencer assigns the meaning of the near-death experience through interpretive usage of causal explanations and statements of affective significance. According to our theory of interpretive usage, the meaning of an experience is expressed through the assignment of single and multiple causes of behavior (effect) and subjective affects to objects and experiences as a function of what the individual feels or believes to be true rather than what is objectively verifiable (affective significance).

Definitions

Meaning

For the purpose of the study, the term *meaning* is defined operationally as the total change in the state of the experiencer, either overt or mental, that results from the interpretation of the experience.

This definition is derived from the theory of interpretive usage:

In its interpretive usage, the meaning of an utterance, to some specific person (perceiver) in some specific context and environment is the total change of state of that person (overt or mental) on receipt of that utterance (Cherry, 1966, p. 307)

This theory implies that an experiencer will interpret the meaning of an event by placing it in a context that is most relevant to his/her background of experience and belief (Norton and Sahlman, 1995).

Intensity of Experience

The *intensity of the experience* is defined in terms of the strength of the relationship between causal factors, and the affective significance of the experiencer's belief system for the perception of the events constituting the experience (affective states). We posit that the intensity of an experience is demonstrated by the strength of the relationship between and among attributional types.

Veridicality of Experience

Identifying the causal consequences of events is the basis for the establishment of the *veridicality of the experience*. Furthermore, the degree to which the experiencer believes in the veridicality of his or her perceptual knowledge is also indicative of the intensity of the experience: the more intense the experience, the greater the consequences.

Attributional Awareness

Attributional awareness deals with the assignment of singular or multiple causes for events and affective significance to an experience. In making attributional statements, the experiencer is offering explanations of the nature and purpose of a given experience.

Attributional statements are based upon social and self-perception and are central to the cognition of meaning and the development of one's psychological epistemology or self-knowledge, a knowledge "that one's beliefs and judgments are veridical" (Kelly, 1973, p. 107). We argue that while some NDErs are willing to accept on faith the profound nature of the near-death event, they nevertheless desire to determine the meaning of the experience. It follows, therefore, that for the experiencer to abstract meaning from an experience, he or she must understand the relationship between cause and effect (that is, attributional awareness).

Method

Selection of Samples

Thirty-two near-death experiences were selected for analysis; 17 participants were males and 15 were females. NDE accounts were collected from three sources. An initial set of accounts was collected from individuals attending the International Association for Near-Death Studies (IANDS) 1995 National Conference in Hartford, CT. Accounts from that conference were either written down and submitted to one of us (M.C.N.), or transcribed from purchased cassette tapes made available by IANDS, containing recorded testimony of NDEs. Another set of NDE accounts was collected from materials

published in *Vital Signs*, the IANDS quarterly newsletter. The final set of NDE accounts was comprised of an "opportunity sample," wherein individuals from local chapters of Friends of IANDS or from local communities expressed an interest in providing their testimonies to the authors. For many of the accounts, gender was the only demographic variable made available to us. For this reason, we cannot report in this article mean age of respondents or other potentially valuable demographic information.

No restrictions were placed on the length or content of any of the accounts collected. Samples were collected without regard to formatting or to any rules as to how to describe the NDE. In short, we hoped to have people tell us about their experiences rather than influencing them in what they might perceive we wanted.

Procedure

A frequency count of all statements in the account samples was calculated and coded according to attributional type. For the purpose of this study, attributional statements were classified as causal (effect) and semantic (affect). It should be noted that effect and affect are not mutually exclusive; indeed, they may be interdependent (Norton and Sahlman, 1995), so that two types of attributions may be expressed in the same statement. In this regard, Fritz Heider wrote:

In distinguishing between the attribution of an event to a direct causal source, and the attribution of a positive or negative quality to an experience, we do not mean that causal attribution and the affective significance of an event do not influence each other. Actually, they are highly interdependent. (1958, p. 170)

System of Classification

The system of classification was adapted from the Norton-Sahlman (Norton and Shalman, 1995) matrices of causal and semantic attributional classifications. Each statement comprising a given NDE account was coded according to the following six attributional types: (1) purpose and intention (PI); (2) past conditions (PC); (3) future actions/consequences (FA); (4) demand for change (DC); (5) affective significance (AS); and (6) valuational consequences (VA). Non-attribi-

bution statements (NA) were also coded. The criteria for classification of statements were as follows:

Purpose and intention (PI). These are statements that address questions concerning the purpose of events and the intentions of the actors: "Why did the event occur?" [purpose] or "Why did certain people appear?" [intention].

In the study of personal causality, intentional behavior is the central factor inasmuch as it is associated with an invariant effect, or goal. That is to say, the actor controls the means-end relationship. The Biblical story of Job delineated this operational definition of purpose and intention: that narrative addressed the question of why a loving God would create a world in which there was so much suffering, and why would He allow it to fall on those who least deserve it. If God is the cause, the next question becomes: "Why? What were God's intentions?" However, in the Biblical account, God did not reveal His intentions, and for this reason, Job's three companions attributed the cause of Job's suffering to him.

Some statements imply both intention and purpose, as in the following: "My mother said: 'I cannot keep you in this heavenly realm, for it is not your time to die.'" The verb forms "can" (or "cannot") and "try" denote both intention and purpose (Norton and Sahlman, 1995).

In assigning personal causation, if the source is not intentionally motivated, the act is deemed nonpurposeful. For example, in the statement "The boy [source] left the soap on the shower floor, and his brother slipped on it and hurt himself," the consequences were not predicted beforehand. Also, environmental factors might have intervened, leading to a wide range of effects.

We can therefore conclude that unintentional acts lead to unintentional consequences, or effects. For example, if as a consequence of seeing his brother injured, the boy learned to put the soap in the dish instead of on the floor, the pursuant act would be purposeful in the respect that the source was consciously controlling the means-end relationship. The goal thus has become invariant and the meaning of the original act was made clear to the source (that is, the boy).

Past condition (PC). The previous discussion raises the question of the onus of responsibility for past causal actions. To whom should we attribute responsibility for negative and positive causal acts? In the statement "As a result of my past life [causal actions], I can now understand why my loved ones met me and gave me this life review [causal consequence]," there is an account of past causal conditions underlying the experience, and an assignment of responsibility for

the consequences (that is, my past life). Attribution of responsibility for the conditions leading up to the life review is clearly stated.

Future consequences (FC). There are dispositional properties in this type of attribution that imply a necessity for certainty and predictability (that is, to control events). It is for this reason that the consequences for future gain or loss including necessity, desire, and the need for future rewards and benefits are imbedded in this type of attribution. For example, in the statement "You must reorganize your life so that you can become worthy to return to this heavenly place," the future consequences of the experience are clear (that is, parameters are placed on future decisions). In the statement "If you repent and become like a little child and ask for Christ to enter your heart, you will become as a little child . . . and come back into the spirit world and have joy and love forever," the future consequences are made clear: "reorganize your life and you will receive a future reward." However, the cause-effect relationship can be inverted as follows: "Any rewards in a future life will be the result of 'becoming as a little child.'"

Demands for change (DC). This type of attribution contains demands for change based upon present conditions. It differs from the above inasmuch as it includes imperatives of personal necessity and forbiddance. In the statement "You must go back because this is not your time to die," the actors, or participants, in the NDE make certain demands for change based upon an existent set of conditions that must be altered.

Affective states (AS). An *affect* is the assignment of connotative or subjective meaning to objects and experiences. These are known as attributes. Affective meanings are assigned to objects and experiences on the basis of what the experiencer feels or believes to be true, rather than what is objectively verifiable. For example, in the statement "I felt an inexpressible joy in knowing the love that emanated from the personage of light," the individual attributes his or her joy to a belief about the personage of light.

The statement "I looked down upon the accident scene and a hand touched me and I turned to see there that a peace and serenity and blissful feeling was coming from the Lord Jesus Christ," delineates the significance of affect on the interpretation of experience.

In the following statements, the experiencer assigns *affects* of love, truth, and light to his or her experience based upon what were believed to be the attributes of Christlike behavior:

I knew without any doubt that a universe was radiating with love of Christ and my very soul was filled with its joy and goodness. Then I heard a voice addressing me with great reassurance, telling me that I was safe from the evils of the world because of light of truth, the love of Christ.

Valuative affective consequences (VC). These attributions assign positive or negative values to objects, persons, conditions, and experiences. These are manifested as statements implying a comparative or an absolute value. For example, in the statement "I was surrounded by pure love," an absolute value is assigned to the experience.

In the statement "Being in the presence of the personage of light was more joyful than anything I had experienced on earth," a comparative value is attributed to the experience. The valuative consequences are clear: the joy was greater than any joy experienced in the pre-NDE state. However, in the statement "Just being in the presence of the personage of light filled me with an indescribable joy" the experiencer is incapable of assigning a comparative value to his or her experience. This type of attribution is typical of experiences involving transcendental affective states.

Results

Data Analysis

The chi-squared (χ^2) goodness-of-fit test was employed to determine whether or not the frequencies observed for each of the attributional categories departed significantly from the frequencies expected from an hypothesis of equal likelihood. The results, shown in Table 1, suggest the operation of a nonchance factor.

On the basis of this finding, we conclude that NDErs abstract the most significant aspects of the meaning of the experience by the use of statements, or attributions, of purpose, intention, and future consequences that follow. It is important to note that for those experiencers who scored higher than the mean on these attributions, the intensity of the experience was emphasized by the causal explanations concerning the reasons the experience occurred and the intentions of the participants or actors in the experience. The following statement is typical of this type of causal explanation: "What was the reason for the near-death experience? I wish I could remember. Why do things happen? I don't know what the answers were."

Table 1
Observed and Expected Frequencies of Attributions

	<i>Type of Attribution (see text for explanation of abbreviations)</i>						<i>Total</i>
	<i>PI</i>	<i>PC</i>	<i>FA</i>	<i>DC</i>	<i>AS</i>	<i>VA</i>	
Observed Frequency = O	183	171	107	86	94	40	681
Expected Frequency = E	114	114	114	114	114	114	681
Observed-Expected = O-E	69	57	-7	-28	-20	-74	0
(Observed-Expected) ² = (O-E) ²	4761	3249	49	784	400	5476	14,719

$$\chi^2 = 129.67, df = 5; p < .001$$

Second, for those experiencers who scored higher than the expected frequency values in the use of attributions for purpose, intent, future action, and demands for change, there are significant changes in their overt and affective mental states. We conclude that such changes carry over into the post-NDE environment and significantly alter the experiencer's attitudes and behaviors.

Third, the results suggest that intentionality, or attribution of intention, is an important factor governing post-NDE orientation. This is revealed in the statistically significant number of statements utilizing the verbal expressions "I can," "I will," "I cannot," and "I will not," in which the experiencer reveals a need for self-actualization and motivation. The following statement is typical of the motivational factors that characterize attributions of personal intention and the future consequences that result, or of future action, and the future consequences that result from them:

I know now why my grandfather appeared to me; he wanted to let me know the meaning of life and death and what to expect, but I cannot know if I will ever understand it fully, there are so many things out there to cope with."

Intercorrelations Between Attributional Types

We performed a correlational analysis of attributional types to determine the interrelationship between attributional statements and

Table 2
Correlations Among Attributions (see text for explanation of abbreviations)

	<i>PI</i>	<i>PC</i>	<i>FA</i>	<i>DC</i>	<i>AS</i>	<i>VA</i>	<i>Total</i>
PC	.23						
FA	.54**	.23					
DC	.72**	.25	.55**				
AS	.07	.40	.04	.07			
VA	-.08	.12	-.20	.04	.37		
Total	.18	.65**	.05	.07	.68**	.22	
NA	-.11	.47*	-.21	-.23	.59**	.18	.93**

* $p < .01$.

** $p < .001$.

whether a given attribution was directly influenced by another. Table 2 presents correlation coefficients between the types of attributions.

The data presented in Table 2 show a strong relationship between attributions of demands for change (DC) and purpose and intention (PI). These data reinforce the finding revealed in the chi-squared calculations that experiencers tend to relate the need for changes in future lifestyle to the purpose of the experience. The following attributional statement delineates the relationship between purpose and demand for change in life goals: "It was then that I realized that my life on earth had a purpose: that I must return to the world as I found it because it was part of the plan which was to teach others how to live so as to overcome the suffering of mortality."

These correlations also reveal the relationship between personal necessity for change and demand for change in future lifestyle: "I had learned that everything that I was to do from then on was necessary for the future well-being of the world in general and of course for my own salvation."

Conclusions

The findings suggest that the meaning of the near-death experience is a direct function of the relationship between purpose, intention, and the need for changes in the attitude and overt behavior of the

experiencer following an NDE. They confirm our basic postulate that the meaning of the near-death experience can be operationally defined as the behavioral changes that occur in the organism as a function of interpretive usage (that is, of his or her interpretation of the experience). They also demonstrate that changes in behavior of the experiencer following an NDE is positively reinforced by the intensity of the experience.

Second, the meaning and intensity of the experience derives from the frequency of attributions of both effect and affect. This conclusion suggests the need to explore further the relationship between objectively verifiable causality and the experiencer's belief system.

Third, the results indicate that affect, or affective significance, and causality, or causal attribution, are interdependent in the respect that they both influence future action, as demonstrated by the need for change in post-NDE attitudes and goals.

These findings reaffirm our contention that the meaning of the near-death experience is a direct function of how the experiencer interprets causation and the affective significance that the experiencer places on the objects and events comprising the NDE.

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Experiences of Anoxia: Do Reflex Anoxic Seizures Resemble Near-Death Experiences?

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ABSTRACT: The role of anoxia in near-death experiences (NDEs) has been hotly debated. Some argue that anoxia can induce NDEs; others that its effects are quite different. Children suffering from reflex anoxic seizures (RAS) have repeated brief cardiac arrests. A questionnaire about their experiences was sent to members of the British RAS Support Group; 112 questionnaires were completed and 7 children were interviewed. Most recalled nothing from their seizures, but 24% reported some experience. A few were comparable to NDEs, with tunnels, lights, and out-of-body experiences.

The possible role of cerebral anoxia in near-death experiences (NDEs) has been appreciated since the early days of near-death research (Moody, 1977; Osis and Haraldsson, 1977), and has been argued over ever since (Morse and Perry, 1990; Ring, 1980; Sabom, 1982). On the one hand it is clear that anoxia plays some role. The areas of the brain most closely associated with the organization of memory, such as the hippocampus and limbic system, are especially sensitive to anoxia, as is the temporal lobe, whose stimulation is known to give rise to memory flashbacks and to floating and out-of-body sensations. On the other hand, many NDErs clearly are not suffering from cerebral anoxia at the time of their experience. There has been much argument over one case in which blood gases were

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measured at the time of an NDE and found to be normal (Gliksman and Kellehear, 1990; Sabom, 1982), but in any case many NDEs are reported from people who were suffering extreme shock or fear, or who expected to die but were not suffering any immediate trauma. Clearly anoxia cannot be necessary for an NDE.

I have argued that anoxia is just one of many triggers that can induce cortical disinhibition, that is, a release of the normal inhibition leading to excessive random firing of neurons. Disinhibition is known to give rise to various kinds of hallucinations, depending on which parts of the brain are involved (Siegel, 1980). My suggestion is that all NDEs depend on cortical disinhibition, but that this can be caused by many different triggers, only one of which is anoxia (Blackmore, 1993).

Part of the argument rests on whether anoxia really does lead to NDE-like experiences. Some forms of anoxia, especially the slow anoxia due to high altitude or slow poisoning with some gases or with alcohol, produce states quite unlike NDEs. I have argued that it is the faster onset anoxia that produces the disinhibition necessary for an NDE-like experience to occur.

The most direct way to test this would be to induce anoxia experimentally and ask the subject what it feels like. This might be thought too dangerous and unethical, but in fact has been done. Lempert, Bauer, and Schmidt (1994) induced syncope, or fainting due to a sudden drop of blood pressure, in healthy adults by using hyperventilation and the Valsalva maneuver, increasing intrathoracic pressure by forced exhalation against the closed glottis. This produced hallucinations similar to NDEs. Also fighter pilots sometimes lose consciousness under very high gravitational or acceleration forces and are trained in centrifuges to cope with it. They sometimes report pleasant emotions and out-of-body experiences, but not full-blown NDEs (Whinnery, 1990, 1997). The present research concerns another situation in which anoxia occurs repeatedly, but is not life-threatening: reflex anoxic seizures (RAS).

RAS is most common in infants and young children, and is also sometimes called white breath holding, vagal attack, Stephenson's Syndrome, blue breath holding, or pallid infantile syncope. Children suffering from RAS are often misdiagnosed as epileptic, and sometimes given years of inappropriate and possibly damaging medication, although the condition is now being increasingly recognized (Appleton, 1993; Stephenson, 1978).

A reflex anoxic seizure is caused by a brief cardiac arrest that results from excessive activation of the vagus nerve in response to a sudden shock, pain, or other surprise. RAS is most common in babies and toddlers, and more common in girls (Stephenson, 1980). In a typical episode, the child suffers a shock. A few seconds later he or she will stiffen, clench the jaw, possibly jerk once or twice, and often become deathly white. Their eyes roll up into the head and they may have urinary incontinence. They may be unconscious for anything from a minute or two to more than an hour. Sometimes the patient wakes briefly and then goes into an unnaturally deep sleep for two or three hours.

There is no danger in RAS attacks themselves, and the child invariably recovers in due course. The only recommended action is to put the patient into the recovery position and wait. However, the attacks are terrifying to watch and many parents and carers, quite naturally, think their child is dead or dying. Some have tried resuscitation, which can be dangerous. Management of the condition therefore mostly involves reassuring the parents and teaching them how to care for the child during an attack, rather than treating the child, although atropine is sometimes used and a few children have been fitted with pacemakers.

In the media, RAS is often associated with dying, in such headlines as "Mummy, I've died again" (*Sunday Mirror*, 24 April 1994) and "The children who 'die' over five times a week" (*Observer*, 2 May 1993), and descriptions of "the boy who has 'died' 300 times" (*Grantham Journal*, 26 November 1993). Newspapers have reported cases of children seeing a bright warm light, and having out-of-body experiences in which they can observe the events from above. However, it is not known whether such experiences are common in RAS sufferers, and this study aimed to find out.

Method

A questionnaire was distributed to all members of the British Reflex Anoxic Seizure Support Group. This is run by the mother of an RAS sufferer for the support of other families with RAS sufferers. The questionnaire was sent out to the approximately 400 members with their regular newsletter starting with the December 1993 issue. Unfortunately the precise number of questionnaires sent out is not known. I sent 200 to the organizer, and when she ran out she kindly

made more copies and sent them out to all new members without keeping a precise record. Questionnaire collection ended in June 1995. Questions concerned the sufferer's age, age at first attack and at diagnosis, and a series of possible experiences thought to be relevant to anoxia.

Seven children, aged between 7 and 13 years, were interviewed at a conference of the RAS support group in October 1994. The youngest was interviewed with her mother; the others on their own, though their parents were at the conference. The questions followed the structure of the questionnaire and then I added open-ended questions about their experience of RAS attacks. Interviews were tape recorded and later transcribed.

Results

A total of 112 questionnaires were completed. A further 15 questionnaires were received well after the deadline and, though they could not be included in the analysis, comments from some of them have been included where appropriate.

Only three of the children were old enough to complete the questionnaire themselves; 93 percent were completed by the child's mother and 4 percent by his or her father. Fifty-seven percent were female. The mean age of the child's first attack was 16 months, though two reported very early first attacks, one "at birth," the other at a half hour after birth. The oldest reported first attack was at age 14. The frequency of attacks was highly variable, but many reported weekly or even daily attacks.

An open-ended question asked parents to describe in as much detail as they could anything that their child has told them about how he or she feels before, during, or after an attack. Thirty-three percent wrote nothing. Many said their child was too young to say anything. Most of the other comments concerned how the attacks appeared to the parents. Several noted that their child became very clingy and wanted to be cuddled for some time after an attack. Many slept for a long time afterwards, waking up having apparently forgotten all about it. Some noted that the child seemed to remember the cause of the attack, such as who bumped them or what surprised them, but not the attack itself. A few parents mentioned that the child looked terrified in the moments before passing out. Some felt sick.

Two noted that their children suffered from sleep disturbances or night terrors after attacks.

Yes/no answers were requested concerning 12 possible experiences that have been reported in NDEs and other types of anoxia. The percentages answering "yes" are shown in Table 1. Most people (76 percent) did not report any of the experiences. Among the 26 (24 percent) who did report them, the number of experiences ranged from 1 to 11.

When additional descriptions were given, the lights included a pink haze and blurred vision. A 7-year-old girl reported "spots of colours, red, blue, black and yellow, mostly black. Also patterns," and enclosed a drawing of the colored streaks. Sounds included a fuzzy noise, a crackly noise, echoes, and high-pitched screaming. A 25-year-old woman who had her first attack at age 14 said that she recalls nothing from the attacks but hearing her own terrified scream on waking, although her husband said she does not actually scream.

Only five respondents claimed to have felt as though they were leaving the body, and most of those did not elaborate. One mother replied for her 6-year-old daughter, but added that she herself also had RAS as a child. "I used to lie in bed asleep and feel as though

Table 1
Frequency of Reported Experiences During RAS
(n = 112)

<i>Experience</i>	<i>Number of Subjects (percent)</i>
Flashes of light	9 (8.0%)
Smells or tastes	10 (8.9%)
Sounds	9 (8.0%)
Tunnels	4 (3.6%)
Other regular patterns	9 (8.0%)
Sensations of floating or flying	5 (4.5%)
Falling sensations	5 (4.5%)
Feeling as though leaving the body	5 (4.5%)
Distortions of the body image	9 (8.0%)
Visions of other places	4 (3.6%)
Meetings with real or imaginary people	9 (8.0%)
Memories of events from the past	5 (4.5%)

I'd left my body and floated to the ceiling. I'd then wake up startled to find myself still in the bed with no covers moved. This has always baffled me but it hasn't happened since I was approx 14 years old."

Although nine respondents reported meetings with people, few made any further comment. One said that an imaginary person visits. Another mentioned people from earlier in the child's life. However, there were no descriptions of beings of light, of angels, of deceased friends or pets, or of any of the beautiful and inspiring scenes reported in some childhood NDEs (Atwater, 1996; Morse and Perry, 1990).

The largest number of experiences, 11, was reported by a 9-year-old boy I will call Alan, who had his first attack at age 2 and subsequent attacks daily or weekly. He was initially diagnosed as epileptic, and had many years of inappropriate medication until he was finally diagnosed as having RAS and fitted with a pacemaker. Both his parents recalled having out-of-body experiences (OBEs) at school during illness or injury. His mother has had several OBEs and two NDEs since childhood, one during Alan's birth.

In discussion and correspondence with his mother, I learned that before an attack Alan feels dizzy with a throbbing headache, like being hit by a hammer. He then frequently goes into a dark tunnel and is hurtled towards a light. On one recent occasion he was simply walking from the bathroom when he found himself already in the tunnel with the light coming towards him. The tunnel is clearly very frightening and unpleasant and he dreads it, but the "white light is nice, like a Christmas light."

He also reported distortions of his own body image and of other people. For example, at the start of an attack "people around me go into the distance." On waking, the voices around him are much louder. He said, "When I come out of the horrid tunnel everyone is much bigger and louder; I feel smaller than when I went in."

He reported hearing whistling sounds, seeing patterns like snake-skin, and seeing people from past periods in his life, adding: "They're on the other side of the wall." He also reported floating, and in response to the question "Has your child ever reported feeling as though they are leaving the body?" he responded "Definitely."

Alan's first OBE occurred when he fell down stairs at age 2. He recalled seeing himself lying on the floor at the bottom of the stairs and going into a convulsion. Later he described an OBE at school after a bump on the head: "I saw the children standing over me after I had one of my black-and-white dreams." His parents described his

worst attack as the one that occurred while walking from the bathroom. He had no pulse for at least a minute and a half and was dark blue. Alan later reported that he had been watching them and his sister from above as they leaned over him.

On one occasion he had an attack during a blood test. This is confirmed by the electrocardiogram, which showed several seconds without a heartbeat at the time of the blood test. Alan later said that he watched the doctor put in the needle, and the nurse move his teddy bear: "I saw her lift my legs."

Alan has since been fitted with a pacemaker and is able to lead an active life and play sports. He said that his déjà vu experiences have become less frequent. In a way, he misses the OBEs, but does not miss the collapses, the dreaded tunnels, or the black-and-white dreams.

Seven children were interviewed informally at an RAS conference. A 7-year-old girl I will call Angela was interviewed with her mother. She told me that normally she experienced nothing during her "little sleeps": "You don't know anything for that minute, you're just lying there for that minute not doing anything, not moving, not breathing, not nothing. . . . Then I come like wake up and then I start again." Interestingly, she said that sometimes she did remember what it was like, and that it was nice, or "lucky," to remember. For example, on one occasion when she fell off the kitchen work surface, she told her mother it was nice at the time, and later explained it to me: "It's all quiet and silent and really funny. . . . It stops you from being hurt." She added: "You're not hurt when you're having it at all . . . but you are when it stops having it."

I asked Angela whether she had ever seen a tunnel or any funny lights. She answered: "Well, no, not really. . . . That's what I've been told by Grandma when you die." We went on to discuss what dying might be like and she added: "But you can never know if that's exactly what actually happens when you really die, when you quite die, 'cause you don't know what's down the tunnel, unless they wrote a letter . . . but unless the angels may have brought it."

Some children described the feeling of being aware of what was going on around them, but being unable to speak or communicate in any way. A 9-year-old girl told me: "When my Mummy and Daddy talk to me when I'm dead, I can hear them." One 13-year-old girl told me that everything begins by feeling "all echoey and far away," then during the attack itself, "Sometimes I can't hear anything and other times I can. And when I can't hear anything I get scared. And

people have to hold my hand." When I asked her how they knew she was scared, she explained the communication system that she and her mother had developed. During attacks she can move only her fingers. So she moves one finger to show she is scared, another to show she is too cold, another for too hot, and a fourth to show she is about to wake up. She said that she can be "out" for anything from 2 minutes to 2 1/2 hours. I asked: "When it's 2 1/2 hours, does it seem like that long?" "Longer," she replied.

Discussion

The questionnaires and interviews provide a general picture of what it is like to have RAS. While many of the children were too young to describe their experiences, and even many older ones remember little or nothing, those few who do remember reported experiences much like those associated with other types of anoxia and with NDEs, that is, tunnels, lights, out-of-body experiences, distortions of body image and of sounds and other people. However, they do not report very positive emotions, meetings with beings of light, or the beautiful places and scenes which are so frequently reported in NDEs.

As far as I know, the account of Alan's experience of watching the doctor insert a needle and the nurse move his teddy bear is the only case of a child having an OBE during a monitored cardiac arrest. However, it cannot help resolve questions about the nature of that OBE. It is quite possible either that something actually did leave the body and observe the scene from above, or that the OBE was the brain's reconstruction of events from a bird's eye view, based on the sensations of the needle and the sounds of activity around.

I should say, however, that moving a teddy bear does not make a lot of noise. Indeed, Alan's mother said: "I don't recall the nurse making a sound, either when moving 'Big Ted' or assisting the doctor. She literally grabbed the bear and cast him aside. [He] slid across the polished floor and came to rest under the bed." But I wish we had an independent record of what happened and of Alan's description of events. Without these, this anecdote simply adds to the many others that imply out-of-body vision but do not provide reliable evidence for it.

My conversation with Angela about what happens when one dies added to my impression that many children have far deeper and

more insightful thoughts about death than adults give them credit for.

These children's descriptions of being aware of what was going on around them, but being unable to speak or communicate in any way, are reminiscent not only of NDEs, in which people are often frustrated by trying in vain to communicate with doctors or nurses, but of OBEs occurring in many traditions and cultures (Blackmore, 1993). The same thing is also reported by pilots in rapid-acceleration training (Whinnery, 1990, 1997).

Transformations of personality and various other aftereffects of NDEs are often reported in the literature, but it was not appropriate to investigate these here. Not only the child's life but the whole family's life can be severely disrupted by having RAS, and therefore any effects of the experiences in themselves could not be separated from the psychosocial effects of the disease.

Within the limitations of this study, these results show that transient, non-life-threatening anoxia can sometimes induce NDE-like experiences, but these are not like typical NDEs in all respects. I hope these results will add to our understanding of the role of anoxia in NDEs.

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BOOK REVIEW

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A Farther Shore: How Near-Death and Other Extraordinary Experiences Can Change Ordinary Lives, by Yvonne Kason and Teri Degler. Toronto, Ontario: HarperCollins, 1996, \$26.00 hb, \$16.99 pb.

A rift in the International Association for Near-Death Studies (IANDS) has sometimes been felt between near-death experiencers on the one hand and near-death researchers and health care providers on the other. Experiencers in particular have decried scientific investigation or health care provision by professionals who have little or no personal knowledge of the near-death experience and, presumably, can relate only very superficially, if at all, to the often deeply profound quality of the experience. As a counselor, researcher, educator, and multiple transpersonal (but not near-death) experiencer, I have wished for a way to bridge the rift, in particular to promote awareness of the commonality between near-death experiences and other experiences of a transpersonal nature.

Now comes Yvonne Kason, a near-death experiencer, researcher, and health care provider. She has written what is, in my opinion, the single best existing book for anyone wanting to learn about near-death and other transpersonal experiences, how they relate to the process of spiritual development, and how hypothetically they are all manifestations of the same underlying phenomenon. In 1979, at the age of 26, Kason was in the final stages of her training as a physician at the University of Toronto. Her near-death experience occurred during a near-drowning in the icy waters of northern Canada. Eleven years later she became one of the founders of the Kundalini Research

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Network. Because she is all three in one, her perspective has much to teach us about, among other things, inclusivity in IANDS.

Kason opens her book with the account of her near-death experience (NDE). So much of the descriptive literature on NDEs consists of excerpts of portions of the experience, or whole experiences condensed to fit the space limitation of a journal or newsletter. For this reason, I luxuriated in Kason's detailed account, start to finish, that the space-unlimited medium of a book afforded her. Also, it was an aspect of her NDE that inspired the title for her book: Having reached the shore and pulled herself from the frigid waters in which her plane had crashed, in the weeks and months that followed, she became increasingly aware of, and impelled to swim the even greater distance to reach "transcendence, God-consciousness, the farther shore" (p. 59). With her NDE account, she succeeded in engaging me to read on. Hopefully, I leave readers of this review sufficiently enticed to acquire a copy of Kason's book and read her account for themselves.

In the second chapter, Kason introduces her term for transpersonal experiences: spiritually transformative experiences (STEs). During STEs, we become "capable of perceiving other levels of reality, including what we might consider mystical or paranormal dimensions" (p. 18). She differentiates between an STE, which is relatively mild, and an STEP, or STE peak, "a discrete, time-limited episode that is intensely absorbing or even overwhelming" (p. 18). Kason asserts that when someone has an STEP, he or she often takes a major step in spiritual development. Types of STEs and STEPs include mystical experiences, classical kundalini episodes, near-death experiences, psychic awakening, and inspired creativity and genius, each of which Kason details in Chapters 3 through 7.

Also in Chapter 2, Kason introduces her main hypothesis: that all STEs and STEPs are manifestations of one underlying spiritually transformative energy that, for reasons of tradition and utility, she terms *kundalini*. In Chapter 8, she provides a more thorough discussion of the kundalini hypothesis, that during the next step of human evolution "we will manifest an expanded range and higher states of consciousness" (p. 127). The hypothetical physiological mechanisms of this transformation are described, examples are given from the annals of near-death research and the life of Gopi Krishna, and implications are discussed.

In Chapter 9, Kason summarizes the findings to date of the Kundalini Research Project. Among the many interesting findings is that

people who report one type of STE typically report other types, which seems to support the kundalini hypothesis of one mechanism underlying all the phenomena.

In Chapters 10 through 12, Kason very thoroughly describes the varieties of physical, psychological, and spiritual phenomena that can characterize STEs and the process of spiritual development. These included lesser known, or lesser discussed, phenomena such as *kriyas*, or involuntary jerking movement of muscles, and changes in sexual energy and dream life. In Chapter 13 she addresses the topic of spiritual emergency, in which spiritual development crosses the line from manageable process to unmanageable crisis, as well as the crucial issue of differential diagnosis of spiritual emergency and psychosis. Why some people cross that line is addressed in Chapter 14. The topics of how to avoid crossing that line, primarily by consciously cultivating physical, psychological, and spiritual balance, and what to do if one does cross it, occupy the remaining three chapters of the book.

I found this book to be extremely thorough, well-organized, and clearly written. I took issue with only a few aspects of the book. One was the term STE. Several times throughout the book, Kason herself refers to the frequency, far from certainty, that an STE will result in spiritual transformation. For example, on p. 61 she writes, quite rightly, that NDEs are often spiritually transformative experiences. I have both read of and spoken with NDErs who either do not feel spiritually transformed or who report having repressed the transformative potential of the experience, sometimes for decades. If an experience is not always spiritually transformative, it cannot logically be called a Spiritually Transformative Experience! And to dichotomize STEs and STEPs on the basis of lesser or greater profoundness seems, to me, arbitrary. At the same time, the field of transpersonal psychology is so new that many writers have proposed their own taxonomies, such as Stanislav Grof's (1972) "transpersonal experiences" and Rhea White's (1998) "exceptional human experiences." Personally, I prefer the term "transpersonal experience." First, it includes any experience that transcends the normal ego boundaries of space and/or time, whether it be an experience of the intuitive, paranormal, mystical, or inspired creativity type. Second, it includes experiences on a continuous, rather than dichotomous, range of strength, depth, or profoundness. And third, it carries no implication about whether an experience will result in spiritual development or transformation, though it allows for the possibility that the more pro-

found the experience, the more likely spiritual transformation will follow. I think the preexisting term transpersonal experience would have been a better choice than STE.

Though Kason expresses near-perfect openness to and empathy for the varieties of symptoms and experiences she described, I was struck by one phrase that sounded, to me, quite judgmental. In her discussion of "negative" NDEs, elsewhere called frightening or distressing NDEs, she asserts her hypothesis that "a critical element in a negative NDE is the failure or refusal of the individual to turn to or surrender to God" (p. 72). "Failure" and "refusal" are terms with negative connotation that could be interpreted to imply blame. What of an experiencer's fear of surrender, or lack of familiarity with how to surrender, that might underlie even the seemingly stubborn veneer of vehement atheism? More than one writer in the transpersonal literature has hypothesized that denial of spirituality can arise from a fear of the pain of disillusionment resulting from reliance on a force that, in the end, may really not be there; the best alternative for the seemingly abandoned is to rely on oneself. This dynamic may, indeed, create and perpetuate a "negative" NDE, but to describe and understand the dynamic in terms of fear or unfamiliarity seems, to me, much more empathic—and accurate.

Throughout the book, Kason uses the terms *spiritual*, *spiritual transformation*, and *spiritual transformation process*, but nowhere in the book does she offer a comprehensive definition or description of these terms or phrases. At one point, she asserts that "people who are being spiritually transformed . . . have . . . a far more spiritual focus, . . . much stronger ethical convictions, and . . . become increasingly involved in altruistic and humanitarian endeavors" (p. 25). Elsewhere she describes the hypothesized final goal of human evolution, the achievement of a stable state of consciousness in which one is continuously and simultaneously functioning in the world and experiencing mystical ecstasy. While these and other "sprinklings" throughout the book suggest some of the features of spiritual transformation, I believe the book would have been enhanced by the inclusion of a comprehensive explanation of this and related terms. The explanation would include both subjective/internal and objective/external features of spirituality and spiritual development.

Despite the criticisms cited above, to a very great extent I resonated with the material in this book. I found the kundalini hypothesis intriguing and consonant with my own views. However, a reader need not agree with, or even understand, the kundalini hypothesis

to benefit from the wealth of information offered by this book about transpersonal experience, the characteristics of the spiritual transformation process, and how to proceed along the spiritually transformative path in the healthiest way.

Yet the kundalini hypothesis has a special value. It places NDEs among a variety of experiences manifested from the same spiritual energy source. From this perspective, any experience of this nature provides the experiencer with a subjective basis for understanding the NDE reasonably well. The question of whether a health care provider or researcher can relate to an NDEr then becomes one of experience in the transpersonal domain in general rather than the near-death manifestation of that domain specifically. I appreciate that Kason has validated my experience and perception in this regard and, in a sense, included me and many others among those nonNDErs who do, indeed, relate to the experience of NDErs.

Kason's other great service is as a model of a mentally healthy person on a path of spiritual development. She speculates that thousands of people or more are going through a spiritually transformative process, which, she writes, makes her in no way special. She writes, "I think it helps people to know that a busy, respected, professional person like me can be in the throes of spiritual transformation and be having mystical experiences, psychic episodes, classic Kundalini symptoms [sic] and be experiencing psycho-spiritual housecleaning—and at the same time can lead a well-adjusted, happy, healthy life" (p. 25). I agree with her: It does, indeed, help. And I also disagree with her: That she has used her unique combination of experiences and credentials to help us all in this way makes her very special indeed.

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BOOK REVIEW

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Children of the Light: The Near-Death Experiences of Children, by Cherie Sutherland. New York, NY: Bantam, 1995, 199 pp + xi.

Cherie Sutherland, who is the preeminent researcher of near-death experiences (NDEs) in Australia, the author of two previous books on the subject (*Reborn in the Light* [1995] and *Within the Light* [1995]), and the founder of AUSTRALIANDS, has now extended her explorations of NDEs in Australia by focusing on those of children. Her book is a welcome addition to the literature on NDEs in the young and, as with her earlier work, demonstrates an obvious continuity with the findings already reported by investigators such as Nancy Evans Bush and Melvin Morse who pioneered studies of NDEs in children in this country.

In Sutherland's case, however, her book begins with an informing vision that not only gave her research its impetus but also points to the special value it will and is meant to have for many of its readers. Sutherland, who is a near-death experiencer herself, found that, after the publication of her first book on NDEs, she was at a bit of a loss concerning how her work should proceed. Staying with this uncertainty and the frustration it bred, she ultimately and unexpectedly underwent an experience that showed her unmistakably where she would find her next source of inspiration. In what she labels simply a "vision," she was carried aloft until from a great height she saw a scene below of children playing joyously with one another, radiating an inexpressible happiness. And somehow she was given to understand that these were the spirits of children who had died—but who were more alive than ever! At the same time, however, she became

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aware of a second group of spirits who were in a dark place and from whom emanated feelings of bewilderment, grief, and terrible devastating loss. These, Sutherland intuitively realized, were the parents of these children who had "no idea how blessed these child spirits felt themselves to be, living on in the light, safe and loved, in the company of angels" (p. x).

Following that vision, Sutherland reports, she found herself meeting or hearing from a substantial number of grieving parents, who expressed to her how much stories of NDEs had helped to succor them in their own loss, and, eventually, she was led to persons, some of them still children themselves, who had had NDEs as kids—and their stories were even more helpful to those dealing with the desolating anguish that the death of a child often unleashes. Sutherland's book, then, is primarily motivated by a desire to bring these stories to a larger audience, particularly to parents and siblings of a deceased child, in order to spread a blanket of comfort over those who are still grieving and to accelerate the process of healing from one of life's most unbearable ruptures.

And Sutherland herself presents some compelling testimony throughout her book to show just how healing it can be to such parents when they learn about the NDEs of children. Her book in fact begins with one very touching account of this kind of discovery. A mother named Maria had lost her five-year-old son in a tragic drowning incident, and was in despair over it. In addition to all her natural grief, she was tormented by questions concerning whether her son had been frightened as he was drowning or whether he had cried out desperately and in vain for his parents to save him. As she testifies, she was obsessed with the question, "Was it terrible to die?" (p. 4).

In time, and quite adventitiously, she came across a story of a childhood NDE based on a near-drowning incident that had much in common with the actual drowning of her son. Reading it was a revelation and immediately provided a powerful anodyne that relieved years of protracted suffering, guilt, and doubt. In Maria's own words,

I felt exhilarated after I had finished. I was so astonished by the almost identical conditions at the two scenes of accident, and the two little boys of virtually the same age, that I had no trouble believing that this "coincidence" was, indeed, the answer I had been searching for. From that day on, my thirst for more and more information about the NDE was unquenchable. I read everything I could find about it, and with each new account, the bottomless, black

despair I had felt for so long receded, and a wonderful new hope was born somewhere deep within me. (p. 6)

Now, through the instrumentality of Sutherland's book, Maria's own experience of healing can itself be a source of solace and hope for bereaved parents and others who have suffered a similar loss. And, from reading stories like Maria's and the many moving accounts of childhood NDEs that Sutherland provides in this book, there are even more benefits to be derived, as Maria's own narrative suggests:

Not long afterwards . . . I realized that the devastating grief and suffering I had been through had produced after-effects similar to those following a near-death experience: I was no longer afraid of death; I felt more genuine compassion for others; I wanted to help others; I was more aware of others' pain. In a sense, I too had died and been brought back to life. . . . [And] I now believe that death is truly a transition from our limited existence into a splendid new life, an adventure beyond our wildest dreams. (pp. 6-7)

With this as a kind of preface to the *raison d'être* for her book, Sutherland is now ready to introduce the persons whose stories constitute both the bulk and the heart of this volume. In all she presents the narratives of 18 cases. The stories are told in the first person, sometimes by children who have had NDEs, often supplemented and clarified by interview material from their parents, and sometimes by persons who retrospectively describe their own childhood NDEs. Sutherland, in all her work on NDEs, has always been very sensitive to the integrity and importance of the personal narrative, and her books, including this one, are rich sources of the texture of NDEs and the meaning they have had, both for those who undergo them and for family members who have been affected by them. In allowing her respondents to tell their stories in this straightforward fashion, Sutherland makes them serve the purposes for which she intended this book: to inform, inspire, and console. In this respect, she has succeeded admirably.

If we now enlarge the focus of this review and ask what the general reader interested in NDEs—and not just the bereaved person—will find in this book that adds to our knowledge of childhood NDEs, the answer, I'm afraid, is not much. There is, first of all, a fairly brief chapter that summarizes some of the previous work in this area that will be familiar ground to readers of Morse's books and this Journal. That is followed by a longer chapter that presents the principal features of the NDEs of Sutherland's own respondents. It consists mainly of the staple ingredients of the NDE mix that, as we already

know, are much the same for children as for adults and that are now shown to hold for her sample of Australian NDErs as well.

To be sure, there are some special points of interest in this summary chapter that deserve mention. One is that several of Sutherland's cases are those of very young children below the age of four—and in one instance we have an NDE that apparently took place at birth itself—where the prototypical NDE pattern is reported. Another is the emphasis Sutherland gives to a number of cases in which child abuse and other severe forms of trauma are implicated, reflecting a possible predispositional factor to which other researchers (Irwin, 1993; Ring, 1992, Serdahely, 1992, 1993) have previously drawn attention. And, finally, Sutherland's data—in contrast to the position taken by Melvin Morse (Morse and Perry, 1990)—suggest that the feature of the life review, which Morse regards as very rare in childhood NDEs, may be just as common as in adult episodes.

When we come to the stories themselves, along with the very familiar aspects and aftereffects of NDEs, we are made aware of certain observations and findings that are worth lingering over. I will mention and illustrate here some of those that particularly intrigued or delighted me, but other readers will certainly find others that will be of special significance to them.

To begin with, it is interesting how frequently Sutherland remarks that on meeting a child NDEr, she was struck by his or her "luminous" quality or unusually serene appearance, to such an extent that she could sometimes be almost certain that the child had had an NDE before she was apprised of that fact. Of course, these are mere impressions on Sutherland's part, not data as such, but they are consistent with what other researchers, including me, have informally noted. Second, it is worth a more than passing notice how often childhood NDErs become aware afterward of how different they are from other children, which will sometimes lead them to adopt solitary modes of behavior and cause them to "clam up" for a long time about their NDEs. Third, it was amusing to me that several of these children who had encounters with a radiant being they took to be Jesus or who had found themselves in a heavenly realm during their NDE afterward took strong issue with conventional teachings about or images of divine personages and transcendental domains. A few examples follow:

[Emily's mother] can always tell when Emily has had a class of religious instruction at school because on those days she tends to thunder into the house, throwing her bag down and venting her

exasperation. She remembers one recent occasion when Emily came in saying, "Oh, that Father Chris, he doesn't understand anything! He's got it all wrong!" (p. 80)

Erin: I saw Jesus too. And whenever you see pictures of him you really get fed up because that's not what he looks like. (p. 93)

We were flicking through his little book—it was just a little religious book—and it had pictures of Jesus and things. And I said, "This is Jesus." And he said, "No, Mum, that's not what Jesus looks like. And I said, "Well, what does he look like?" And he said, "He doesn't look like that" and he argued with me. This four year old was telling me that this picture and the picture on the wall was totally wrong, that Jesus didn't look like that at all! (pp. 98-99)

Finally, what these children have to say about death is often as striking in its directness as it is pithy in form and precocious in wisdom—and the tone of surety with which these utterances are made cannot help but impress the reader. Consider these statements, for instance:

Death's all right. I know I could die any time so I live just each day. I'd say to people who are dying, "Don't be afraid. It's a beautiful place." (p. 105)

When you die it's like you're still alive. You shouldn't be scared because you're going to be in good hands. (p. 86)

To somebody who's dying I'd probably say that there's nothing to be scared about, and that it's really nice up in heaven. (p. 81)

Although reading all these cases serially can be somewhat repetitious, there are so many precious nuggets like these and so much deeply affecting testimony that the cumulative impact of these stories will be profoundly satisfying to most readers, and not just to those who are drawn to this book because of its healing and inspirational value.

The book ends with a short and somewhat perfunctory afterword, which attempts to sum up the lessons of these narratives, but by the time the reader has reached it, these concluding observations will be self-evident, anyway. No matter, because in writing this book the author has not only remained true to her original vision but has succeeded in her goal of sharing it with us. For this, we have every reason to praise her achievement and to be grateful for it.

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Letters to the Editor

Skepticism and Evidence of the Paranormal

To the Editor:

Reductionistic essays such as "Death of a Gedanken Creature" by Stephen Thaler (Spring 1995) and "A Neurobiological Model for Near-Death Experiences" by Juan Saavedra-Aguilar and Juan Gómez-Jeria (Summer 1989) are helpful in giving insights into the possible neurological correlates of the events of a near-death experience (NDE), and for such insights we can be grateful.

I confess, however, that my gratitude is somewhat limited by my irritation that articles of this kind fail to deal with the evidence for paranormal knowledge on the part of experiencers. A decade and a half ago, Michael Sabom (1981, 1982) presented findings showing that returned NDErs had seen details of their resuscitations, such as the movement of needles on a defibrillator, the color of an oxygen mask, and even a small blood clot under a surgeon's fingernail, which are most unlikely to have been gleaned from verbal cues and used to build a hypothesis of being out of the body.

Even more dramatic evidence for paranormal knowledge comes from testimony of veridical perceptions of things and events outside the immediate scene of the near-death crisis. The story of Kimberly Clark Sharp's discovery of an unlikely tennis shoe on an unlikely ledge outside a third-floor hospital room, following the instructions of an NDEr named Maria, has been told often enough (for example, Clark, 1984; Sharp, 1995) that anyone with even a cursory familiarity with the literature must have read it. I submit that every reductionistic writer who wants to be considered as making a responsible contribution to the field must try on Maria's tennis shoe.

There are several areas to be dealt with in trying on the shoe, whether one is seeking the truth, whatever it may be, or mostly concerned with proving that the shoe doesn't fit. One approach is to inquire into the sort of witness Sharp was. In her recent book (Sharp, 1995), she described having been helped by angels and harassed by demons, which for some inquirers is evidence enough that she is un-

stable and unreliable in everyday life. Well, maybe. But this sort of supernormal socializing is common among NDErs and mystics, who nonetheless function remarkably well in everyday life. And Sharp seems to have held down very responsible jobs.

Another possibility is to note that the event happened several years before it was written down, that Maria is no longer available (nor is the shoe), and in short, that Sharp's memory may have played her false. If, in response, Sharp were to produce a number of other witnesses who could testify that they heard the story and saw the shoe, it would be necessary to inquire into *their* reliability.

If an inquirer were to succeed in demolishing the tennis shoe, responsibility would require that one go on to other such cases. George Rodonaia claimed that during his three-day NDE, while his body was frozen, he learned that a crying newborn infant in the same hospital had a broken hip, a situation later verified by x-ray (Atwater, 1994). Can Rodonaia be shown to be unreliable? Is he willing and able to produce documentation? Does he have other witnesses?

Kenneth Ring (1984) recounted the story of "Belle," who, during her NDE in 1971, saw a picture of the then-unknown Raymond Moody, and was told that in due time she was to tell him her story. Does Ring's story ring true? Is Belle the sort of person likely to have been deluded? Does she have witnesses that her account to Ring is consonant with her earliest accounts to others? And so on.

If a reductionistic investigator were to succeed in showing that all such apparently paranormal features were unconvincing, still other hurdles would appear, such as the NDEs of the blind. Vicki Umipeg (1994), totally blind since shortly after birth, had two NDEs in which she saw an enormous number of images, almost none of which she could have constructed from the brief scenes she may have seen between birth and placement in the incubator that destroyed her optic nerves. The same questions regarding reliability must be asked of Vicki.

Still another challenge is presented by NDErs whose otherworldly vistas are wholly or partially out of keeping with their religious training, yet surprisingly consonant with the tenets of other religions. George Ritchie (1991), for example, described scenes of addicted earthbound spirits and of embattled spirits. These were incompatible with his indoctrination that all the dead slept until the Last Trump, but consistent with two of the Six Lokas of Hinduism and Buddhism, the realms of the Hungry Ghosts and the Fighters. How likely is it that Ritchie was exposed to these ideas and forgot them? Does the

human mind somehow create life-transforming visions on the basis of a casually-encountered alien worldview? And again, does Ritchie show signs of being an unstable or unreliable person?

Some of these questions are frivolous, but not all of them.

It is not hard to see that if reductionists took these things seriously, they would soon have to spend enormous amounts of time sleuthing into matters of little appeal to them, and sacrificing time spent on the research that to them really matters. Being naturally disinclined to such a course, their tendency is to ignore the contrary evidence. Critics of certain parapsychological findings who do articulate their rejections have often taken the stance that one can dismiss all assertions not established by repeatable experiments. They note that human testimony is fallible and that there will always be frauds; in short, they just don't believe it.

On the face of it, such a "skeptical" position seems hardheaded, while that of "believers" seems softheaded and governed by wish-fulfillment. Careful thought, however, shows that "I don't believe it" is translatable into "I believe that it isn't true." Without an investigation into the strength of the evidence, such a belief could in fact reflect utter credulity, based simply on the materialistic worldview that reductionists and their colleagues share and value.

There is a place for a true skepticism, which is a form of caution together with openness, a position in which there are always more questions to be asked, more possibilities to be considered. Among these questions are issues of physiological correlates of NDEs and the relevance of artificial intelligence, issues that are not necessarily reductionistic. It is to be hoped that future contributors in these areas will either be responsible enough to try on Maria's shoe and all other such shoes, or steer clear of "nothing-but"-ism.

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OBEs in the Blind and Encounters with the Light

To the Editor:

As one who suggested more than a decade ago the importance of investigating whether congenitally blind persons have out-of-body experiences (OBEs) with a visual component (Krishnan, 1983), I am glad to note that Kenneth Ring and Sharon Cooper are now collecting such claims and examining them (Ring, 1995; Ring and Cooper, 1997). I hope researchers in this area would give some thought to certain suggestions I subsequently made in hopes of finding a way to identify the underlying mechanism (Krishnan, 1988, 1993).

Ring claimed that accurate out-of-body perceptions by blind persons would mean that there is some conscious aspect of ourselves that can function independently of brain-based consciousness. I'm afraid there is no compelling reason to draw this conclusion. Might not out-of-body sight be an entirely brain-based form of perception? I have pointed out why this possibility cannot be dismissed easily (Krishnan, 1985, 1993).

Clearly, Ring and Cooper favor the view that there are two entirely different orders of reality, or "stuff," commonly referred to as matter and non-matter, or spirit. How reasonable is that? The question can be handled in different ways. The following is one of them. If it is held that the two orders of reality have nothing in common between them, then it is obvious that they cannot interact and we cannot

know anything about the order to which we do not belong; it does not exist for us. But if it is assumed that they can interact, then it would mean that they have something in common and, therefore, they cannot be treated as two distinct orders of reality. So, then, we have to conclude that there is only one order of reality, and terms like "material" and "nonmaterial" are our descriptions of some of its characteristics as understood through the different techniques employed to study its nature. I hope Ring and Cooper will consider whether monism understood in the above sense might not be the truth.

As for the "encounter with the light" (Ring, 1995, p. 129), the few studies of near-death experiences (NDEs) in India that have been published (Osis and Haraldsson, 1977; Pasricha, 1992, 1993) suggested that the experience is rather rare among Indians. This impression may be due to the smallness of the study samples. Anyway, the Indian experiencers do not seem to have been as much impressed by the light as American subjects were. For example, they do not speak about it as an entity radiating love, or with overwhelming emotions of reverence and adoration.

My collection of about 50 NDE accounts confirms this. I should, however, make it clear that not all my interviewees had the light experience in what would usually be called a life-threatening situation. One of them, who had it during meditation, found himself in an "expanse" of a "very light blue" color of light and enjoyed the experience, although he regarded it as hallucination. (His preceptor had told him to ignore all imagery, with or without form.)

There are also some other differences between the NDEs of Indians and Americans (Pasricha, 1993). Such variations in the experiencers' attitude to light or other elements could be due to differences in belief system, culture, deprivation of parental affection, psychological make-up, critical faculty, and such factors, and point to the need for more cross-cultural studies, as well as caution in considering the ontological significance of all elements in the NDE.

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Concerning Anesthetically-Induced Frightening NDEs

To the Editor:

Kenneth Ring's article on anesthetically-induced frightening near-death experiences (NDEs) in the Fall 1996 issue of the *Journal* raised some important questions. He noted properly that women are more adversely affected than men by nitrous oxide, and that the pattern of rotating devices, aversive noise, meaninglessness, and many void and vortex accounts may indeed be little more than drug effects and not true near-death experiences. In so noting, he asked that specific criteria be agreed upon for what constitutes the real thing.

Ring's request seems reasonable enough. On many occasions I too have encountered reports, especially from women, that match his profile exactly. And my conundrum has always been the same as his: are these really near-death experiences or are they something else, such as drug effects? There are cases in which I would heartily agree that the experience was nothing more than a drug effect, but there are others where I must stand my ground and argue otherwise. The story of Gloria Hipple is a case in point.

In my book *Beyond the Light* (1994), I discussed, in a chapter on what I term Unpleasant and/or Hell-Like Experiences, what happened to Hipple in August 1955. After being hospitalized for a miscarriage, she "died" of complications from severe blood loss. The primary content of her experience at death was a horrific vortex that spun at great speeds, with a white skull that attacked her. She fought to get out of the vortex but was forced to deal with the skull. By angrily smashing the skull to bits with her fists, her scenario quickly switched to one of being bathed in a welcoming, warm light. Most notable afterwards was her new-found ability to stand up for herself and fight back, a skill she thought herself incapable of.

No drugs were involved in Hipple's case, yet she remembered a similar encounter during the tonsillectomy she had as a child:

Ether was the sedation used to put me to sleep. I recall being terrified by the mask and the awful smell. I can still taste it as I think about it. As the sedation took hold, there was the vortex, the dizzy spinning sensation, as I was dragged downward into sleep. I screamed, not knowing what was happening to me.

As she compared the two episodes, she recognized that the vortex experienced during surgical anesthesia in childhood was the same as the one she had encountered as an adult, except for the smell and taste. This association underscores what one finds in the medical literature: that certain chemicals, especially ether, can cause vortex or spinning hallucinations. Missing from the medical literature, however, is mention of anything more significant than this imagery. No attention is given to possible *aftereffects*, beyond chemical *side effects*. Hipple suffered no side effects from the sedation she was given in 1943, nor any aftereffects from being pulled into the vortex, except for a dislike of ether. But her adult confrontation with the same type of vortex did have aftereffects, the kind associated with the near-death phenomenon.

Hipple's hellish near-death episode was lengthy, intense, fully involved, and resolved in "heavenly" light. A close examination of Hipple's life reveals the sudden development of unique sensitivities afterward. The pending death of an unborn daughter was revealed to her in an unusually detailed vision. When her husband died in a trucking accident at 4:15 one morning, she was up and prepared for it, and even heard a thump against her trailer home at the exact moment he was killed some distance away. Strange sensations about her sister awakened her from a deep sleep at the exact moment her

sister died. She claims: "I am more sensitive to people's thoughts and actions than before. I follow hunches that are sometimes quite accurate." Her hellish experience transformed her from being dependent on outer circumstances and material possessions to the realization of greater truths and the power of inner peace. Drug-induced hallucinations do not foster the kind of life shift that happened to this woman, and she is one of many such experiencers.

Similar spinning vortexes and clicking or taunting objects that invade one's personal space at dizzying speeds are not at all uncommon in cases of people who were frightened by what they met on the other side of death. Even full-blown hellish scenarios often center around the swirling of great winds or giant whirlpools. Yet, with the majority of these reports, I have been unable to uncover direct causal links between drugs and imagery, regardless of the gender. The few that do qualify as drug-induced experiences hardly constitute a pattern of universal import.

We all have ideas about near-death experiences, but we need to be careful about drawing hard conclusions from them. The phenomenon does not lend itself to scientific analysis. The more narrow our focus in detailing what constitutes a legitimate case, the more we risk distancing ourselves from the very dynamics that seem to power it.

Richard Maurice Bucke (1901) also searched for criteria with which to judge whether or not a given individual had really undergone an episode of what he termed "cosmic consciousness," and what I call a "brain shift." Although he validated out-of-body experiences as genuine, he labeled any scenario experienced while under the influence of drugs "bastard," even if descriptions matched those of "true" illumination. Bucke claimed that artificially induced episodes were vastly inferior and without the lasting, permanent aftereffects associated with enlightenment.

To offer an example of a "bastard" experience as defined by Bucke, here is a quote he gave from a patient under the influence of chloroform:

I seemed at first in a state of utter blankness; then came flashes of intense light, alternating with blankness and with a keen vision of what was going on in the room round me, but no sensation of touch. I thought that I was near death, when suddenly my soul became aware of God, who was manifestly dealing with me, handling me, so to speak, in an intense personal present reality. I felt Him streaming in like light upon me and heard Him saying in no language, but as hands touch hands and communicate sensations: 'I led thee; I guided thee; *you will never sin and weep and wail in*

madness any more; for now you have seen Me.' My whole consciousness seemed brought into one point of absolute conviction; the independence of my mind from my body was proved by the phenomenon of this acute sensibility to spiritual facts, this utter deadness of the senses. Life and death mere names. . . . I cannot describe the ecstasy I felt. (Bucke, 1901, p. 380)

Surely this *sounds* like a genuine experience; but because the individual was under the influence of a drug, Bucke discounted the case.

Bucke considered aftereffects the *only* final determinant of validity, yet he left in doubt what happened afterward to this patient under the influence of chloroform. Although his focus was the broader genre of consciousness transformations, his findings dovetail with near-death research, especially my own. And for that reason I am arguing that in any redefinition of what constitutes the various types of near-death experience, the pattern of psychological and physiological aftereffects must be recognized as an integral part of those criteria.

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Risks of Psychomanteum Experimentation

To the Editor:

I heartily agree with Bruce Greyson's caution about Raymond Moody's psychomanteum, expressed in his review in the Summer 1996 issue of the "Journal" of Moody and Paul Perry's *Reunions* (Greyson, 1996). Although all of Moody's accounts of meetings with the deceased cited in *Reunions* (Moody and Perry, 1993) were pleasant and healing,

I find the mirror's capacity for calling upon and being visited un-awares by spirits to be personally chilling. Like the "bad trips" of the 1960s psychedelic pioneers or the "flashbacks" many experienced afterwards, such encounters could possibly tear apart the unsuspecting explorer.

In one case I know, an ardent follower of Moody's book made her own device. She invited several of her metaphysically curious friends, including myself, to visit and perform our own experiments. Two of us declined, while she and two others ventured into this basement "Theater of the Mind." The woman and her two friends have since suffered severe emotional and family trauma, while those of us who shied away have not.

One of these people, although always eccentric and hypersensitive, went rapidly downhill in the months following her completion of the psychomanteum. She became emotionally unbalanced, nearly died from several ailments that flared up all at once, separated from her husband, and disconnected her phone. A second turned against her friends; her hate mail and phone calls led me to fear for my safety, as she lived nearby and we had car-pooled to several events together. She alternated between rage and depression, but saw no need for any medical help. Even sadder was the fate of the third participant, a near-death experiencer who seemed to be very stable and well adjusted prior to this time, despite the rape and murder of her teenage daughter several years ago. Her marriage (to a man who had an NDE in the recent past) broke up, and her daughter, the twin of the murdered daughter who was visited in the psychomanteum, ran off with a man who had previously been jailed for kidnaping her.

Are these cases merely coincidence, or cause and effect? I don't think this can be proven, but I personally am glad I resisted the temptation to dabble in such "black arts."

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Endorphins Cannot Explain All Aspects of NDEs

To the Editor:

Patricia Guevara and Julio Sotelo (1997) speculated in their Letter to the Editor that endorphins may induce near-death experiences (NDEs). There are some difficulties with their hypothesis. They cited the work of T. Lempert, M. Bauer, and D. Schmidt (1994), who claimed to have induced NDEs in the laboratory by hyperventilation and the Valsalva maneuver in 42 healthy humans. Their subjects experienced out-of-body episodes, tunnels, lights, and feelings of calm with a frequency similar to that found in actual NDEs. But there was a critical difference between these laboratory "NDEs" and real NDEs: about one-third of all real NDErs have a life review, while none of the 42 laboratory "NDErs" experienced a life review. Apparently, something other than endorphins induces the life review.

There are other problems with the endorphin hypothesis. Guevara and Sotelo noted that sedated, fully conscious dogs secrete more endorphins when exposed to low oxygen conditions (Sotelo, Perez, Guevara, and Fernandez, 1995). The lack of sedating drugs seems to enhance the endorphin release. It would be expected that unseated, fully conscious humans having cardiac arrest would therefore have more NDEs than sedated humans, but P. R. Martens (1994) found that cardiac arrest survivors who were not on sedating drugs had a very low incidence of NDEs.

Another problem with the endorphin hypothesis is that low oxygen does not always elevate endorphins. Chronic hypoxia does not elevate endorphins in animals (Freedman, Scardella, Edelman, and Santiago, 1988; Perhonen, Takala, Huttunen, and Leppäluoto, 1995) or in humans (Kraemer, Hamilton, Gordon, Trad, Reeves, Zahn, and Cymerman, 1991; Steinbrook, Weinberger, Carr, von Gal, Fisher, Leith, Fencl, and Rosenblatt, 1985).

Still another difficulty with the endorphin hypothesis is that beta-endorphins impair memory in animals (Dalmaz and Fin, 1989; Patterson, Schulteis, Alvarado, Martinez, Bennett, Rosenzweig, and Hruby, 1989). Beta-endorphins may also produce amnesia for traumatic events in humans (van der Kolk and Fisler, 1993). If beta-endorphins are high during NDEs and inhibit memory, then how can NDErs remember their experiences so vividly and clearly many years later? If the brain is dulled by endorphins, what is it that remembers the NDEs?

A final difficulty with the endorphin hypothesis is that endorphins dull sensation. Endorphins decrease activity in the visual areas of the brain (Iasnetsov, Pravdivtsev, and Kaliuzhnyi, 1985; McGregor and Herbert, 1992; von Knorring and Perris, 1981). Endorphins also decrease the sense of hearing and smell (Hartwig, 1991). NDErs report that vision, hearing, and smell sharply increase during the NDEs. Kenneth Ring and Sharon Cooper (1997) have found that people who are blind from birth and have NDEs often report sharply increased visual "seeing." It is also common for NDErs to report hearing beautiful music and very bright colors during NDEs.

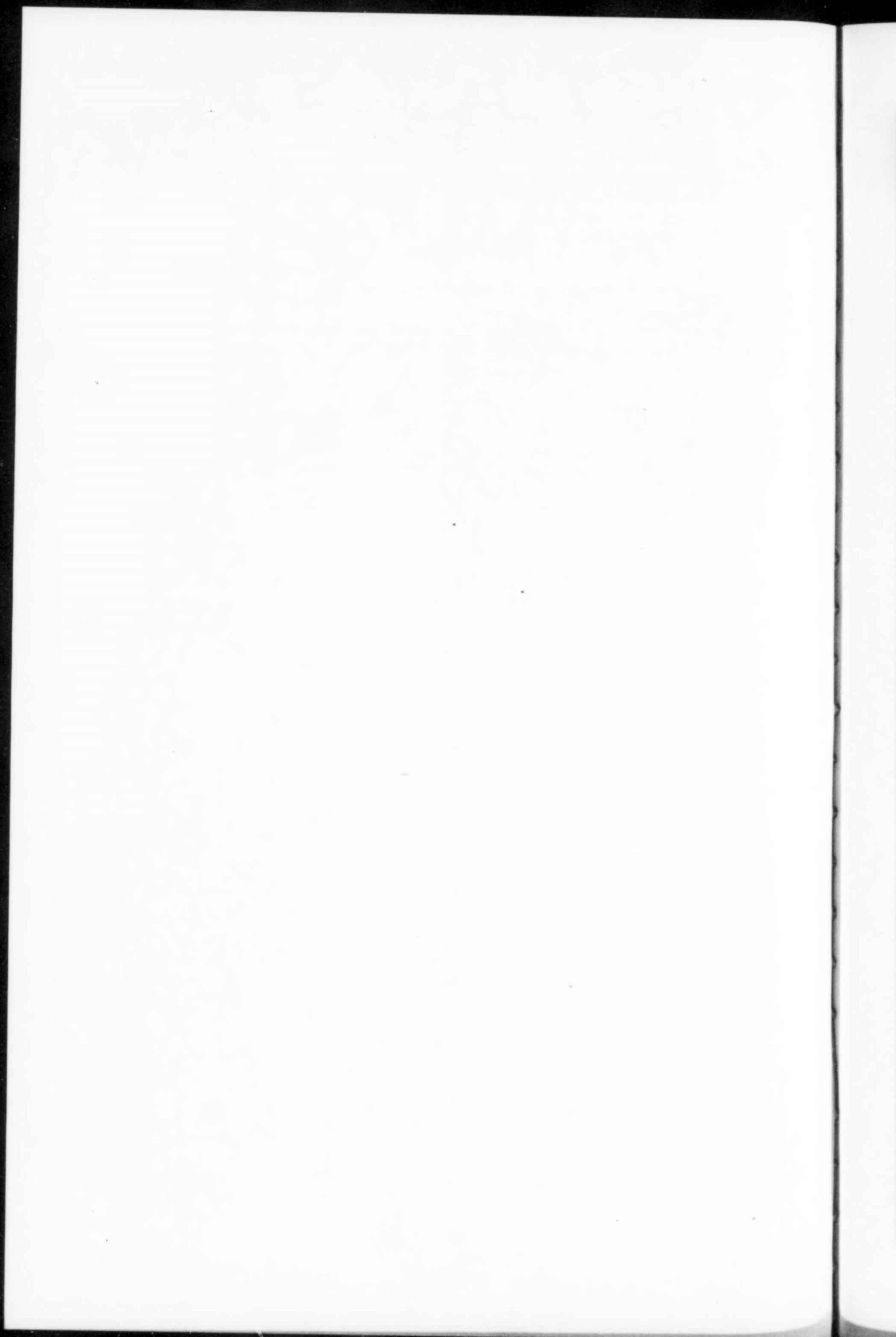
Thus I conclude that while endorphins may explain some parts of the NDE, they cannot fully explain all that goes on during an NDE.

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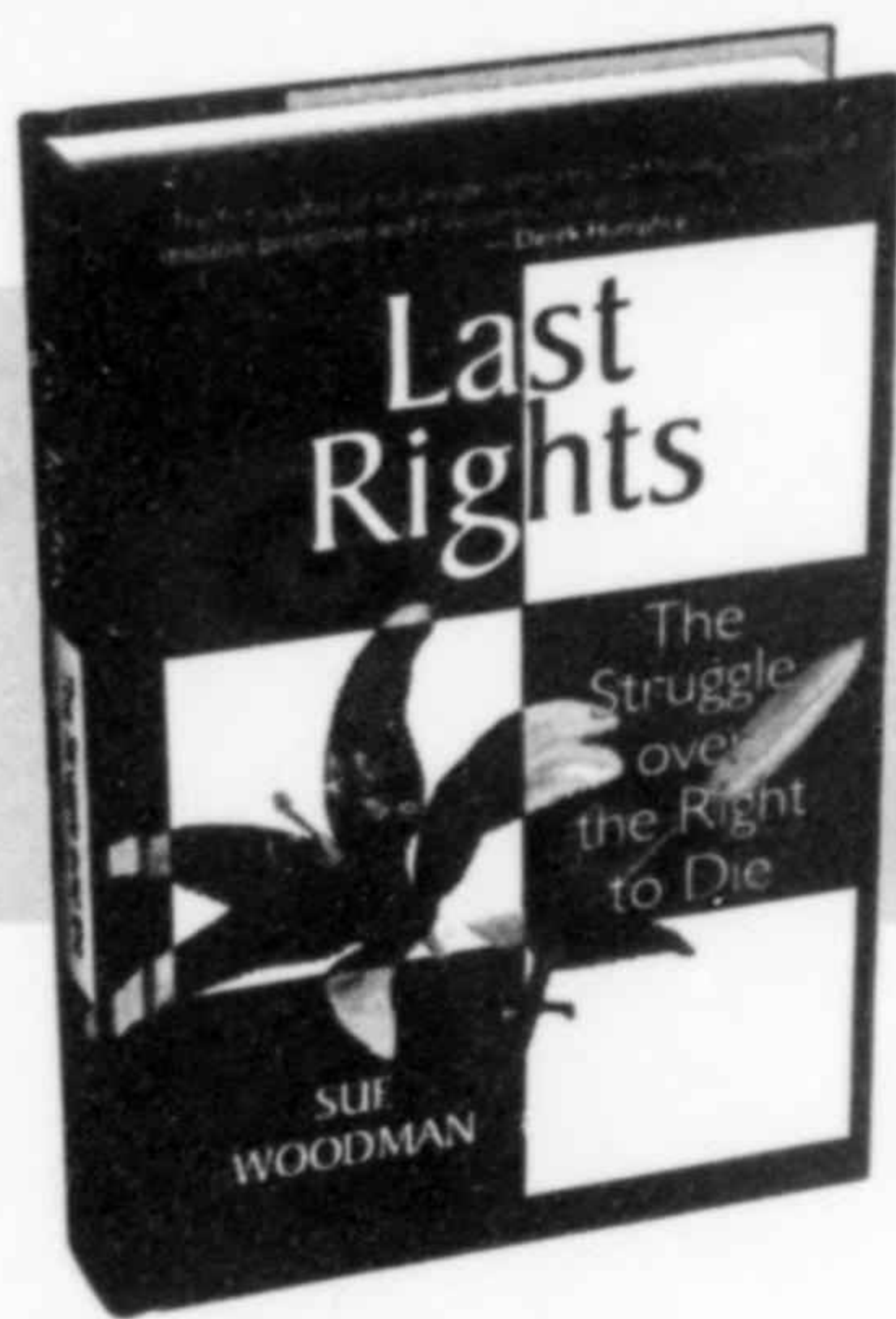
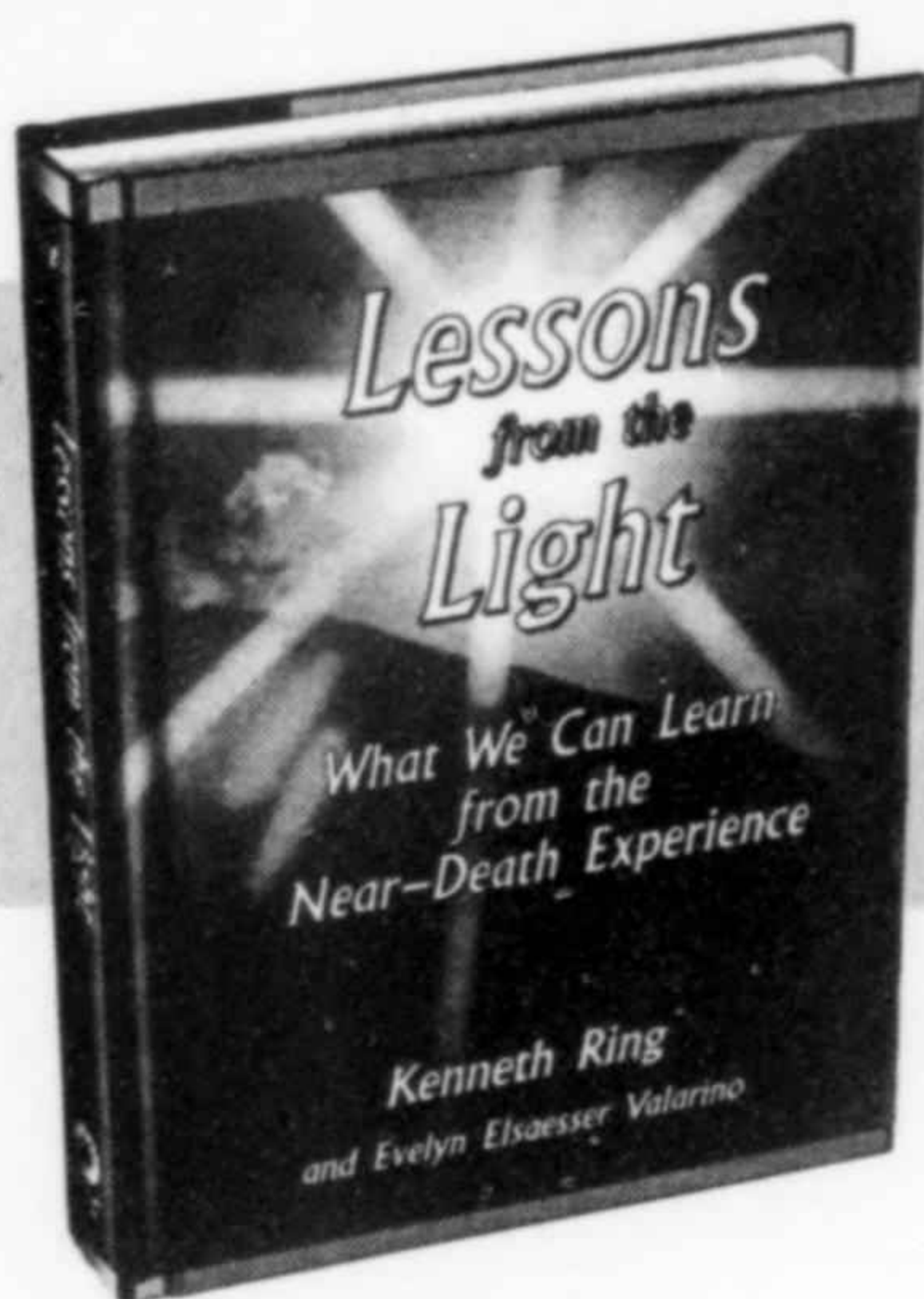
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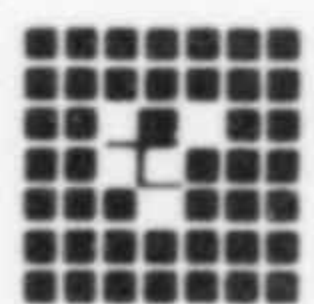
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