**Is there life after death?** Brendan I. Koerner. **U.S. News & World Report**, March 31, 1997 v122 n12 p58(4)

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On the talk-show circuit and the bestseller list, the tales are legion. After being struck by lightning, a man meets a "Being of Light" who grants forgiveness for a lifetime of violence. In full cardiac arrest on the operating table, a grade-school teacher travels down a long tunnel to "a place filled up with love, and a beautiful bright white light." And Elvis Presley takes her gently by the hand.

As sophisticated medical technology has permitted more and more people to journey back from the brink of death, such seemingly mystical reports have become almost commonplace. Of the nearly 18 percent of Americans who claimed in a recent U.S. News poll to have been on the verge of dying, many researchers estimate that a third have had unusual experiences while straddling the line between life and death--perhaps as many as 15 million Americans. A small percentage recall vivid images of an afterlife--including tunnels of light, peaceful meadows, and angelic figures clad in white.

No matter what the nature of the experience, it alters some lives. Alcoholics find themselves unable to imbibe. Hardened criminals opt for a life of helping others. Atheists embrace the existence of a deity, while dogmatic members of a particular religion report "feeling welcome in any church or temple or mosque."

Such dramatic changes have piqued the imagination of those searching for evidence of the mystical. Bruce Greyson, 50, is a psychiatrist at the University of Virginia Medical School who has spent much of his professional life investigating these events as possible "peepholes" into a world beyond. Greyson says that those who have such experiences "become enamored with the spiritual part of life, and less so with possessions, power, and prestige." Nancy Evans Bush, president emeritus of the International Association for Near-Death Studies, says the experience is revelatory. "Most near-death survivors say they don't think there is a God," she says. "They know."

Stories about strange events in the borderland between life and death are hardly new. Over two millenniums ago, in the Republic, Plato recounted a gravely wounded soldier's journey toward "a straight light like a pillar, most nearly resembling a rainbow, but brighter and purer." Near-death experiences aren't fresh to popular literature, either. Thirteenth-century monks wrote of a farmer who returned from the edge with tales of "corridors of fire" and "icy" paths to the afterlife.

Heavenly cars. And tales from the realm between life and death aren't limited to the West. In Micronesia, "experiencers" have reported that heaven resembles a bustling American city with skyscrapers and plenty of automobiles. In India, the afterlife has frequently been described as a giant bureaucracy, in which survivors are sent back to life because of "clerical error." "There's a lot of cultural overlay," says Greyson, who also edits the Journal of Near-Death Studies. It publishes articles on topics ranging from the

scholarly ("Near-death Experiences: A Neurophysiological Explanatory Model") to the suspect ("Death and Renewal in The Velveteen Rabbit"). "Many people describe it as an ineffable experience, so it's no surprise that they come up with models based on their background," Greyson recounts. Almost all reports from around the world bear similarities to familiar daytime TV fare--the out-of-body feeling, the life review, the presence of deceased relatives on "the other side."

Until recently, however, these anecdotes were usually dismissed as hallucinations or after-the-fact inventions, lumped in with alien abductions. Many who were convinced they had glimpsed an afterlife were afraid to describe their experiences for fear of being labeled crazy. The medical community's perception of these reports began to change in 1975 when Raymond Moody published Life After Life, a book that coined the term near-death experience (NDE) to describe this hard-to-define phenomenon. Moody interviewed 150 near-death patients who reported vivid experiences (flashing back to childhood, coming face to face with Christ). He found that those who had undergone NDEs became more altruistic, less materialistic, and more loving.

Scores of psychiatrists and neuroscientists have since sought to uncover the roots of these powerful experiences. But serious research into the phenomenon has been difficult. "It's very much like trying to conduct research on humor," says John Sappington, a psychologist at Augusta College. "You can't just get people into the lab and say, 'Now, be funny!' " The task is complicated by the personal nature of the experience; researchers must rely on hearsay that, by definition, cannot be corroborated.

Seeking the greater certainty of controlled observations in the laboratory, a number of researchers are taking a physiological approach to uncovering the causes behind NDEs. Michael A. Persinger, a neuroscientist at Laurentian University in Sudbury, Ontario, has induced many of the characteristics of an NDE--the sensation of moving through a tunnel, the brilliant white light. He has done so by stimulating the brain's right temporal lobe, the area above the right ear responsible for perception, with mild electromagnetic fields. In England, Karl Jansen has zeroed in on the brain's reaction to shifting levels of ketamine, a powerful neurotransmitter. Often ingested as a recreational drug--its street name is Special K--ketamine frequently causes the out-of-body sensation common to NDEs. The U.S. Navy has managed to replicate many of the sensations of an NDE by subjecting test pilots to massive centrifugal force--a physical stress that can induce the presence of a patriarchal figure interpreted by some as God. "There's nothing magical about the NDE," Persinger asserts.

Physiological findings have led many researchers to view NDEs not as glimpses into a world beyond but as insights into the world within the human mind. "I think it is an evolutionary adaptation," says Sherwin Nuland, the National Book Award-winning author of How We Die. He ascribes NDEs to the actions of opiate-like compounds known as endorphins, which are released by the brain at times of great physical stress to deaden pain and alleviate fear. He scoffs at those who view NDEs as a temporary bridge to an afterlife. "I think that the mind is just trying to save itself from the horror of unbelievable trauma," he says.

Daniel Alkon, chief of the Neural Systems Laboratory at the National Institutes of Health, says anoxia (oxygen deprivation in the brain) lies at the root of all NDEs. When death appears certain, he argues, the body will often shut down and "play dead" as a last course of action. His skepticism is significant because many years ago, as a result of a hemorrhage, he had a near-death experience himself.

Despite the strides in explaining NDEs through clinical investigation, some researchers believe that the physiological approach is insufficient. "These are just armchair speculations. Finding a chemical change in the brain does not necessarily prove that it causes NDEs," argues Greyson. For Greyson and others who view NDEs as mystical experiences, the skeptics in the lab are only solving a small part of the puzzle.

Watching heart patients. A block from the University of Virginia's Charlottesville campus, in an old house labeled Division of Personality Studies, Greyson and Ian Stevenson, 79, are in the middle of a three-year, \$250,000 study they hope will answer many of the questions that, in their view, the physiological approach doesn't address. The pair, whose funding comes from a German psychiatric institute rather than the university, have been monitoring cardiac arrest patients. They are searching for insight into notable changes that often accompany the experience, such as heightened zest for life and unconditional love for all humans.

The two are annoyed by those who have made near-death experiences a pop culture fad more likely to be featured in a tabloid alongside a scoop about an 800-pound human baby than in a medical journal. "It makes people take us less seriously," says Greyson. For many scholars, Greyson and Stevenson's work has never threatened to enter the realm of serious inquiry. Nuland debunks near-death research as pseudoscience investigating nothing more than "pleasant illusions." Moody insists "there is no imaginable empirical evidence to prove that there is an afterlife."

Despite the unmuffled snickering of some colleagues, Greyson and Stevenson insist that their research is intellectually rigorous. "Most scientists shy away from the area of the paranormal," says Greyson. "I think the research we're doing here is breaking down some of those prejudices."

Greyson and Stevenson have been instrumental in gathering evidence indicating that religious backgrounds do not affect who is most likely to have an NDE. They have mapped out the conversion-like effects of NDEs that can sometimes lead to hardship. ("They can see the good in all people," Greyson says of people who have experienced the phenomenon: "They act fairly naive, and they often allow themselves to be opened up to con men who abuse their trust.") They have gathered reports of high divorce rates and problems in the workplace following near-death experiences. "The values you get from an NDE are not the ones you need to function in everyday life," says Greyson. Having stared eternity in the face, he observes, those who return often lose their taste for egoboosting achievement.

Greyson and Stevenson's interest is not limited to the psychological realm, however. They are intrigued by reports of the chronically ill regaining their vigor, and even "miraculous" cures from cancer or HIV infection--claims most of the scientific community put in the same category as snake oil and faith healing. The Virginia researchers are undiscouraged by this scorn. They believe that they may be pushing the boundaries of human knowledge. "NDEs demonstrate how little we know, and how far we have to go to understand our role in the universe," says Greyson. Stevenson, now in the 35th year of a study of children who claim to recall past lives, concurs. "The evidence for survival after death comes from a wide variety of sources, including NDEs," he says. "Certain communications through mediums deserve attention, too." Operating in terrain disdained by many scientists as a twilight zone, Greyson and Stevenson hope to peer through a portal into an afterlife.

Not even the diehard skeptics doubt the powerful personal effects of NDEs. "This is a profound emotional experience," explains Nuland. "People are convinced that they've seen heaven." Persinger adds: "The fact that we're studying a neural basis for it doesn't demean its significance." Diane Komp, a pediatric oncologist at Yale, was transformed by witnessing children's NDEs--an 8-year-old with cancer envisioning a school bus driven by Jesus, a 7-year-old leukemia patient hearing a chorus of angels before passing away. "I was an atheist, and it changed my view of spiritual matters," recalls Komp. "Call it a conversion. I came away convinced that these are real spiritual experiences."

For the many Americans who believe they have been privy to a glimpse of life after death, no amount of clinical explanation will shake their faith.