

Chapter 4

The Transition from Life to Death

We don't have adequate language to describe the incomprehensible presence we meet in deep spiritual practice or at the time of dying. We choose to name it Mystery with a capital M. The word Mystery points to depth, to liberation, a kind of beauty and truth that can't be fully defined. Yet, Mystery is not something we cannot know. Mystery is endlessly discovered. Embracing Mystery may not be about taking action. It's more about opening. It's more about awe and wonder. It involves a willingness to "Not Know." This is not a stance of ignorance but a quality of attention. It is the capacity to bear witness to that which cannot be solved but can be lived into.

Upaya Institute and Zen Centre

In 2013, four eminent doctors, each with a particular interest in death and dying, came together to discuss near-death and out-of-body experiences and the nature of consciousness.^{1,2} Despite the session's title, *Experiencing Death: An Insider's Perspective*, only one of the four participants, Doctor Mary Neal, had confronted death. The debate was stimulating, but most of the dialogue was rational and analytical rather than experiential. Except for Doctor Neal, the panellists spoke about their clinical experience and research, and primarily saw death as the end of life. There was no sense of mystery, awe or wonder.

Very early in the session, Doctor Neal described a kayaking misadventure where she was trapped underwater for 15–30 minutes before being rescued and successfully resuscitated. During this time, she had a full-blown near-death experience that contained many of the features detailed in Chapter 5. It was this experience that led her to suggest that death occurs, 'When the spirit leaves the body *permanently* [my emphasis]'. She did not define spirit, but I understood her to mean consciousness. This definition unsettled the other panellists. One in particular could not conceive of consciousness existing outside of the body. He steadfastly believed Doctor Neal's near-death experience could be explained by the dying brain hypothesis proposed by Susan Blackmore and described in Chapter 5. This hypothesis attributes each and every aspect of a NDE to neuro-physiological changes in the brain, brought about, in Doctor Neal's case, by oxygen deprivation.

Doctor Neal strongly believes that spirit or consciousness leaves the body with the near-death and out-of-body experience. While she did not state it openly, she indicated that consciousness (and life) returns only if the event that precipitated the disembodied experience resolves on its own accord, or if the person is successfully resuscitated, or when the consciousness *chooses* to return on its own accord. In Doctor Neal's case the cardio-pulmonary resuscitation (CPR) undoubtedly played a large role in preventing biological death, but according to her, it was her disembodied consciousness that chose to return to her lifeless body.

Doctor Neal was clinically dead for most of the 15–30 minutes, but was never biologically dead. Her heart and breathing had ceased, but the cells of her vital organs – heart and brain – remained viable. If they had been irreparably damaged, biological death would have ensued and resuscitation would not have been successful.

Oxygen deprivation (anoxia) from cardiac arrest or drowning are two well-known causes of clinical death (absent heart beat and respirations). If the period of absolute anoxia exceeds 4–6 minutes, biological death inevitably follows. There may, however, be circumstances where this period of 4–6 minutes stretches out. Hypothermia is perhaps the best-known moderating factor and almost certainly contributed to Doctor Neal surviving an extended period under water. You may think surviving 15–30 minutes underwater is remarkable, but the record goes to a 29-year-old skier who fell into an ice-covered ravine. She was successfully resuscitated having endured 3 hours in freezing water. Her body temperature at the time of rescue was 13.7 degrees centigrade (23.5 degrees below the accepted normal of 37.2 degrees) and it was this that contributed to her successful resuscitation and return to life.³

This life-prolonging effect of hypothermia is put to good use when transporting organs from one hospital to another for the purpose of transplantation. It is also a means of safeguarding against neurological damage during selected forms of surgery. Many years ago, I was present in an operating theatre when the core temperature of a very young child was reduced to near 20 degrees centigrade after she had been fully anaesthetised. At this point the heart was stopped and life-saving cardiac surgery commenced. It was a surreal experience – one I shall never forget.

What is this spirit or consciousness that Doctor Neal speaks of? Contrary to popular belief, there is no simple definition of consciousness, nor is there a known answer to the relationship between consciousness and existence.⁴ In her book, *Conscious*, Annaka Harris describes consciousness as the subjective experience of one's own inner life; the colours, thoughts, flavours and feelings that you experience every day of your life.⁵ Others, like Anil Seth define consciousness as the presence of any subjective experience of what it is like to be you.⁶ While neuroscientists have gone a long way to resolving many of the so-called easy questions, such as the neurophysiological underpinning to hearing, vision, taste, pain and memory,⁷ the *hard* question of how a subjective experience or this sense of 'I' arises out of the non-sentient matter of the brain remains a mystery. This dilemma is expressed metaphorically in the following rhetorical question, 'How is the water of the physical brain turned into the wine of consciousness (*i.e. our rich inner life*)?'⁸ [My words in italics.]

The nature of consciousness and whether it can exist outside of the brain are two of the most challenging questions confronting humankind. Materialists believe consciousness is an epiphenomenon or emergent property of the brain and ceases to exist following biological death. Stephen Hawking for one, believed that consciousness vanishes when the brain dies. Others, such as Annika Harris and David Chalmers, believe consciousness is fundamental to reality and as such, it is irreducible, unmeasurable and cannot be destroyed, even by death. This is not new-age thinking. It was conceptualised as far back as 1931 by the quantum physicist and Nobel Prize recipient Max Planck, who said,

I regard consciousness as fundamental. I regard matter as derivative from consciousness. We cannot get behind consciousness. Everything that we talk about, everything that we regard as existing, postulates consciousness.

If one follows Planck's line of thinking, we arrive at the somewhat mystifying conclusion that the brain is the receiver of consciousness rather than its creator.

The nature of consciousness may not dominate our thinking, yet its significance in day-to-day life is undeniable. This is most appreciated when we can no longer relate to someone we know and love because their or our consciousness is impaired for any number of reasons, including head injury, stroke, dementia,

coma and unconsciousness. Although I have used the word ‘impaired’, consciousness cannot be impaired if we believe it to be fundamental. Physiological, pharmacological or pathological changes to the medium, (i.e. the brain) through which it finds expression can, however, compromise the way it manifests. There is a range or spectrum of consciousness and each state of consciousness is different (as is the subjective experience). Included in this spectrum are altered states of consciousness (e.g., paranormal experiences such as near-death, out-of-body and near-to-death experiences – see Table 1 Page 6). As remarkable as it may seem, many of the paranormal experiences discussed in this review seemingly rescue people from the fear of death and the horror of extinction.⁹

My particular interest lies with paranormal experiences that occur around the time of death and, for this very reason, are appropriately named *deathbed visions*. Deathbed visions were described by Sir William Barrett in his 1926 book of the same name¹⁰ but were virtually ignored until the latter part of the 20th century. I became interested in them following my entry into palliative care more than 30 years ago. During this time I witnessed countless near-to-death experiences, many of which are documented in *Reflections of a Setting Sun*.¹¹ The experiences that motivated me to look more deeply into the mystery surrounding death, however, were those that took place at the moment of death.

To the best of my knowledge, the first paper depicting electroencephalographic changes in dying patients at the moment of death was published in 2001.¹² This was a pilot study designed to evaluate the potential role of the Bispectral Index (BIS) monitor in quantifying the level of awareness or sedation in dying patients. Details concerning the monitor appear in Appendix 1 and some of the anecdotal findings from that 2001 paper were outlined in the previous chapter. The most puzzling finding from that study was a dramatic rise in the BIS in four of 12 patients immediately before death. Figure 6 is the first documented example of such a change in a dying patient. Subsequent studies involving intensive care and palliative care patients recorded similar changes in 50% of those who were dying. In all cases the spike or surge in the BIS score was striking and exceeded baseline readings by at least 50%.¹³⁻¹⁷



Figure 6. Surge in basal BIS occurring moments before death. Basal score = 40. Peak score = 100, which is equivalent to full awareness and represents a 250% increase in the basal score.

It is 20 years since the surge in BIS readings was first noted in dying patients. While the finding generated considerable interest, the scientific community remains divided about the likely cause. Despite my belief that the BIS spike at the moment of death is due to a covert deathbed experience, most of the neuroscientists I have communicated with disagree and attribute it to the agonal throes of a dying brain. Others rightly insist more sophisticated studies are required before this question can be satisfactorily resolved. I take their comments and the evidence upon which they are based seriously, but am mindful that none that I have spoken to have witnessed a deathbed vision such as Hazel's. It is this bedside experience together with my own near-death experience that led me to conclude the BIS spike around the time of death may be due to an end-of-life vision or dream rather than a neuro-electrical storm. There has been some progress on this front, which I will now briefly outline.

In 2013, a publication from a well-respected group of neuroscientists reported neurophysiological changes in rats during the first 30 seconds following anoxic cardiac arrest and before the appearance of an isoelectric (flat line) EEG. They concluded the changes, 'Were consistent with conscious processing at near-death and might explain the highly lucid and realer-than-real mental experiences (i.e. near-death experiences) reported by near-death survivors.'¹⁸ A similar study some years later reported the same changes together with an increase in cerebral blood flow and brain metabolism. This group concluded the changes could represent potential markers of consciousness.¹⁹

Opinions are divided as to the significance of these animal studies and whether the findings can be extrapolated to humans. This was partly put to rest following a recently reported single case study involving an 87 year-old man who had full uninterrupted EEG monitoring prior to and following his cardiac arrest, having previously incurred a traumatic subdural haematoma. The interpretation of the EEG findings has sent the scientific and non-scientific community abuzz for it suggests 'the human brain may possess the capability to generate coordinated activity during the near-death period... and such activity could support a *last recall of life* that takes place in the near-

death state.'²⁰ The EEG changes were remarkably similar to those of the animal studies described above and led the authors to conclude that the brain may pass through a series of stereotyped activity patterns during death.

Electrical surges, similar to the BIS surge in Figure 6 were also noted in this single case study. They appeared following the cessation of the patient's heartbeat, but before electrical silence. Bearing in mind the earlier animal studies had shown neuronal activity following cardiac arrest I contacted the principal author and enquired about the cause of the electrical surge noted in his study. He said more research is required before a definitive answer can be given, but gamma waves [similar to those found before cardiac arrest] were present after cardiac arrest and their presence may 'represent' memory flashbacks or discharges from injured nerves'.

We must be careful about drawing conclusions from single case studies, but there is now mounting evidence in support of the belief that neural changes around the time of death could be responsible for both the near-death experience and deathbed visions. The significance of the electrical surges noted on the BIS monitor remains contentious, but this case study lends support to the possibility that some form of conscious processing (i.e. vision or dream) may be present even at a late stage. What is clear, however, is that the BIS monitor, as useful as it may be in measuring awareness and patient comfort, is too blunt an instrument to detect the subtle neurophysiological changes that accompany dying.

Death is truly a Mystery that is endlessly discovered. The neurophysiological underpinnings may or may not be uncovered in the laboratory, but it is at the bedside where we can open to and embrace the mystery.

The moment of death is a transitional time not unlike that between wakefulness and sleep. Remarkable changes, similar to that described by Charles Dickens in *Oliver Twist*, are possible in all transitional states simply because the rational discursive mind (the corporate associate) settles and in so doing it opens one to unlimited possibilities.

There is a drowsy state, between sleeping and waking, when you dream more in five minutes with your eyes half open, and yourself half conscious of everything that is passing around you, than you would in five nights with your eyes fast closed, and your senses wrapt in perfect unconsciousness. At such time, a mortal knows just enough of what his mind is doing, to form some glimmering conception of its mighty powers, its bounding from earth and spurning time and space, when freed from the restraint of its corporal associate.

Elisabeth Kübler-Ross was one who believed in the might of transitional states and repeatedly stated, 'No one dies alone.' Over the years, this quote has been misread or misinterpreted to mean 'No one should die alone', and for a select few this has become an important goal of end-of-life care. Most families seek to be present at the time of their loved one's death and are understandably distressed when circumstances prevent this from happening. Try as they may to find reasons for why the death occurred when it did, most grieve believing their loved one died alone. The message Elisabeth Kübler-Ross was trying to convey is that visions of deceased loved ones occur with all who are in that transitional state between life and death. This claim was based on her clinical experience and research, which unfortunately was never published and is therefore not widely known or considered credible. I am inclined to believe the potential for experiencing an end-of-life dream or vision exists for all who are dying and that this can be facilitated by ensuring their physical comfort and be creating a healing space around them.

Albert Einstein once said, 'The intuitive mind is a sacred gift and the rational brain a faithful servant. We have created a society that honours the servant and has forgotten the gift.' After reading this Chapter many of you may be wondering if I have taken the rational approach in trying to unpack the mystery of death. So, before entering into a more detailed discussion of near-death and near-to-death experiences in Chapter 5 let me set the ledger straight by explaining my reason for pursuing this question of what happens at the moment of death.

Although it may seem otherwise, I am not turning to science in the hope of solving this mystery. Rather, I have chosen to look more deeply into the nature of death – to be curious about death and the experience of dying. In the words of one spiritual teacher for whom I have great respect, I am seeking to, 'Ponder it [death] with ease, and wonder at it, like a child, with curiosity and with gentleness of mind and a sensitivity of body.'²¹ Having said this, I do of course have an ulterior motive which I can only explain as follows.

In getting to know death we incrementally discover more about ourselves. John O'Donohue expresses this beautifully when, in his book *Anam Cara*, he says, 'We endeavour to see ourselves and meet ourselves; yet there is such complexity in us and so many layers to the human heart that we rarely ever encounter

ourselves ... at our death, all the defensive barriers that separate and exclude us from our presence fall away [and] the full embrace of the soul gather around us'.²²

We do not have to wait until death to feel the full embrace of the soul. The defensive barriers that John O'Donohue can be dissolved by getting to know oneself better; by leading a reflective life.

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.

TS Eliot. Little Gidding