

PARTING VISIONS  
USES AND MEANINGS OF END OF LIFE EXPERIENCES  
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CHAPTER SEVEN

“But was it real?” Chris asked me. He was the young man who saw the “huge noodle that had a rainbow in it during his near death experience which I described at the beginning of this book. Even though he had personally experienced the huge noodle that was a tunnel to a heaven that seemed to indicate his survival of death, he was completely skeptical himself that his own experience was true. He had directly experienced leaving his body after death, and even that was not proof of enough for him. He wondered if his experience wasn’t in fact a crazy dream. His mother, who had the experience of seeing and talking to her dead husband, also doubted that her own experience was real, dismissing it as a “crazy widow’s nightmare”.

As a medical scientist, I had two contradictory responses to Chris’s question. Spiritual visions are “real”, in the sense that they arise from specific brain structures, similar to our ability to develop mathematical equations or kick a football. The brain science of religious and spiritual visions is now well understood. They are not the result of brain dysfunction at all, but rather arise from well understood biochemical and neurological actions in the brain, as do most human thoughts and emotions. Yet the medical scientist in me also has a hard time believing that these experiences are anything but hallucinations of the mind. They seem to mock our current scientific model of the universe. They imply that memories can be stored out of the brain, that human beings can perceive future events, that we can telepathically experience another person’s death at a distance, and that spiritual “lights” can heal the human body. I trained in some of the best American medical schools, such as Johns Hopkins University, and the gods I worshiped who wrote the great medical texts stated that these experiences could only be hallucinations and fantasies of the brain. They could only be caused by anxiety about death, or falsifications of the mind generated by the chaos of abnormal or dying brains. So medical science seems to have two contradictory responses to Chris’s question. Spiritual experiences arise from normal brain structures and functions and yet they are hallucinations and abnormal!

Chris understood how important his question as to the reality of spiritual experiences is. After all, as he points out, if these experiences are real “we will have to tell all the old people”. In fact more than just the old people need to know if near death experiences and other spiritual visions are real. If these experiences are real, it changes our entire perception of what death is, and in turn what life is. It opens us up to bringing the ability to communicate with energetic patterns of information that exist outside our bodies, an experience that children described to me as “talking to god”. It reinforces understandings that we know only vaguely acknowledge as intuition or “gut feelings”. It allows a powerful source of insight and meaning to guide our lives. We can trust that the experiences of love and understanding that people have when they die are real experiences. In turn, we can learn that the source of that love is not only real but it is accessible

to us all to find happiness and meaning in our daily lives.

I was determined to answer Chris's question as a medical scientist. I am not a spiritual person myself and have no particularly religious or spiritual belief systems. When Chris asked me this question, I was a neuro-scientist investigating the effects of various cancer drugs on brain function. I took the scientific approach to answering his question, in that I researched the scientific literature, surveyed what studies and facts were known prior to my involvement in the field, collaborated with the best scientific minds I could find who were already researching the question, and then used the available facts to come up with the best theory possible to explain them.

I discovered to my great surprise that the best scientific explanation of spiritual experiences is that they are real. They are the result of the normal functioning of a specific area of our brain, the right temporal lobe. They represent nothing less than a true communication with energetic patterns of information that exist outside of our brain. This conclusion is in complete harmony with recent advances in neurology, evolutionary biology, cosmology, quantum physics, chaos mathematics and consciousness research. This finding is understood and used on an active basis by military organizations all over the world and nothing is more "realer" than that. My finding that spiritual experiences are real fits within a greater scientific paradigm shift which is currently transforming our fundamental understandings of how the universe works.

No one could have been more astonished than me at this conclusion. I personally thought these experiences were evidence that the mind could play tricks on itself in an effort to deal with severe anxiety or grief. I thought that people who had these experiences were weird.

I was not alone in dismissing spiritual experiences as artifacts of a dysfunctional mind. The hallmark of the valid spiritual experience in Western Civilization in the 21<sup>st</sup> Century seems to be the perception that such experiences are not valid and are the result of mental pathology. I have heard the most moving spiritual experiences over the past 20 years, many of them as profound and moving as to bring me to tears. Yet virtually all of them begin with the phrase "you will think I am crazy, but. . . ." Typically what follows is a description of an experience which in former times could have started a religion or resulted in the teller being regarded as a mystic with unique insights into life. Today the experiencer frequently hasn't told anyone else about the experience, or perhaps a few friends. They do not see the experience as a source of important information or spiritual insight, but rather as something to be trivialized as weird and ultimately unimportant.

I definitely understand this urge to dismiss and ignore spiritual wisdom. I received rigorous medical training, much at Johns Hopkins University, where I was taught only to believe objective scientific facts which could be proven in the laboratory. Spiritual experiences cannot be replicated in the laboratory, and do not lend themselves easily to ordinary scientific inquiry. They seem to be deeply personal, and often perversely organized to prevent any sort of objective validation.

For well over 100 years, scientists have attempted to independently validate spiritual visions. I once asked Ian Stevenson, the famed University of Virginia Professor who rigorously studies

reincarnation stories, as to what he felt was the most important next step in trying to understand if psychical and spiritual experiences are “real”. He told me that the next step was to find someone who has had an experience which can be validated by objective findings that would be acceptable to the most skeptical critic of these experiences. For example, someone who wrote down a detailed dream of the future, had reliable third parties who could prove that the dream was written prior to the predicted events, and then demonstrate that the details of the dream came true.

The specific details of such an experience would have to be such to overcome the common objections skeptics have to stories that seem to prove the human ability to prove future events. These objections are as follows: 1) If a person was to have dozens of dreams that seem to predict the future, through chance alone it is possible that one of them could be documented to come true. 2) People could have many dreams of future events such as a person close to them dying. However, (skeptics claim) we tend to forget about dreams that don't come true and glorify the few dreams that do come true. 3) People could fraudulently create evidence that would seem to support the concept of dreams coming true. Their motives could be to sell books, be on television shows or simply enjoy the attention that they get from making up such stories.

This search for the perfect experience that would satisfy even the most rigid skeptic has become to be known as the search for the smoking gun of spiritual and psychical research. Scientists as long ago as William James have described what such an experience in theory would have to be like, and what proof skeptics would accept should they encounter such an experience. William James called it the search for the “White feather” which would in turn demonstrate that not all crows are black.

My opinion, based on 20 years of research in both reviewing the scientific literature and documenting hundreds of spiritual stories is that this search for the “smoking gun” story that proves that spiritual experiences are real both ignores the science of the past 50 years and ignores the reality of personal and private nature of spiritual experiences.

I have a neighbor who knows of my interest in spiritual experiences, and shared with me her experience of hearing a dead lover communicate with her by somehow splicing his voice onto a tape recording she was making. Her story illustrates the typical problems in validating and understanding the objective reality of spiritual experiences.

Mildred is over 80 years old. She has lived a full and interesting life. She was born in England, married an American pilot who months later went on to be killed in World War Two, moved to America, remarried and had five children. She is a registered nurse and worked well into her 60s. She is a thoughtful rational person who enjoys the respect of everyone she knows. She spends her time now working in her garden, playing with her grandchildren, and communicating with her friends by making tape records on an audio-cassette recorder and mailing the recordings to them.

One day she was making such a tape, when her tea kettle boiled over and she went into the kitchen to turn off the stove. She then returned to her living room and rewound her tape to listen to the last few sentences she had spoken, so that she could regain her train of thought.

Instead of hearing her own voice, she heard an extremely high pitched whiney voice which seemed to be saying at very high speed “Bunny, the time we had together meant everything to me. I love you, and will be with you forever”.

She was very astonished at this and took it to her son, who is a well known News Anchorman for a Seattle Television station. He took the tape to his audio-technicians, who analyzed the tape for him. They determined that it was a recording of a human voice on the tape, but it was not recorded at either of the two speeds that Mildred’s tape recorder was capable of recording at. It seems to be at 2/3d of the highest speed. It did not seem to be the result of mechanical malfunction, as when they slowed the tape speed down, it had a consistent quality to it, it did not erratically speed up or slow down as a tape malfunction might be expected to do.

Both she and her son thought this was certainly an odd event, but thought no more about it, until several months later when I happened to have tea with her, and she learned of my interest in spiritual visions.

What can we learn from such a story? It certainly is not the smoking gun story that skeptics and researchers such as Ian Stevenson are looking for. There is no way to prove that the tape is authentic, or part of an elaborate hoax. I interviewed her son, and the technicians at her son’s television studio, but all that is proof of is that they actually heard the tape and analyzed it. It still is not proof of some sort of voice beyond the grave communicating with her.

Mildred does not seem to have any sort of motive for creating such an elaborate hoax. Her son is a television personality, yet he laughed when I suggested that he might want to tell this story on television. He thought it would be professional suicide to even tell anyone of the story and felt very nervous about even having his own technical people involved with analyzing the tape. Mildred is well known in our neighborhood and active at her church, yet none of our neighbors or friends know of this story, so she clearly is not telling many people about it.

Furthermore, the words on the tape themselves don’t make any sense. She herself thought that the voice was a message from her first husband who was the American pilot. Yet he never called her “Bunny” as a nickname. The only person who ever did call her “Bunny” was a niece that she knew in England, when she was in her 20s. This niece did not play much of a role in her life, and she only vaguely remembered the girl, other than to remember that she called Mildred “Bunny” for reasons she could not even remember anymore.

This is a typical type of story that I have investigated. It contains odd quirks, does not lend itself to objective analysis and proof of its “reality”, seems to be intensely personal, and there is no easy to identify motive for people to have invented it. Yet it really is not proof of anything, other than for Mildred. For Mildred, and Mildred alone, this experience somehow proves for her that her first husband communicated with her from beyond the grave and reassured her of the importance of their love. Even her own son laughed when I suggested this, saying only that odd things happen in life that we can’t explain, and that his mother drew her own conclusions from the recording and that was all that could be said about it.

I investigated another such story, this one a woman who took pictures of her cat which seemed to include communications from her dead father. On the anniversary of her father's death, she and her sister were acting silly and dresses up their animals in costumes and took pictures of them. To their great surprise, when she developed the pictures, there seemed to be tiny faces in the picture which looked exactly like her father. There were also ghostly halos around some of the animals heads. In addition, she was recording a movie that day off of the television set. When she replayed the movie, in the middle of it, was a brief scene from the movie RoboCop Two with Arnold Schwarzenager, in which the main character emphatically states, "I did not die, I did not die". Robocop II was not on television that day.

Again, the content of the experience is very bizarre. Their father did not particularly like RoboCop or Arnold Schwarzenager. He was not a particularly spiritual man, and had no interest in photography. Why he would communicate with his daughters through photographs and a spliced segment of the Robocop movies was incomprehensible to them.

She showed me the pictures and the video recording, and I had them analyzed by scientists at the National Institute of Discovery Science. These scientists were able to document that the faces and halos on the pictures were not artifacts of the developing process or caused by bad film or a faulty camera. They analyzed the negatives as well as the pictures and could only conclude that the images in the pictures well accurate representations of something that was part of the process of creating the visual image on the negative. They analyzed the videotape and concluded that this was not a case of one movie being recorded over another, but that it had been a brand new tape, with the RoboCop segment seemingly spliced into the middle of the movie.

Again, this is not proof of anything. Of course this could be part of an elaborate hoax. There does not seem to be any sort of motive for this hoax, however. The sisters have not tried to go onto television and show their photographs, or write a book or even talk about it to their friends. They were extremely reluctant to allow me to analyze the videotape and pictures and for years occasionally complained to me that the photos were damaged by the scientific analysis, but other than complaining never asked for anything else.

Both of these stories illustrate why I have little interest in proving that spiritual experiences are "real" by analyzing a specific story and trying to prove that the elements in the story are "real". These stories seem odd, idiosyncratic, and do not lend themselves easily to objective proof. For the individual, it is very reassuring to learn that the photos, for example, were not caused by a defect in the negatives or an artifact of the processing of the photos. For the skeptic however, there is always a way to show that fraud or a clever hoax could have created the same effects.

For me, the most powerful aspect of these stories is that they are so odd. I would not expect that if someone was going to make up a story, they would include elements which didn't make any sense and that they could not explain. However, to the skeptic, that would probably be more proof of how clever people can be when creating hoaxes.

In the final analysis, I reject the approach of looking at individual stories for "proof" that psychical experiences as being inherently unscientific. As a medical scientist, I was trained to reject anecdotal evidence as proof of anything. Anecdotal evidence means that we can take a

given story and use it as proof of a scientific theory or premise. My professors would sneeringly dismiss anyone who tried to support their scientific theories by presenting illustrative cases by saying “is that all you have is *anecdotal* proof?” It is shocking that for 100 years, scientists and skeptics alike have been debating anecdotal evidence in an attempt to understand something as important as the reality of spiritual intuitions and visions. Such an approach is inherently unscientific and it should not surprise anyone that such an approach has so miserably failed to produce anything of value.

It is only when we take a scientific approach to understanding spiritual experiences that we can understand that they are real. There is a rich body of scientific evidence in the existing literature from a variety of sources which is pertinent to this issue. When we look at all of the scientific evidence as a whole, we see a new pattern and way of understanding spiritual visions that cannot be understood by looking at individual stories. I will briefly outline and summarize the evidence and then return to it in more detail.

1. Spiritual visions are unique experiences which can be easily defined and differentiated from hallucinations. They are vividly real impressions of other realities intruding into this one. They have a unique feel to them, are often described as unlike any other experiences. They present at transition times, such as the break between sleep and wakefulness (hypnagogic hallucinations), transition times in sleep cycles (lucid dreams) and death (near death experiences), but also times of nonverbal rhythmical activity such as knitting, yoga, meditation, gardening, fingering rosary beads, or sorting pieces of a collection or hobby such as organizing photographs. If there are verbal elements triggering the experience, they typically involve saying or thinking a particular phrase over and over again.

2. They are associated with a specific area in our brain, our right temporal lobe and associated structures such as the hippocampus. In this they are no different than many other human experiences we perceive as real such as seeing, which is the creation by the brain of visual image using our occipital lobes, or math which also a learned mental event documented as being localized in a specific area of the brain. They are similar to other right temporal events such as remote viewing, (seeing things at a distance), precognition (seeing the future) and telepathy (sharing emotions and symbolic language with other minds at a distance) and near death experiences, all of which have scientific studies documenting that they are real phenomena. The neurobiological pathways of spiritual visions have been worked out by a number of different scientific groups. The existence of complex neurobiological pathways and structures associated with spiritual visions argues that they are not hallucinations or the result of brain or mental dysfunction.

3. Hallucinations, by definition, involve the perception of something that does not exist. It is not scientifically known if other spiritual realities or a god objectively exists so any description of spiritual experiences as hallucinations or reactions to mental pathology is not supported by science or even the textbook definition of a hallucination. Furthermore, all of the researches on the perceptions involved in spiritual visions documents that the perceptions involved in the experience are in fact completely accurate. Although I cannot document that the children I have studied have seen a real god, I have documented that all of the other perceptions that they have while nearly dying are correct.

4. The new sciences of evolutionary biology, chaos mathematics, quantum physics, cosmology, and consciousness research do not debunk the reality of spiritual visions but rather present evidence that is a very respectable scientific question to ask if they are real. For example, if it is true that ultimately reality is not time or space dependent, then premonitions of the future could occur if we have the biological ability to access this dimension of reality. Theoretical physicists have documented that there are at least two other realities that exist, and that most of the mass of the universe is not accounted for in this reality, which certainly opens the door to the possibility that Chris accurately perceived another reality when he thought he went to heaven.

5. Near death experiences have been documented in the laboratory and can be replicated in a scientific manner. America's National Warfare Institute has induced near death experiences in fighter pilots, when attempting to understand the effects of gravitational forces on fighter pilots. These are highly trained warriors, not prone to exaggeration or mental flights of fancy, and yet when they are brought to near death as part of these experiments, they describe near death experiences. Near death experiences are simply spiritual experiences that occur to the dying, and are no different than spiritual experiences induced by knitting, for example.

6. The results of spiritual experiences are very real and can transform lives. When we listen to our spiritual visions and intuitions, positive and real changes can occur in our lives. We would not expect that mental pathology would result in positive changes. We would not expect that mental dysfunction would result in greater happiness and a sense of meaning in our lives, yet spiritual visions and experiences have the power to do exactly that.

One of the most challenging pieces of knowledge is that there is a neurobiology to communicating with God. This is one of the most misunderstood and controversial areas of understanding spiritual visions. For the believer, the fact that we have a "god communicator" area in our brains tends to devalue the spiritual experience. They tend to become angry and reject my theories, thinking that I am saying that these experiences are just in the brain. For the skeptic, they often seize on this information and make the same silly argument, that just because there is a "god area" in the brain means that there is no god. Such an argument is as absurd as saying that just because we see visual images on a television set, and it is the same visual image on a television set means that this proves that there is no television studio broadcasting information.

This skeptic-believer debate over the meaning of the fact that there is a "god spot" in our brains demonstrates the complete intellectual impoverishment of the current understanding of spiritual experiences. As most medical scientists understand, all of human experience, thoughts and emotions are the result of specific neurological and biochemical events in our brain. Our eyes, for example, are not video-cameras projecting a "real" visual image of the world for a little man that lives inside our heads. In fact, our eyes access a huge amount of energetic information through nerve cells at the back of our eyes. This is only a small fraction of all of the information that exists that could be accessed. Only that information which can be picked up by the specific rods and cones that humans are genetically programmed to have.

This information is then shaped, discarded, amplified, enhanced, and processed at least seven

more levels within the brain. Finally, the very back of our brain, our occipital lobe, creates the visual image that we perceive as “reality”. So, before we can answer Chris’s question as to whether or not the spiritual world that he perceived while dying was “real”, we should reflect on the fact that we constantly create and generate the local reality that we all agree is “real”. I am agreeing that what we see and hear and feel through our five senses is “real”, but we must acknowledge the scientific fact that it is a reality created by specific brain functions, and hardly represents all the reality that there is to perceive. The fact that we all more or less share the same concept of local reality is because we all more or less share the same sort of brain with the same sort of information sensors and reality generators. Without even going to the world of quantum physics, medical scientists all know that just in the information that we routinely discard through our ordinary senses contains enough information to explain angels, aliens, heavens, hells, and whatever else we can imagine exists in the sea of information that our human brain and mind is not able to routinely access.

For well over one hundred years it has been known that we have the biological ability to perceive something most people call god. It is our right temporal lobe and associated neurobiological structures. This is not controversial. Every medical scientist knows that we have such an area in our brain, although it seems the general public has been unaware of it until my research group linked this area of the brain to near death experiences. As we will see, there is such hard science documenting that near death experiences are real that the area of the brain responsible for our perceptions of such experiences has begun to get more attention.

In the past 20 years, there has been an explosion of information on how this area of the brain functions, and now, for the first time, the entire neuro-biology of spiritual experiences has been documented. Individual researchers such as Michael Persinger of Laurentian University in Canada and d’Auli and Newburg at the University of Pennsylvania Medical School have contributed much of the basic science of our knowledge of how our brains come to communicate with “the light that has a lot of good things in it” as one child described the experience to me. Stuart Hammeroff of the University of Arizona contributed invaluable information on protein microtubules in the brain that allow our nerve cells to access information from quantum or non-local reality. Others such as Jim Whinnery MD of the United States Naval Warfare Institute have contributed experimental evidence documenting that near death experiences are real.

Our research group at the University of Washington in Seattle is the first, to my knowledge, of putting all the pieces together into one coherent theory to explain how the brain and mind of man might actually come to interact with the energetic patterns of information that make up all that we know exists. Quantum physicists call these timeless spaceless patterns of energy “non-local” or quantum reality. The children I resuscitated from nearly dying call this event an interaction with “a light that told me who I was and where I was to go”, or “a light that has a lot of good things in it”, or “a sun that had a happy face for me”. Most adults who have these neurological pathways activated describe the experience as seeing and/or interacting with “god” or a “higher power” or a “loving being of light”.

Regardless of the name of the experience, the first step in accessing it is to turn off input from the five senses that allow us to perceive local reality. There is a beautiful symmetry in this, this involves turning off our internal narrator which resides in our left temporal lobe, which is



responsible for language. This area of the brain is responsible for language and verbal communication with other humans. In turn, this permits us to better perceive and understand input from our right temporal lobe, which allows us to communicate with “god”, my short hand expression for the energetic patterns of information that underlie all of reality.

Notice that I emphasize that turning off the left temporal lobe allows us to better perceive and understand input from the right temporal lobe. We are always receiving input from this area of the brain, however, it is extremely faint and typically overwhelmed by input from the rest of the brain. I once had a patient who had a spiritual experience while in typing class. The rhythical sounds of typewriters caused this left temporal lobe to turn off and he had an intense spiritual vision. He described it as follows: “I once heard a light that was the sound of the entire universe wrapped up into a ball of light. It was a sound so loud that I understood everything that ever was and ever will be. Yet it was also so faint that the unaware couldn’t hear it at all, and the aware only thought that they did”.

To best understand the spiritual implications of the experience for our everyday lives, we must understand how the brain receives input and prepares outgoing signals. We are constantly bombarded with information from the outside world all the time, both through our five senses and from non-local reality which some call our sixth sense. We are constantly prepared to react to this information as well.

Our brain responds to this enormous process of organizing and reacting to energetic information in part by a process called dis-inhibition. Dis-inhibition means that we are constantly inhibiting ourselves from certain actions or sensory information and we act through removing the roadblocks of dis-inhibition. So, in very simplistic terms, we are constantly inhibiting our ability to move our arm, for example. The gate-keeping area of our brain is constantly receiving energetic impulses which code for “move the arm”, “move the arm”, “move the arm”. When we actually decide to move our arm, we don’t activate the “move the arm” signal, but rather remove the natural block on the “move the arm signal” that we always have.

Please read this again and again until you understand it, as it is crucial in understanding how we access the “god experience” through our right temporal lobe. We are always receiving sensory input from non-local reality, again in simplistic terms; we are always receiving the signal that says “talk to god”, “talk to god”, “talk to god”. It is only when there is silence in the rest of the brain, or when the blocks to the “talk to god” impulse are removed, that we can interact with the mass of energetic information that surrounds us at all times.

This makes the brain extremely efficient in terms of both perceiving reality and acting on that information. We don’t ever actually activate a signal to move our arms. Instead, the brain has thousands upon thousands of impulses to move the arm, move the finger, hear the voice, throw the ball, etc, and we act by unblocking a given impulse. So, we are always hearing the voice of god, but we must actively unblock the signals from this area of the brain to actually have the experience of interacting with “god”.

There are so many astonishing concepts needed to get our minds to understand this new information from brain science. It seems inconceivable that our minds are constantly processing

thousands upon thousands of impulses to think, feel, and act in certain ways, and that we must unblock these impulses in order to think, feel and act. Yet this is in fact the current scientific theory of how the brain works. So it also is with our ability to access information from “god”. We are, in fact, constantly receiving input from god, all of us do, and we must unblock our natural restrictions on that information in order to have the god experience, just as we must unblock the restrictions we have on any other feelings, thoughts, or actions.

This is difficult enough to understand and now on top of it all, we have to realize that information from non-local reality is timeless and space-less. This means that this information may represent something that we perceive as being in our past (a past life experience), a premonition of a future event, or something that has happened across town or even across the world. The information is not bounded by time or space so it can be very confusing when intermingled with information from our five senses and local reality.

Fortunately, the information gained from non-local reality, the energetic patterns of information that make up the universe, has a different feel or flavor to it. Accessing the information often has a hyper-real quality to it, “realer than real” as one child described it. There is often a sense of knowing, often called an intuition or knowledge from the heart. In the medical field, we often access this information by asking each other what is our “gut feeling” about a difficult case. When the information is presented by the brain in visual or auditory ways, such as an angel or a voice from god, the angel or voice is vividly real and superimposed over ordinary reality. In our study of parents who had premonitions of sudden infant death, we found that this information presented was presented to the brain either as vividly real visions, voices alerting the parent that the child would die, or deeply felt intuitions and physical feelings.

Through sophisticated PET scans of nuns and monks who could meditate in their laboratory, D’Aquill and Newberg demonstrated that when they meditate, they actually turn off a small area in the brain on the left side in the parietal lobe. This is an area of the brain called the orientation association area. This area of the brain weaves the complex sensory input from the five senses into a vivid complex perception of a “self” and the world that this “self” exists in. Without this sense of self and the mental representation of the world it exists in, we could not function.

In addition, the University of Pennsylvania researchers documented that meditation results in increased activity in the frontal and prefrontal areas of our brains. These areas are in turn tightly connected to the right temporal lobe and associated structures.

So at last we come to one coherent theory of how spiritual experiences occur, at least through meditation. Through rhythmical chanting and/or movements, the brain silences the internal narrator in the left temporal lobe. Sensory input from the five senses is turned off by turning off the orientation association area in the left parietal lobe. Increased activity in the frontal and prefrontal lobes occurs which in turns triggers and activates the right temporal lobe. This in turn results in removal of the blocks on information from non-local reality, resulting in a spiritual vision. The brain has been shown to contain tiny proteins called microtubules which have the ability to access information from non-local reality. The subjective experience of receiving this information is commonly described as perceiving a transcendent light that surrounds the person with love and contains all the information in the universe.

At last we have one coherent way of understanding exactly how spiritual experiences occur in the brain. Every step of the way has been documented in the laboratory. There is no longer anything controversial or speculative about this model. We now know exactly what happens in the brain when we have spiritual experiences. More importantly, we are all biologically hardwired to have this experience, just as we all have a math and a dance area in our brain that we need to learn to use.

We can take this model and apply it to the many different situations that result in spiritual experiences. For example, during the process of dying, the first thing that happens is complete cessation of sensory input from the brain. Chris described this during his near death experience as when the car filled up with water and “then the world went all blank”. This represented the cessation of sensory input. With this cessation of input from the five senses allows for heightened perceptions of input from the right temporal lobe. As the brain is dying, the energy source for this input clearly comes from the linking and interacting with the energetic patterns of non-local reality.

Other situations in which we have spiritual experiences include times of sensory deprivation, rhythmical activities which turn off the left temporal lobe and sensory input such as yoga, religious prayer, hobbies, typing class, or even perceiving geometric fields. These all involve both decreased sensory input and rhythmical activities, all of which result in allowing right temporal input to be perceived by the mind.

Still, this does not answer Chris’s question as to whether or not spiritual experiences are real. Matthew Alpert, author of “The God Area of the Brain” also agrees that we have a god area in our brains. However, his philosophical interpretation of the information is that there is no god. In his view, man evolved this area of the brain to relieve the fundamental anxieties of being a conscious human being and understanding past and future events as well as our own deaths. Most mainstream neurologists have a more neutral point of view. For example, in the most recent review I read in the medical literature on the neurochemistry of the god experience, the authors remind the readers that just because they have reviewed the known neurochemistry of the human perception of god in fact makes no statement about the objective reality of that god. Michael Persinger of Canada takes a more enthusiastic view of this god area of the brain. He has directly stimulated it with electromagnetic energy and induced students to have the “god experience” as he puts it. He describes the experience of interacting with “god” as not just relieving death and existential anxiety, but as actually being good for you. Our own research presented in “Transformed By the Light” agrees, and we documented that children who had the experience as children grew up to be uniquely psychologically healthy adults. D’Aquili and Newberg make similar observations as Alpert does indicating that the history of religion and spirituality indicates that humans have used myth and religion to relieve death and existential anxiety.

None of this however is evidence one way or another as to the objective reality of the perceptions of the experiences. The fact that they are beneficial is a piece of circumstantial evidence that they involve real perceptions as we wouldn’t expect that hallucinations secondary to brain pathology would have such beneficial effects. Certainly there are no examples of other

types of hallucinations having beneficial effects. Usually hallucinations cause a transient sense of well being ending with worse effects on physical and mental health. Alpert and D'Aquili/Newburg's observations as to the function of this area of the brain is not evidence one way or another as to the reality of the perceptions. As near death researchers Gabbard and Twemlow pointed out, just because we need a god doesn't mean that god isn't real.

As discussed above, spiritual visions in themselves are extremely personal and don't easily lend themselves to scientific analysis. After all, the scientific method depends on reproducible information which can be reliably replicated at will in the laboratory.

Ironically, such proof that spiritual visions are real has been developed, not by spiritual masters or by studying gurus capable of intense spiritual visions, but rather by warriors dedicated to the practice of inflicting mass destruction on other human beings. This research comes from the Naval Warfare Research Institute in the United States of America. The warriors studied were fighter pilots. The studies had nothing to do with spirituality at all, but were an effort to understand what were the maximum acceleration forces the human brain could withstand and still remain conscious enough to fly fighter jets.

At the Naval Warfare Institute, flight physician Jim Whinnery put fighter pilots in a giant centrifuge and whirled them at enormous speeds. He carefully documented how many G forces it took to induce unconsciousness in his experimental subjects. In an effort to understand the full capabilities of the human brain, he increased the gravitational forces until the pilots had seizures, a complete loss of bowel and bladder tone, and ultimately to the point where the blood stopped flowing in their brains.

He made a surprising chance discovery. Pilots who endured the rigors of his study did not consider the experience to be at all unpleasant. In fact, many of them reported that the experience was surprisingly pleasant. They were left with the impression that it was a pleasant experience to die and not something to be feared. Whinnery was astonished to learn that often they perceived themselves as being out of their physical bodies watching themselves in an unconscious state. He described them as having "dream-lets" in which they would say things like that instead of being seizing and unconscious in the centrifuge, they were on a beach looking up at the sun, thinking of their relatives and how much they were loved.

Whinnery and I compared notes about our research. We learned that the children who survived near death and were resuscitated by me had virtually identical experiences to the fighter pilots who had experiences as part of the centrifuge studies. Furthermore, both the fighter pilots and the children described the experience as pleasant resulting in decreased anxiety about dying. The reason for decreased death anxiety was simple, both the children and the fighter pilots said things like "I'm not afraid to die because I know a lot more about it now". Instead of Alpert's theory that death anxiety causes near death experiences, we learn that surviving death and learning what it was like results in decreased anxiety, just as learning about any unknown experience makes it easier to understand and less to worry about.

Whinnery was able to discover exactly when these dreamlets occurred by varying the length and intensity of the centrifuge runs. He learned that these fighter pilots only had the dreamlets and

out of body perceptions when they were actually at the point of death, after they lapsed into coma and seizures. His research on fighter pilots reached the same conclusion that my research on American children had, which was that when we come to the point of death, even if we are unconscious and seemingly unresponsive, we suddenly awake, perceive ourselves as being out of our bodies, and have spiritual experiences.

Finally I could understand a story told to me by one of my office nurses, Anne. She has worked for my partner David Christopher for over 20 years, and is a solid sensible Pediatric Nurse. She knows of my research and once told me a fascinating story of when she was a student nurse and had to resuscitate a patient who nearly died of a heart attack.

She was in training to be a nurse in nursing school in South Dakota in the United States. She and other student nurses were interviewing an old rancher, when suddenly he had a heart attack. They immediately called for help and did the best they could to resuscitate him. They had no idea what they were doing and helplessly flailed around the room, finally applying paddles to his body to try to shock his heart to restart itself. To their great amazement, it seemed to work and he returned to consciousness.

They later spoke to him, and asked him about their efforts to help him. He smiled gently at them, and told them that in fact they had nothing to do with his successful recovery. He told them that in fact Jesus was responsible for his return to life. And the proof he said is that your machine that you thought you shocked me with was unplugged the entire time.

The students returned to the room that they resuscitated him and found to their amazement that the old rancher was absolutely correct. The machine was unplugged and clearly had been unplugged throughout their attempts to resuscitate him.

Jim Whinnery's studies document that when we die, we at least perceive ourselves as being out of our bodies and can see two realities, this one and another spiritual one. Now these stories, such as those told by Chris and Anne can be verified by scientific evidence from the laboratory.

Now I can tell all the old people that I have answered Chris's question. His experience was real. In turn, if his spiritual experience is real, there is no reason to doubt that all spiritual experiences are real, whether they are induced by meditation, the monotonous noise of typing class, sensory deprivation, yoga lessons, knitting, gardening or sorting football cards in a collection. We know the neurological pathways involved in allowing us to have the experience, we can replicate the experience in the laboratory and study it under controlled conditions, and we can observe the positive benefits of the experience.

Finally, at long last, we have means of reuniting a split between science and spirituality that has persisted for hundreds of years. I can now confidently present a coherent scientific theory of spiritual visions which satisfies the most rigorous skeptical critic and yet preserves the concept that through spiritual intuitions we can learn more about our own humanity and the nature of our relationship with something that exists beyond our own brain and body. Whatever this is, it seems to have many names, "energetic patterns of information which underlie all of existence", quantum non-locality, non-local reality, our higher power, "a light that told me who I was and

where I was to go”, or more simply, god.

My theory rests on several well established non-controversial scientific facts:

1. When we die, we are awake and conscious and perceive other realities.
2. We have a specific area in our brain that allows us to have these perceptions.
3. There are complex and well defined specific biological pathways throughout the brain which permit these perceptions.
4. These pathways are active in a variety of times in our lives, from prayer, to meditation, to needing spiritual insight, to dying.
5. There are other realities to perceive.

Furthermore, this theory is very much woven into the mainstream of current scientific thinking. We live an exciting time in terms of consciousness research. More and more cutting edge researchers are discovering that this is an interactive universe in which our own consciousness plays a direct role in defining our own realities. Chaos mathematicians speak of defining the mathematics of god. Quantum physicists are saying that they are on the edge of explaining the spiritual nature of the universe, some even speak of explaining religious concepts such as reincarnation in terms of quantum physics. Evolutionary biologists such as Rupert Sheldrake have abandoned the concept of evolution as working not through the body but through energetic patterns of information which exist outside the body. There is nothing in my theory of how the brain can interact with energetic patterns of information existing outside the body which would offend anyone who is knowledgeable of the science of the past 20 years. When I hear that science attempts to debunk religion, I understand that this has nothing to do with my research. Such comments only mean that the outdated science of the 19<sup>th</sup> century is at odds with the outdated philosophies of the 17<sup>th</sup> Century.

I have not proven that all spiritual experiences are real, only that near death experiences are real. Yet my answer to both Chris and his mother is that all spiritual visions are as real as any other human experiences and perceptions. It is not much of a stretch to suppose that if near death experiences are real, then the same sort of experience which is perceived by the exact same neurological pathways are also real.

Don't take my word for it. In the next chapter, I will discuss ways in which anyone can satisfy for themselves the reality of these experiences. You don't need to get a Ph.D. in quantum physics to understand the truth of spiritual visions. I will help you to understand not only the true nature of spiritual visions, but also a simply way that any person can decide for him or herself the ultimate reality of these experiences.