

MIND WITHOUT BRAIN: A SCIENTIFIC ANALYSIS OF NEAR DEATH EXPERIENCES
WITH SPECIAL ATTENTION TO THOSE IN CHILDREN

A NEW SCIENTIFIC PARADIGM OF CONSCIOUSNESS

Annals do 4th CIPRO Congresso International of Consciousness and Conscientiology.
International Journal of Consciousness Vol 11 no 41 pp 183-208 August 2008

Melvin L Morse MD
Georgetown, Delaware
Spiritual Scientific Research Foundation
www.spiritualscientific.com

INTRODUCTION:

“But was it real Dr. Morse”, asked Chris A. He had just described to me what he remembered of nearly dying in a car accident in which his family car veered off a bridge on an icy road and plunged into a river 40 feet below. His father was killed on impact and his mother managed to smash the windshield of the car and swim up to safety. Chris was seat belted in the back seat. He was ultimately freed from the car by citizens who witnessed the accident, was flown by helicopter to Harborview Hospital in Seattle, Washington where after being in profound coma for three days, he made a full recovery.

“Because if it is (his near death experience was real), then you have to tell all the old people about it”. Chris states he never lost consciousness throughout his entire ordeal, but rather viewed his body and the hospital setting from the vantage point of a “heaven” he visited during his illness. He states “I was in the car and it filled up with water and then everything went all blank. I couldn’t hear or see anything. I floated out of my body and entered into a huge noodle. No wait; it couldn’t have been a noodle, because it had a rainbow in it. My grandmother (who previously had died) was there. First I went to an animal heaven, and was told to go to the human heaven. I went there and stayed in a castle, until I was back in my body.” The experience was fragmentary, chaotic in description, with perceptions of sounds and primary sensory perceptions instead of formed visual experiences.

His mother also wanted to know if Chris’s near death experience (NDE) was real because she had the perception that her husband, who died in the accident, was still alive and waiting with her by the side of the river while the two of them watched the rescuers recovering Chris from the car. The experience of seeing him was so real to her that she asked him why he wasn’t helping the rescuers, and he smiled faintly and replied “there is no need, Chris will be all right”. She intuitively felt that if Chris’s NDE was real, then her after death perception of her husband was also real.

A NEW SCIENTIFIC PARADIGM

In this paper I will present a novel scientific paradigm which permits out of body states and other subjective mental phenomena to not only be classified as “real”, but worthy of study as a scientific theory. It fits the criteria for a scientific theory in that 1) It explains the known

scientific evidence better than the current scientific model of consciousness, 2) It lends itself to reproducible studies which will result in a richer understanding of near death and out of body experiences, 3) It permits an integration of currently diverse and unexplained phenomena such as mind-body healing, premonitions of death, after death visions of loved ones, remote viewing and precognition, all of which have been documented by scientific inquiry. 4) It permits a greater understanding of human consciousness and permits greater avenues of scientific inquiry than are permitted with the current theory.

The new scientific paradigm is as follows: The human brain is linked to a greater “non-local reality” with similar neurobiological pathways, neurotransmitters, and inferred perceptions as are seen with the traditional perceptions associated with the five senses and “local” reality. Humans share a consensual sense of “reality” that is primarily based on a subjective sense that what we perceive is “real”. There seems to be a unique state of consciousness that is associated with proper brain function involving the five senses as well as introspection of the concept of self, memories, thoughts and emotions. (5, 6) In spite of numerous efforts to further define what is “real”, this inner sense that something is “real” seems to be the best definition that we have to date. With regards to the five senses, we can test each others perceptions of reality and mutually agree as to what is shared to a great extent as “real”. However, perceptions and information based on non-local reality share this same sense of “realness” and yet are often highly personal and idiosyncratic and defy efforts to validate the perceptions by observations from others or even our own other senses.

My proposed scientific paradigm demonstrates that there are specific neurobiological structures associated with out of body states and other paranormal experiences. It does not depend on a state specific conscious perception of “reality”. I will present scientific evidence demonstrating that out-of-body perceptions, near death experiences, and a wide range of paranormal phenomena such as remote viewing and mind-body healing depend on the proper function of the brain, as opposed to brain dysfunction. As such, these often subjectively described inner states of consciousness must be categorized as normal, as opposed to paranormal. This model of previously considered paranormal states of consciousness then permits greater scientific analysis of the experiences including replication of the experiences in the laboratory and reproducible scientific experiments.

A more detailed model of brain function is as follows:

There is an interface within the right temporal lobe, hippocampus, and associated structures which permits perceptions and information to be accessed from quantum or “non-local reality”. By non local reality, I am referring to a timeless space-less reality at the quantum particle level which contains all of the information which is the underpinnings of the local reality we perceive with our five senses. This information is conceived of consisting of energetic fields, which then express themselves as either wave forms (photons, units of light) or subatomic particles of matter, depending on the experimental structure and the state of the observer. Much of this information is contained as theoretical potentials which then can be expressed according to the Uncertainty Principle. Quantum non-locality has been demonstrated experimentally numerous times over the past 50 years.(7,8) As theoretical physicist Henry Stapp stated: “the failure of

locality (in the subatomic world) absolutely precludes the possibility that the real world actually conforms to the precepts of classical physics”.(9)

Considerable neurobiological evidence suggests that we create the sense of self from information obtained via the five senses, in a specific area in the parietal lobe. When information from this area of the brain is suppressed, through, for example, meditation, then there is increased activity in the right temporal lobe and associated structures permitting out of body and transcendental perceptions. By transcendental perceptions, I mean a subjective sense of one’s consciousness merging with a greater reality or consciousness with a resultant loss of the individual self. (10, 11, 12)

When there is decreased activity in this area of the brain, the loss of input from the five senses and resultant loss of a sense of self results in increased activity in the right temporal lobe and associated structures. This results in out-of-body and transcendent perceptions with the subjective perception of exchange of information with a greater reality or consciousness. Consciousness is not lost by the loss of activity in the parietal lobe, but rather it is dramatically altered, either localizing consciousness from a viewpoint outside the body, or being merged with a greater sense of consciousness. The subjective sense that things are “real”, which, for example is not seen in dreams, drug induced hallucinations, or states of consciousness associated with brain dysfunction, persists in these states of consciousness associated with decreased parietal and increased right temporal lobe function. (13, 14, 15)

The paradigm depends on a greater recognition of five scientific facts, by the scientific community. These facts are acknowledged as being individually true, but I have arranged them in a novel way which results in a new understanding of reality not currently recognized by the scientific community. (I will provide documentation and scientific references for these facts as I discuss them in turn throughout the rest of the article)

These facts are as follows:

1. Near death experiences are “real”, meaning that they occur when patients state they occur and are not retrospective falsifications of the mind. They occur to patients with normal brain function as well as to patients suffering significant brain dysfunction including profound coma. They represent the subjective perceptions of the last few minutes of life.
2. Near death experiences involve accurate perceptions of local reality coupled with a sense of a different reality superimposed or separate from this reality. Both are perceived as real by the patient. In this, they are similar to pre-death visions, after-death visitation, meditative states, spontaneous out-of-body perceptions, the subjective experiences associated with spontaneous mind-body healing, and the subjective experiences associated with remote viewing, precognition and telepathy.
3. Specific neurological and neuro-chemical structures and pathways have been identified as facilitating these experiences. These experiences including near death experiences can now be replicated in the laboratory.
4. The subjective descriptions of these experiences are strikingly similar to descriptions of “non-local” or subatomic reality by theoretical physicists. Points of similarity include the perception that time does not exist, the perception that the experience contains all of the

information underpinning local reality, that space does not exist, that perceptions of light predominate and pervade the experience, and that the experience is real (or “realer than real” as one child told me) but of a separate yet interrelated reality to the one we ordinarily perceive. There are other realities to perceive.

MEMORIES NOT STORED IN THE BRAIN?

The most controversial and speculative part of the new paradigm is exploring the possibility that memories are not stored in the brain. Since memory is an important part of the sense of self and personality, in turn there is an implied understanding that the self conscious sense of personality is also not stored in the brain. This link between memory and the sense of self is best illustrated by the complexities of the “multiple personalities” described by patients with Dissociative Identity Syndrome. It is now understood that this condition is real, but patients do not in fact have “multiple personalities” as if they are possessed by outside demons or other consciousnesses. Instead, painful traumatic memories are compartmentalized within the mind at a young age, with the natural development of distinct “alter” or sub personalities who are entwined with a given set of memories. If the memories are later shared among the various sub personalities, then a sense of integration of personality can result from the reintegration of memory.

I readily acknowledge this seems to be the weakest link in the new paradigm. However, I do not see this as a problem, as there currently is no theoretical model for how long term complex memories are stored within the brain.(16) Even more fascinating with regards to the new paradigm, the right temporal lobe is regarded as the area of the brain most closely associated with long term memories, albeit in an unknown way. Fred Lashley, the grandfather of modern memory research stated at the end of his career, “If I did not know it was impossible, I would think memories were stored outside the brain.” (17)

Modern brain theorists such as Dr. Joseph Tsien at the Boston University Center for Memory and Brain are currently speculating that memories can be described in a binary code. He has developed an experimental rodent hippocampal computer model of brain function which simulates a rodent’s memory of an earthquake event. (18) Dr. Tsien has arguably made the greatest advancements in describing how memories could be stored within the brain, and he does it using a binary code model which can be simulated by a computer. Since the universe is the ultimate binary code, meaning that all that exists is described either as a wave form or as a particle, Dr. Tsien’s research supports the concept that memories could be stored outside the brain. In fact he explicitly speculates this in an interview with him in Discover Magazine in December of 2005.

Neuroscientist David Eagleman, of Baylor College of Medicine wrote an article for Discover Magazine (August 2007) in which he lists 10 unsolved mysteries of the brain. He lists the retrieval and storage of memory as unsolved mystery number two.

If there is no model for how memories could be stored within the brain, perhaps this new paradigm of brain function will resolve this mystery as well.

DON'T EXTRAORDINARY NEW IDEAS REQUIRE EXTRAORDINARY PROOF?

No. This is a slogan, not a scientific argument. It is a slogan advanced by a group of so-called skeptics dedicated to exposing fraud and hypocrisy in paranormal research which in of itself is a laudatory enterprise. Their journal the Skeptical Inquirer is well researched and written. Ironically, when this same organization has dedicated itself to doing its own research, or evaluating the research of others, they at times relied on intellectual dishonesty and poor science themselves. Furthermore, the fact that they primarily publish in a vanity press format without adequate peer review significantly detracts from their goal of sorting out science from pseudoscience. (19, 20)

I am proposing a broad new scientific paradigm, one that resonates with new scientific advances and understandings in a broad array of disciplines, including mathematics, cosmology, theoretical physics, evolutionary biology, consciousness research, paranormal research, and medicine. The history of such paradigm shifts in science is that they develop slowly over time, until the new information reaches a tipping point and there is a radical revision and new understanding of the nature of reality itself. Typically, the new paradigm is understood and embraced by a new generation of scientists and they have to wait until older scientists still psychologically enmeshed in the old paradigm retire.

Furthermore there are numerous examples of scientific and medical advances that were initially ignored or disbelieved because there was no scientific framework to understand them in. For example, Semmelweis, the Austrian physician, demonstrated clinically that “invisible forces” could be destroyed by the simple measure of washing hands and avoiding contaminating the birthing process with “unknown agents” associated with autopsies and surgeries. When his precautions were followed in the care of birthing women, there was a marked decrease in deaths from infection. However, his clinical findings were considered absurd and dismissed as there was no widespread understanding of germ theory in the 1840s in Europe. Only when Lister advanced the concept of germ theory did hand washing prior to surgery become commonplace by surgeons. Documented descriptions of ball lightning even by experienced airline pilots were similarly dismissed by the scientific community until physicists developed an understanding of how these “anomalies” could be real. (21)

My colleagues and I experienced a similar phenomenon when we attempted to publish an excellent controlled study documenting that parents often have premonitions that their infants are going to die of Sudden Infant Death Syndrome. (SIDS). The study was prospective in nature, with two control groups, and was done by one of the largest SIDS study groups in the United States, the Southwest SIDS Research Institute. We demonstrated that parents have premonitions of their infants dying of SIDS, in a statistically meaningful way, and furthermore, such premonitions were quantifiably different from the ordinary fears that parents have about SIDS. Several of the premonitions were documents in journals. In other cases, the premonitions were so vivid that the parents brought the infant to a physician or even several physicians and emergency rooms prior to the infants' death.

The study was seriously considered by publication by several mainstream and first rate Pediatric Journals. In one case, one Journal asked for three successive revisions. We were able to satisfy

the reviewers' requests in all three occasions, and yet still the Journal did not publish the article. In their final rejection letter, they lamented that although the research was impeccable and the study well designed, it did not fit within "known scientific understandings" and as such would confuse their readers.

The authors ultimately published the article as an abstract in a Pulmonary Journal which publishes articles on SIDS and also wrote a book on their research. (22,23)

Many other studies have clinically documented precognition, most notably those done by Dean Radin at the University of Nevada at Los Vegas and by scientists working for the Boeing Corporation in Seattle, Washington. (24,25) It is reasonable to say the precognition has already been demonstrated in rigorous scientific laboratory and clinical studies, and yet those who proclaim "extraordinary claims require extraordinary proof." have not acknowledged that such extraordinary proof already exists. In my opinion, these are sincere scientists who are suffering from cognitive dissonance when confronted with research that contradicts their outdated scientific worldview.

My new proposed paradigm explains precognition. I propose that we can access information from quantum non-locality informational fields where time does not exist. The memory of horrific and emotionally painful events such as the death of an infant are accessed by our right temporal lobes and interpreted as a "premonitions" by the brain existing in our shared local reality in a time prior to the occurrence of the event.

Conversely, "déjà vu" experiences and "past life memories" can similarly be understood as the right temporal lobe accessing information from quantum non local reality. In these cases, since the events have already occurred in time as measured by the biological markers of the aging and deaths of individual beings, they would be interpreted as coming from the "past", and misunderstood perhaps as already having happened to the individual or even being part of a "past life". This model specifically refutes the concept of reincarnation, as each person with a given body and brain can only have one life, but the information which consists of the memories and personality of a given person of course is timeless, and could be accessed by other brains. In fact, considerable clinical and anecdotal evidence exists that suggests that this in fact happens, evidence which no longer has to be marginalized or ignored.

IS THEORETICAL PHYSICS A PSEUDOSCIENCE?

The primary impetus for the concept that consciousness is an inherent part of a participatory universe comes from the very hard science field of theoretical physics. Information gained from experiments done on particle physics super colliders and particle accelerators has documented the concept of quantum non-locality as a fundamental property of all that we consider to be real.

While neuroscientists waffle and debate the nature of consciousness, virtually every important quantum theorist of the last century has boldly advanced theories advocating that consciousness is an inherent part of nature. Theoretical physicists insist that our individual consciousness must be linked with the universe at large, if there is to be any understanding of what they are learning about reality in the laboratory. (26-32)

This understanding of nature and consciousness has existed for over 75 years. The principles of classical physics with its cause and effect mechanical determinism has been overturned and super ceded by the new physics which both demonstrates how classical physics predicts behavior on the local macro level of reality yet at deeper level of reality that is information based that does not obey the laws of Newton and cause and effect.

We should not be surprised that consciousness is a part of this information based quantum non local reality, as our memories are information, and as such would be part of the information that this level of reality contains. As previously stated, virtually all modern theories of personality and consciousness include the concept that our individual memories are an important part of our sense of individual consciousness and “self”

As Henry Stapp of the Lawrence Berkeley National Laboratory of Theoretical Physics states: “A beautiful, intricate, and rationally coherent mathematical machinery has been discovered that transforms the mechanistic mindless concepts of classical physics over to a highly tested, useful, and accurate mathematical picture of a nonlocal reality in which our streams of consciousness are naturally and efficaciously embedded”. (27)

SUPPORT FOR THE NEW PARADIGM FACT NUMBER ONE: NEAR DEATH EXPERIENCES ARE “REAL”

Robert Oppenheim, the famous theoretical physicist, is quoted as stating that the basic principles of theoretical physics are best understood by the child’s mind, which is still filled with wonder and not burdened by a preconceived idea of what is the true nature of reality. It is only fitting then that the most solid research documenting that consciousness exists independent of coherent brain function comes from our study of childrens’ near death experiences.

The Seattle Study was a combined prospective/retrospective case control study of the subjective experiences that critically ill children, ages 3-16, described after resuscitation from nearly dying. The prospective portion of the study took place from 1983 through 1998, during which time semi-structured interviews of survivors of cardiac arrest, profound coma with Glasgow Coma Scores of 3 or less, and one patient with severe diabetic coma with initial blood glucose of over 2000 were undertaken. Near death was defined as surviving trauma or illness with a predicted mortality rate of greater than 50% with a full neuro-psychiatric recovery. In fact, well over 400 charts were reviewed to identify 28 patients who fit the pre-existing criteria for inclusion in the near death group. Only two of these patients declined to be interviewed, leaving a total of 26 patients interviewed in the prospectively studied near death group. In addition, another 10 patients were identified as being near death by a retrospective chart review of 631 charts from the time period of 1970 through 1983, making a total of 36 patients in the near death group.

A separate group of medical students blinded for experimental details then matched each of these cases to critically ill patients also seen in our intensive care unit at Seattle Children’s Hospital. The near death patients were matched with patients who were of the same age and sex, had conditions serious enough to warrant admission to the intensive care unit with loss of consciousness and the need for mechanical ventilation including intubation, and oxygen. Both

groups had similar arterial and/or venous blood gas results, medications, use of anesthetic agents, and the psychological stresses of admission to the Intensive Care Unit.

Many of these patients subjectively felt they were going to die, as did their parents, although they suffered from conditions not typically felt to be associated with significant mortality.

For example, we studied 24 patients who suffered from epiglottitis, for which a “sense of impending doom” is the textbook description of the patients’ state of mind at admission. Other patients included mild diabetic comas, routine patients for either cardiac or orthopedic surgery, head injury and near drowning with Glasgow Coma score of greater than 6, pneumonia with severe hypoxemia, guillian barre syndrome, and narcotic and other medication overdoses.

Our study design was undertaken in 1982-3, and we were determined to avoid the design flaws associated with previous studies of the experiences in adults. The authors of the study included Donald Tyler MD, then head of the Intensive Care Unit at Seattle Children’s Hospital, Jerrold Milstein, head of the department of Child Neurology, and a team of medical students from the University of Washington. In developing the study design, we consulted Michael Rothenburg, the head psychiatrist at Seattle Children’s Hospital, Tom Duhammel Ph.D, the lead psychologist at Childrens, Kim Clark Sharp, a social worker affiliated with Harborview Hospital and the International Association of Near Death Studies, Bruce Greyson MD, now head of the Division of Personality Studies at the University of Virginia, William Serdally MD, of Montana State University School of Medicine, and Vernon Neppe, then director of the Department of Neuropsychiatry at the University of Washington.

The patients were interviewed within three weeks of recovery and discharge from the Intensive Care Unit at the earliest, to over 10 years later in some of the retrospective control cases. They completed either on their own or with the assistance of their parents a check list of common subjective experiences associated with nearly dying, as well as an interview of consisting of open ended questions such as “what do you remember about being in the hospital”, and “what happened when you were asleep/unconsciousness/not awake (or whatever terminology the patient preferred)”.

The same interview team of two medical students and myself interviewed all of the patients. We were aware of whether or not the patient was in the near death or control group, but were otherwise blinded for details of the case history prior to the interview.

We worked from the same interview schedule without deviations.

Our results were as follows:

1. 31 of 36 near death patients reported being fully conscious for brief or extended periods of time while they appeared profoundly comatose and near death.
2. 2 of 144 control patients reported being conscious during the time they appeared comatose to observers.
3. Both of these control patients were undergoing routine surgery and reported being awake during the operation and accurately reported conversations that occurred during the operation.

4. Two of the near death patients who did not recall being conscious during the experience had extraordinary experiences in which others perceived their bodies being illuminated with a bright light during the time of near death. For example, one patient was a near drowning, and her rescuers state that they were able to locate her body which had sunk 20 feet below the surface of Lake Washington because it was softly illuminated from within by a bright light.
5. All 31 patients described their experiences as a learning experience which resulted in decreased death anxiety. One patient, for example, stated that she is now not afraid to die as “I know a little bit more about it now”.
6. All 31 patients described the experience as being “real”, “real, just like this is real you know”, or “realer than real”. They all denied it was like a dream or any other experience they could think of.
7. Our findings support and validate the findings of previous done adult studies, in that the patients taken as a whole described a sequence of floating out of the physical body, seeing their own body below them, seeing a loving or “nice” light, entering and leaving a tunnel, entering into a heavenly realm, meeting dead relatives and religious figures as the most predominant images reported.
8. The individual experiences tended to be fragmentary, typically containing only one or two brief elements, such as “I saw my grandmother (who had died) and “then I was back”. When asked what it meant that she was back, she replied “that’s what I am trying to know”.
9. The experiences were quite simple in young patients age 3-5 (I saw the sun, it had a happy face for me) to becoming increasingly complex as the patients ages increased, to the teenage experiences which were as complex and filled with details as the typical adult experience.
10. The length of resuscitation directly correlated with the complexity and number of details of the experience. Patients with resuscitations of over 60 minutes reported lengthy experiences whereas patients with brief resuscitations described brief experiences. Furthermore, the length of the resuscitation directly correlated with how far the patient preceded in the sequence of out-of-body perceptions, entering a tunnel, traveling in the tunnel, exiting the tunnel, entering into a heavenly realm, and the length of time and number of experiences in that realm. Since no patient under the age of seven reported detailed complex experiences, no adjustment for the age of patient was made in studying the effects of length of the experience.
11. Patients reported a high number of idiosyncratic and personal experiences related to their own personal psychology. They reported seeing living teachers (2), living classmates singing to them (3), stuffed animals (4), a “pig monster” (1), heaven as a having a castle (3), heaven as a golden field (4) with a tent in it (1), rainbows in their drawing of the experiences (12) located in the top left corner of the drawing (11), a brick wall (2), relatives who had previously died (4), pets either living or dead (4), a sense of border or barrier (9), a decision to return (7), being told to return or other involuntary return (for example, “three doctors told me to press a button on a box or I would never see my mother again”, “that was weird, you guys sucked me back into my body”, “where is my Jesus, why did you take away my Jesus”) and brief experiences of light (22), (a light that had a lot of good things in it)

12. Virtually all the experiences had corresponding elements in the patients' life that had deep personal meaning to them. For example, a patient who was accompanied by a lamb in the tunnel had a stuffed lamb for a comfort object. Another patient who told me dramatically "Dr. Morse, I have a wonderful secret to tell you, I was climbing a staircase to heaven" was a Led Zeppelin fan and frequently listened to the song "Staircase to Heaven".

The experiences clearly represent the last few minutes of life as opposed to being caused by brain dysfunction associated with coma, medications or other brain pathology, or retrospective falsifications of the mind after recovery. This finding validates a study published in the American Medical Association's *Cardiology Journal* Heart published in 1966 in which the authors presented cases of near death experiences after successful resuscitation from near death and concluded that "interviewing these patients, as crude a tool as (such interviews are) give us a glimpse into the personal psychology of the last few minutes of life.

Our study was published in three articles in the American Medical Association's *Pediatric Journal*, the *American Journal of Diseases in Children*, and in a major nursing journal. An entire issue of *Contemporary Pediatrics* was devoted to the study and its implications for clinicians and society. (33, 34, 35)

Our study findings have since been replicated in two prospective studies in adults, by Dr. Pin van Lummel of the Netherlands (36), and Bruce Greyson MD at the University of Virginia.(37) Dr. von Lummel published his findings in the *Lancet*. I met with Dr. van Lummel and compared his results with our findings. He had a far lower incidence of near death experiences in his near death group, but we concluded this was possibly due to differences in definition of near death. Many of the patients in his near death group would have been control patients in our study, as our entrance criteria for near death was a condition with a mortality of greater than 50%.

Every major review of near death experiences has agreed with our conclusions, including one in the *British Journal of Psychiatry* which described the experiences as being part of the psychology of dying. Another review by Michael Schmidt in the *Journal of Scientific Exploration* concludes that the dying process involves an expanded sense of consciousness and awareness which extends beyond the physical body. (38, 39, 40) Chris Carr, an anthropologist comments in his review of the cross cultural aspects of the NDE that the common elements include being conscious in the final moments of life, learning something about one's own life or the meaning of life, and encountering mystical beings or images of light. (41) Our own analysis of the specific elements of American children's near death experiences, as well as our studies of Japanese children's and African near death experiences resulted in the same conclusion. (42, 43)

In fact, the following medical doctors who have studied end of life experiences and agree that we are aware and conscious in spite of a highly dysfunctional brain include Diane Komp MD, Maurice Rawlings MD, Peter Fenwick MD, Raymond Moody MD, Michael Sabom MD, among others.

Bruce Greyson MD, and Drs. Emily and Edward Kelly, in their benchmark review of mind-body issues *The Irreducible Mind*, published in 2007 state: "the central challenge of the NDE lies in

asking how these complex states of consciousness including vivid mentation, sensory perception, and memory, can occur under conditions in which current neuro-physiological models of the production of mind by brain deem such states impossible.” Implicit in this statement is his conclusion that the NDE is not an “imaginative reconstruction” of the mind after recovery, but that they represent the dying experience. (44)

My answer to Dr. Greyson’s challenge is that clearly the NDE involves the normal function of the brain at death. Such normal function involves direct perceptions of non-locality with the energy necessary to support the brain in those perceptions arising from sources outside the brain. These are the same brain structures which permit similar experiences to occur in fully functioning brain, as seen in meditation induced mystical states of consciousness, and pre-death visions. This model of brain function views consciousness and memory as being a fundamental property of quantum non-locality and our brains being a filter/transmitter allowing information from quantum non-locality to intermingle with the brains primary function as processing perceptions from the five senses and local reality.

FACT NUMBER TWO: NEAR DEATH AND ASSOCIATED DEATH BED VISIONS AND AFTER DEATH PERCEPTIONS INVOLVE ACCURATE PERCEPTIONS OF THIS REALITY COUPLED WITH VIVIDLY REAL PERCEPTIONS OF ANOTHER REALITY, OFTEN SUPERIMPOSED OVER THIS ONE.

The hallmark of the near death experience is that the patient is in fact oriented to time, place, and person at the time of the experience. By in large, our patients accurately reported the events associated with their own resuscitation and were aware of why they were in the hospital and what was happening to them. This occurred even in patients who were perceived as being profoundly comatose throughout the experience, even in patients who had their eyes taped shut throughout their resuscitation because of the loss of protective corneal reflexes. For example, one patient suffocated in a tunnel he dug at the beach. He perceived himself as being outside of his body throughout his trip to the hospital, a trip to radiology for brain imaging, and successful resuscitation in the emergency room. Although he viewed the events from outside of his body, he did not seem to have interest or the ability to independently move his point of view away from his body, or to actually physically go places other than where his body was. This is a typical description of the experience, and we did not find cases in which patients were able to move away from their body at will.

Then, superimposed over his accurate perceptions of this reality, he encountered a “wizard dressed in white” who told him to “struggle and you shall live”. This boy, not surprisingly, is preoccupied with role playing and fantasy games. The wizard seemed entirely real to him, and the experience was superimposed over his experience of being in a CT scanner.

In understanding these experiences, our research group has taken the viewpoint of Vernon Neppe that these experiences are best understood as “subjective paranormal experiences”. (45) Remember that we do not directly perceive reality as if our eyes are video cameras and our ears tape recorders. We infer and create reality from information we gather from our senses. The brain effortlessly creates visual images that it cannot see all, the time, for example, in the way we

fill in the background of our visual image the small hole in our visual field that is created by the nerve fibers leaving the retina to go back towards the brain, our so-called blind spot.

Our ordinary memories of our daily lives are far from exact representations of reality. One third of observers in simulated crimes will report that the victim was the perpetrator. Children who are gently questioned about a non-existent visit to the doctor will, for example, come to give detailed reports of being bitten by animal and requiring stitches. (46) I once lived at a home that was at the end of a long driveway that had a bright red stop sign halfway down the driveway. Very few visitors to our home accurately could describe this stop sign. I find it remarkable that children can recall any of the events of their own resuscitation given that it is an environment of high anxiety and fear, all known to distort memory.

I am proposing a new scientific paradigm. The essence of the scientific method is that we can collect data under controlled conditions that can be reproduced by other scientists. We are currently at an exciting time in brain science in that many of the fundamental questions regarding near death experiences are now very amenable to scientific inquiry.

We no longer have to argue over whether or not subjective experiences are objectively true. We understand that much of what we remember and perceive as “real”, is not objectively verifiable or true. By taking the approach that we can study the phenomenon of experiences and validate that they are subjective in nature, we can both listen to the patient, learn what we can from the patients’ subjective truth, and scientifically study the fact that patients have such experiences and understand them in the context of the clinical situation (such as extreme torture, childbirth, near death, etc) and brain function.

The importance of understanding that patients who experience NDEs perceive dual realities, one that only they can see, and one the shared consensual reality we all share is to emphasize their similarities with other related experiences. After death visitations, of the type that Chris’s mother experienced, premonitions of death, death bed visions, meditation experiences, lucid dreams, autoscopic perceptions, out of body experiences, and spontaneous visions while awake all share with the NDE this dual perception of two realities, often one superimposed over the other. (47)

Little work has been done scientifically assessing if these intuitively related experiences in fact are neurobiologically related. In fact, each of these experiences tends to have its own literature, its own causative explanations and there is even little cross over in researchers who study these experiences. The handful of journalists and academicians who have studied these experiences report that there are profound similarities in the experiences, these include Ossis and Harroldsson’s studies of death bed visions in both America and India,(48) Diane Komp’s reports of deathbed visions in Pediatric Oncology Patients (49), and University of Pennsylvania professor Danial Hufford’s study of the folklore of lucid dreams and hypnagogic experiences. (50)

FACT NUMBER THREE: FAR FROM REPRESENTING BRAIN DYSFUNCTION, NEAR DEATH AND RELATED EXPERIENCES CLEARLY ARE ASSOCIATED WITH WELL DEFINED AREAS IN THE BRAIN, NEURONAL CIRCUITRY, NEUROTRANSMITTERS,

WITH A WIDE ARRAY OF EXPERIMENTAL METHODOLOGY AVAILABLE TO STUDY THE EXPERIENCES.

It is, unfortunately, a little known fact that near death experiences has been and can be replicated in the laboratory. Although many people are aware of the work of Dr. Persinger and his use of magneto-encephalograms to stimulate the right temporal lobe and recreate a near death experience like event (51), I am not referring to his work in this statement. His student volunteers are not near death.

I am referring to the work of Jim Whinnery of the United States Warfare Institute published in the late 1990s in journals devoted to research on aeronautic and space medicine. Jim Whinnery was interested in studying the effects of G forces on fighter pilots. He placed them in gigantic centrifuges and whirled them at tremendous speeds until in theory the blood flow stopped in their brains. (52, 53)

Dr. Whinnery's results were precisely the same as we found in our Seattle Children's Study, and Drs. Greyson and van Lummel found in their studies in adults. By varying the intensity and length of the centrifuge runs, he documented that pilots first became unconscious from the stresses of the experiment, and then, when close to theoretical death, paradoxically regained consciousness and described all the same subjective experiences as described in clinical studies of near death.

There is a rich anatomical literature for over 100 years documenting that the right temporal lobe and associated anatomical structures in the hippocampus and limbic system are associated with the mental imagery of visions and perceptions of other realities. Wilder Penfield, the father of modern Neuroscience, was one of the first to do electrical stimulation studies of various areas of the brain. In the right temporal areas, patients would describe precognitive experiences and out of body sensations. One patient stated "oh god I am leaving my body, no, I am half in and half out". (54)

More recently, D'Aquili and Newberg have done PET scan studies of meditation by experienced religiously trained Nuns and Bhuddist Priests. At the time of the subjective perceptions of either being out of the body or merging with a greater consciousness or transcendent universe, the patients had decreased brain activity in a specific area in the left parietal cortex that is associated with the interpretation of information from the ordinary senses and the generation of a sense of self. (55)

Other neuroscientists have looked at the experiences from the point of view of neurotransmitters. Again there is significant mainstream scientific literature on this, with L glutamine and other endopsychosins being identified as being associated with the experience. This information which is outside the scope of this paper is developed to the point where a general review article has been published summarizing this information in a mainstream Neurology journal. (56)

Hameroff and Penrose have developed a neuro-anatomical model for exactly how the brain could theoretically interact with quantum non-locality. They point out the existence of tiny protein structures within the brain called microtubules. No one else has replicated their findings or even

agrees with their speculations as to the function of these microtubules, yet these are scientists from the University of Arizona and Oxford University, respectively. (57)

One confounding problem in developing a new paradigm of brain function is that neuroscientists lack the theoretical background in quantum physics. Yet it is the quantum physicists who seem to have the greatest understanding of how consciousness could be linked to quantum locality and the brain. The rest of us, as well as informed journalists can only stand on the sidelines and cannot directly assess the worth of the various theories.

For example, Hameroff and Penrose lack the credentials of Henry Stapp with regards to quantum physics. In his book *Mindful Universe*, he cites several studies which he feels support his concepts of quantum consciousness and the brain. I read the studies he cites, and unfortunately, the studies themselves do not discuss quantum physics, or where consciousness might be located in or out of the brain. Dr. Stapp accurately cites the studies and properly describes the contents, but reaches conclusions that the study authors do not hint at. The rest of us lack the knowledge to look over Dr. Stapp's shoulder and assess for ourselves the validity of his insights.

Dr. Stapp himself hints at this problem when he criticizes Hameroff and Penrose's work. He states that he feels they reached conclusions and describe quantum processes that, in his opinion would be found highly unlikely by "most theoretical physicists". He further states that he doubts their theories apply to "warm wet living brains". (58)

Equally promising areas for new research are studies from Switzerland and Sweden on the experimental induction of out of body states. Although Dr. Whinnery's research in theory could be replicated by other scientists, it is not surprising that only pilots in the military would "volunteer" for such studies. At the Karolinska Institute in Stockholm, cognitive neuroscientists are able to induce the out of body state in the laboratory by the use of virtual computer generated illusions of reality. Similar studies have been replicated by the Ecole Polytechnique Federale in Switzerland. (59)

For this reason, I feel strongly that we need to issue a \$1,000,000 prize to the team of theoretical physicists and neuroscientists who can adequately answer the Greyson Challenge of how complex mental processes can occur in a dying dysfunctional brain.

Regardless, clearly there is enough interest and experimental possibilities to start to answer some of these questions in the laboratory. A new scientific paradigm will create an academic framework where hordes of graduate students can begin the tedious but necessary work of grinding out dozens of Ph.D. theses analyzing small aspects of these theoretical problems. (60)

I am trained as a Pediatrician and a critical care physician. My expertise is that I have resuscitated hundreds of children whose circumstance has brought them to near death. I then had the interest and patience to listen to them describe their experiences. My results were the same as those found by Dr. Whinnery in his studies of fighter pilots who were experimentally brought to the point of near death.

I am not a theoretical physicist, and my only expertise in this area is that I received an A in quantum mechanics in college, over thirty years ago. I am sensitive to the debate between Hammeroff, the anesthesiologist and Stapp, the theoretical physicist as each has areas of expertise which really don't overlap. Furthermore, I know that highly trained scientists can be fooled by false understandings of quantum physics. For example, one of the highly regarded science journals published a lengthy discussion of quantum physics which passed peer review and was well received, only to reveal that the authors of the article deliberately wrote "quantum babble" just to make the same point I am making.

However, when we read the books written by highly trained theoretical physicists, again and again they describe precisely the same things that the children I studied described. I once was a member of a committee that consisted of scientists from many different backgrounds who studied the issues of consciousness. The theoretical physicists always comments to me how well I seemed to understand quantum science, whereas in reality I was simply quoting comments made to me by children who described their own near death experience. (61)

FACTS FOUR AND FIVE: THEORETICAL PHYSICISTS TELL US THAT THERE IS AN INFORMATION BASED QUANTUM NONLOCALITY WHICH HAS MUCH IN COMMON WITH THE HUMAN VISIONARY EXPERIENCE. IN ADDITION, THEY STATE MUCH OF THE MATTER OF THE UNVERSE HAS NOT BEEN IDENTIFIED, THERE IS SOMETHING CALLED DARK MATTER AND DARK ENERGY, AND THERE ARE AT LEAST TWO OTHER UNIVERSES VIRTUALLY IDENTICAL TO THIS ONE MADE OF SIMILAR QUANTUM BUILDING BLOCKS.

This is a topic that really is for another paper and lecture, and well out of my area of expertise. Yet the concept that much of the matter of the universe has not been identified and consisted of invisible "dark matter" is now well known. A further concept of "dark energy" has been advanced. (62, 63, 64)

On the quantum level, there are unit of energy/matter called quarks. These are the basic building blocks of the protons, neutrons and electrons I am more familiar with. It is intriguing that there are three sets of virtually identical quarks, each set resulting, at least in theory with a universe identical to ours, but invisible to us.

Christian De Duve, the nobel prize winner evolutionary biologist has concluded that consciousness is inherent in the evolutionary process. He is a molecular biologist and emphatically states that the chance of consciousness developing through random evolution is the same as dealing a bridge hand in which each of the players is dealt all the cards from a given suit. He feels that if humans did not evolve, whatever evolved in our place would also have consciousness, as consciousness is a biological imperative, part of the fabric of the universe. (65)

One the pioneers of theoretical physics, Wolfgang Pauli teamed with psychologist Carl Jung to propose the concept of synchronicity. Synchronicity is defined as meaningful coincidence in the affairs of humans which are often odd, or quirky, and yet seem to hint at some greater unseen order within our universe that is guided by a conscious will.

This is the same statement frequently made by those who have near death experiences as being one of the most important things that they learned from nearly dying. “I learned there are no coincidences”, “I learned that everything we do has meaning”, “I learned how important I am. Maybe I won’t ever do anything important, but I will influence someone else, and they will do something important”.

The list of theoretical physicists who have written on this issue is seemingly endless, Fritjof Capra’s *The Tao of Physics*, Henry Stapp’s *Mindful Universe*, David Bohm, *The Undivided Universe*, Neils Bohr *Atomic Physics and Human Knowledge*, Heisenberg’s *Physics and Philosophy*, Swartz’s *The Mind and the Brain*, *Neuroplasticity and the Power of Mental Force*, are but a few.

CONCLUSION:

IT TAKES COURAGE AND FAITH TO PROPERLY USE YOUR RIGHT TEMPORAL LOBE

The science supporting a new scientific paradigm of brain function that permits the biological interface with the information contained in quantum non-locality is clear and convincing. Even in those areas that most of us are not qualified to independently assess the conclusions of the scientists involved, such as theoretical physics, the sheer volume of appropriate experiments and unanimity of their conclusions must be persuasive to the most skeptical mind.

This new paradigm gives new insights into the mechanisms of mind-body healing. Excellent well documented anecdotal case histories of remarkable recoveries from cancers and autoimmune diseases exist, but are again greeted with skepticism by scientists who read of them in their own scientific journals. (66, 67) However, if we can access quantum non locality with our brains, then we potentially can access the information that was the basis of our bodies in the first place, and correct, for example, the errors in DNA that may have led to a specific cancer in the body.

Similarly, the work of evolutionary biologist Rupert Sheldrake fits within this paradigm. Dr. Sheldrake has advanced a theory that evolution progresses outside of the individual organism, and that a “morphic resonance” between these theoretical morphic forms in nature and an individual organism result in evolutionary changes. Dr. Sheldrake’s work is brilliant in that it explains many of the problems with classic Darwinian evolutionary theory. The new paradigm provides a place for these morphic forms to exist, (quantum non local reality) and means of morphic resonance, the interactions between our brains and non local reality. (68)

One barrier to accepting a theory involving minds without brains that I often hear discussed by skeptics is the supposed lack of a well documented case history demonstrating that a “soul” can truly leave the body. For many skeptics, this would be the only proof that mind is independent of brain function. . This search for a case that proves that consciousness can survive the brain has often been described as the search for the white crow that proves that all crows are not black.

First of all, such case histories are well documented and have been so for over 100 years. At the turn of the 19th century, the Nobel Prize winner physicists, psychologists such as William James

and other scientists turned their attention to the mind-body problem. One of them, Meyers, published a two volume work filled with meticulously documented case histories demonstrating that consciousness can persist and even act in the absence of brain function. (69)

Those who search for the white crow, or the smoking gun of near death research do not understand the nature of reality and the true meaning of these experiences. A child explained it to me the best: “(My experience) was kind of like leaving my body, but it was really like walking into my mind.” Another child told me that “I saw heaven, well I don’t really see anything, it was like I knew what it was.” It is the information gained from the experience that is important, and it typically has meaning only for the given individual and is coded in images and perceptions specific for that individual.

The perceptions and information we gain from using our right temporal lobes to interact with quantum non locality are subjective described as being intuitions, feelings, or a distinct “knowing”. “I just knew I shouldn’t cross the street, and suddenly a car appeared that would have hit me” is a common description of the experience. Law enforcement officers and prison guards often describe a “gut feeling” that they have learned to pay attention to, although it often is not more than a premonition of danger. For those who are visually inclined, these perceptions are often processed and presented as visions of angels. For those who are auditory oriented, they will hear a voice that is unlike any other voice they have heard. I have a friend who had severe abdominal cramps which resulted in his narrowly missing a car accident. For him, if he saw an angel telling him to stop his car to avoid an accident; he probably would have kept driving.

In our study of parents who had premonitions of SIDS, we found that the premonitions sorted themselves into four groups, visions, auditory perceptions, non specific knowings, and body sensations such as abdominal pain. Many of the known right temporal lobe perceptions such as unusual odors and prickling sensations of the skin were also described. Yet the information gained by the parent was the same, regardless of the different ways it presented itself to the individual.

Those who have right temporal insights, visions and premonitions often look to others to validate their perceptions. They are attempting to use the same model we use to validate our perceptions from the other five senses. Yet these perceptions are highly personal and seem to perversely defy efforts at validation by others, or even one’s own other senses. It is extremely difficult to understand that the comforting person who is present at my death might be a totally different person from the comforting person present at someone else’s death, and yet each is a real experience, and each person can gain comfort from the event.

My conclusions after 20 years of studying these experiences are twofold, and seemingly contradictory: I am calling for more rigorous scientific exploration of the nature of the experience, and more rigorous nonjudgmental acceptance of the individual experience.

I present this new scientific paradigm today to similarly alert you in the audience that we don’t have to wait until we die to understand the meaning of the near death experience.

By simply being aware and having the faith and courage to trust all of our senses, including those which process information from non locality, we can bring the knowledge of the near death experience into our ordinary lives.

Thank you

Melvin L Morse MD FAAP
Associate Professor of Pediatrics, University of Washington
(Retired after 20 years)
Georgetown, Delaware