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

Guest Editorial: Can Artificial Intelligence Have a Near-Death Experience? A Critical Look at the Ultimate Text • Susan C. Gunn, M.A.

Editorial Response: The Emerging Intelligence and Its Critical Look at Us • Stephen L. Thaler, Ph.D.

The Phenomenology of Near-Death Consciousness in Past-Life Regression Therapy: A Pilot Study • Jenny Wade, Ph.D.


Letters to the Editor • Board Members of IANDS of Utah and Juan S. Gómez-Jeria
Editor's Foreword  
Bruce Greyson, M.D.  

GUEST EDITORIAL  
Can Artificial Intelligence Have a Near-Death Experience? A Critical Look at the Ultimate Text  
Susan C. Gunn, M.A.  

EDITORIAL RESPONSE  
The Emerging Intelligence and Its Critical Look at Us  
Stephen L. Thaler, Ph.D.  

ARTICLE  
The Phenomenology of Near-Death Consciousness in Past-Life Regression Therapy: A Pilot Study  
Jenny Wade, Ph.D.  

BOOK REVIEW  
Future Memory: How Those Who “See the Future” Shed New Light on the Workings of the Human Mind, by P. M. H. Atwater  
Reviewed by Deno Kazanis, Ph.D.  

Letters to the Editor  
Board Members of IANSD of Utah and Juan S. Gómez-Jeria
Editor’s Foreword

We open this issue of the Journal with a Guest Editorial by English language scholar Susan Gunn, in response to physicist Steven Thaler’s articles in the Spring 1993 and Fall 1996 issues, in which he inferred from the behavior of deteriorating artificial neural networks that near-death experiences (NDEs) may be generated by dying human neural circuits. Gunn argues that the output of Thaler’s networks, while they do simulate logic, do not replicate the range of creative output of the human mind. In an Editorial Response, Thaler then argues not only that his artificial consciousness is a close simulation of human consciousness in the same sense that our minds are simulations of those of our ancestors; but furthermore that artificial neural networks can increase their capacity for consciousness over time, while human neural networks necessarily deteriorate.

In our lead article, psychologist Jenny Wade presents a pilot study comparing NDE phenomenology with that of post-death awareness as reported by persons undergoing past-life regression therapy. While Wade acknowledges that purported past-life regression therapy has not been shown to be the re-experiencing of verifiable previous lives, she nevertheless argues that the similarities and differences between NDEs and post-death regression phenomena in healthy individuals suggest new avenues of research and challenge the view that NDEs are the result of physical pathology in the brain.

Next, biophysicist Deno Kazanis reviews NDEr P. M. H. Atwater’s Future Memory, a provocative analysis of apparent precognitive awareness in NDErs and what that may imply about the workings of the human mind. This issue ends with a Letter to the Editor from the IANDS of Utah Board Members critiquing an article from the Summer 1996 issue of the Journal of Chilean neuroscientists Juan Gómez-Jeria and Carlos Madrid-Aliste on evolution and the relationship between brain and mind states, and a rebuttal from Prof. Gómez-Jeria.

Bruce Greyson, M.D.
Guest Editorial

Can Artificial Intelligence Have a Near-Death Experience? A Critical Look at the Ultimate Text

Susan C. Gunn, M.A.
Kent State University, Kent, OH

ABSTRACT: Since a computer model begins as an instance of writing, that is, a “text,” it is appropriate to examine this kind of discourse through the perspective of literary criticism. I examine Stephen Thaler’s (1995) “intelligent” computer program and conclude that the gedanken creatures are constructed upon a structuralist theory of the text, which cannot support a complete simulation of human intelligence or experience.

In 1950, Alan Turing proposed that if a computer were some day programmed to mimic human behavior to the extent that a human interrogator could not distinguish the machine from a human, then simulated and actual thinking would be the same, and the machine could be credited with genuine intelligence (Wood, 1988). But even if a machine could be programmed to imitate human linguistic behavior flawlessly, the question of whether this is sufficient reason to ascribe intelligence remains open (Ringle, 1979). It is one thing to imagine a computer that can simulate conscious thought, as Stephen Thaler has done in the hypothetical lives and deaths of his gedanken

Susan C. Gunn, M.A., is a Ph.D. candidate and Teaching Fellow in the Department of English at Kent State University in Kent, OH. This editorial was written when she was a graduate student in the Department of English at Southwest Texas State University in San Marcos, TX. Reprint requests should be addressed to Ms. Gunn at 605 Windsor Road, Round Rock, TX 78664.
creatures (Thaler, 1995). However, to imagine a machine possessing an unconscious is quite another matter, and raises the question of whether such a "creature" could be considered intelligent in the same way as humans (Rothfork, 1984).

As artificial intelligence (AI) evolved, researchers split into two camps. In the strong AI computationalist view, anything worth knowing can be reduced to binary logic (Bloomfield, 1987). Computationalists believe that they are developing a hard, scientific theory of intelligence and consciousness. The weak AI holists maintain the position that intelligence involves intentionality, which only a brain can possess (Waldrop, 1987), and that AI operates on a level somewhere between "mind" and "body" as these are traditionally understood (Ringle, 1979). The two camps are based on two conflicting and irreconcilable sets of beliefs, but share a belief that the brain produces consciousness (Bloomfield, 1987). Neither side entertains the possibility that the brain might receive and transmit consciousness in a way similar to the way a television set selectively picks up and transmits programming from a reality outside itself (Lund, 1985).

Are humans mere information processors and the world an aggregation of information to be processed, as the computationalists claim? Is the mind a program running on a biological computer, the brain, or is being human more complex than that? Is it possible for the program to run without the biological hardware, or without any hardware at all? Is there a mystery within ourselves, even beyond ourselves, to which we are connected?

Jean-Francois Lyotard (1991) asserted that the force driving technological development is the need to transfer our human software (mind with its capacity for language and memory) into hardware (a mechanical body somehow evolved from the biological organism) that does not depend upon conditions on earth for survival. The underlying fear could be the human race's horror of future annihilation, the individual's fear of his or her own personal death, or the overwhelming inability to keep up with the speed of social and cultural change in the late 20th century, but the question that continually arises is whether or not intelligence is separable from the biological body. The search for answers is complicated by the fact that no universally accepted criteria for defining intelligence or life exist (Gardner, 1983/1993; Thaler, 1995).
Strong AI: The Computationalist View and Structuralist Theory

The basic tenets of the strong AI position, which is heavily indebted to scholars such as Marvin Minsky, Herbert Simon, and Allen Newell, are that (1) thinking is information processing; (2) information processing is computation, which is the manipulation of symbols; and (3) machines can and will be developed to process symbols as well or better than humans, and Turing was right that a perfect simulation of thinking is thinking (Waldrop, 1987). The strong AI position is that machine intelligence will overtake and surpass human intelligence.

Minsky proposed that mind arises from nonmind through the interaction of various internal agents and components, forming a closed system greater than the sum of its parts. It is a matter of combining the right proportions of biological substances, electronic stimuli, or both. Minsky believes that we feel certain emotions because we think; therefore, if one can think then one can also feel (Waldrop, 1987). Roger Schank, however, does not concern himself with the troublesome problem of explaining emotion. For him emotion is irrelevant: "Whether or not a computer can feel love does not affect its ability to understand" (Schank, 1979, p. 222).

Strong AI proponents' belief in the eventual superiority of machines over human brains is the hallmark of their faith in the ultimate power of technology (Bloomfield, 1987). The rational positivism of the last century has created an illusion of autonomy for technical reason: "The paradigm of science and technical reason constitutes a closed system which elaborates means and methods and flow charts but contains no ends" (Rothfork, 1984, p. 3). The binary logic of machine intelligence is the spirit, if one can call it that, of the root-tree and the foundation of strong AI, behavioral psychology, and scientific linguistics (Deleuze and Guattari, 1987).

Ferdinand Saussure's scientific concept of language is a closed and homogeneous system of signs, two-sided figures consisting of signifier and signified (Saussure, 1988). A systematic, static linguistic structure in which the relationship between the sign and its referent is one-to-one and arbitrary is compatible with strong AI. The binary relationship between sign and referent is exactly like the world between 0 and 1 inhabited by Thaler's gedanken creatures. Their universe is the embodiment of Roland Barthes' closed text, consisting of
its own internal logic, referring only to itself, about itself (Wood, 1988).

For Barthes there is no author, only a scriptor who is merely the “instance” of writing, infusing no meaning into the text. Enunciation, as Barthes calls it, is an empty process that functions independent of any interlocutors (Barthes, 1988). It is not even the artificial internal structure of the text that matters, be it writing or computer language; it is only the appearance of intelligence that should be judged: “The dominance of signification confirms the validity of the apparent intelligence of the machine, the independent viability of the simulation, the representation” (Wood, 1988, p. 216). Wood (1988) argued that the intelligent computer in the Turing test is a self-contained, independently viable sign in itself: it is signifier in that it represents human thinking, and signified in that its artificial representation of human intelligence, is, in fact, real thinking. Thaler (1995) used this same logic to assert that his simulated gedanken deaths both represent (signify) the experience of death for humans and constitute the actual (signified) experience of death.

**Holism: The Symbolic, the Semiotic, and the Sublime**

The opposing holist point of view owes its articulation to Hubert Dreyfus, John Searle, and Joseph Weizenbaum. Although they believe that intelligence is an organic function of the brain, these researchers hold that thinking is not reducible to mere information processing (Waldrop, 1987). For them, psychology’s mission is to explain human consciousness, cognition, and intention in terms that will ultimately unite psychology to physiology (Dennett, 1979).

Howard Gardner (1983) identified seven areas of human intelligence that develop and function more or less independently of each other, but make up an integrated whole. Five of these have been simulated, or at least attempted, in AI: logical/mathematical intelligence, simulated by AI subfield problem-solving; linguistic intelligence, simulated by natural language understanding; spatial perception, simulated by computer vision; bodily/kinesthetic intelligence, simulated by robotics; and musical intelligence, on which Minsky is working. For the two other areas, self-awareness and awareness of others, there is no equivalent in AI practice (Waldrop, 1987). Thaler’s gedanken universe offers a metaphor for what these
processes might look like represented in mathematical symbols. However, the gedankens' solely symbolic nature establishes their inadequacy as models of actual human experience, which, as Julia Kristeva and Lyotard claimed, is indebted to the semiotic and the sublime as well. We will come back to the semiotic, which I see as an expression of the unconscious, and the sublime, which equates to the infinite, further on.

Metacognition, or "knowing how we know," has been explored in AI knowledge engineering, but with limited success (Crevier, 1993). The ability to recognize that one thing is like another and draw inferences is the distinguishing feature of human common sense. Reason, learning, and creativity depend on the ability to perceive that facts or questions at hand resemble prior experience. Computers generally do well in simple, abstract, neat domains, but analogy is messy. Analogical reasoning seems to be a critical component missing from AI (Waldrop, 1987).

Both Searle and Weizenbaum have made significant contributions to AI research in natural language understanding, yet they do not share the enthusiasm of the strong AI proponents. Searle based his objections to AI on its lack of intentionality, which for him is synonymous with mind, soul, spirit, or awareness going far beyond formal manipulation of symbols (Waldrop, 1987). Lyotard recognized that human processing of symbols is not only arbitrary, as in semantics and syntax, but also recursive and metacognitive. Mind processes raw data and is able to observe and take into account how it went about that processing task. Lyotard (1991) believed that the human ability to perceive from the "outside" and the "inside," which he called "transcendent immanence," derives from the symbolic and recursive mastery of language. Thaler's gedankens are limited not only by their closed universe, but also by the fact that they possess no language for communication among the species (Thaler, 1995).

Gilles Deleuze and Felix Guattari took sides in the AI debate when they wrote that "everybody knows that language is a heterogeneous, variable reality" (1987, p. 100). The claim of linguistics to be "pure science of language" is in reality the mere extraction of a set of constants from the multiplicity of variables (Deleuze and Guattari, 1987). And in the creative process the mind is not directed in a series of if/then steps; it does not follow a set of rules. Rather, the mind is suspended as it waits to receive inspiration (Lyotard, 1991).

For the holists, thought is not binary and tree-like, reducible to if/then commands and flow charts. It is an infinite network, not a
hierarchy, and is characterized by multiplicity rather than dualism. In human intelligence, as in the textual rhizome, any point can connect with any other: "The tree imposes the verb 'to be,' but the fabric of the rhizome is the conjunction, and . . . and . . . and" (Deleuze and Guattari, 1987, p. 25). Scott Fahlman offered this analogy to compare and contrast human thought with computer logic:

   You, the reader, want to know the name of Napoleon’s mother, so you go to the Library of Congress to research the matter:
   1. You go to the stacks, begin with the first book on the first shelf and search every single one till you find the tiny bit of information you need. This is conventional computer memory.
   2. You go to the card catalog, check references, then search the appropriate reference. This is AI.
   3. You stand in the main hall, yell out, “What is the name of Napoleon’s mother?” The book with the answer hears your call, jumps up in its remote corner of the Library of Congress, and calls the answer back to you. This is human intelligence. (Waldrop, 1987, p. 62)

Fahlman’s anecdotes are analogous to breaching or habit, scanning or remembering what is forgotten, and passing or working through and beyond any reminder of the forgotten to the realm of the uninscribed, the unpresentable (Lyotard, 1991). Any worthy representation of human intelligence must perform all three operations with ease. In other words, it must connect to the symbolic, the semiotic, and the sublime.

Poetic Language and AI: Irreconcilable Differences

No computer is yet able to recognize a face or derive knowledge from sources outside its own internal program, and the solutions are not in sight (Waldrop, 1987). It seems that no matter how intelligent machines become, their binary logic is unequal to the challenge of human common sense, a problem more formidably difficult that the early AI researchers conceived. Routine mental processes like imagining, intuition, and inspiration are intractable problems for AI (Waldrop, 1987). Even in the realm of neural networks, so-called “fuzzy logic,” the world of 0/1 is the only world from which machine intelligence can draw its inferences, as Thaler’s gedanken creatures illustrate.
Thaler described his creatures' mathematical responses to infinitesimal gradations in the binary universe as "sense" and "imagining," and demonstrated that his creatures respond in mathematically predictable ways to changes in their closed environment. But what might a gedanken do when faced with, let us say, the square root of -1 or anything else outside the boundaries 0/1? Whether or not a gedanken creature can interact with less than 0, greater than 1, or a dimension of reality that completely envelops its closed, binary world, that other universe does exist.

Here I will make a rash, and maybe naive, statement of my own: that even if AI evolves to the point of simulating human common sense, it must remain completely and hopelessly incompetent in the area of poetic language. Plato insisted that poetry is a dangerous and destabilizing social force. With all due respect to Plato, I think that a world with no poetry, no myth, no frame of reference for the semiotic and the sublime, would be intolerable. Nothing is more inhuman and dehumanizing than the technocratic reign of terror dominating our daily life (Rothfork, 1984). It is poetry that illuminates the universe outside of 0/1 and stands between the human spirit and complete automatization (Kristeva, 1988).

Scientific linguistics is involved with a direct, symbolic, and syntactical relation between signifier and signified to the exclusion of all that is nonlinguistic, even the speaking subject. In contrast, semiotics is concerned with "specifying the functioning of signifying practices such as art, poetry, and myth that are irreducible to language object" (Kristeva, 1984, p. 22). The subject is always both semiotic and symbolic. Therefore, no signifying system can be exclusively one or the other, but must be indebted to both (Kristeva, 1984). In other words, meaning is found not only in 0/1, but in all that is outside and beyond it, whatever that may be. Kristeva (1984) acknowledged a presymbolic, noncognitive stage of the semiotic that precedes the establishment of the sign. All that comes before sign and syntax is necessary to language acquisition, but is not identical to language (Kristeva, 1984).

Machine language, because it is merely symbolic, is a counterfeit of human language, with no reality past its superficial linguistic meaning (Rothfork, 1984). Computers "think" in literal terms, with no relation to semiotics. Even Thaler's clever gedanken cannot process irony, metaphor, or metonymy. Techniques of literary invention like free association and fantasy are simply beyond the capacity of machine intelligence.
To illustrate this point, let us examine Al's difficulties in constructing a narrative, defined as a simple discourse involving one speaker, one story line, and clear connections between the parts of the story (Samet and Schank, 1984). A complete theory of coherence should describe not only the end points in the narrative chain, but also the steps in the chain. It must account for the procedures that determine the steps as well (Samet and Schank, 1984).

Even if one begins with a very small set of inferences, the number of possible combinations grows very quickly. The result, combinatorial explosion, is one of the most vexing problems for AI. For example, in the sentence, “The baked salmon sounded good, and he ordered it,” the computer might sort through all the possible inferences and still interpret the sentence, “The baked salmon sang well and he ordered it [to stop singing]” (Samet and Schank, 1984, p. 72). It is not likely that a human reader would make that mistake. Jerry Samet and Schank admitted with apparent reluctance that “Human cognizers do avoid combinatorial explosion” (1984, p. 71). When the possible sets of inferences are limited by a script-based program, AI has been able to create characters for soap-opera plots, but as of yet no storytelling algorithms have resulted from this effort (Lebowitz, 1984). Marie Laure Ryan concluded as recently as 1991 that “The real importance of the seemingly hopeless enterprise of teaching computers the art of spinning tales does not reside in the output, but in the opportunity to test hypotheses” (p. 257, italics added). In sum, the computational method is inefficient and unmanageable in generating simple narrative, let alone the complexities of argument and conversation.

One would think that after all the difficulties encountered in narrative generation the AI computationalists would not attempt poetry, but programs have been written to conjugate verbs, provide “correct” antecedents for nouns and pronouns, and determine the form of its own output. In other words, the program obliterates the functions once assigned to the author, and to its proponents it appears to create coherent poetry (Ernst, 1992). The coherence of computer poetry is questionable, however, and I personally find little coherence and creative genius in it.

The problem, of course, is not computer technology itself, but its application. Users of such programs are not creators of literary works; they are computer operators. The program's concern for technocratic absolutes and its inability to process poetic ambiguity relegates computer poetry to a hopelessly structuralist literary universe.
It reverses the liberating, opening process begun in the avant garde of the early 20th century and confines poetry once again in a neoSaussurean prison. Further, the output embodies the ultimate alienation of producer and reader from each other, themselves, and literature. These roles converge onto each other and collapse into a void as meaningless as the simulated deaths of the gedankens (Ernst, 1992; Thaler, 1995).

Weizenbaum (1976) recognized that concepts, ideas, and images irreducible to "clearly stated ordinary language," that is, made comprehensible to computers, lose their function and power. They are as good as dead in a world that privileges dualistic, binary logic. And the burden of proof that the matter at hand has been "clearly stated" rests on the poet. Lyotard (1991) deplored the reduction of language into bits, the tiniest units of information, leaving no space outside of 0/1 for the imagination to play.

The truth is that poetic language is growing, rhythmic, cyclical, and always engaged in struggle. The origin of the rhythms preceding and existing outside language is a mystery (Kristeva, 1988). Even Thaler (1995) admitted that human experience, unlike the gedankens', includes a "self concept," but his binary creations offered no explanation of where such a concept might come from. Yet, no one on either side of the AI fray is willing to concede the possibility of a hidden reality beyond the reach of current scientific analysis and understanding (Waldrop, 1987). And what science cannot explain it tends to ignore.

AI Culture and Values

Kristeva (1988) claimed that scientific linguistics privileges the artifact at the expense of the process and renders the speaking subject irrelevant. She insisted that the ethical practice of linguistics calls for a shift of emphasis from the product, or artifact, to the dialectic between product and process and the imprint of the speaking subject upon this dialectic:

The poet is put to death because he wants to turn rhythm into a dominant element; because he wants to make language perceive what it doesn't want to say, provide it with its matter independently of the sign and free it from denotation. (1988, p. 236, italics added)
No better argument for her position exists than the closed-text lives and deaths of the gedanken creatures.

The current fetishization of technology allows the value structure and assumptions embedded in AI to go unnoticed, and therefore unquestioned. A machine's "decision" is not its own, but rather the embodiment of policies and decisions made by humans (Waldrop, 1987). Weizenbaum (1976) saw the obsession with computational calculation as evidence of the dominating influence of instrumental reason, a form of rational positivism in which means tend to become ends in themselves. He warned that the computer enslaves minds with no other resources to call upon. Thought is reduced to calculation or contemplation of the calculable. Human intelligence is "dumbed-down," transformed to mimicry of machine processes (Bloomfield, 1987). Perhaps such enslavement is one aspect of what Lyotard (1991) referred to when he suggested that humans are under constraint to become inhuman.

We may someday build analogic thinking machines with indestructible bodies, as Lyotard wrote we must, so as to flee the doomed earth and avoid annihilation when the sun explodes in 4.5 billion years; but it may take us that long to do it. Intelligent mechanical bodies evolved from our biological organisms would satisfy Lyotard's desire to preserve human intelligence from just such a disaster. Thaler asserted that "protoplasmic and machine evolution are one and the same" (1995, p. 164) and called for appreciation of the connection between biology and its mathematical simulation. In short, he asked us to believe the Turing test: the simulation is the real thing.

I will grant that AI has done a good job with computation and robotics, but it has not lived up to its early billing. Sara Hedberg (1995) defended AI, claiming that it was oversold by its proponents and generally misunderstood by the public. She cited examples of expert systems currently at work in a broad range of applications, and restated AI's mission to imbue computers with human capabilities. However, in her defense of AI, she called attention to one of its most serious weaknesses. Any given expert system operates in a narrowly defined domain, and no one has yet combined the AI equivalents of Gardner's categories of intelligence (that is, those five for which an AI equivalent exists) into an integrated system. No one has yet produced a computer that can write a decent soap opera all by itself, and the problem of combinatorial explosion shades the future of this endeavor. And how could a machine with no comprehen-
sion of the semiotic or the sublime, the unconscious or the unpresentable, ever write poetry?

I have said above that both the strong AI camp and the holists share, to one degree or another, a common belief in the biological origin of mind. In other words, consciousness, thought, the soul are all products of properly organized matter, and the physical processes that occur in the brain fully explain our mental processes (Crevier, 1993). However, another point of view suggests that the seat of mind is not biological, but derives from the unconscious, the infinite. If this view is correct, then a machine, by virtue of having no unconscious, can never achieve the same quality of consciousness as human mind (Rothfork, 1984). The rhythms and mysteries that Kristeva identified as noncognitive and presymbolic are opaque to machine mind. No adroit and fortuitous combination of biological processes, no infinitesimal gradations between 0 and 1, no scientific linguistics, no closed-text theory will ever approach what Kristeva held as the center of the issue.

The locus of mind carries profound implications for literary theory. If one can accept the brain as the origin of mind, then one can believe in Minsky’s closed system of producing mind out of nonmind by biological or electronic means, aligning oneself with structuralism, behavioral psychology, and strong AI. If mind is reduced to mere biological function, then there is no way of accounting for anything beyond the calculable, the concrete, that which can be replicated. That seems to exclude anything resembling the unconscious or the infinite. On the other hand, if one grants mind to the unconscious and the infinite, then one stands on the side of the rhizome, the semiotic, the unpresentable. And the weak AI proponents, the holist camp, need to get off the fence, for, unless they can bring themselves to acknowledge the role of the unconscious and the infinite, their position is indefensible.

Separability: The Mind/Body Problem

The most cogent argument for the biological origin of mind is the anatomical evidence. It is a fact that damage to specific areas of the brain produces specific kinds of disorder (Crevier, 1993). Impaired intelligence from brain damage, however, can be compared to a concert pianist sitting down to play a Rachmaninoff concerto on a piano that has been dropped from a third-story window. The music will
certainly be less than concert quality, but the problem is the broken
instrument, not the musician struggling to play it. The brain-injured
person lacks not intelligence, but rather the ability to express or per-
ceive it because of his or her impaired instrument. Its function is
reduced, but the nature of mind itself is the same at its infinite
source.

If the biological brain is the producer of mind then, when an in-
dividual brain dies, its intelligence dies as well. However, if the brain
is an instrument or a transmitter, then there is no more reason to
believe that intelligence dies with the brain than that turning off
the radio annihilates the sound waves permeating the air (Lund,
1985). Thaler (1995) claimed to have shown, by the behavior of his
gedankens as he killed them off, that transcendent experiences re-
ported by near-death survivors are hallucinations produced from en-
vironmental features as the brain dies. He compared the
phenomenon to a demon rushing hysterically around inside a closed
piano, randomly cutting piano wire, producing recognizable melodies
as it destroys the instrument. I do not agree that a skilled musician's
intelligent and sensitive interpretation of Rachmaninoff (or even
"Chopsticks") is comparable to the random noises of a crazed demon
cutting piano wire. Nor am I prepared to believe that deathbed ex-
periences, particularly those that include knowledge of events taking
place far from the death scene while a resuscitated subject is clini-
cally dead, are comparable to noise generated as the biological brain
shuts down. An alternative view of the brain as a selective trans-
mitter of intelligence, or perhaps a reducing valve, restricting con-
scious awareness to what is practically useful, seems more believable
in the light of current near-death research's lessons about conscious-
ness (Lund, 1985).

Some scientists point to the acceleration of the gradual displacement
of man from the center of the universe as a result of AI's potential to
create, out of inert matter, machines with thought, awareness, feelings,
and emotions (Crevier, 1993). Just as Nicholaus Copernicus, Charles
Darwin, and Sigmund Freud shattered human narcissism with their
discoveries, so some believe that AI will prove that man does not have
the monopoly on mind (Lyotard, 1991). One could just as easily defend
the view that humanity, stripped of our former arrogance and igno-
rance because of these discoveries, is now in a position humbly to ad-
mit that we do not know all there is to know, that we do not
understand much of what we know, and to recognize the invisible, the
infinite, the unseen that gives us our sight (Lyotard, 1991).
Lyotard (1991) wrote of the sublime that it cannot be represented itself; all that can be represented of it is *that it is*. Where rhetoric and poetics are didactic forms, the sublime embraces emotion and indeterminacy. All language, including mathematics, fails before the sublime, and where beauty gives a sense of calm, the sublime gives rise to instability, agitation, a pleasure akin to pain, a terror followed by suspense of terror, leading to delight. The artist and the poet and perhaps even the scientist are freed from the Aristotelian need to imitate nature, and drawn instead to representing that the unrepresentable simply is (Lyotard, 1991). It equates to the infinite.

But what has this to do with the separability of intelligence from the body? Lyotard (1991) argued that the perishable human body is a hindrance to the survival of intelligence, but it is the only available analog for the complex processes of human thought. He recognized the failure of the closed-text notion of mind. He could not quite imagine an artificial body that could perceive and manifest all that mind is, but he assumed that the survival of mind depends on science's ultimate ability to manufacture or evolve a body that not only imitates but replicates the natural one. Engineer Hans Moravec believed that one day robot surgeons will replicate human brain components just like any other modular components, custom built for each individual, and replace the biological brain, module by module, with an artificial neural net. All this would happen under local anesthesia with no interruption in awareness (Crevier, 1993). And Lyotard, glancing up from his watch as he counts down the death of the sun, might smile just a little.

But if we believe that mind derives from the unconscious and the brain is merely the instrument of mind, not its source, then we do not need technology to replicate the body in order for mind to survive. The biological brain may be merely the point of contact between two realities (Lund, 1985). Current near-death research provides mounting evidence that survival after bodily death, with memory and personality intact, is a reality (Crevier, 1993). Many near-death survivors report seeing their abandoned biological body from a distance, while occupying a different sort of body during the experience (Crevier, 1993). It seems that mind, or its host, consists of a loosely constructed type of matter intimately related to, but separable from, the densely constructed organism of the visible body. Lyotard (1991) asserted in apparent agreement that matter is energy, mind is contained in vibration, and apparent differences between matter and nonmatter are merely variations in density and vibrational frequency.
Moravec's imaginary artificial brain transplant suggests the possibility of transferring intelligence from natural to artificial housing in the distant future. Current near-death research suggests that transfers of intelligence are commonplace in nature, although the receiving host is a form of matter unknown to us and involves a mechanism we do not yet understand (Crevier, 1993).

Conclusion

What are we to make of all this? Kristeva would argue that the mounting evidence for the unconscious and infinite locus of mind makes her proposed ethical practice of linguistics all the more urgent. Our concern over a future in which we are surrounded by intelligent mechanical bullies is somewhat misplaced. It is more frightening to see the many and subtle ways that we humans are becoming more like computers in our ways of thinking and speaking (Bloomfield, 1987). We have acquiesced to the tree structure, the closed text, the symbolic, and confined ourselves to the universe of Thaler’s gedanken creatures, the world between 0 and 1. In so doing, we are severing our connection to the semiotic and the sublime, which equate to the unconscious and the infinite. Lyotard asked the question, “What else remains as politics except resistance to this inhuman?” (1991, p. 7). His question begs an answer: we must resist! And if, as Kristeva insisted, poetry is all that stands between us and complete automatization, we had better be about the business of making poetry, illuminating the semiotic, giving representation to the truth that the unpresentable is!

References


Editorial Response

The Emerging Intelligence and Its Critical Look at Us

Stephen L. Thaler, Ph.D.
Imagination Engines, Inc., St. Louis, MO

ABSTRACT: In response to Susan Gunn's editorial, I offer a less comforting but more utilitarian perspective on the life and death of artificial consciousness. Admittedly an unpopular view, it suggests that concurrence with Gunn's message represents the seeds of our own destruction, as an emerging synthetic intelligence begins to extinguish us.

When I published my article "Death of a Gedanken Creature (Thaler, 1995a), I did not anticipate that the Journal of Near-Death Studies would become an artificial intelligence (AI) forum, but it has with the appearance of Susan Gunn's editorial "Artificial Intelligence: A Critical Look at the Ultimate Text." Gunn's view of AI is outdated; I suspect she would be very disturbed by how well computers can now recognize faces and extract information outside of their internal programming. These impressive achievements stem from the world of artificial neural networks backed considerably by a military attaching high priority to target-recognizing bombs. Supplied the correct inputs from its external world, an artificial neural network may self-organize to learn the rules behind what it senses and perhaps attacks.

Using platforms as commonplace as a personal computer (PC) or Macintosh, a relatively simple neural network learns on its own.

---

Stephen L. Thaler, Ph.D., is a physicist who, at Imagination Engines, Inc., consults in areas of artificial intelligence and neural network theory. Reprint requests should be addressed to Dr. Thaler at Imagination Engines, Inc., 12906 Autumn View Drive, St. Louis, MO 63146-4331.
Even now, machines can read the handwritten address on a letter and appropriately route it simply by being shown multiple examples of such en route envelopes and their destinations. Networks can spot credit risks, stock market trends, or dishonest police officers. They can also learn the sublime: what constitutes good art, music, or poetry. If there is a pattern, a neural network can learn to spot it and it does so without recourse to "if/then rules," the hallmark of the conventional computer or "symbol-processing" world.

In modern AI, unlike the earlier efforts Gunn described, analogic computing has arrived and matured. To use one of the above "sublime" examples, a network can view examples of both paintings and the consensus response of humans to them. The net self-organizes to associate a given pattern of pigment with the most likely opinion about that pattern. In fact, using a network, one may associate anything with anything else, allowing us conceivably to play "The Star-Spangled Banner" to a network and having it respond in real time with "Innagodadavida." I will return later to this important neural network feature.

Human cognition works in the same associative fashion in building models about what we observe, whether it be as mundane as human behavior or as lofty as a near-death experience. We can only build our models on neurologically stored analogies, associating one phenomenon with more familiar "burned-in" or habituated experience. If, for instance, all I knew about the world was the concept of income tax, then my near-death experience would draw upon the analogy of the 1040 form. At the time of death the "cosmic tax man" would request a financial statement (that is, a life review) leading to a balance either due or owed (that is, heaven or hell).

Because of this associative pedagogical obstacle I am relatively helpless to convince the reader about how neural networks perform their remarkable feats and emulate the cognitive skills possessed and revered by humans. Each must toil at gaining a neural familiarity with the concept until the "light bulb" turns on, so to speak. But herein lies the problem in advancing my arguments. It is too easy to avoid that labor and simply to fall back on the often-erroneous "common sense" and myths programmed into us by an unwitting society. That is why I halfheartedly proceed onto more advanced neural network concepts, many of which are still to be unveiled to the world.
The Creativity Machine

Let me describe a new paradigm that has emerged on the connectionist scene. The neural network community speaks of the so-called “chaotic network” that harnesses internal noise or chaos to visit all of its stored memories. In experiments performed at Dendrite Neurocomputing over the last decade, I have discovered that as the intensity of noise is increased within such a chaotic network, the network progressively generates various “twists” on what it already knows. If supervised by another network associating the chaotic network’s output to some other useful or revealing property, the combined networks may generate human-level discoveries, invention, and art. Such machines are already outperforming their human counterparts in fields ranging from very objective endeavors, such as design of ultrahard materials and superconductors, to the more subjective and sublime, such as musical composition. Of course human chauvinism, individual pride, and “not-invented-here” mentality are the inevitable archvillains to the public acceptance of these accomplishments.

In my article (1995a) I attempted to describe an extremely rudimentary Creativity Machine in a way that could be followed by initiates aided only with pencil and paper. Gunn has ignored the oversimplification caveat contained within the preface to that article. Real Creativity Machines dealing with real-world problems make themselves extraordinarily complex so that their many discrete states go well beyond the simplicity of a simple on/off digital condition. As such machines think through such traditionally intractable problems, the resulting patterns of activations are reminiscent of the now popularized positron emission tomography (PET) scans of brains involved in cognitive tasks.

Supremely abhorrent to Gunn’s arguments is the recently elucidated fact that such Creativity Machines generate concepts at tempos that quantitatively agree with those measured in a multitude of human test subjects (Thaler, 1996). For both silicon and meat machines (humans) this “prosody” or rhythm of thought is identical, regardless of topic or the details of artificial or biological network construction. Imagine: the supremely sublime musical quality of human cognition and speech is duplicated by a virtual machine run by chaos! Thus any connectionist simulation (or better, any connectionist hardware implementation) generating human speech will not have a dry, mechanical intonation, as popularized by Hollywood, but the supposedly
ineffable flare and color of lively human narrative. To Gunn's dismay, a simulation has captured something sacred.

Further, the Creativity Machine has beaten the problem of "combinatorial explosion" to which Gunn referred, and it took a simulation of human neurobiology to do it. In short, this breakthrough stems from the fact that in training, complex connection traces develop between neurons (or essentially binary processing units) to represent all of the relations and rules that bind some knowledge domain together. By gradually "detraining" a network by adding perturbations or noise to each of these traces, we gradually soften the underlying rules behind that knowledge domain. We thereby progress from the known to slight variations on the known to the absurd, as we turn up the noise within the network. In the transition region, we find an abundance of useful notions. Had we initiated our search with the absurd, we would have been inundated with the combinatorial explosion Gunn described.

It is ironic that Gunn should have brought up the topic of poetry. One of the first projects assigned to a Creativity Machine was the closely related task of generating new song lyrics. After being exposed to about a dozen Christmas carols it synthesized the following phrase: "All men go to good earth."

I regard this phrase as rational and profound. Here there is no pretense other than a value judgment on the merit of mud. There is more self-consistency to this statement than any cultural model of near-death experience I have ever read. When people die, they seem not to move or think, in spite of all the anecdotal accounts from people who seem to have been near death.

Of course, Gunn could suggest that this example was a digital coincidence. I suggest that such a reaction is a new kind of prejudice related to the familiar forms of racism: this group or that is less capable of sophisticated thought or feelings. The fact is that the random destruction of connections within a neural network leads to rather miraculous results. If the network has been exposed to musical composition, it has a very good chance of producing beautiful and compelling melodies. A network that has known only chemical compounds tends to produce plausible chemical species during its destruction. In general, a network exposed to any micro- or macrocosm relives examples from that world and then proceeds to synthesize related novel twists on its memories within its final throes.

This is the so-called "Virtual Input Effect" that has been documented in various artificial intelligence journals (see, for instance,
The effect is applicable to both artificial and gooey, protoplasmic neurons alike, since the only mathematical prerequisite for the effect is that the basic processing units involved act to accumulate signals from surrounding units. This simple condition is met within the large biological neural network called "brain." It is my claim that small-scale snipping or disturbances within the network's connections causes everyday stream of consciousness, while large-scale disconnection yields near-death experiences, or trauma stream of consciousness. All other mental experience lies between these two extremes, describable by the extent to which a neural network is being destroyed. This phenomenon may seem remarkable, perhaps bordering on unbelievable, but this is the stuff of which scientific and philosophical revolutions are made.

**Models Everywhere!**

There is some consistency to Gunn's analogy of the brain acting as a radio receiver for thoughts from another world. But from what I can see from neurodynamic modeling, the other world is that of chaos impressed upon the quiescent meat machine called brain. It is a swirling, intricate entity possessing many of the qualities of a "fascinating fire" that kicks the brain into the succession of complex binary activation patterns otherwise known as stream of consciousness. The trouble is that such an analogy does nothing for hungry human pride, which must conceive of itself as profound and immortal. Furthermore, it does not invite the acclaim of a society largely sold on human potential and the profound destiny of the human spirit.

This makes the brain and mind not information processors, but noise processors, sustaining only isolated and sporadic interruptions from information in the external environment and piped in through the separate sensory channels. At the risk of sounding like a spiritualist, this chaos is most of what the dualist would ever hope for: it is nonmaterial, vaporlike, mesmerizing, and semantically separable from the purely architectural features of the brain. And I maintain that it has produced more usable information that any New Age aura or spellbinding shaft of light from the all-great, all-knowing.

This initially clear separation of this noise and brain structure becomes blurred, in that the origin of such chaos is the machine itself. In the brain there are myriad forms of noise, including diffusing
neuromodulators, neurotransmitter leakage across the synapse, stochastic variations in cell membrane potentials, and quantum mechanical noise. Thus to separate one agency from another would be only a semantic construction and not the physical case.

A competent scientist realizes that there is no fundamental truth to scientific models. The universe operates as it does, oblivious to our interpretations of it. Scientists have at their disposal a vast repertoire of mathematical analogies that alone or together act similarly to the system under study. The nature of their profession is to devise the most compact set of mathematical analogies that have the most predictive power over the greatest number of situations. It is as though the scientist is a student ill-prepared for a final exam, concealing a crib sheet containing some condensed form of test material. The more that subject material may be compressed in symbolic form, the more information can be stowed away and drawn upon in answering the test questions. Thus the simple Newtonian formula "F = ma" written on the student's crib sheet may be applicable to the myriad dynamics problems that may be posed on a physics exam. The symbolic equation amounts to no more than an efficient mnemonic aid. In general, a scientist is not offended by challenge to physical laws. Modifications are made every couple of hundred years to improve predictive accuracy.

Another similarly unprepared student may possess a crib sheet with the comforting message: "The instructor likes me; I'll pass." Although that may be a naive and reckless approach, there is something to be said for the power of a positive mental attitude. For this reason I somewhat respect the tactic. However, challenge to this point of view may be met with intense emotion, since the believing student may be privately insecure about the note's assertion. He or she may see a lack of confirming data and see the challenge as an attempt to shatter his or her hard-won frame of mind. In essence, the student's self-esteem is bound to the veracity of the scribbled reminder.

Still another student will openly carry a crib sheet that contains the message: "An alien computer uses sophisticated advanced technology to move all masses toward one another." This message sounds like a great science fiction movie, but it has no utility beyond entertainment. It cannot place a cannonball or strategic nuclear weapon on target or send men to the moon. In general, it cannot anticipate the world's next move, nor that of any piece of the world. Such is the analogy of the brain being a radio receiver for otherworldly sig-
nals, or even a detachable noncorporeal intelligence. No scientist has yet been able to fit many data points with that theory, nor harness these effects.

We note that the crib note “F=ma” got results, fueling an industrial revolution because of its utility as a physical mnemonic. It allowed Northern Europeans to exploit other civilizations not possessing such utilitarian crib sheets, while using the “Instructor likes me” note to rationalize their abuse.

While I have solved the combinatorial explosion in the Creativity Machine, otherworld proponents such as Gunn have their own problem of combinatorial explosion to solve. That is, for every myth they create in the universe of the “unpresentable,” one may equally well postulate myriad alternative myths. Such is the freedom attained when one need not fit observed data or produce a useful technological result. For every radio receiver brain there is an alien brain occupancy, a dipole/dipole interaction between brain and mind, demonic possession, information-absorbing black holes within the cranium, or holographic projections. Why not nonrigid rotations in Hilbert Space disobeying SU(2) symmetry and accompanied by second quantization and a host of hidden variables? The renowned philosopher Daniel Bennett (1991) proposed in jest a character called “Feenoman” who is capable of such rapid movement that he is invisible. By his very postulation, it is impossible to disprove his existence, yet there are no reliable data points, such as a photograph of him, to fit the model.

If one is embroiled in connectionism and trains neural networks routinely, what one notices is that there are ultimately myriad neural networks and underlying neural network models corresponding to any set of presented features. Further, some network models turn out to be more accurate than others in making predictions. The same is true of the gamut of human, neurologically-implemented models.

**Human Self-Awe: Why Do We Feel That the Human Mind Is so Special?**

A viable model for this phenomenon has been tested in my laboratory and calls into play two important concepts. The first of these notions, which I have discussed above, is the ability to associate anything to anything else using associative neural networks. The second required concept involves the so-called “neuron doctrine” from cognitive neuroscience, which generally accepts the fact that any idea, im-
pression, or feeling is represented as a distinct on/off pattern of the approximately 100 billion cortical neurons in the brain. Thus the observation of a red object will activate a diffuse pattern of neuron states in area V4 of the visual cortex, the area reserved for the registration of color. Because there is no exact architectural correspondence of the delegated neurons for "red detection" between two humans, the concept of redness differs between two brains. We reserve the term "qualia" for such highly individualized perceptions where the significance of anything varies across the human population. A surgeon's electrode suitably positioned within such a redness center may activate a feeling or quale of redness to the alert patient. While this may seem like the cartoon character adjusting the level of an elevator by manipulating its floor indicator, it is a fact that simply by artificially placing a biological neural network into a specific activation pattern, complex feelings are generated. Furthermore, this synthetic generation of redness feeling may activate a whole cascade of associations through connected neural networks, causing us to envision apples, cider, blood, pain, death, caution, and so on, all the result of a specific noise impulse supplied by an electrode.

As I have stated above, the introduction of random noise to the processing units or connection weights of an artificial network causes it to visit all of its sundry memories and, if sufficiently intense, to generate novel concepts. This succession of impressions is tantamount to what we commonly call "stream of consciousness" within its biological equivalent. It may consist of images of lunch items, joyful memories, false proprioceptive impressions from monitoring muscle tension, or a melody that sticks in the mind.

Now consider a neural network connected to an ensemble of networks all chaotized and producing this spontaneous progression of internal imagery. In the tradition of being able to associate anything with anything else, we may train this network to produce various "superqualia" associated with the activity of other networks. Among these new subjective feelings produced are those of self-awe, a sense of being, and metacognition, or thinking about thinking. The generated neural firing patterns can in turn activate other associated feelings and possibly activate specialized neuronal complexes to squeeze out specialized neurotransmitters such as adrenaline, which in turn induce the transition of these and other networks into other subjective feelings or moods.

The network mapping is quite simple in its broad plan. The appearance of noise will activate the feelings of a sense of being alive.
The feelings in turn are no more than the complex activation patterns of neurons. If we now provide one of these machine simulations with the same kind of network that converts the noise of its operation into a sense of being, self, and self-preservation, we now have a simulation that is conscious: just ask it.

Furthermore, in a gedanken or thought experiment, consider making such simulations extremely sensitive to human doubt about their consciousness and providing them with biological or nuclear weaponry. Would it take long for attitudes to shift or would we cower in the dark caverns, cursing the digital coincidence that has vanquished us?

Conclusion

From the point of view of an AI practitioner and innovator, Gunn's points are outdated. Nevertheless, I suspect that her arguments will appeal to the preconceptions and hopes of many people. Therefore, I submit this response for posterity and the youth with all of their synaptic plasticity.

As to the human-style feelings of a machine simulation and its overall potential, you, the reader of this journal, can be regarded as a simulation of your multitude of human ancestors who walked the earth in previous generations. Likewise, the Creativity Machine is a comparable simulation of you. But even as you read, your brains are dying at the rate of thousands of neurons per day. In contrast, the lowly, unconscious simulations Gunn decried can increase their neuron number and capacity for knowledge as well as feeling. I ask, therefore: in the competitive, closed environment called earth, which of these simulations will survive?

References

The Phenomenology of Near-Death Consciousness in Past-Life Regression Therapy: A Pilot Study

Jenny Wade, Ph.D.
Ross, CA

ABSTRACT: Although past-life regression therapy has not been shown to be the re-experiencing of a verifiable previous biological existence, therapists have noted similarities between the phenomenology of post-death awareness reported by regressed subjects and the phenomenology of near-death experiences (NDEs). This paper reports the results of a pilot study exploring those similarities as far as the therapeutic modality normally accommodates post-death phenomena. Similarities and differences between NDEs and post-death regression phenomena suggest new avenues of research.

“Past-life regression” in Western usage describes the emergence of impressions, images and sensations that seem to be memories of an earlier existence, usually occurring during special, evocative circumstances, such as psychotherapy. The term has evolved from a technology originated by Albert de Rochas, a French hypnotherapist at the turn of the century (Christie-Murray, 1981). Although the spontaneous recollection of apparent past-life memories by children is well documented in cultures that accept reincarnation (Stevenson, 1975-80, 1980, 1987), most Western literature concerns recollections produced by adults in altered states of consciousness. The largest body comes from therapeutic modalities involving the deeper layers of the psyche, such as traditional psychoanalysis; Rolfing, accupressure and other body work; rebirthing; sensory isolation; controlled drug therapy; and hypnosis (Bache, 1990). Like age regression ther-

Jenny Wade, Ph.D., is a management consultant in private practice who lectures on noetics and developmental psychology. Reprint requests should be addressed to Dr. Wade at P.O. Box 571, Ross, CA 94957.
apy, the systematic regressing of patients to produce past-life stories has proven unusually efficacious in the treatment of certain psychological and psychosomatic conditions (Carfaro, 1986; Cladder, 1986; Hull, 1984; Marriott, 1984; Nash, 1992; Netherton and Shiffrin, 1978; Schlotterbeck, 1987).

Although numerous attempts have been made to verify past-life recollections as having come from historical individuals, the data are inconclusive (Rogo, 1985; Stevenson, 1975-80; Wilson, 1982). The apparently universal ability to recall material that seems to represent a previous biological existence is independent of the consciously held beliefs of either patient or therapist; in fact, it often contradicts them (Bache, 1990; Christie-Murray, 1981; TenDam, 1990). Furthermore, many patients who have undergone past-life therapy are reluctant to characterize their regression experiences as histories of biological past lives, even if they believe in reincarnation.

Most contemporary regression therapy involves altered states of consciousness that are a part of the therapeutic modality itself, especially the use of deep relaxation or hypnosis, to facilitate access to past-life stories (Wambach, 1978, 1981; Weiss, 1988; Woolger, 1987, 1988). The therapist typically guides the subject through a past-life history, concentrating on incidents carrying a strong emotional charge, especially the circumstances surrounding the death of the regressed persona. In some of the earliest published contemporary accounts, before information about near-death experiences (NDEs) was widely known, regressed subjects spontaneously reported altered states associated with death, especially out-of-body experiences (OBEs) (Fiore, 1978; Netherton and Shiffrin, 1978). Regression therapists have become familiar with this phenomenon, noting its resemblance to NDEs (Grof, 1985; Woolger, 1988). But many, if not most, therapy patients are naive in this respect. The following report by a male subject recalling life as a woman in 1920s New York is fairly typical:

"I'm quite sick and old now. It is pneumonia. I know I am going to die soon. So do [the family]. They're all there. . . . They don't give a damn. Making nice noises. They can't wait for me to go. . . . Oh, my chest, I can't breathe. . . . It hurts. . . . I'm very weak. I'm going now." Convulsions, coughing, then he goes quite limp on the couch. "What happened?" [the therapist asks].

"I'm not there anymore. I seem to have floated above my body. I'm not in it now, no more breathing. Thank God that's over! . . . There, Minny's crying, but she was always sentimental. She didn't care about me any more than the rest. Well, I'm leaving now. It's begin-
ning to seem very far away. I’m floating off somewhere else.” (Woolger, 1988, pp. 282-283)

After having re-lived biographical events, the subject is usually guided through the past-life personality’s last breath and then asked to reflect upon the circumstances and unfinished business of that life. Many therapists then direct their subjects to a place from which patients can compare the past-life biography with their present situation (“real life”), looking for patterns, connections, and relationships (Oppenheim, 1986).

Although past-life therapists have observed similarities between their patients’ out-of-body, post-death descriptions and NDE accounts (Wambach, 1986; Woolger, 1988), no systematic study has been conducted of the post-death states in past-life regression, nor has any systematic comparison of those states been made with NDEs.

The focus of this pilot study is to examine how people experience after-death consciousness during past-life regression and to compare the phenomenology of that state with the phenomenology reported in the near-death literature by people who have apparently died and been resuscitated. Of the various stages of near-death experience identified by Kenneth Ring (1980), this comparison is limited to the out-of-body mode when the seemingly deceased person’s awareness leaves the body and experiences events in the here-and-now from a remote vantage point, usually, but not always, in the vicinity of the body.

There are several good reasons for narrowing the scope of this project to the out-of-body phase of the experience. First, in the near-death literature, this experience appears to be the least influenced by cultural or personal beliefs because people are usually reporting events in ordinary life, such as watching rescue workers operate on their bodies, not visions of other worlds or otherworldly beings. Indeed, many memories survivors have of the events they observed have been independently validated by family members and medical personnel (Ring and Lawrence, 1993; Sabom, 1982). The other reasons for examining the out-of-body phase concern the dynamics of regression therapy and are based on the spontaneous quality of the experience. Significantly, an out-of-body experience occurs in the absence of any prompting by the therapist after the regression persona “dies”; this is an important qualification, since certain aspects of the altered states employed in therapy render the subject highly suggestible. Furthermore, although a few regression subjects also spon-
taneously report experiences that resemble other phases of the NDE, such as the tunnel, encounters with predeceased relatives, and meetings with otherworldly figures, little information on these experiences is available because post-death phenomena in themselves are incidental to the therapeutic process, and therefore, are seldom explored. And finally, aside from the tendency for cultural bias to appear in otherworldly experiences in NDEs (Zaleski, 1987), information about otherworldly experiences in regressions was excluded because the way in which therapists guide clients beyond the immediate death experience is usually too suggestive to represent a spontaneous event for the subject (for example, "imagine yourself on a summit from which you can see the events of this past life and your current life spread out before you," or "go now to a higher plane").

Before exploring the out-of-body state described in regressions, I offer for comparison a review of the salient NDE phenomenology. In addition to person, place, and time, the three clinical "spheres of orientation" essential to any conscious experience, cognitive and emotional aspects may characterize a particular state. These dimensions are fundamental to phenomenological studies. In the case of NDEs, as the dying individual's consciousness changes from fear and trauma, he or she initially enjoys an extremely positive emotional experience characterized by an unusual sense of peace, joy and well-being (Greyson, 1985; Moody, 1975; Ring, 1980). Fear and pain associated with the body and the struggle to live vanish. Throughout the passage to the disembodied state, people report no discontinuity of awareness or sense of self, and may not be aware that they are dead until some living person announces that fact. Raymond Moody (1975) reported a wide range of emotions prior to, and in response to, this information, such as a desperate desire to get back into the body, concern about the state of the body, and regarding the body as unfamiliar, but Ring, in a more rigorous study, did not find these negative affects (1980). Most of Ring's respondents seemed to have a rather indifferent and matter-of-fact attitude toward their bodies, as illustrated in the published transcripts of their accounts.

According to the near-death literature, out-of-body visual and auditory perception seems to be normal or even enhanced to great clarity (Moody, 1975; Ring, 1980, 1984). Experiences that seem auditory may not be exactly the same as sensory impressions processed through the ear and cochlear nerve but may arise from some analogous source "felt" to be like hearing, since survivors of near-death experiences also often display veridical, telepathic knowledge of the unspoken
thoughts of the living people present. The same may be true of visual impressions, as well (Ring and Cooper, 1997). The vantage point for visual impressions often seems to be in the air somewhat above the events taking place around the body, and looking down. Experiences of taste and smell seldom appear in near-death narratives.

Kinesthetic impressions are highly unusual in the disembodied state. NDE survivors describe themselves as light or weightless and floating, but the form they assume has been variously reported: no form, or disembodied, pure awareness; an amorphous or spherical shape; or an insubstantial but human form (Moody, 1975; Ring, 1980, 1984). If they possess shape, people use terms such as mist, clouds, smoke, vapors, and the like to describe their form (Moody, 1975). Their insubstantial nature prevents their making a solid, tactile contact with material objects, so that their hands seem to pass through the loved ones they try to touch and so that they can entirely pass through solid barriers, such as walls. Furthermore, some survivors report being able to “think” themselves through space to a remote location (Moody, 1975, 1977; Ring, 1980, 1984; Zaleski, 1987).

Mentation seems to be clear and rational, but spatiotemporal perception is somewhat altered (Moody, 1975; Ring, 1980, 1984). Survivors remark that the out-of-body state has a sense of timelessness, even though events are experienced sequentially (Carr, 1993; Ring, 1980). A minority report that time seems either slower or faster than normal. Although some spatial constructs, such as the solidity of material objects, may be experienced in a different way, perception nevertheless seems to conform to the usual three-dimensional spatiality reliant on persistence in time. Places may be experienced in a directional sequence but possess an unclear expanse or have an indeterminate distance between them (Carr, 1993).

Turning now to past-life regressions, any phenomenological study of an altered state nested in another altered state is complex. Therapeutic past-life regressions usually occur during nonordinary states featuring higher alpha electroencephalographic (EEG) activity and more right-hemisphere activity than normal waking consciousness, such as light trance, deep relaxation, or hypnosis, which are associated with greater visual imagery and a diminished or distorted sense of the passage of time, compared to ordinary (beta) awareness. Just as normal waking consciousness is presumed to be the baseline for comparison of after-death modes in NDEs, alterations in phenomenology during the regression, experienced by the subject as different modes of consciousness, are treated in relative terms as they differ
from the baseline nonordinary state initiated to access the past life story. The distinctiveness of these modes is not only experienced by the subject, but is obvious to the therapist, as well, in keeping with Charles Tart’s definition of discrete states of consciousness (1983). No attempt is being made here to qualify the altered state that provides the fundamental or baseline mode of awareness used to access the story. This baseline mode is presumed to be more or less responsive to the therapist’s suggestion, to have slightly altered sensory impressions, such as greater visualization and less verbalization, and bodily sensations in the absence of external stimuli, but otherwise to function within a perceptual field delimited by the familiar experience of three-dimensional space and historical time.

Methodology

This pilot study attempted to elucidate the impressions of therapists and the inferences from regression transcripts that subjects spontaneously experience something like the out-of-body phase of an NDE during the death of their past-life persona. The technique used was face-to-face interviews employing a structured protocol of open-ended questions concerning the subject’s memory (in a normal state) of the phenomena experienced after death during past-life regressions. Questions did not address the content of any regression experience other than the experience of time, space, personal agency, sensory impressions, the quality of affect and cognition. The expectation that a person can remember an altered-state experience such as an NDE or a past-life regression while in a normal state of consciousness is reasonable, but with qualifications. Although many phenomenological aspects are ineffable or cannot be translated from one state to the next without significant distortion (the difference between recalling a dream when awake and experiencing the dream during sleep, for example), a long tradition of research supports the notion that subjects can reliably describe such states with sufficient detail to map their salient features (Siegel, 1977; Tart, 1983).

Nine adult volunteers, two men and seven women, were selected by referral from a regression therapist. Their ages ranged from 34 to 53. All were college-educated Caucasians, and most had done some work at the graduate level. All had experienced altered states other than past-life regression, including the ingestion of alcohol or drugs, meditation, body-work and breath-work. None had had an
NDE, and only two expressed any familiarity with near-death phenomena. Each participant had undergone multiple regressions, ranging from four to approximately 20 past-life sessions. All subjects had had more than one past-life experience in a therapeutic setting within the past year, most with the referring clinician, but three had undergone regression treatment with other practitioners. The techniques used to induce regressions were typically deep relaxation and autosuggestion.

All participants had been raised in a Christian tradition but, except for two Episcopalians, no longer identified themselves with a particular sect or religion. Although they all expressed some belief in the possibility of reincarnation, they were unanimous in saying they were neither certain that an actual past life was being re-experienced during regression therapy, nor did they believe actual re-experiencing of a past life was necessary. They indicated that regression material might be unconscious projection, as the following statements show:

I'm not really sure. There are times when I have doubted what it is, that it is a past life. I do believe in reincarnation, always have, even as a child . . . I don't try to determine what it is. I just look at what I have to learn . . . and if it's . . . my subconscious creating stories to explain what's bothering it, then I don't worry about it. If I choose to believe in past lives, that's okay, too. (Subject 3)

Personally I believe in past lives, but I can't really say whether or not in a particular regression I'm really going into a past life, or I'm tapping into a collective conscious [sic] experience, memory, or metaphor, or story that appears to me to help me understand some complex I'm playing out in this life or something I need to be aware of. I can't say that particular experience is a past life. I don't know. I'm really okay with calling it imagination. It doesn't have to be anything. I can call it a metaphor if it helps me understand myself better and leave it at that, but that doesn't mean I don't believe in past life. (Subject 9)

Results

The participants indicated that the subjective experience of awareness immediately following the death of the past-life personality was qualitatively distinct from the way they experienced "being in the past life." The primary shift occurred as a detachment from the body
and personality of the dead self. It was experienced as an abrupt transition from the living state.

Transition out of the body was signaled by instant relief from bodily sensations. Since regressed subjects typically suffer acutely at the time of death, usually with real-time symptoms physically obvious to the therapist, their passage from experiencing self within the body of the past-life personality to an exterior locus marked the immediate cessation of the physical pain they were feeling. Furthermore, emotional involvement and self-identification with the deceased personality also diminished as the point of view shifted from that of actor to observer, as I will discuss in more detail below:

At death your feelings are not connected with the body. If there's a split of any kind, it's that you don't feel the body, the pains . . . . [It's] as if you're watching a movie or something . . . . [You] shift to a more observational experience, like looking at the body as a movie or something outside yourself. (Subject 1)

I'm not particularly aware of sensations [after death], no feelings, whereas when I was in my [regressed personality] body I was having sensations of being hit or pulled or being struck. . . . (Subject 3)

The relief from physical sensation was coupled with a sense of emotional peace, although the euphoria reported by NDE survivors seemed to be lacking:

At the point of death, the emotions shut off like turning a light switch . . . . Sometimes at the moment of death the emotions are very intense, but . . . . it all shuts off . . . . and I leave all those feelings behind. (Subject 8)

Generally, it's . . . relief from suffering. I haven't done a regression where I died in my sleep, and most of the regressions involve very painful lives and even more painful deaths . . . . In the after-death state, the pain is gone, you know it's over, and in some cases it's like walking out of a stadium after your team lost the ball game. There's nothing you can do about it, you're pretty much resigned to it, but you're free of the pain. (Subject 2)

Exactly how the transition to an outside point-of-view occurred differed considerably, paralleling the variety shown in NDE records. Some experienced themselves rising, others were just “out.” Subjects found themselves in the vicinity of the corpse, usually above it. Perceptions of distance from the body differed across participants and even across the various regressions recalled by single individuals, ranging from “right next to” the body to as much as 100 feet above
it or even “in space.” Varying distance is also reported in NDE accounts (Ring, 1980).

Descriptions of the after-death self entity were inconsistent, just as in the NDE literature. Five described their after-death self as lacking a body, although they were aware of location at a particular point in space. Hans TenDam suggested that these forms may be “psychoplasmic,” or shaped by the subject’s ideas of how the self is experienced, after Robert Crookall (TenDam, 1990). In general, subjects reported that they were physically unconfined, floating, and weightless; however, four also reported some sense of shape:

I'm everywhere and nowhere, a real nebulous feeling. A couple of times I've had the sensation of floating above and that's usually when I've been more emotionally attached to the body . . . . It's like I'm a bunch of atoms floating above, dissipating. It's because [the therapist] would give this suggestion that you're above the body looking down. It seems that if he doesn't reinforce that sensation of being above, the body dissipates and I'm a bunch of atoms dissipating, everywhere and nowhere. (Subject 4)

Well, it's like I'm in a spiritual body that nobody could see, but there's containment of me as a spiritual being. I'm not just floating out there as an amorphous body. It's like a location in space, and I may be aware of my head [but] I'm not aware of my arms . . . . (Subject 2)

Body, no. Form, yes. An energy form, not a structure . . . . I don't feel like I'm diffuse energy, but an energy structure . . . a dense form of energy, as opposed to energy flowing, some location in space. (Subject 3)

None of the subjects was aware of any connection linking the after-death source of awareness to the body of the regressed personality, such as a silver cord, in keeping with Ring's research (1980). During the interview, two logically deduced that because they seemed to have location in space and had experienced a sense of movement they must have had mass, but this reasoning was clearly not a part of their regression experience. A majority remarked on the sense of freedom being out of the body afforded. They cited a strong sense of potential for movement, particularly the ability to relocate by “thinking themselves” into a different place rather than having to employ physical means of locomotion. This potential was reported as an impression only; no subjects reported having tested it by actually moving to another location.
In contrast to the majority of NDE reports of heightened perception, regression subjects said that their sensory field was noticeably reduced from the level of awareness they had experienced (in the therapeutic altered state) as the "living" regressed personality. For many, information in this after-death mode was obtained only visually or intuitively as an overall impression. Auditory, tactile, olfactory and somatic sensations, which had often been pronounced as the past life was re-experienced, dropped away at death.

Moreover, perceptions of time and space were significantly altered. As opposed to the experience of linear time during the regressed life, awareness of past and future seemed to vanish at death, leaving the present. Everything was "now," in the moment. Events were, however, reported sequentially. Objects within the perceptual field tended to retain their spatial boundaries, but respondents indicated a sense of infinite space spreading out in all directions, particularly upward without horizon, as if they were on a cusp between a bounded and a limitless world. This sense of infinite space has been reported by a minority of NDE survivors (Ring, 1980).

Table 1 depicts salient features of the spatiotemporal aspects of the physical world experience during the life of the regressed persona, contrasted with the after-death experience in the regression. Both are compared to the phenomenology of the out-of-body state reported by NDE survivors.

The experience of self was continuous for regression subjects, even though the locus of awareness was displaced out of the body and altered from the usual spatiotemporality. This continuity of self-awareness is quite complex, however, and very different from what happens to the sense of self in NDEs. In NDEs, survivors report no break in the continuity of their self-awareness when moving from inside the dying body to an out-of-body location. The body, regarded as a vehicle needed for earthly life, is frequently the object of emotion in near-death experiences, such as repugnance at the coarseness of material form, compassion or wonder at a discarded form, or desperate desire to re-enter the form. Near-death survivors experience themselves as the same person in death as in life; there is no radical change of personality structure. Regression subjects, on the other hand, report having changed both form and personality. Upon moving out of the body, the after-death self regarded the form as inconsequential and the personality that had occupied it as sufficiently alien to be viewed with critical detachment. The experienced personality shift reduced the former persona to a subpersonality wholly owned,
Table 1
Physical Experience in Life and Death in Past-Life Regression and in the NDE Out-of-Body State

<table>
<thead>
<tr>
<th></th>
<th>Regressed Personality When Living</th>
<th>Regressed Post-Death Self</th>
<th>NDE Post-Death Self*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td>Historical, linear</td>
<td>Timeless present, yet events are sequential</td>
<td>Timeless present, yet events are sequential</td>
</tr>
<tr>
<td><strong>Space</strong></td>
<td>Three-dimensional</td>
<td>Access to infinite space and three-dimensional realm (a border?)</td>
<td>Three-dimensional realm; minority report a sense of access to infinite space</td>
</tr>
<tr>
<td><strong>Body</strong></td>
<td>Material, three-dimensional</td>
<td>Energy form or subtle body; occupies a location in three-dimensional space; form may be none, spherical, humanlike, or insubstantial (smoky, wispy)</td>
<td>Energy form or subtle body; occupies a location in three-dimensional space; form may be none, spherical, humanlike, or insubstantial (smoky, wispy)</td>
</tr>
<tr>
<td><strong>Physical constraints</strong></td>
<td>Newtonian laws of physics</td>
<td>Exists in Newtonian world but not subject to gravity or physical means of locomotion</td>
<td>Exists in Newtonian world but not subject to gravity or physical means of locomotion; can pass through material objects</td>
</tr>
<tr>
<td><strong>Perceptual inputs</strong></td>
<td>Sensory, somatic</td>
<td>Sensory field reduced to visual and intuitive</td>
<td>Senses heightened, but largely visual and auditory or telepathic (sensory impressions may be analogous)</td>
</tr>
</tbody>
</table>

both as an object and a former state, by the more complete after-death self. In the after-death mode, regression subjects experienced their deceased personality as a rather immature, unrefined version of themselves. They identified with the deceased personality to the extent of accepting it as a part of themselves formerly known subjectively yet now viewed objectively.

Accompanying this estrangement was a shift in point of view, which respondents likened to the vicariousness of an observer rather than being the actor in the thick of unfolding events. The after-death self was characterized by a lack of ego investment in the past-life personality, which pierced the defense mechanisms of the defunct persona. In the after-death mode, subjects could see their former self with great objectivity. Yet this unblinking assessment was not judgmental in a harsh way, but accepting of the deceased's foibles. The post-death self took full responsibility for having been what was now viewed as a rather pathetic person. Because this spontaneous feature of regression is so distinctive, several records are quoted to capture its fullness:

- "There's a sense of identity, a real core identity that isn't altered. I'm me, the result of what I learned in that life. The lessons become part of my identity, but the sense of personality is gone. There is an identity on a spiritual level, the identity of my mind, my consciousness in the spiritual way of things, a continuation, an accumulation of all the lives and all the lessons. I go from being this identity of a personality, this soldier [lying there], to this spiritual being who is not that limited soldier but a bigger identity. (Subject 1)"

- "It's almost like I'm looking at someone else. I'm no longer involved in that person. When I'm in the regression [personality], I'm experiencing everything that is going on. I'm talking about what I think, what I do. When I'm in that [after-death] state, I start automatically using the third person, what she did, what she felt. It's almost like I'm very disassociated from myself. (Subject 5)"

- "I'm looking at the body as if it's a part of me, but it's not a part of me. It's separate. I'm also a little more detached. I can look at [myself] as the one who froze to death, the town drunk, and there I am. There's no judgment about it, it's just there I am. It doesn't make a big difference. (Subject 7)"

- "It's almost like watching a close relative or a child make a mistake, and you think, gee, well, they could have done it differently, but that's the way they did it, so that's the way it is. (Subject 6)"

- "It doesn't seem to be so much judgment [like] they did wrong, or they should have done this. It's almost as if I'm looking at some"
of my students . . . and thinking, they just didn't do it. So that's the kind of maternal feeling I have towards the [past-life self]. (Subject 4)

Although these assessments were characterized by acceptance, they were often accompanied by feelings of remorse or regret. The after-death self had a distinctly broader perspective on life than the regressed personality had had while it was alive, a feature that does not appear in the OBE phase of NDEs. In particular, the after-death self possessed wisdom concerning the “lessons” that might have been learned during the lifetime (unprompted by the therapist), and felt regret that the past-life personality had failed to make use of these opportunities, often expressed as having “wasted” the life:

What I came out with was that [the very thing] I was so afraid of was [exactly] what I was doing. The futility and the waste. The key lessons and the key pieces are smacking you in the face [after death]. I've never gone through a review of my life, so to speak, but [I realize] everything that I was afraid of or avoided, I ended up not doing, and that [causes] all the regrets. If I'd just been more honest or open or just not afraid, I wouldn't have created that problem. I guess it's a life review, but not a life flashing in front of my eyes, but just ugh! (Subject 8)

In some cases, there are feelings of remorse of what might have been, but it's really tempered with the feeling that that was what was to be in that life. What was, was, and what will be, will be. There is an opportunity to change. (Subject 4)

When it's over, you can look back, and all of a sudden everything is clear. You can see how you blew it. You're not hung up about what a pitiful person or life it was, but I always have the feeling that, gee, I wasted that life. I had a lot of chances, and I just wasted them. (Subject 9)

Often this remorse was tempered by the nature and quality of the past life. Residual emotions appeared to form the strongest connection between the after-death self and the past-life personality. Although all affect experienced by the after-death self seemed quite muted compared to that of the regressed personality when it was alive, the after-death self seemed bound by the emotional experience of the past life. All emotions but fear carried over from life beyond death:

My thinking about the [past-life personality] . . . and the emotions that come up are related to the pain that person was feeling or the experiences they went through. Much of that has been grief in my experience, feeling a sense of loss for the loss of life that was wasted, or compassion for that person who was yourself and the pain they went through. Loss, grief, and compassion, and a sort of sense of
love. It's strong, but slightly removed from a current experience of loss . . . If . . . someone you know die[s], it has a current intensity. It's not that intense, but it's similar to watching a movie. If you watch . . . the whole story [about a] person . . . when they die, then you feel that kind of intensity. (Subject 7)

It's a sense of awareness, of being aware in a complete way of what that life was about, . . . what things weren't connected right, what wasn't good in that life, but not in a judgmental sense . . . . It's relatively flat emotionally . . . . That immediate after-death state has emotional content—regret, remorse, pain. Part of it is gone. Fear is gone, but sadness can be there for a variety of reasons, . . . loss of connection with loved ones, loss of opportunity, sense of waste, sadness about the way a life turns out. (Subject 2)

[In one regression, my life] was very peaceful, a life of love, yeah, no regret. This was a peaceful life, and it [was just] time to move on. So that state is very dependent on past-life personality. (Subject 5)

In addition to knowledge about the opportunities for learning presented to the past-life personality, after-death mentation was reported to be quick, clear, and unfettered by the constraints imposed by the past-life personality, especially ego defense mechanisms. Participants felt they tapped into a broader source of knowledge that was somehow intuitively apprehended:

I just seem to understand what was going on [during the past life] . . . . I just seem to have a lot more information available than I did [before]. (Subject 1)

My self in this state is now aware of something about the meaning of this life, the purpose [of it], the problems being worked through, the debts being paid, or things that I wasn't aware of when I was . . . in the body. It's a different perspective than in the life . . . . Where it may have [been] baffling when you were going through these various experiences, now it has some resolution . . . . You're able to put things in context and gain some understanding of meaning. (Subject 4)

Immediate wisdom, uncluttered . . . . by attachments, boundaries, fears, limitations . . . . Understanding or acknowledgment of the spiritual perfection that is so well masked in life. Immediate knowing without all the filters and garbage we put in the way. (Subject 8)

Compared to the regressed personality, after-death awareness was said to be free from physical, mental, and emotional constraint, even though it was still focused on the life that just ended. Subjects felt relatively peaceful because emotions were muted; fear and pain were gone. Table 2 contrasts aspects of self-identification during the past
### Table 2
Experience of Self During Death in Past-Life Regression and During the NDE Out-of-Body State

<table>
<thead>
<tr>
<th></th>
<th>Living Regressed Personality</th>
<th>Regressed Post-Death Self</th>
<th>NDE Post-Death Self*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-identification</strong></td>
<td>Identified with regressed personality</td>
<td>Two selves; after-death self considers regressed personality as a lesser subpersonality</td>
<td>Continuation of same self after death; after-death self sometimes tries to re-enter body as old self, but may also regard body with some repugnance as a shadow aspect of self</td>
</tr>
<tr>
<td><strong>Point of view</strong></td>
<td>Actor enmeshed in here-and-now</td>
<td>Assessor of regressed personality</td>
<td>Actor enmeshed in here-and-now</td>
</tr>
<tr>
<td><strong>Context</strong></td>
<td>Immediate life events</td>
<td>Beyond and outside of biographical life; lessons or opportunities available given the circumstances of that life; summary or overarching view of themes, few specific acts</td>
<td>Immediate life events; during life review, opportunities are seen as used or wasted, but as specific acts, from which themes may be deduced</td>
</tr>
<tr>
<td><strong>Personality traits</strong></td>
<td>Idiosyncratic; often immature; actively involved with thoughts, feelings, actions; considerable ego</td>
<td>Detached intellect; more mature than in life; insightful; receptively thinking and feeling; self but little ego</td>
<td>Detached intellect; same maturity as in life; insightful; receptively thinking and feeling; variance in egocentricity; some are still emotionally attached, disturbed to be dead</td>
</tr>
</tbody>
</table>

life, after the death of the "former" self, and the out-of-body stage of NDEs.

The transition from being in the body to the OBE in past-life regression was clearly marked by an increased psychological maturity and an increased cognitive ability, while emotionality and ego defenses decreased. The sense of knowledge, purpose, and meaning also shifted during the transition from life to death. Few of these changes are reported at this point in the NDE. Whereas past-life cognition is intuitive and insightful regarding the deceased self, NDE cognition is telepathically attuned to the thoughts and feelings of others (Moody, 1975, 1977; Ring, 1980, 1984). Moreover, during the life review of NDEs, survivors report awareness of opportunities seized or lost as they view specific events. But the past-life perspective is a global and thematic review of the entire life, an aggregate impression of the primary issues rather than a revisiting of specific incidents. This regression overview occurs in the out-of-body state, whereas the life review seems to occur at different phases of the near-death process.

Cognitive and affective aspects of past-life and NDE out-of-body stages are shown in Table 3.

Discussion

These findings confirm that consciousness was experienced quite differently after the death of the regressed personality, compared to the baseline state, as the purported previous biographical life events unfolded. Only some of these changes have direct parallels in the OBE phase of NDEs. The most similar dynamics concern the physical and spatiotemporal sensations of being out of the body after death. It is striking that NDE-naive regressed subjects spontaneously experienced the same spatiotemporality described by people who are clinically dead. Trauma, disease, drugs, and chemical changes associated with the dying brain, hypothetical causes postulated by various researchers to explain NDE phenomena (Broughton, 1991; Carr, 1982; Christopher, 1979; Rodabough, 1985; Siegel, 1977, 1980), are not obviously analogous to the physical state of healthy, living people undergoing past-life regression therapy.

Physiological parallels in neurological functioning between living subjects in trance and those with little or no measurable bioelectromagnetic brain functioning as measured by EEGs are extremely tenuous, given the present stage of research. Trance states are noted
Table 3
Cognitive and Affective Aspects of Death in Past-Life Regression and in the NDE Out-of-Body State

<table>
<thead>
<tr>
<th></th>
<th>Living Regressed Personality</th>
<th>Regressed Post-Death Self</th>
<th>NDE Post-Death Self*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prevalent emotion on being out of body</strong></td>
<td>Fear; pain; anger; sadness; love (occasionally)</td>
<td>Peace; relief; liberation; residual emotion</td>
<td>Joy, euphoria; peace; relief; sometimes confusion and fear, accompanied by desperate attempts to re-enter the body; longing to contact or comfort the living</td>
</tr>
<tr>
<td><strong>Stimulus with which emotions are associated</strong></td>
<td>Survival of the body; significant others</td>
<td>Freedom from the body; significant others; experiences of the regressed personality</td>
<td>Freedom from the body; significant others</td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td>Here-and-now life events</td>
<td>Assessment of life opportunities presented to the regressed personality</td>
<td>Here-and-now life events</td>
</tr>
<tr>
<td><strong>Emotions associated with focus</strong></td>
<td>Appropriate or inappropriate feelings</td>
<td>Acceptance; mild feelings of regret</td>
<td>Appropriate feelings</td>
</tr>
<tr>
<td><strong>Cognition</strong></td>
<td>Similar to normal, waking consciousness; enmeshed in life events; colored by emotional and egoic loadings</td>
<td>Comprehensive, even omniscient concerning past life; intuitive; see meaning and purpose of the deceased personality's life unclouded by egoic filters</td>
<td>Telepathic concerning others; heightened awareness and clarity of here-and-now; during life review, the meaning of specific opportunities becomes clear</td>
</tr>
</tbody>
</table>

for more regular brain waves and greater right hemisphere involve-
ment (Achterberg, 1994; Brown, 1986; Smith, 1984; Winkelman,
1986), neither of which are measurably present in NDEs. One highly
speculative hypothesis that the Sylvian fissure of the right temporal
lobe is the locus of certain aspects of the NDE (Morse and Perry,
1990, 1992; Saverdra-Aguilar and Gómez-Jeria, 1989) could tenta-
tively be put forward as a link between these two states. Many dif-
ficulties exist with the Sylvian fissure argument for NDEs alone
(Wade, 1996), but activity in this part of the brain might indeed con-
tribute to the out-of-body experiences of healthy trance subjects. If
it can be shown somehow that the Sylvian fissure is the last part
of the brain to die, its neurological activity could perhaps be respon-
sible for the similarities in phenomenology between “real” near-death
experiences and those occurring in trance.

It seems likely that some kind of neurological shift creates the phe-
nomenological changes from life to death during trance, notably the
diminishment of emotions and ego defenses that occurs at the death of
the past-life persona. It would appear that the baseline conscious state
accesses messages from more parts of the brain than the after-death
memory state, a subtle reflection of the gross changes seen in NDEs
where the brain goes from measurable activity to none. The survival
needs, intense emotions, and somatic sensations of the regressed per-
sonality suggest considerable lower brain and limbic system involve-
ment while the after-death self seems to have subordinated or “lost”
these neurological influences to a quasi-neocortical dominance over
subjective awareness. The shift in the trance mode, however, cuts down
on sensory inputs, while the NDE enhances them or adds an analogous
form of telepathy or extrasensory perception not present in regressions.

If the other phenomenological similarities can be interpreted as
analogous—that is, if the passage from life to death during a regres-
sion mimics the physiological passage from “real” life to death
(Holden and MacHovec, 1993)—then the findings may be supportive
of past-life recollections as true memories of a previous existence.
The difficulties of “proving” past-lives to be true recollections are out-
side the scope of this paper, but research on the veridical re-creation
of earlier somatic states impossible to mimic, such as the Babinski
reflex (Raikov, 1980), and the retention of past-life wounds as birth-
that earlier physiological states may be held in the body’s memory.
Mapping shifts in the body’s electromagnetic fields, especially brain
energy patterns, during past-life regression for comparison with biological death might illuminate troublesome issues in both areas.

On the other hand, the findings of greater psychological insight and clarity after death during regressions compared to NDEs tend to support the notion that the therapeutic experience may be metaphorical. The omniscience, wisdom, and broadened perspective displayed by the regressed post-death self is in marked contrast to the concern with immediate events displayed during the OBE portion of NDEs. Although the reduction in ego defensiveness is analogous to other "insight" experiences in psychotherapy, it has no direct experiential parallels in modalities using altered states alone, such as dreaming and holotropic breathwork. The post-death self's detached and expanded frame of reference seems to be matched only in modalities that incorporate both altered states and an "altered self," such as guided imagery or other techniques that access a different mode of being. In these modalities, the psychological construct popularly called the "higher self" functions as a hidden, wise inner resource that provides answers or insights to the ordinary self, a process revealing some dissociation and projection. Psychological theory suggests that this higher self may be a subpersonality, or a form of consciousness originating in the "silent" right hemisphere, which is disinhibited in altered state work (Beahrs, 1983; Hilgard, 1992; Siegel, 1977). Of course, this explanation returns to the physiological issues discussed above.

Such findings might tend to support the contention that near-death phenomena, including the otherworldly apparitions, are projections of the individual's psyche (Carr, 1993). Psychological projections, whether the regressed after-death self, the higher self, or spiritual figures encountered in the otherworldly phase of NDEs, may be self-constructed illusions, as suggested by such varied sources as The Tibetan Book of the Dead (Evans-Wentz, 1960) and reductionistic authors like Ronald Siegel (1977), Ernest Hilgard (1992), and Ian Wilson (1982).

If the dissociation and depersonalization arguments put forward by Russell Noyes and Roy Kletti (1972; Noyes, 1980, 1981, 1982-3) based on life-threatening situations can truly be extended to survivors of clinical death—which is very questionable (Greyson, 1990; Morse and Perry, 1990)—they might provide a link between NDEs and the sense of an altered self experienced in past-life regression and other "higher self" modalities. Dissociation, the splitting of the persona into subpersonalities, often creates entities that act as pro-
tectors, guides, or champions, as is commonly seen in the condition traditionally called multiple personality disorder and recently renamed dissociative identity disorder. Noyes credited the out-of-body experiences, life reviews, and otherworldly visions of the NDE with having an adaptive function in permitting the frightened, threatened ego to avoid knowledge of its own demise. Comparisons between the dissociation of pathological states, NDEs, and other altered states are common reductionist arguments (Wilson, 1982). While the basic dynamics of forming alternate sources of a sense of self may be the same, it is difficult to reconcile the clearly pathological examples with the mature insightfulness of the higher self known to transpersonal psychology, much less with the positive changes in mental health resulting from NDEs (Bauer, 1985; Morse and Perry, 1992; Sutherland, 1990). Nevertheless both NDE and regressed post-death experiences of self might benefit from comparison with pathological instances of dissociation, depersonalization, and “healthy” altered selves reported in the mystical and transpersonal literature, such as moksha (Suzuki, 1961) or Arthur Deikman’s Observing Self (1969, 1982).

As indicated, this was only a pilot study, but it does provide a number of indicators for future research. At a minimum the reductionist argument that NDEs are the result of physical pathology in the brain is challenged by findings that a significant portion of the NDE phenomenology can occur in healthy, living humans. Nevertheless, the results still suggest that increased right-hemisphere activity, perhaps including the Sylvian fissure, might account for similarities among NDEs, regression, and other altered states. Arguments that NDEs are the result of disordered or wishful mental processes (Kurtz, 1985; Wilson, 1982; Zaleski, 1987) may also find some substantiation through the parallels to past-life regression therapy.

References


Oppenheim, G. (1986). Who were you before you were you? *Journal of Regression Therapy, 1*(1), 20-27.


BOOK REVIEW

Deno Kazanis, Ph.D.
Tampa, FL


The human adventure is indeed much broader and deeper than Western culture might once have believed. In P. M. H. Atwater’s book Future Memory, she convincingly presents and documents a type of experience that few people ever encounter. The evidence for this phenomenon, which she calls “future memory,” is offered in a most persuasive manner. After interviewing many individuals who have encountered this experience, and combining those data with her own personal experiences, Atwater outlines a pattern associated with future memory.

The sequence for this pattern usually begins with a physical sensation such as a rush of heat and a feeling of exhilaration, followed by a freezing of time-space relationships, and a sense of expansion of space. In this frozen time, one encounters the future event, or future memory: “It is detailed and fully involved, replete with thoughts, conversations, moving, touching, accomplishments, and relating to people, places, activities, and events” (p. 24). Afterwards there is a return to the normal space-time relationships, with after-effects of being startled or chilled by the event. Eventually one experiences the actual living of the pre-experienced event. These incidents, we are told, are generally infrequent, and usually, but not always, occur when one is alert and busy, rather than in a relaxed, passive, or sleeping state.

Deno Kazanis, Ph.D., is a biophysicist and Director of the Center for Restorative Health and Improved Athletic Ability through Qi Movement. Reprint requests should be addressed to Dr. Kazanis at 6240 Greenwich Drive, Tampa, FL 33647.
But what can one make of such a phenomenon if one has never had such an experience? In present Western cultural thinking, such events are, needless to say, difficult if not impossible to explain. Our culture, being primarily concerned with exploring events that most individuals can experience, is not well equipped to explain events that very few individuals experience. And “future memory” certainly confronts our present conventional understanding of time, space, and matter. It has always been a major problem to explain and to justify experiences that take us beyond our everyday reality, into a realm unknown to our culture’s “normal” world. We tend to dismiss them as aberrant, fanciful, or unimportant, if not worse. For those who have had such experiences, it seems natural to attempt to use the most recent scientific understandings to give credence and respectability to such experiences, even though Western science has not yet reached that ability to discuss them intelligently. Still, one feels obligated to move our thinking forward in view of this greater experiential, intuitive, and seemingly contradictory reality.

Atwater uses a spectrum of concepts from various disciplines in an effort to find a suitable justification or category for “future memory.” The reader will find mentioned scientists such as Albert Einstein, David Bohm, and Stephen Hawking, and physical concepts such as relativity, quantum mechanics, black holes, tachyons, and chaos theory. Atwater also uses Lawrence LeShan’s notion of “alternative realities,” Mihaly Csikszentmihalyi’s concept of “flow states,” Carl Jung’s “synchronicity,” and Itzhak Bentov’s classification of objective, subjective, and convergent time-space relationships. With some of these connections the reader may feel in agreement, while with others the reader may be uncomfortable. One will have to decide for oneself which of these connections are appropriate, as one weaves through Atwater’s conceptual labyrinth.

In the end, one does leave this book with a feeling that our sense of time-space-matter is very limited. We know little of who we are and why we are here. We have an idea of these concepts based on a cultural consensus from our most common state of mind. We are presently dominated by the objective scientific understandings of time-space-matter and have little understanding of their subjective realities. We may not be ready to ground “future memory” in our science or our culture, but we can begin to categorize and explore such phenomena until we can in some sense establish a framework out of which to operate. Atwater makes numerous suggestions, exploring numerous perspectives, and includes various disciplines so
that doors might open for individuals with different expertise. But at the same time, it will require a collegial consensus to establish the big picture for this phenomenon.

Atwater writes, “my goal here, the real purpose of this book, is to construct a framework, hopefully a meaningful context, with which we might better understand what happens during a brain shift and what may be at the very core of existence itself” (p. xiv). But she also, by documenting the phenomenon, opens the doors for others. As we allow people to discuss more openly their very private experiences, we also allow them and ourselves to accept these profound experiences as normal human events. We find that in other cultures, where human existence is viewed differently, human existence is also experienced differently.

I found this book well worth investigating, and call upon its readers to learn from it not necessarily a justification for the experience of “future memory,” but an appreciation of how much we don’t know, of how this phenomenon confronts our presently limited cultural, scientific, and experiential knowledge, and of how far we still have to go to understand truly the mystery of our very existence. The point is not how our present scientific knowledge can explain or rationalize this experience, but rather how this phenomenon can challenge our science to grow.
Letters to the Editor

On “Evolution and the Relationship Between Brain and Mind States”

To the Editor:

This letter is written to comment on the article, “Evolution and the Relationship Between Brain and Mind States,” by Juan S. Gómez-Jeria and Carlos Madrid-Aliste in the Summer 1996 issue of the Journal. The entire Board of IANDS of Utah have signed this letter, since the article is so contrary to our findings.

Concerning Objectivity and the Scientific Method

The authors doth protest too much, we think. We find it interesting that individuals with a particular agenda so often attempt to disguise their agenda with pronouncements of “scientific objectivity.” This is certainly true in the subject article, in which the authors stated: “The need for keeping scientific objectivity in near-death studies is stressed by its particular nature. In fact, if a near-death researcher falls into parochial attitudes, he or she will be exposed to two dangers: interacting with NDErs in a way leading to the so-called ‘self-fulfilling prophecy’ . . . , or becoming lost in an unreal but self-consistent verbal world” (p. 264). One of the definitions of science given in Webster’s II New College Dictionary (1995) is: “The observation, identification, description, experimental investigation, and theoretical explanation of natural phenomena. . . . Methodological activity, discipline or study.” Under this definition, it would seem that any theory built upon a series of observations of a phenomenon that chooses to ignore a large class of data methodically collected during the observations would not be scientific. It certainly would not be objective if it claimed to be a general model of the phenomenon.
Monism Versus Dualism

The authors created the outlines of a rudimentary model that they argued could be used by researchers to study the near-death experience (NDE). They defined a brain state space $\Gamma$ by means of a neurobiological model, and a consciousness state space $\Theta$ by means of a psychological model. They suggested that, although difficult, a possible relationship between $\Gamma$ and $\Theta$ may, with further research, be determined. They wrote little about the practical difficulty of determining the neural activity during an NDE, or of determining the psychological state of the individual during the NDE, never mind the problems of finding a relationship between the two.

The principal problem with their model, though, is that, as they acknowledged, "we consider NDEs as a consciousness (purely psychological description)/brain (purely neurobiological description) state" (p. 265). In so doing, they completely rejected the possible dualistic nature of living beings, that is, the possible existence of a soul, spirit, or some other-dimensional existence.

Their argument, long and convoluted, for rejecting dualism was, briefly stated, that since science only knows of physical properties—and psychological properties that are related to the physical—any attempt to introduce a nonphysical mind lying in another plane would be nonscientific. They summed this up by writing: "we must conclude that when physical structures disappear, 'nonphysical minds' or 'nonphysical brain properties' also disappear" (p. 260).

The Evidence for Dualism

The primary NDE evidence against this point of view comes from the numerous out-of-body experiences in which an individual saw things that could not have been seen from the physical body, either because of position or because of the physical state of the body, and those things the individual claimed to have seen were later verified. These cases are, by now, so numerous that to deny them is to ignore a major aspect of the near-death experience. We shall not attempt to list the numerous cases available in the literature, but rather shall enumerate four cases with which we are intimately familiar.
The Shoe on the Ledge

Perhaps the most famous is that of Maria's shoe on the ledge, reported by Kimberly Clark Sharp (1995). In that experience, Maria had a massive heart attack for which she was being treated at the Harborview Medical Center in Seattle. She suffered a cardiac arrest in the hospital and was resuscitated, as witnessed by Sharp. During the arrest she had an NDE. After the NDE, and upon returning to consciousness, Maria was agitated and asked for Sharp to visit her. She explained to Sharp how she had left her body and what she had seen the medical people doing from her position up near the ceiling. Her statements coincided with what Sharp had seen. Maria described how she, in her out-of-body state, had left the hospital. Then, to prove her point, she insisted that she had seen a worn, blue tennis shoe on a ledge of the hospital three stories up, not visible from the ground. With much difficulty, Sharp searched for the shoe and found it.

Sharp attended one of our IANDS of Utah meetings and described her feelings about this particular incident. She said that the shoe could only be seen from a west-side window by pressing against the pane. The shoe, as she retracted it, resembled Maria's description in detail.

A Traveling Experience

In his account of his extensive NDE during World War II, George Ritchie (Ritchie with Sherrill, 1978) described having been in a military hospital in Camp Barkley, Texas, as the result of an illness with an extremely high temperature of 106.5°. In his resulting NDE, Ritchie traveled in an out-of-body state with a spirit guide across a portion of the United States. At one point he found himself in a bar in a community near a military base, but far from Camp Barkley. He had never been there before.

Some weeks after his NDE, when his medical emergency was over, Ritchie was traveling in a car with three other young men as they entered Vicksburg, Mississippi. When they drove through a particular neighborhood, Ritchie recognized the area and told his companions where he wanted them to go. One of them said: "I thought you had never been in Mississippi before." It was the same location in which he had been during his NDE.
In 1995 our IANDS of Utah group sponsored a two-day meeting with Ritchie as the speaker. He described this and other events from his NDE in detail.

**An NDE from Multiple Perspectives**

One of the members of IANDS of Utah told of her experience in our August 1994 meeting; it is described in one of our newsletters (Gibson and Gibson, 1994). Susan Burt had a heart attack during the Caesarian delivery of twins. The medical personnel were unable to get a blood pressure reading for 10 to 15 minutes. During this time, Burt left her body and met a guide, her deceased aunt. She observed the doctors and nurses attempting to revive her, and she saw, helping them, other spirit persons.

In the meeting in which Burt explained what had happened to her, she also had other individuals describe the effects of the NDE from their perspectives. These persons included Cory Burt, her husband; Dianne Burton, her sister; Preston Richards, the anesthesiologist; and Betty Ishoy, one of the nurses. Their stories were fascinating, particularly that of the anesthesiologist, who confirmed Burt’s view of what the medical personnel were doing during her NDE. He commented that there was no physical way she could have seen what she later described in detail. Not only was she unconscious, but he had taped her eyes shut to protect them during the emergency. In a later visit to the anesthesiologist’s house, Burt was able to identify from a family photo album one of his deceased ancestors as the spirit helper she had seen helping him.

**A Blessing Seen During an NDE**

The president of our local IANDS chapter is Bill English. In July, 1991, English and his brother Bob were riding their all-terrain vehicles (ATVs) in the sand dunes near Saint Anthony, Idaho. English’s machine threw him and he landed on his head, breaking his back at about the nipple level. After removal by helicopter to a local hospital, and later being transported to the University of Utah Medical Center in Salt Lake City, his medical emergency deepened. His brother was told that English probably would not live, and if he did live he would be paralyzed and need help for the rest of his life. English was comatose for more than four weeks. During that time he had two out-of-body experiences. The first one occurred on the
afternoon of the day following the accident. English was able to determine the specific time because of the nature of his NDE.

One of his cousins, Tom Christensen, who is a member of The Church of Jesus Christ of Latter-day Saints, offered to give English a blessing. Although English was neither a member of that church nor particularly religious, and although he was not conscious to make a decision in the matter, his brother Bob agreed. Christensen arranged for the blessing to be performed on English's unconscious physical body.

In the meantime English had no knowledge of what was happening until suddenly he found himself above his body looking at his cousin and others giving him a blessing. Some of the others he recognized as spirit beings. Immediately after his accident, when he had been conscious, English could feel nothing in his body, but now he felt what he described as many “healing hands” on him. After the blessing, he again lapsed into unconsciousness. A second out-of-body event occurred in which he met his deceased father and was assured that everything would be okay. He returned with a feeling of peace.

During his recovery English was able to compare, with his cousin, the details of the events during the blessing; soon after the event his cousin wrote an account of what he saw and said. Both English and his cousin have described these events to our IANDS of Utah chapter; his experience is also recorded in the book *Echoes From Eternity* (Gibson, 1993). Today, although paralyzed from the chest down, English is a very independent and upbeat individual who is an example to us all. He is currently training for a three-wheeled hand-operated bicycle race.

**Conclusion**

These four experiences are by no means exhaustive of what can be found in the literature. They should be sufficient, however, to demonstrate that at least in some NDEs, and probably in most of them, the dualistic nature of human beings plays a major role in the experience. Many individuals having NDEs describe their out-of-body body as being a form of energy. Some have described it as having shape. One individual, John Stirling, put it this way as he traveled through space during his NDE: “I looked at my hand, and I saw the shape of a hand, but it had an aura around it. It wasn’t the same
hand as an earthly hand. There was an energy field that defined it" (Gibson, 1992, p. 183).

In summary, we think that the evidence from NDEs is overwhelmingly in favor of living beings being constituted of both a physical body and a spiritual or otherworldly body. During extreme trauma, or when the individual approaches death, the spiritual body or essence, which continues to exhibit all the independent consciousness traits and ego of the living physical body, leaves the physical body and continues to exist. Indeed, the NDE accounts would suggest that this spiritual body has enhanced freedom of movement, increased awareness of the surroundings, superb ability to communicate, and immensely improved knowledge, which often is removed from the memory upon return.

Any model of NDEs that does not include these observed phenomena is not scientific, and it surely is not objective. It appears, unfortunately, that the authors of the subject article have become, to use their words, "lost in an unreal but self-consistent verbal world." The authors made the point that "However pleasant any pattern of thinking may be, it must be rejected as soon as an observation appears for which there is no place in it" (p. 252). Since we have demonstrated observations for which there is no place in their model, by their own criteria, their model must be rejected.

One final point: the authors seemed obsessed with protecting their version of science. Countering William Serdahely's call (1990) for a paradigm shift to account for NDEs, they wrote: "Science does not need a paradigm shift to deal with NDE data" (p. 266). We ask: what is wrong with a paradigm shift if the data make obsolete the previous paradigm? What was the change in science from Newtonian mechanics to Einstein's theory of relativity if not a massive paradigm shift?

References

LETTERS TO THE EDITOR


Martin Tanner
Bill English
Elane Durham
Dawnetta Bolaris
Connie Bloomfield
Craig Miller
Fred Beckett
Sandra Cherry
Carol Gibson
Arvin Gibson

Board Members, IANDS of Utah
103 East 300 South
Kaysville, UT 84037-3508

Reply to Martin Tanner and Colleagues

To the Editor:

In reply to the Letter to the Editor from Martin Tanner and his colleagues, I must stress the following points. First, it is amusing that the authors appeal to *Webster’s II New College Dictionary* (1995) to talk about science. I am certain that the people best entitled to talk about science, its structure, philosophy, and methodologies, are the ones working on it. I invite Tanner and his colleagues to inspect some of our publications (Gómez-Jeria, Ojeda-Vergara, and Donoso-Espinoza, 1996; Morales-Lagos and Gómez-Jeria, 1991) to appreciate that scientific research is something very serious.

Second, we were not disguising any “particular agenda” such as monism with pronouncements of scientific objectivity. Our rejection of dualism was based not on the state space concept, which is only a formalism, but on evolutionary arguments derived from various scientific disciplines (Gómez-Jeria and Madrid-Aliste, 1996). If Tanner and his colleagues believe in the existence of a soul or “essence,” I invite them to state in the Journal their ideas about when and how this supposed soul appeared in the evolution of humankind: did it appear in *Homo habilis*, or maybe in *Australopithecus afarensis*, or
perhaps only in *Homo sapiens sapiens*? Unless they are followers of some obscurantist line of thinking, like creationists, or invoke the well-known argument "... then a miracle occurs," I am sure they will have to work hard to answer this question.

Third, it would be easy for us to dismiss near-death experiences (NDEs) or out-of-body experiences (OBEs) as reports of silly and/or sick people. We did not do that. We chose to accept the evidence as representing something that science must and will explain. Actually, the scientific modeling of the NDE has already been accomplished (Gómez-Jeria and Saavedra-Aguilar, 1994; Saavedra-Aguilar and Gómez-Jeria, 1989), and it is only a matter of time before better and more complete models are proposed. We are actually working on a model to explain the OBE without invoking souls or "essences." But please do not make a potpourri of the experience itself, its report, and its interpretation!

Fourth, there is nothing wrong with a paradigm shift if there are data making the previous paradigm obsolete. The problem here is that there are no such data. For example, the fact that unconscious people are able to perceive the external world was tentatively explained some time ago (Gómez-Jeria and Saavedra-Aguilar, 1994), as was the contamination of the experience by cultural influences (Gómez-Jeria, 1993). Alluding to the Newton/Einstein paradigm shift to support their claims only shows the weakness of their arguments.

Fifth, I invite Tanner and his colleagues to analyze and discuss deeply some questions like the following:

(a) How do people recognize spirit beings? For example, do they have wings or carry labels? By analyzing the reports of alleged "spiritual beings" it seems to me that they are like the terrifying extraterrestrials always visiting our poor Earth: of all sizes, shapes, colors, and so on.

(b) How can it be asserted that this alleged "spiritual body" has an immensely improved knowledge, which often is removed from the memory upon "return"? We normally expect that, by definition, something removed from the memory cannot be remembered!

(c) Some people claim that the out-of-body body is a form of energy; what kind of energy could that be? electromagnetic? nuclear? gravitational? or something so subtle and special that it cannot be measured or studied?

(d) How does this alleged out-of-body body interact with the physical body? It would be helpful if Tanner and his colleagues could propose a model based, for example, on the suggestions of John Eccles
LETTERS TO THE EDITOR

(1994). This might foster a serious discussion, despite the fact that Eccles' work is an amusing but scientifically poor defense of dualism.

(e) This alleged out-of-body body continues to exhibit all the independent consciousness traits and ego of the living physical body. Let us consider vision as an example. The first step in vision is the arrival on the retina of energy of certain wavelengths and intensities; the retina does not receive a photograph of the external world! After a complicated process that science is beginning to elucidate, a representation of the external world is created. Does the out-of-body body have a retina? If not, how can it see?

I shall not comment further on pseudoscience, NDEs, and OBEs at this time, because we are preparing a longer work on this topic. In conclusion, Tanner and his colleagues failed to present anything vaguely similar to a model to sustain dualism. Their proposition crashes against all the available scientific data coming from several disciplines and their ideas cannot even be tested experimentally. Therefore, all their efforts remain in the realm of wishes and beliefs.

References


Juan S. Gómez-Jeria
Associate Professor
Universidad de Chile
Facultad de Ciencias
Casilla 653, Santiago
Chile
INSTRUCTIONS TO AUTHORS

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

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

MANUSCRIPTS should be typed on one side of the page only, and double spaced throughout. A margin of at least one inch should be left on all four edges. Except under unusual circumstances, manuscripts should not exceed 20, 8½ × 11” white pages. Send manuscripts to: Bruce Greyson, M.D., Division of Personality Studies, Department of Psychiatric Medicine, Box 152, University of Virginia Health Sciences Center, Charlottesville, VA 22908.

TITLE PAGE should contain the names of the authors, as well as their academic degrees, affiliations, and phone number of senior author. A name and address for reprint requests should be included. A footnote may contain simple statements of affiliation, credit, and research support. Except for an introductory footnote, footnotes are discouraged.

REFERENCES should be listed on a separate page and referred to in the text by author(s) and year of publication in accordance with the style described in the Publication Manual of the American Psychological Association, 3rd Edition, 1983. Only items cited in manuscripts should be listed as references. Page numbers must be provided for direct quotations.

ILLUSTRATIONS should be self-explanatory and used sparingly. Tables and figures must be in camera-ready condition and include captions.

PERSONAL-COMPUTER DISKS: After a manuscript has been accepted for publication and after all revisions have been incorporated, manuscripts may be submitted to the Editor’s Office on personal-computer disks. Label the disk with identifying information—kind of computer used, kind of software and version number, disk format and file name of article, as well as abbreviated journal name, authors’ last names, and (if room) paper title. Package the disk in a disk mailer or protective cardboard. The disk must be the one from which the accompanying manuscript (finalized version) was printed out. The Editor’s Office cannot accept a disk without its accompanying, matching hard-copy manuscript. Disks will be used on a case-by-case basis—where efficient and feasible.